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EYE ON THE MARKET | OUTLOOK 2024

Pillow Talk

Pillow Talk. Falling US inflation and possible Fed easing are increasing talk of a soft landing rather than a recession, hard landing and bear market. Leading indicators point to slowing economic growth but not a collapse. While odds of a soft landing have increased, markets are already pricing that in at a time of single digit earnings growth and single digit returns on the median stock. Our 2024 Outlook takes a closer look and includes sections on the national debt, weight loss drugs, antitrust risks to US megacap stocks, Japan, China and ten surprises for the new year.

By **Michael Cembalest** | Chairman of Market and Investment Strategy for J.P. Morgan Asset & Wealth Management

MARY CALLAHAN ERDOES
Chief Executive Officer
J.P. Morgan Asset & Wealth Management

As we head into the new year, we want you to know what a privilege it is to serve as your advisor. We work very hard each day to bring you the best of J.P. Morgan. No one exemplifies this better than Michael Cembalest, my investment partner, who guides all of us with his deeply researched and insightful perspectives.

Michael's *Eye on the Market Outlook* is one of our clients' most cherished publications and this year's *Pillow Talk* gives us a look into several global investment areas as well as 10 predicted surprises for 2024.

Thank you, as always, for your continued trust and confidence.

Here's to a peaceful and prosperous 2024,

Mary C. Erdoes

2024 Outlook: Pillow Talk

Falling US inflation and prospects for easier Fed policy are increasing talk of a soft landing rather than a recession, hard landing and bear market. Leading indicators point to slowing growth but not a collapse. Select real estate, corporate and household delinquency rates are rising, but as illustrated below these are usually lagging indicators for investors. In other words, equity markets normally bottom well before the peak in economic distress, with the dot-com cycle being the notable exception. There's still risk of recession next year; the important point is that even if it did occur it is likely to be a mild one, particularly with the Fed providing ample back-door liquidity to the banking system.

The challenge for investors: the damage to public sector finances from mega-deficits, markets that already price in a very soft landing and the concentrated contribution of megacap stocks. In 2023, S&P 500 earnings were flat; they were up 33% for the 7 megacap stocks and down 5% across the rest of the S&P 500. All things considered, 2024 looks like a year of slowing GDP growth, single-digit earnings growth and single-digit returns on the median S&P 500 stock.

If so, a diversified portfolio of cash, long-duration government bonds, high quality corporate bonds and equities is a good way to think about investing. Industrials and energy look interesting given US industrial policies, and so does Japan. The outlook concludes with a detailed review of antitrust risks facing US tech stocks, a deep dive on weight loss drugs, the US Federal debt, China and my top ten surprises for 2024 in honor of Byron Wien.

Michael Cembalest
JP Morgan Asset Management

Equities tend to bottom first during recessions

Source: BEA, Census, NAR, Shiller, Bloomberg, S&P/Dow Jones, JPMAM, 2023. Past performance is not a indicative of future results

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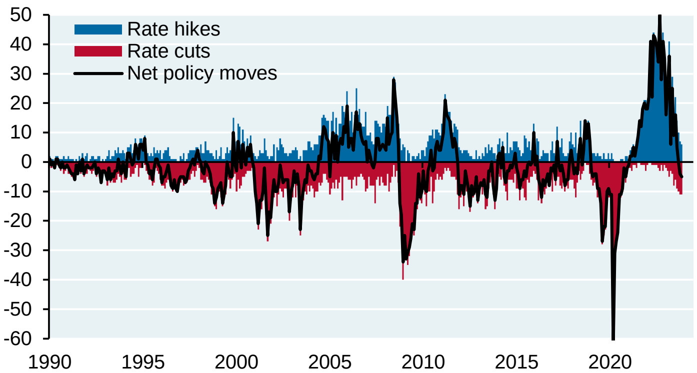
Chart of the year: the most intense global tightening cycle in decades is ending

Central banks hiking/cutting rates
Number of central banks



Source: Individual Central Banks, Haver Analytics, JPMAM, November 2023

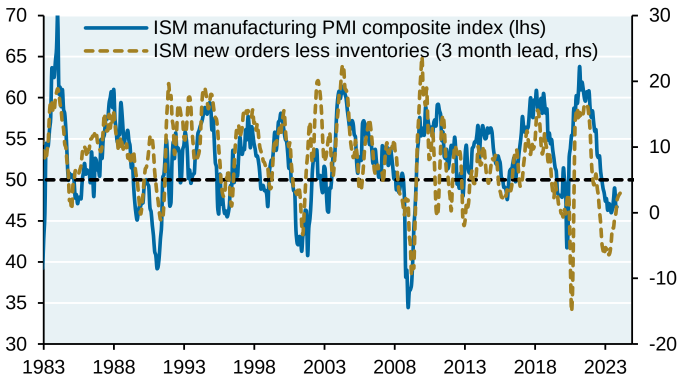
Acronyms

CBO Congressional Budget Office; CMBS commercial mortgage backed securities; CPI consumer price inflation; DoJ Department of Justice; EBITDA earnings before interest, taxes, depreciation and amortization; ECI employment cost index; EPS earnings per share; EV electric vehicles; FDI foreign direct investment; FTC Federal Trade Commission; GFC global financial crisis; IMF International Monetary Fund; ISM Institute for Supply Management; LEI leading economic indicators; NFIB National Federation of Independent Business; P/E price to earnings; SOE state owned enterprise; TSMC Taiwan Semiconductor Manufacturing Company; YTD year to date

Leading indicators point to weaker US growth but not a sharp decline

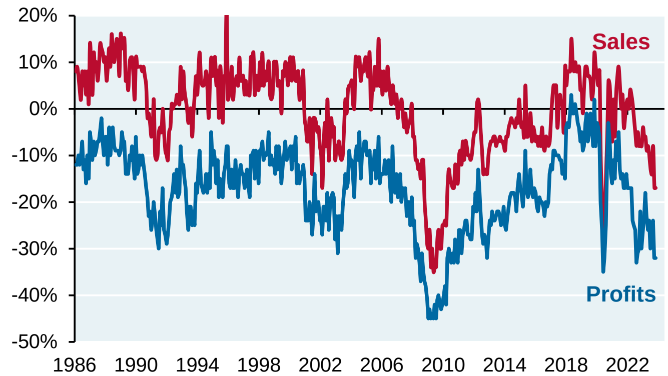
Many leading indicators point to weaker growth but not a sharp recession. While our preferred leading indicator (ISM new orders less inventories) is actually improving on the margin, other leading indicators point to weaker growth. We show four of them below: projections of capital spending, growth, construction and profits. Other weak indicators include small business expectations. Remember, **investors have to consider the risk of a hard landing in profits even if the there's a soft landing in the economy** (e.g., 2001).

US new orders less inventories
Index (50+ = expansion) Index, 3 month average



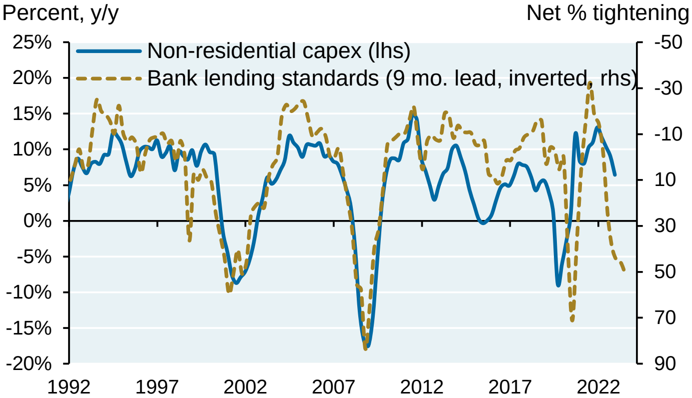
Source: Bloomberg, JPMAM, November 2023

Small business expectations
Net % of NFIB Optimism Survey respondents



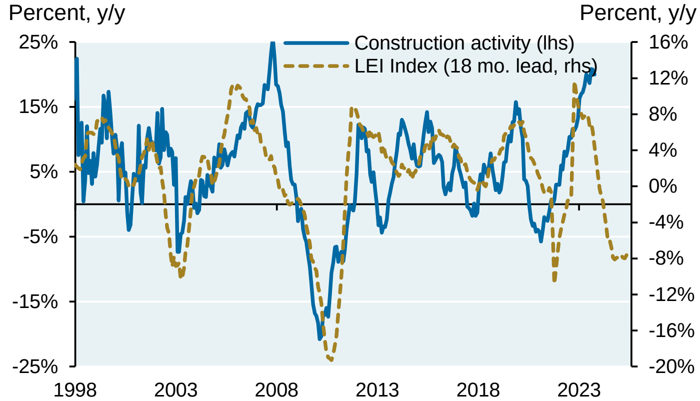
Source: Bloomberg, JPMAM, November 2023

US bank lending standards => US non-residential capex
Percent, y/y Net % tightening



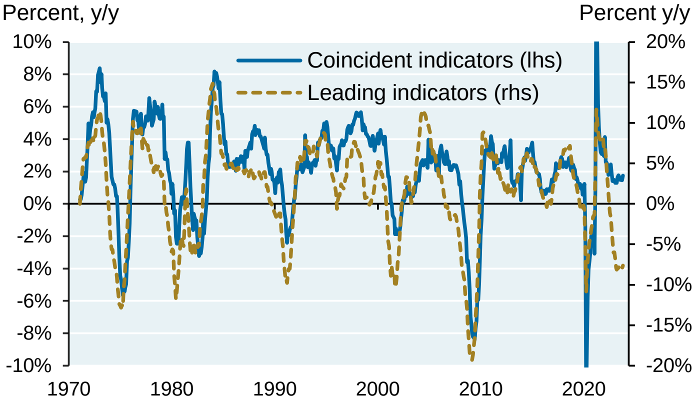
Source: Bloomberg, JPMAM, Q3 2023

Leading economic indicator => construction activity
Percent, y/y Percent, y/y



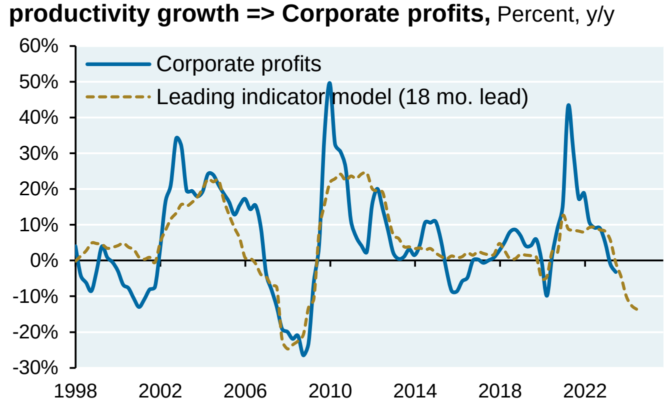
Source: US Census, Conference Board, JPMAM, November 2023

Coincident and leading economic indicators
Percent, y/y Percent y/y



Source: Conference Board, JPMAM, November 2023

Fed funds, effective corporate tax rate, unemployment, productivity growth => Corporate profits, Percent, y/y



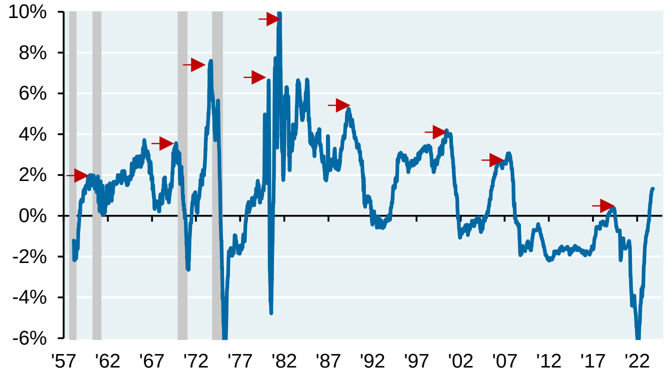
Source: Piper Sandler, Q3 2023

Why hasn't the increase in Fed policy rates caused a US recession? As explained in our "Rasputin" Eye on the Market last August, monetary policy is tighter but below the level of real rates that led to prior recessions; corporate cash flow is still in good shape, unlike the cash flow deficits which preceded prior recessions; and the corporate sector termed out debt maturities before the rise in rates, partially immunizing itself from the interest spike that preceded prior recessions. Private sector credit creation was similar to prior cycles, but debt servicing risks are lower for companies and households that termed out maturities.

While we see the risk of recession receding, recessions tend to occur at least 7 quarters after the initial Fed hike, and that's where we stand as 2024 begins. The fact that a recession hasn't taken place yet is not a guarantee that it won't. But estimates of liquidity are expanding based on the various facilities that the Fed provides to the banking system (bottom chart), which is another cushion mitigating any decline in growth.

Real cost of money

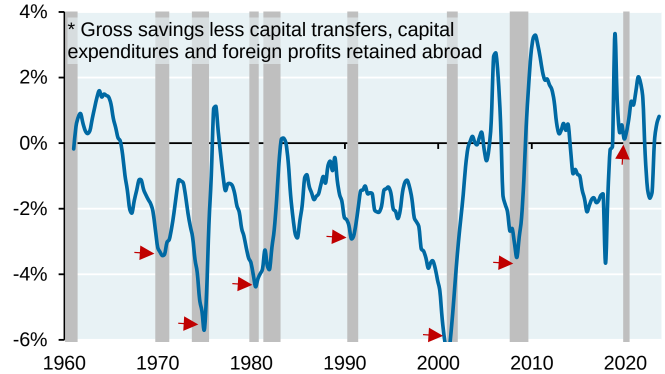
Real interest rates (FED Funds - Core CPI), 21 day smoothing



Source: Bloomberg, JPMAM, December 26, 2023

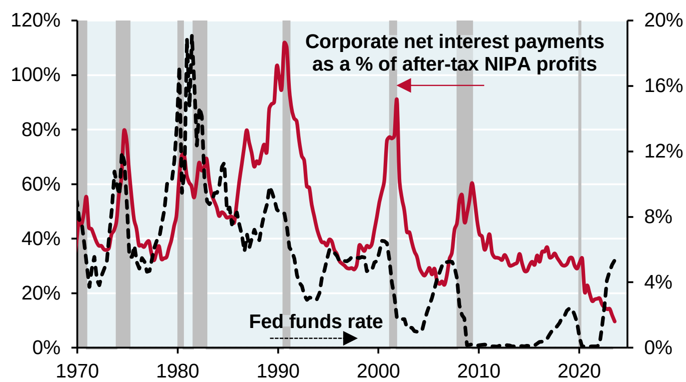
US corporate sector financial balance

% of corporate gross value added, 4-quarter average



Source: Federal Reserve, BEA, JPMAM, Q3 2023

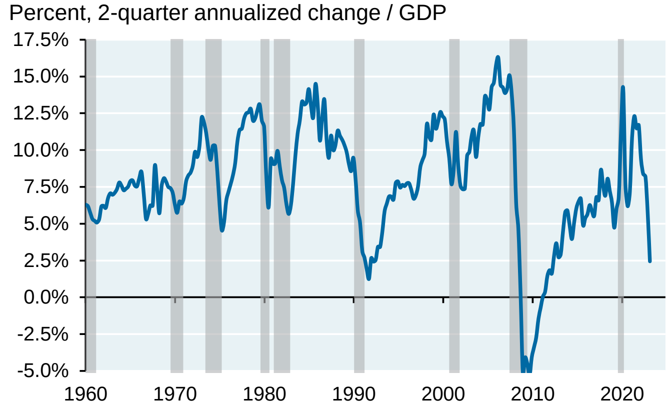
Corporate net interest costs stable despite rising funds rate



Source: Bloomberg, JPMAM, Q3 2023

US private non-financial credit creation as a % of GDP

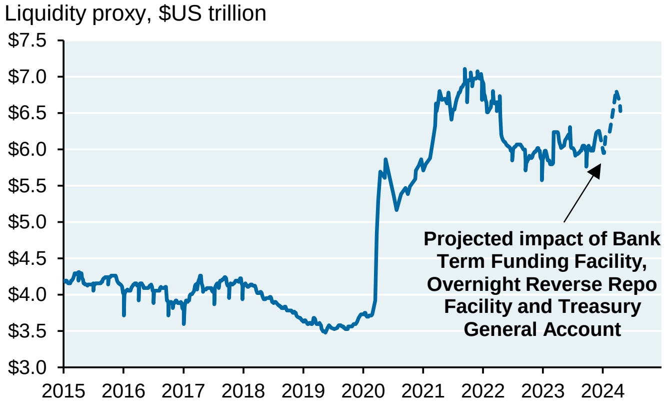
Percent, 2-quarter annualized change / GDP



Source: Federal Reserve, BEA, JPMAM, Q2 2023

US liquidity conditions set to improve in 2024

Liquidity proxy, $US trillion



Source: Steno Research, December 2023

Recessions usually take place at least 7 quarters after the initial Fed hike

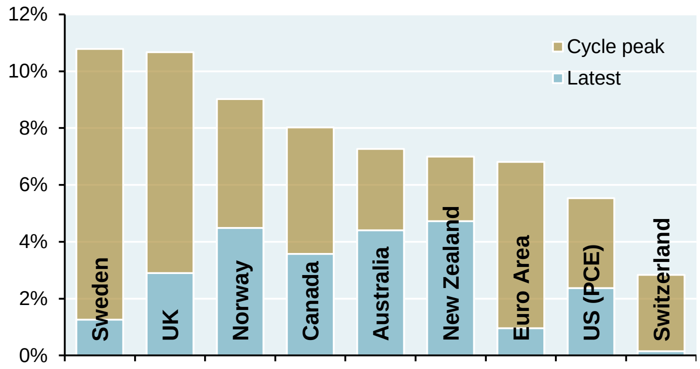
Fed funds initial hike	1st quarter of recession	Quarters after initial hike
Q3 1958	Q3 1960	8
Q4 1967	Q1 1970	9
Q2 1972	Q1 1974	7
Q2 1977	Q2 1980	12
Q4 1980	Q4 1981	4
Q4 1986	Q4 1990	16
Q2 1999	Q2 2001	8
Q3 2004	Q1 2008	14

Source: Piper Sandler, 2023

Inflation monitor: Mission mostly accomplished

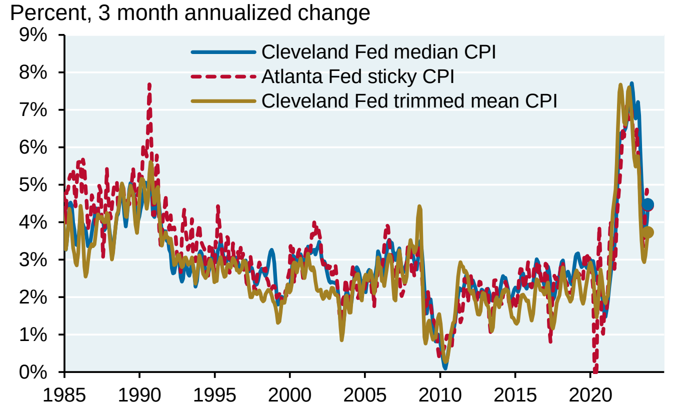
The US and other developed economies have experienced substantial declines in inflation vs peak levels. That's what is driving the chart shown earlier on declining central bank rate hikes.

Developed world core inflation declines
3-month percent change, annualized



Source: Haver Analytics, JPMAM, November 2023

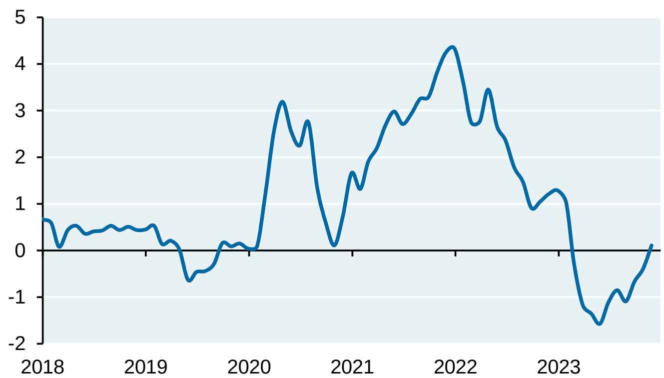
US consumer price inflation measures
Percent, 3 month annualized change



Source: Bloomberg, JPMAM, November 2023

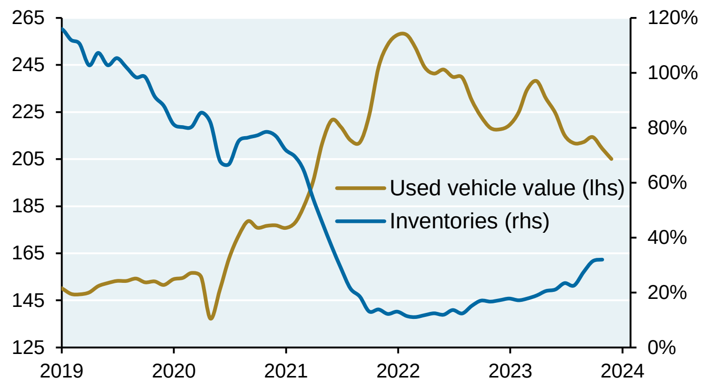
Breathing room for the Fed is coming from falling supply chain pressures; rising auto inventories and falling used vehicle values; and timely measures of residential rent inflation which are also declining. There's also a lot of residential real estate supply coming online, particularly in multifamily. Futures markets are pricing in 1.4% of Fed easing by the end of 2024; I hope it's less than that since too much easing too fast could reignite inflation, which would be a real problem for the Fed and for markets. The Fed has enough egg on its face already.

Supply chain pressures subside
FRBNY Global Supply Chain Pressure Index



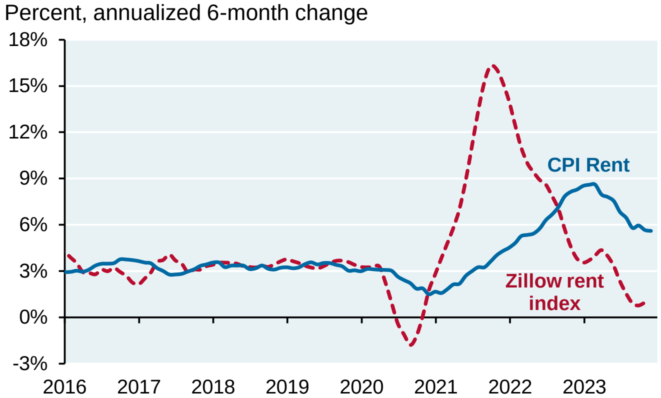
Source: Bloomberg, JPMAM, November 2023

US used vehicle prices fall and auto inventory recovering
Manheim US Index
Percent of average 2019 level



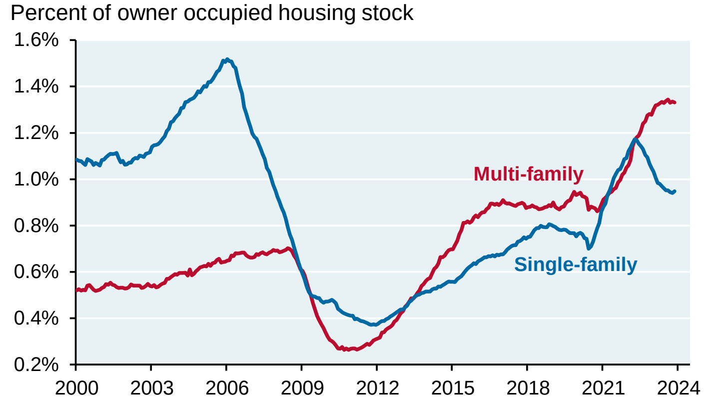
Source: BEA, Bloomberg, JPMAM, November 2023

Timely residential rent measures vs CPI rent
Percent, annualized 6-month change



Source: Bloomberg, Zillow, JPMAM, November 2023

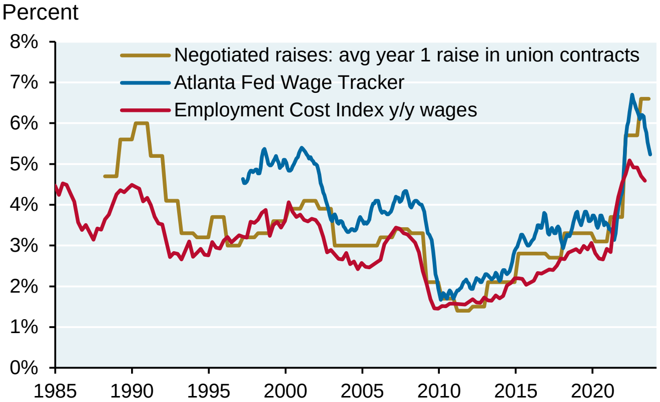
Housing supply under construction
Percent of owner occupied housing stock



Source: Bloomberg, US Census, JPMAM, November 2023

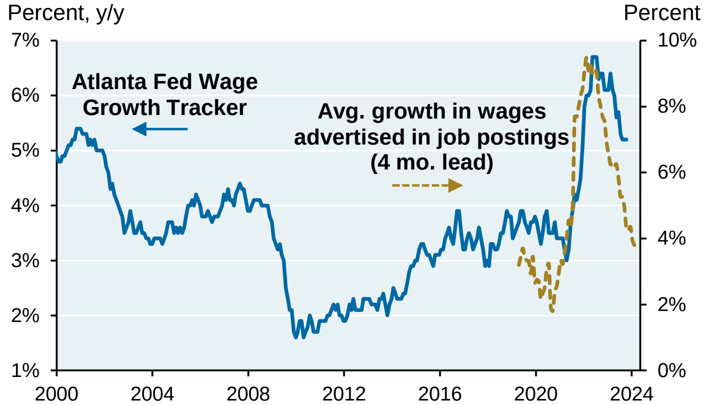
We also expect **wage inflation** to decline based on the decline in advertised wages (second chart); observed declines in temporary help, manufacturing and overtime hours worked, unit labor costs, the "job switcher vs job stayer" premium, the share of private industries with rising employment and the voluntary quits rate; and rising female labor force participation. While negotiated pay raises are still at peak levels, union workers are only 7% of the workforce, below the 20%-30% range which prevailed during the 1970's.

Wage inflation measures



Source: BLS, Bloomberg Law, JPMAM, Q3 2023

Wages in job postings => Wages

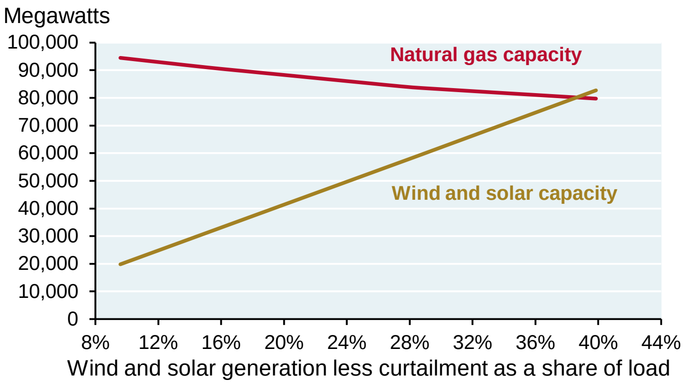


Source: Steno Research, Bloomberg, Indeed, JPMAM, November 2023

On inflation and US energy/industrial policy. Looking a few years out, inflation risks tilt higher due to large US fiscal deficits and the impact of new US energy/industrial policies. A constant theme in our annual energy piece is the duplication of generation capacity required to accompany high renewable power penetration. The first chart below illustrates what I mean by this. MISO is one of the larger independent system operators, stretching from Minnesota to Louisiana. As wind and solar capacity increases, MISO will not be able to reduce natural gas capacity on a 1:1 basis. The red line shows the estimated modest reduction in gas capacity that can be shuttered as wind/solar increase. Whether backup power is provided by thermal generation or batteries, increased capital investment will reverberate through the cost of power.

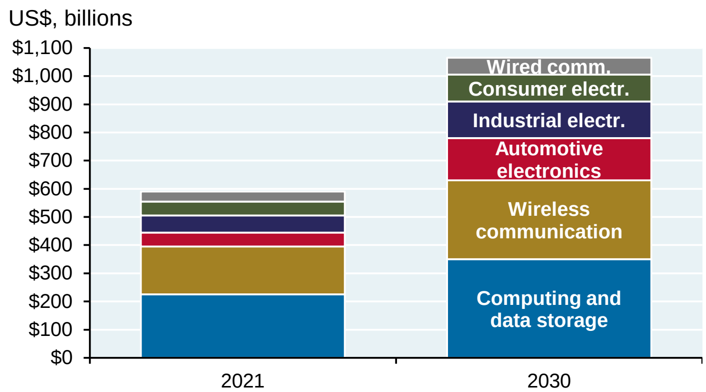
As for semiconductor policy, TSMC is building two new fabs in Arizona, one for 4-5 nanometer chips (opening soon) and another for 3 nanometer chips opening in 2027. As per our sources and TSMC's CFO[1], the $40 billion cost of TSMC's US fabs is 4-5x times higher than the same facilities in Taiwan. Capital costs are only part of the overall expense, but US labor costs are higher than Taiwan's as well. It makes sense for the US to renationalize semiconductor supply chains due to geopolitical risks, but investors should be aware of the implications for supply chain costs, particularly in semiconductor-intensive EVs, wireless communication and AI/computing.

MISO: wind, solar and gas capacity as a function of wind/solar share of load



Source: EIA, JPMAM calculations, 2023

Global semiconductor market value



Source: "*The semiconductor decade: A trillion-dollar industry*", McKinsey & Company, April 2022

[1] *"Y 2022 Earnings Call"*, Taiwan Semiconductor Manufacturing Co Ltd, January 12, 2023

Leviathans: US equity markets and the domination of megacap stocks

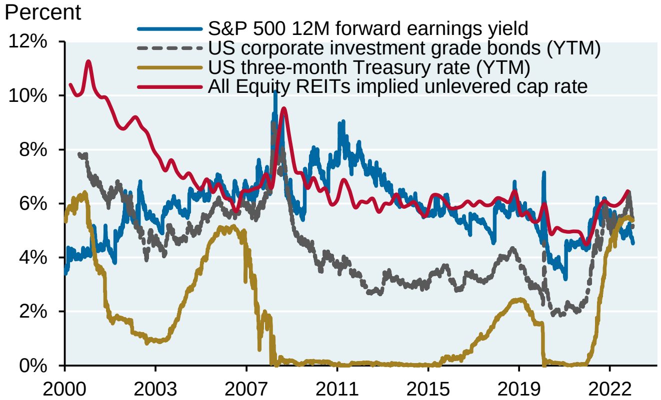
Markets are at a unique juncture: yields on equities, high grade bonds, T-bills and REITs have converged, which hasn't happened in 20 years. If this remains the case, holding some cash looks like good value on a risk-adjusted basis. As shown on the right, equity valuations are at the high end of the range for the market cap-weighted S&P and closer to median for the equal weighted S&P. The valuation peaks in 2020/2021 are no longer relevant now that the Fed will presumably maintain a positive real cost of money. Also, the internals of the US corporate sector are a bit weaker than headline S&P 500 earnings suggest:

- US corporate revenues and S&P operating earnings per share have been flat in real terms since early 2022
- Free cash flow of the S&P 500 excluding the 7 megacaps has also been flat since that time (see next page)

After the fall rally, US equity markets already price in a soft landing. We expect single digit earnings growth and single digit returns on the median US stock in 2024, with continued outperformance by the megacaps.

Convergence of yields across assets

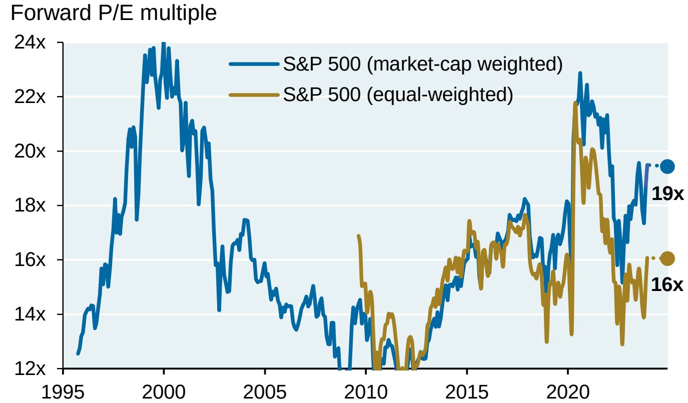
Percent



Source: Bloomberg, JPMAM, December 26, 2023

S&P 500 valuations

Forward P/E multiple



Source: FactSet, JPMAM, December 26, 2023

From a sector perspective, industrials and energy look interesting in addition to technology. As shown on the left, industrials are inexpensive vs the market and should benefit from energy, semiconductor and infrastructure bills. The table shows free cash flow and valuation for the energy sector. The greener the shading, the cheaper that indicator is vs the market. I don't expect energy valuations to improve much given stranded asset concerns. Even so, the energy sector still looks like an attractive source of earnings yield, dividends and stock buybacks.

Industrial valuations vs the market

Industrial sector forward P/E vs S&P 500

Source: FactSet, JPMAM, December 26, 2023

Percentile rank of energy sector valuations relative to S&P 1500, start of available data to Nov 2023

	Enterprise value to cash flow (EBITDA)		Free cash flow yield	
	Last 12 M	Next 12 M	Last 12 M	Next 12 M
Oil & Gas Drilling	5	2	75	94
Oil & Gas Equipment & Services	5	2	79	91
Integrated Oil & Gas	4	3	87	86
Oil & Gas Exploration & Production	7	7	85	88
Oil & Gas Refining & Marketing	3	9	95	95
Oil & Gas Storage & Transport	13	14	62	70
Energy	4	4	88	87

Source: FactSet, JPMAM, November 2023

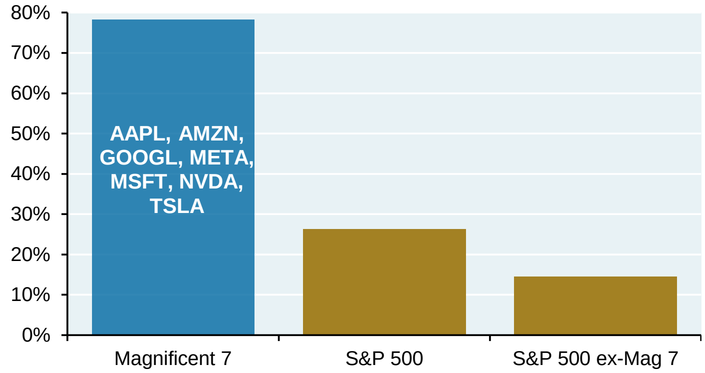
Given limited impacts from antitrust so far (see next section), the valuation of the megacaps largely reflects their higher margins and free cash flow. The percent of market cap that the "magnificent 7" represent is at an all-time high, and they accounted for most of the equity market gains in 2023. Another sign of concentration: last year also saw the second highest percentage of S&P 500 stocks underperforming the index since 1980 (72% underperformed vs 52% average). But without judicial brakes on them, the strong are getting stronger and I see little reason, other than valuations that become too high relative to the market, that this should change.

On this latter point, see the bottom chart. While megacap stocks look increasingly expensive relative to the market, **after adjusting for their higher earnings growth expectations they don't look nearly as overpriced**. The challenge: as shown in the last chart, **everyone seems to agree; this is a very crowded trade**.

Market cap of largest 7 companies in S&P 500
Percent of total index market cap

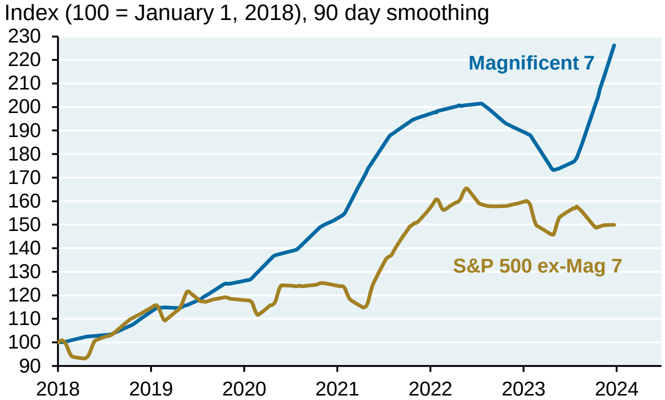
Source: FactSet, JPMAM, December 26, 2023

Magnificent 7 stocks led S&P 500 in 2023
Percent, YTD return



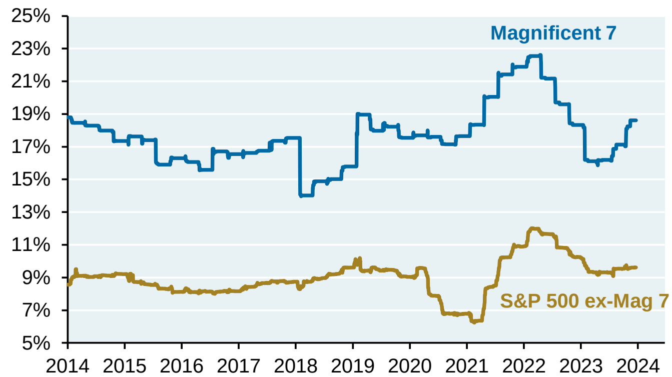
Source: Bloomberg, JPMAM, December 27, 2023

Magnificent 7 growth in free cash flow vs rest of S&P 500
Index (100 = January 1, 2018), 90 day smoothing



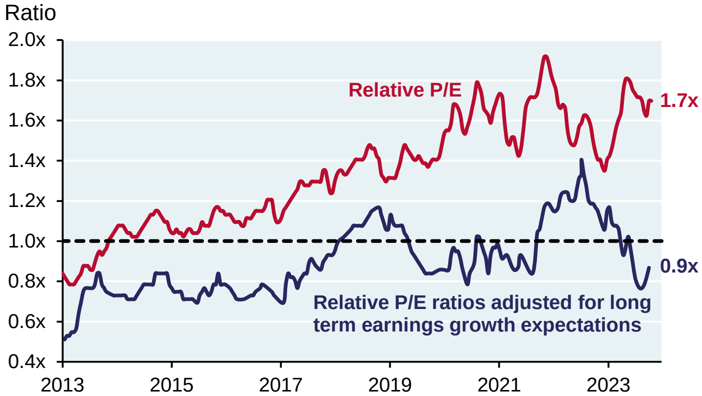
Source: Bloomberg, JPMAM, December 27, 2023

Magnificent 7 profit margin vs rest of S&P 500
Percent



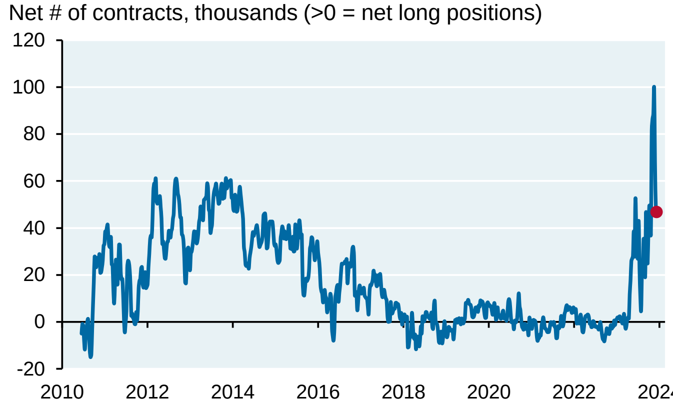
Source: Bloomberg, JPMAM, December 27, 2023

Valuations of Magnificent 7 vs median S&P 500 stock
Ratio



Source: GS Global Investment Research, JPMAM, November 2023

Nasdaq 100 positioning: asset managers & leveraged funds
Net # of contracts, thousands (>0 = net long positions)



Source: CFTC, JPMAM, December 19, 2023

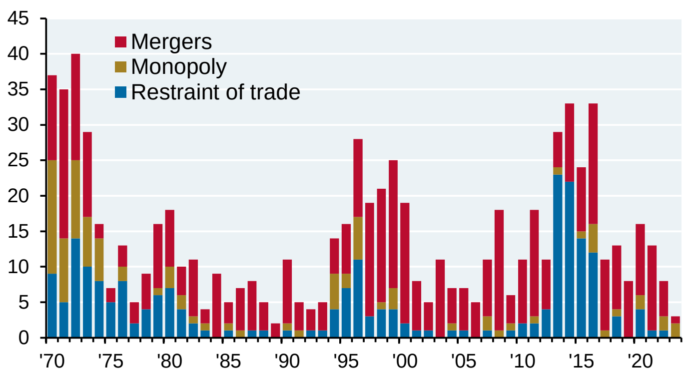
Antitrust monitor: the latest on DoJ/FTC lawsuits against Big Tech and Epic's big win vs Google

This section is not "appendix" material. Given the contribution of megacaps to market returns, antitrust risks are one of the most important dynamics to understand regarding their profit and margin sustainability.

After Biden was elected in 2020 we spent a lot of time on antitrust issues:

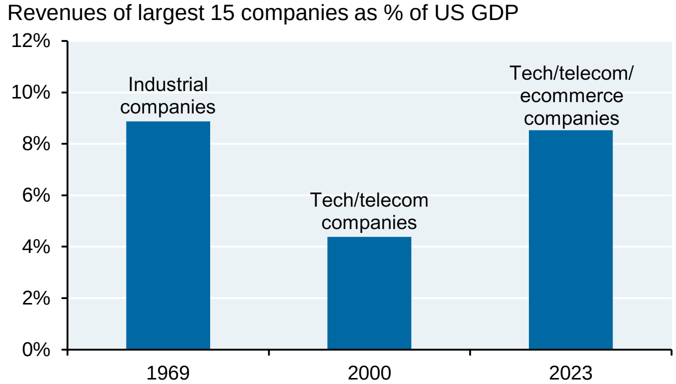
- Antitrust enforcement by the DoJ had fallen to a post-war low by 2017, and industry consolidation had reached the prior 1969 peak
- The Biden Administration was intent on increasing antitrust enforcement and appeared to have allies among House Republicans who were hostile to big tech for their own reasons
- The US Department of Justice filed its Google lawsuit, after which states piled on with their own
- Some politicians advocated repeal of Section 230 of US telecommunications law which provides indemnity against lawsuits resulting from social media comments that are posted or censored
- The FTC filed an antitrust lawsuit to force Meta to unwind its acquisitions of Instagram and WhatsApp
- The 2020 House Judiciary Committee report issued on antitrust (reflecting the majority Democratic view on the committee at the time) laid out an energized antitrust agenda that targeted Meta, Google, Amazon and Apple. Recommendations included Glass-Steagall legislation for the tech sector (break up lines of business), rules to prevent discrimination and self-preferencing, merger prohibition, safe harbor for new publishers, prohibition on abuse of bargaining power, rules on data portability/interoperability, strengthening Section 2 of the Clayton Act (price discrimination), strengthening Section 7 of the Clayton Act (acquisitions that foster monopolies) and restoring enforcement Agencies to full strength

Department of Justice antitrust case filings
Number of cases filed



Source: United States Department of Justice. November 2023.

Industry consolidation versus prior 1969 peak
Revenues of largest 15 companies as % of US GDP



Source: Bloomberg, BEA, Fortune 500, J.P. Morgan Global Economic Research, JPMAM. 2023.

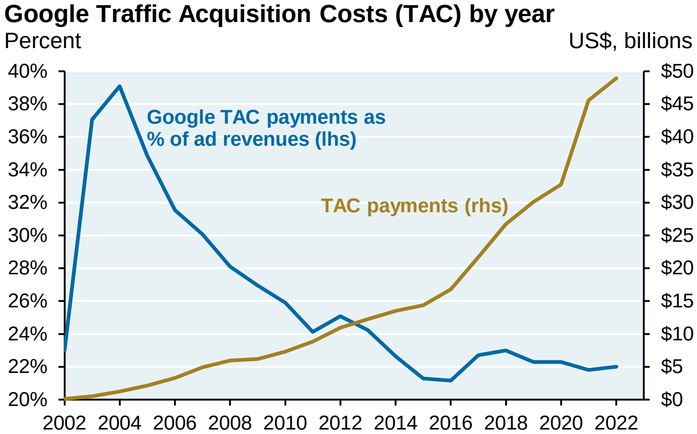
Here we are three years later and not much has changed, although the FTC/DoJ are trying

- There's little visible Congressional momentum for Section 230 repeal
- Proposed legislation that operated under the presumption of monopolistic behavior simply based on size or market capitalization never got passed
- There are 20-30 years of existing case law that embrace the consumer welfare standard and which support the notion that BIG is not necessarily BAD when it comes to antitrust. Even if the DoJ/FTC prevail in one of their cases, such rulings might not hold up on appeal given the composition of Appellate and Supreme Courts
- Most antitrust investigations are focused on price fixing and bid-rigging rather than on exclusionary anticompetitive activities

Here's a summary of the major antitrust cases underway.

- **GOOGLE**. The legal scope of the DoJ lawsuit against Google has been narrowed[2] to mostly focus on Traffic Acquisition Costs (TAC; see box). Should Google lose, device users would still be prompted to pick a search engine, and most might select Google anyway (which is what happened in Europe). According to Morgan Stanley: if Google reduced its TAC payments by 50%, it would have to lose ~15% digital advertising market share before the margin impact would be negative
- Closing arguments are set for mid-2024, final ruling not expected until 2025. If Google loses, the lawsuit would move to a remedies phase which could include an additional trial, all of which could take time including appeals; and its contracts with Apple and Samsung would presumably have to be renegotiated in accordance with the court's definition of acceptable device placement agreements
- Another potential loser from the Google lawsuit: **Apple**, which earns an estimated $18-$20 billion per year from Google. In 2020, the DoJ claimed that 15%-20% of Apple's worldwide annual income was derived from Google payments; and in 2023, Sanford Bernstein estimated that this figure is still ~15%. In November 2023, Google's CEO confirmed under cross-examination during the Epic Games trial that Google shares 36% of its advertising payments originating on Safari with Apple in exchange for default status on Apple devices

Google Traffic Acquisition Costs (TAC) by year



Source: Google 10-K filings, JPMAM, 2022

Google's Traffic Acquisition payments for default status on devices. Google pays $ billions a year to device makers (Apple, Motorola, LG, Samsung), wireless carriers (AT&T, T-Mobile, Verizon) and browser developers (Mozilla, Opera, UC Web) to secure default status for its search engine. Google may also disincentivize counterparties from dealing with competitors and require placement of Google Apps in prime device positions

UPDATE. Google was also being sued in 38 states by attorney generals regarding its Google Play Store policies on app distribution and in-app payments. **In December 2023, Google agreed to pay $700 mm and alter its Play Store policies**. The settlement blocks Google from enforcing agreements requiring mobile device makers to preload or feature the Play Store exclusively on home screens; requires Google to make it easier for users to install apps outside the Play Store; and requires Google to permit developers to steer users to alternative purchase methods, including buying apps directly from websites. This settlement could preempt any relief the judge might order in the Epic vs Google case, discussed on the next page. Note that this agreement is unrelated to the products and allegations in the DoJ lawsuit cited above, and those in a separate Texas-led AG lawsuit.

[2] The original suit also accused Google of blocking vertical service providers like Yelp and Expedia from appearing towards the top of search result pages. In August, the judge ruled that there was no evidence of anticompetitive harm and that the allegation relied almost entirely on the opinion and speculation of plaintiff's expert

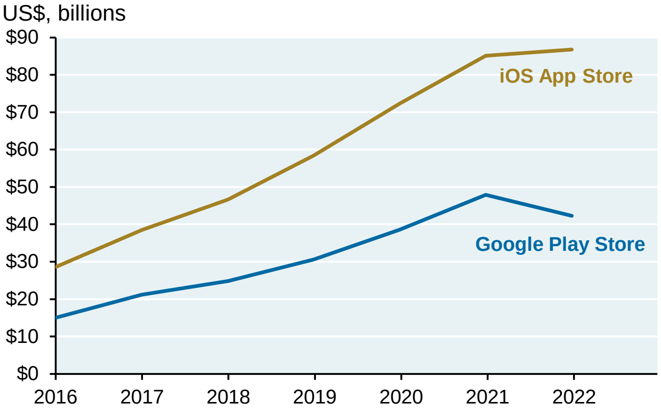
In addition to Federal and State lawsuits, Google was also sued by Epic Games for engaging in anticompetitive conduct in Android markets. In December, a jury ruled against Google. This came as a surprise to me since in a lawsuit that Epic filed against Apple, a judge ruled that Apple's behavior was *not* a violation of antitrust rules. Here are some key takeaways from the Epic vs Google ruling.

- Google is an open-source model; it doesn't sell an integrated product like the iPhone and instead enters into contractual relationships with device makers like Samsung
- As part of these relationships, (a) Google pays device manufacturers to only ship phones with the Google Play Store and not other App stores, with payments to manufacturers taking the form of revenue shares in Google Play; and (b) Google requires apps listing in the Google Play Store to exclusively use Google Play Billing services to process payments and in-app purchases
- This kind of "shelf space" behavior is not a priori anticompetitive; it has to be proven that the company also has control over "the market", that the shelf space behavior substantially impaired competition, and that there are no countervailing procompetitive justifications. Epic was successful in convincing the jury that the Google ecosystem is a market unto itself, separate and distinct from Apple's iOS ecosystem (presumably since switching costs are high). Once a company is determined to have market power, its contracts and incentives can be evaluated in the context of anticompetitive behavior
- Epic also claimed anticompetitive "tying" which the jury agreed with; it ruled that Google's conduct was anticompetitive and that there is no "procompetitive" business rationale for Google to require app developers to transact only through Google Play Billing services

Why did Apple prevail while Google did not? The answer might surprise you. In Epic vs Apple, the judge **did** find that Apple possessed market power over "mobile game transactions" (iOS plus Android) since Apple has a 52%-57% share of this market, and charges "supracompetitive commissions" that result in a 75% operating margin. The court also found that Apple's App Store restrictions **do** reduce competition and **do** stifle innovation[3]. **So why on earth did Apple prevail?** Apple was able to prove to the court that it had sufficient procompetitive justifications for the way its closed ecosystem works. The court agreed with Apple for reasons related to reasonable exploitation of intellectual property, a distinct user experience and better user privacy/ security; the 9th Circuit Court then affirmed this ruling

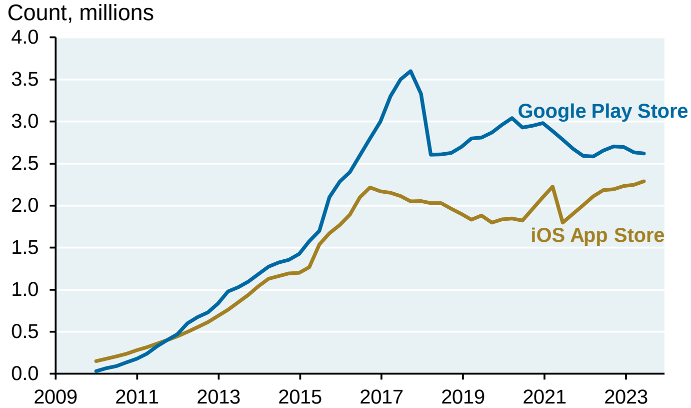
- Another difference: the Epic vs Google judge concluded that Google suppressed and/or destroyed evidence, and that the jury could draw an adverse inference on the merits as a result. These kinds of instructions can heavily impact a jury's disposition towards a defendant

Annual app and game revenue
US$, billions



Source: Business of Apps, JPMAM, Q2 2023

Estimated available apps and games
Count, millions



Source: Business of Apps, JPMAM, Q2 2023

[3] Ninth Circuit Court of Appeals, Epic vs Apple, April 24, 2023, Section 2

As a reminder, civil cases are tried before a judge when plaintiffs only seek injunctive relief. **If plaintiffs seek damages as well, they're entitled to a jury trial**. That's why Epic vs Apple went before a judge (only injunctive relief was being sought) while Epic vs Google went before a jury (damages were sought as well). Since judges provide legal opinions for their rulings, they can be overturned on matters of law; such appeals are harder in jury trials since juries don't provide legal opinions, only verdicts, and they usually can only be overturned if the judge's instructions were faulty. In any case Google will probably appeal, perhaps aiming to get the case into the 9th Circuit Court of Appeals that decided the Epic vs Apple case in Apple's favor.

Let's keep going with the FTC/DoJ lawsuits:

- **META**. The primary focus of the FTC lawsuit against Meta: its acquisitions of Instagram and WhatsApp. The lawsuit is scheduled to take place in 2024. The FTC still has to prove the existence of a "personal social networking market" for purposes of antitrust enforcement, which is no simple task. The negative consumer welfare aspects of this case are also less apparent than in other antitrust cases. That said, if the FTC prevails, it could have a chilling impact on the tech industry since the FTC may challenge other prior acquisitions
- The FTC has been permitted by the courts to modify a prior consent order against **Meta** stemming from the $5 bn fine related to the Cambridge Analytica fiasco from the 2016 election. While the FTC modified its order to prevent Meta from monetizing data from users below 18, this demographic might not represent a large source of Meta revenue. On monetization restrictions: Morgan Stanley estimates that when users in some jurisdictions opt out of having their data tracked and monetized, subscription revenues they pay can be even higher than their per capita monetization value
- **AMAZON**. The FTC and 17 state attorney generals filed an antitrust lawsuit in September 2023 alleging that Amazon maintained monopoly power by making it harder for competing platforms to attract customers and sellers by (a) restricting eligibility to preferred placement in front of Prime customers only to sellers using Amazon's fulfillment service, and (b) utilizing anti-discounting tactics to punish sellers for offering lower prices on other platforms. The FTC has an uphill battle to prove that Amazon maintains a monopoly; it has a ~40% share of US e-commerce but less than 25% of retail sales are online, suggesting Amazon has only a ~9% share of retail sales
- **T-MOBILE** is set to face an antitrust lawsuit related to its 2020 acquisition of Sprint. In November, a US district judge ruled in favor of a class action suit filed by AT&T/Verizon subscribers on behalf of consumers. The judge stated that plaintiffs demonstrated plausibility that the $26 billion merger "reduced competition in the retail mobile wireless market and as a result, market participants AT&T and Verizon charged higher prices than they would have otherwise"[4]. The proposed class action seeks a range of penalties, including undoing the 2020 T-Mobile/Sprint merger and recovering overcharged amounts
- **Ongoing FTC/DoJ antitrust investigations** include LiveNation, RealPage (apartment listings), Visa and several M&A deals: United Healthcare/Amedisys, Kroger/Albertsons, Exxon/Pioneer and Chevron/Hess

All things considered, 2024 looks like a make or break year for DoJ and FTC efforts to constrain what it sees as monopoly power in the digital world.

Another legal issue: in late December the **NYT sued OpenAI**, alleging that OpenAI unlawfully uses NYT articles to train its dataset, encodes copies of them in its parameters and outputs memorized articles in response to queries. While the third issue has reportedly been fixed according to Arvind Narayan at Princeton, the other two cannot be "patched away" by future OpenAI revisions and will require judicial or legislative interpretation of "**fair use**" doctrine to resolve.

The fair use doctrine ultimately rests on two questions: (a) do AI tools mostly avoid replicating materials they absorb and instead produce new works, and (b) does AI output hurt commercial markets for the original works. In 2013 when the Authors Guild sued Google for scanning more than 20 million books and showing brief book sections in response to user searches, a judge ruled that Google's conduct was fair use since it was "transformative". Google also provides factual information about the books and links to them as well, which OpenAI does not do. Large language model training opens up a new frontier in fair use doctrine adjudication and will have to be resolved without much precedent.

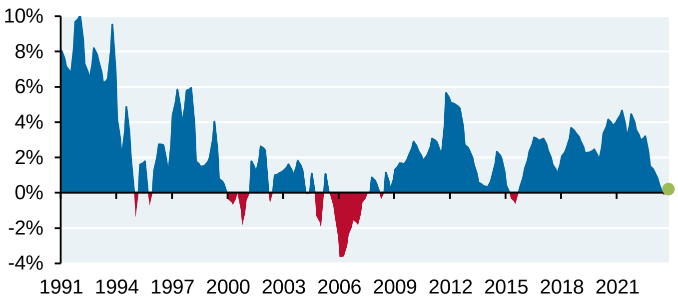
[4] US District Court for the Northeastern District of Illinois, Judge Thomas Durkin, November 2, 2023

European and Japan equities: two ships passing in the night

I'm on strike regarding a long section on European equities, particularly after another year of underperformance vs the US. Even though Europe trades close to a record P/E discount, Europe underperformed the US *again* in 2023 by 7%. So, despite a recovery in Japanese equities and continued subpar returns in China, the barbell** eked out a small positive return again in 2023. The barbell has outperformed in 84% of all three-year rolling periods since 1991 with an average positive return of 3.0% compared to an average return of -1.2% when it does not work. Vive le barbell!

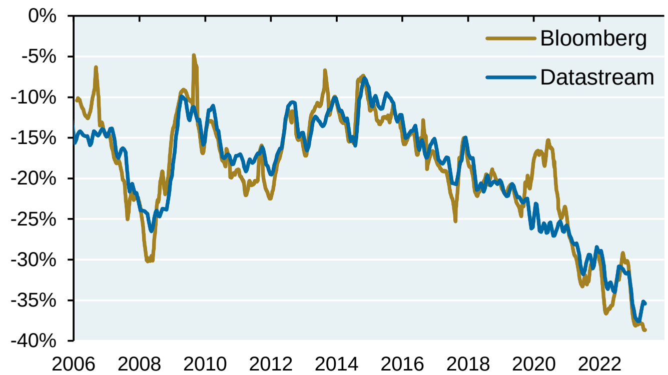
** The barbell: for over 15 years I have written about a strategy in global equity portfolios to overweight the US and Emerging Markets and underweight Europe and Japan. The pro forma excess returns are illustrated below

Overweight US & EM, underweight Europe & Japan
3-year rolling out (under) performance vs MSCI All World Index



Source: Bloomberg, JPMAM. December 2023. All equity portfolio, rebalanced quarterly. O/W US by 10%; U/W EUR by -10%; U/W JPN by -5%; O/W EM by 5%. Assumes no currency hedging. Past performance is not indicative of future results

Europe P/E discount vs US
Relative P/E discount based on forward earnings



Source: Bloomberg, Datastream, JPMAM, Dec 1, 2023

Regarding Japan: corporate governance reforms and other policies create a better foundation for investing.

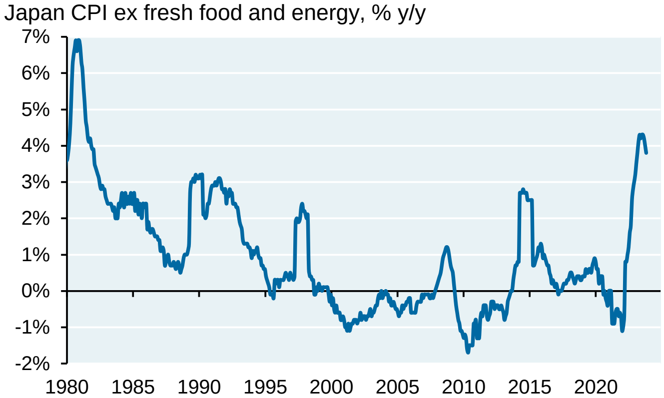
- As shown in the table, there's a lot of room for Japan to "equitize" further
- The exit from deflation has made cash less attractive vs equities for Japanese pensions and households (real short term interest rates are -2%)
- The Tokyo Stock Exchange has threatened to delist companies trading below book value unless they enact governance reforms
- There are over 50 activist funds in Japan which is unprecedented, and they're pummeling the corporate sector with governance proposals
- The share of companies with more than 50% independent external directors has risen from 30% to 60%
- There are tax incentives for households to increase equity allocations, and there's pressure on Japanese pensions to align equity allocations higher to match the Government Pension Investment Fund

Room for Japan to "equitize"

	US	Japan
10 year dividend payout ratio	70%	30%
Cash % of market capitalization	7%	21%
Share of companies trading below book value	4%	50%
Corporate buybacks as % of market capitalization	2.0% - 3.5%	0.7% - 1.4%
Household equity allocation	40%	11%
Pension equity allocation	40%	25%
Household cash allocation	15%	55%

Source: Bridgewater, JPMAM, December 2023

Japan finally exits deflation
Japan CPI ex fresh food and energy, % y/y

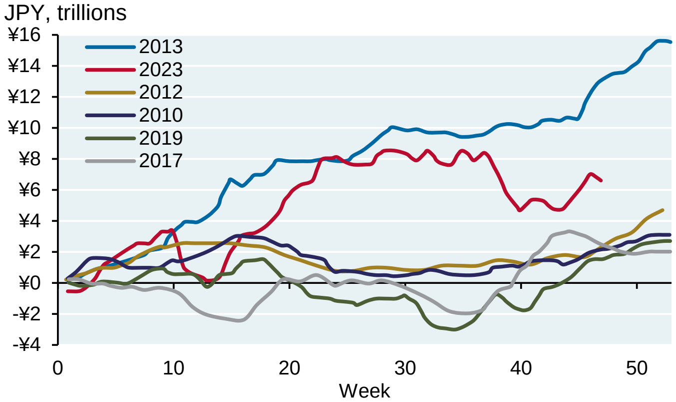


Source: Bloomberg, JPMAM, November 2023

The exhibits below illustrate how Japan was mostly a value investment in 2023 that is regaining traction with international investors. Note the strong performance of Japan's value factor in the table; in other words, investors anticipate that Japan's low price/book companies will take steps to increase shareholder value. Global investor underweights to Japan still exist but are modest at ~1% in the context of a global equity portfolio[5]. The cheapness of the Yen may be a potential tailwind for investors as well.

To be clear, Japan is still a very slow-growing economy with a lot of demographic and competitive pressures. Growth in 2023 was still dominated by exports rather than by domestic consumption, real wage growth is still negative, its industrial production growth is no different than Europe, and China has now eclipsed Japan as the world's largest auto exporter. According to the Bank of Japan, the country's potential growth rate is still less than 1% due in large part to unfavorable demographics. **Our improved outlook for Japan equities is based mostly on a one-time exit from deflation combined with additional boosts from corporate governance and investment incentive policies. I doubt that will end up being a rationale that lasts for several years**.

Japan YTD cumulative overseas investor inflows by year
JPY, trillions



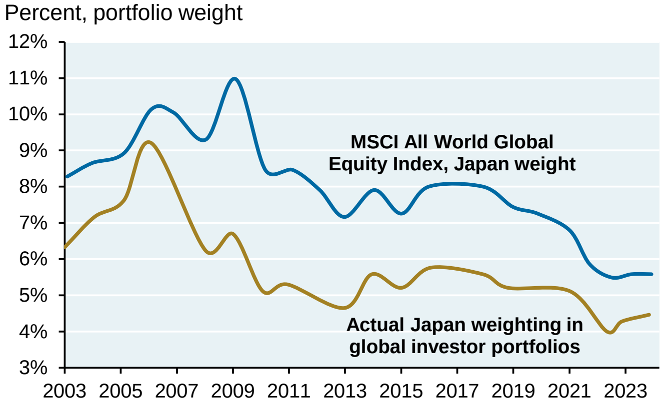
Source: JP Morgan Securities Japan, QUICK, JPMAM, November 30, 2023

Japan, US and Europe major equity factor returns, 2023 YTD

	Japan	US	Europe
Price-to-earnings	33%	-8%	2%
Price-to-book	30%	-4%	-3%
Dividend yield	5%	-17%	9%
Return on equity	13%	-14%	0%
Return on assets	4%	-1%	-6%
Earnings per share growth	1%	15%	9%
Revision Index	-3%	20%	6%
EPS revision (1m)	0%	3%	6%
Market cap	12%	13%	-2%
Beta	1%	7%	-6%
60d volatility	-2%	-7%	-2%
1m return	-3%	7%	16%
12m return	6%	-2%	-2%

Source: JP Morgan Securities Japan, QUICK, JPMAM, November 30, 2023

Global investor underweight to Japanese stocks
Percent, portfolio weight



Source: JP Morgan Securities Japan, JPMAM, December 2023

Japan real broad effective exchange rate
Index (2020 = 100)

Source: Bank for International Settlements, JPMAM, November 2023

[5] "*Japan Year Ahead Strategy*", JP Morgan Global Market Strategy, Rie Nishihara, December 2023

Fixed income: The Low Spark of High Yield Bonds[6]

As illustrated earlier, many US large cap companies have been minimally impacted by rising rates. The primary reason: S&P 500 debt is now 76% fixed compared to less than 50% in 2007. That's why interest coverage ratios still look good despite high levels of debt to cash flow and debt to assets. Investment grade bonds have also benefited from an improving upgrade-to-downgrade cycle.

As for high yield, maturities are at an all-time low which increases exposure to higher rates, and spreads are not far from the tightest levels since 2009. That said, compared to prior cycles US high yield benefits from stronger interest coverage, a better BB/CCC mix, a lower share of private equity borrowers that are associated with lower recovery rates, a higher share of secured debt and less use of payment-in-kind bonds. High yield energy spreads are roughly the same as the broad HY market but reflect a more profitable universe whose weakest links have mostly defaulted already; the BB/CCC energy mix is now 63% / 5%. So, tighter HY spreads and lower HY risks.

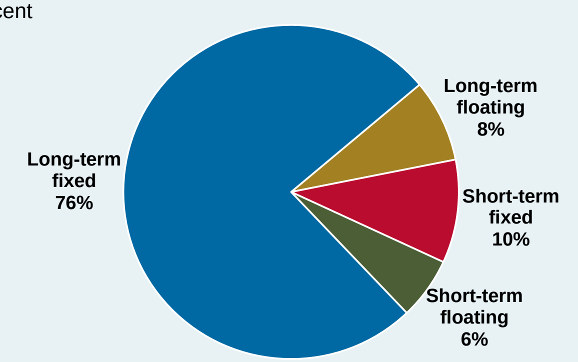
Current percentile rank vs history for leverage, debt service, profitability and liquidity

	Net debt/ EBITDA	Total debt/ EBITDA	Net debt/ assets	Total debt/ assets	Interest coverage	Interest expense / debt	EBITDA margins	Cash/ assets
US investment grade	92	55	56	100	69	15	69	23
US high yield	38	62	77	85	92	19	73	31

Green: best credit quality
Red: worst credit quality

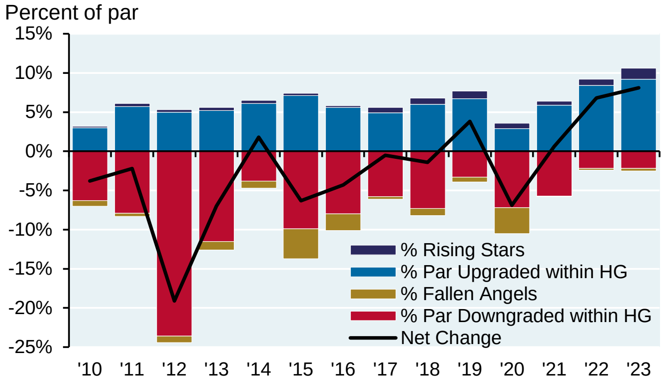
Source: GS Global Investment Research, November 13, 2023

S&P 500 debt composition
Percent



Source: BofA US Equity & US Quant Strategy, JPMAM, March 2023

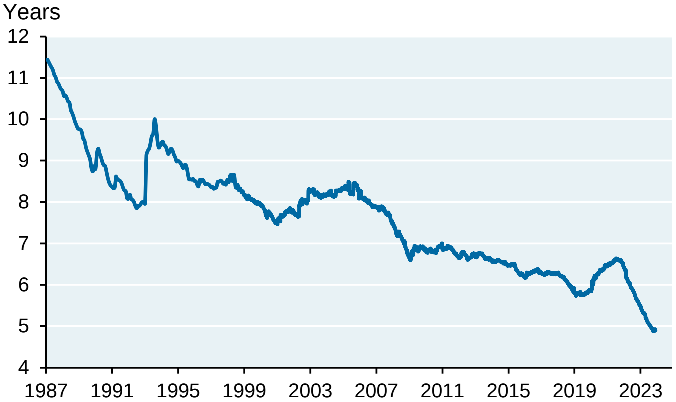
Credit rating upgrades are exceeding downgrades
Percent of par



Source: JP Morgan High Grade Credit Strategy, JPMAM, November 14, 2023

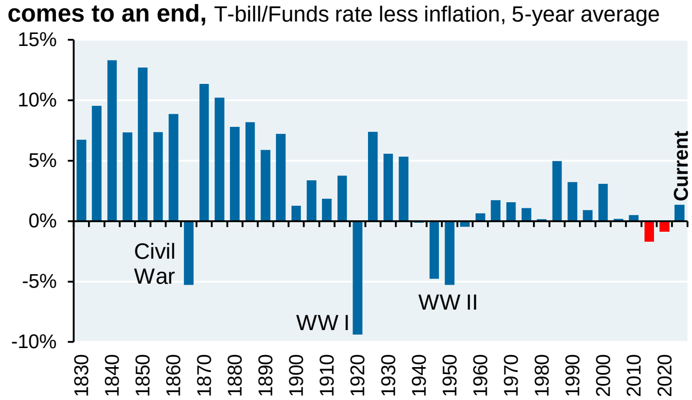
The recent era of financial repression was the longest on record, and the only period since 1830 when short term rates were negative on a prolonged basis other than during the Civil War, WWI and WWII. While real policy rates are still negative on a 5-year trailing basis, **they are finally positive on a one-year basis**. For fixed income investors, to quote Gerald Ford and David Letterman, "our long national nightmare is over".

US corporate high yield weighted average maturity
Years



Source: Bloomberg, JPMAM, December 26, 2023

Unprecedented peacetime financial repression finally comes to an end, T-bill/Funds rate less inflation, 5-year average

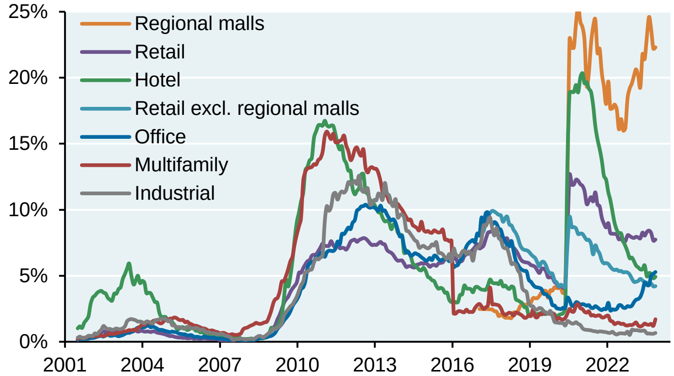


Source: FRB, Robert Shiller, GFD, BLS, JPMAM. 2023.

[6] This title refers to the low level of high yield bond spreads and is a reference to the song "*The Low Spark of High Heeled Boys*" by Traffic, 1971

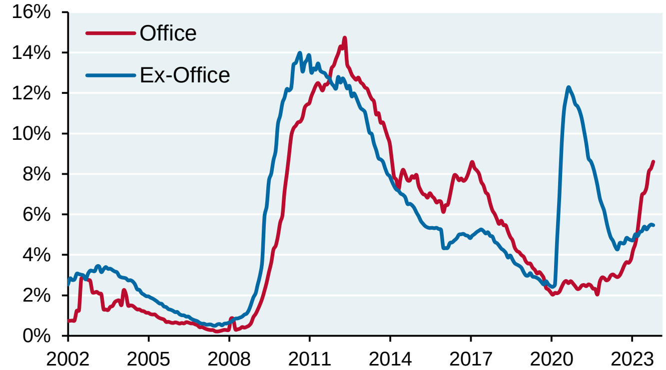
Sources of credit stress in the US: regional malls and office within commercial real estate; subprime auto and credit cards in the household sector; and falling interest coverage/more restructurings in leveraged loans. What's notable is how low delinquency rates still are in hotels, retail ex-malls, multifamily and industrial.

CMBS delinquencies by property type
Percent



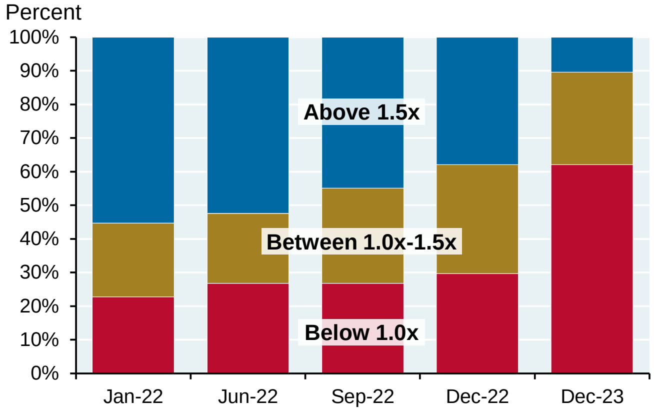
Source: Moody's, JPMAM, November 2023

Special servicing rates for office and non-office CMBS loans
Percent



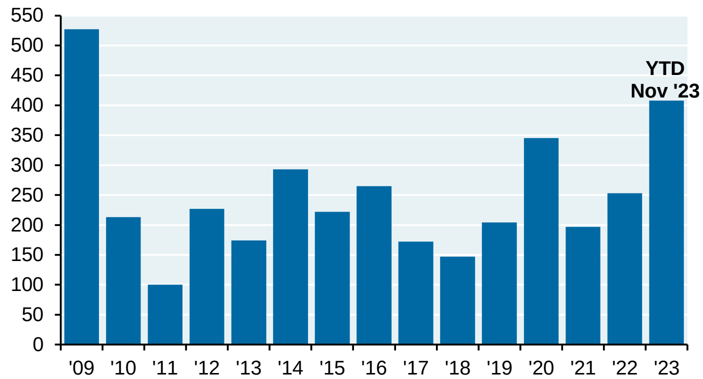
Source: JP Morgan CMBS Research, November 2023

Interest coverage for B- rated issuers in the US loan market
Percent



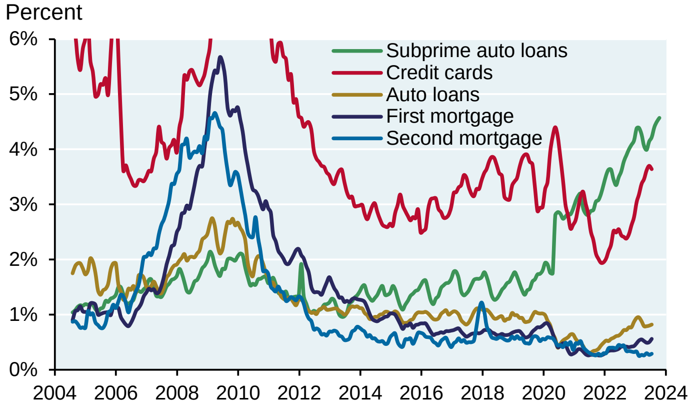
Source: Moody's Investors Service, December 2023

US leveraged loans amendments and extensions
Count



Source: LCD, Pitchbook, JPMAM, November 2023

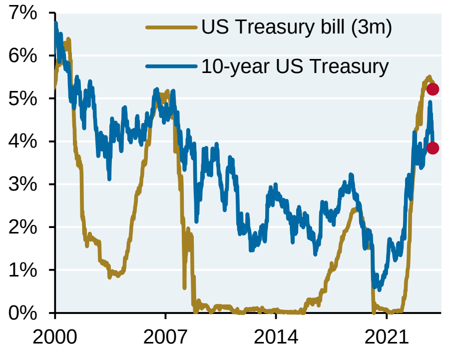
US 90+ days loan delinquency transition rates
Percent



Source: Experian, S&P Dow Jones Indices, JPMAM, July 2023

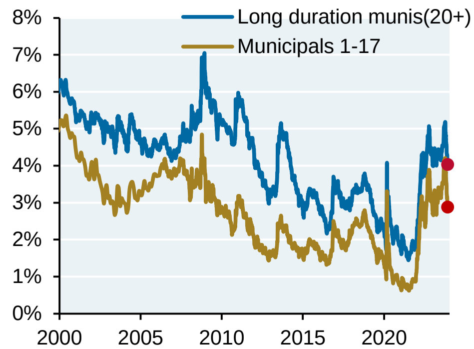
Fixed income monitor. The big question for 10-year Treasuries: next stop 3.5% or 5.5%? I believe they will fluctuate between 4% and 5% in 2024, but if they break out I suspect it would be to 5.5%. North of 4.5%, they offer decent value to long term investors.

US Treasury yields
Yield, percent



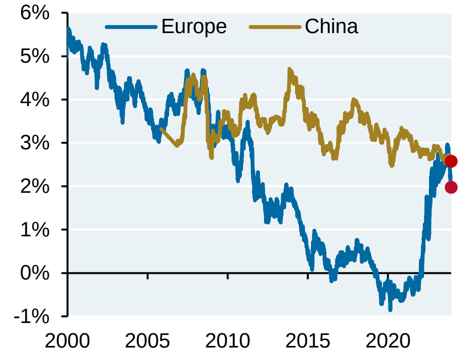
Source: Bloomberg, JPMAM, December 26, 2023

US Municipal yields
Yield, percent



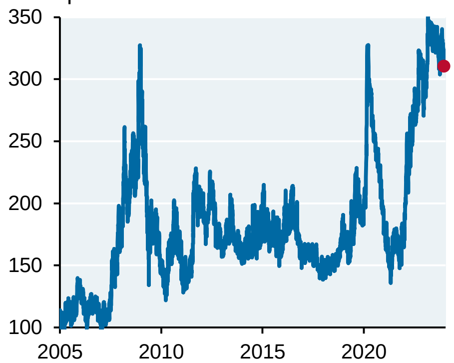
Source: Bloomberg, JPMAM, December 26, 2023

Sovereign bond 10 yr yields
Local currency yield, percent



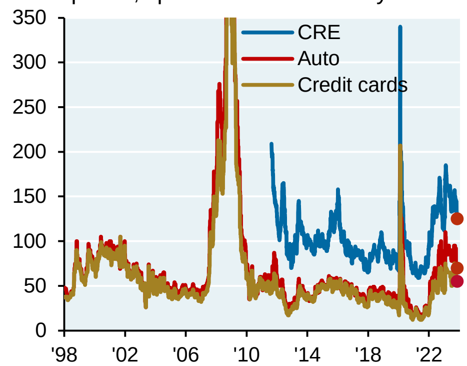
Source: Bloomberg, JPMAM, December 26, 2023

30 year mortgage - 10 year Treasury
Basis points



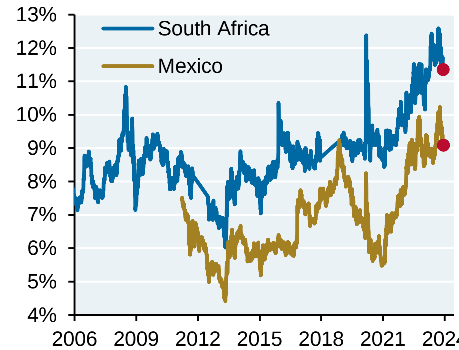
Source: Bloomberg, JPMAM, December 26, 2023

AAA asset backed securities spreads
Basis points, spread versus Treasury



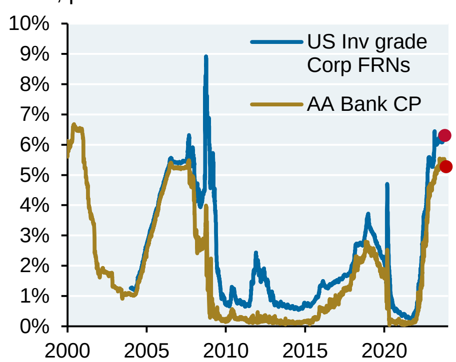
Source: Dataquery, JPMAM, December 26, 2023

Sovereign bond 10 yr yields
Local currency yield, percent



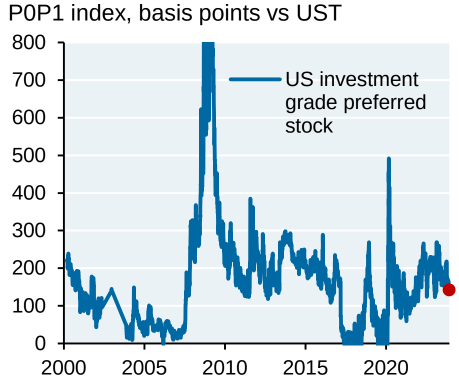
Source: Bloomberg, JPMAM, December 26, 2023

Floating rate instruments (USD)
Yield, percent



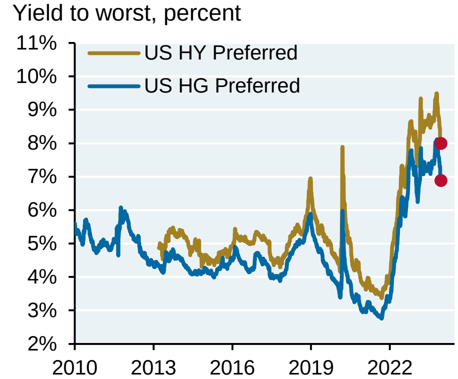
Source: Bloomberg, JPMAM, December 26, 2023

Preferred option adjusted spread
P0P1 index, basis points vs UST



Source: Bloomberg, JPMAM, December 26, 2023

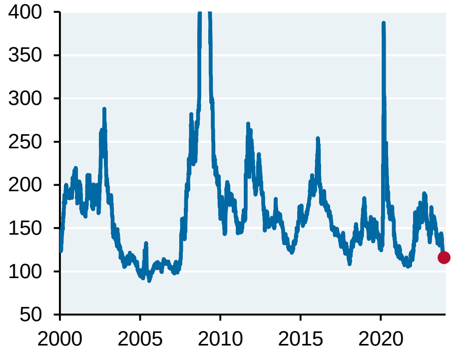
US preferred yields
Yield to worst, percent



Source: Bloomberg, JPMAM, December 26, 2023

CRE commercial real estate; CP commercial paper; FRN floating rate notes

US investment grade corp spreads
JULI index spread vs UST, basis points

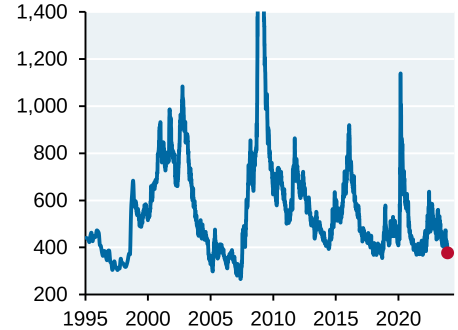


Source: Bloomberg, JPMAM, December 26, 2023

Emerging markets dollar bonds
Spread vs US Treasuries, basis points

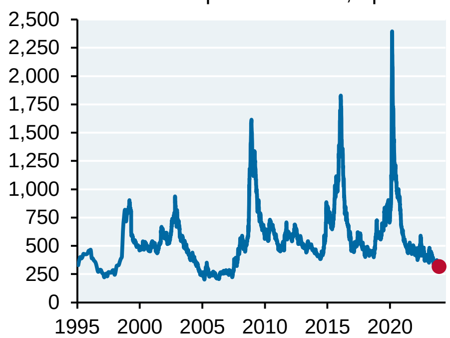
Source: Bloomberg, JPMAM, December 26, 2023

US high yield bond spreads
JPDFHYI index spread vs UST, basis points



Source: Bloomberg, J.P. Morgan HY Team, December 26, 2023

US high yield energy bond spreads
JPDFENER index spread vs UST, bps

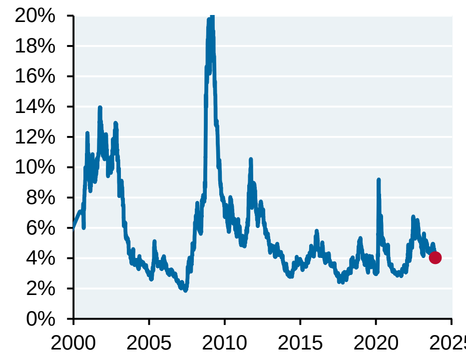


Source: Bloomberg, J.P. Morgan HY Team, December 26, 2023

US leveraged loan prices
SPBDALB index

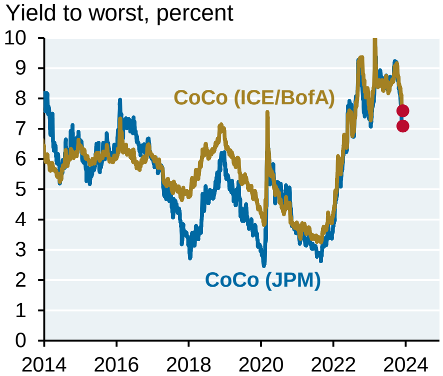
Source: S&P/LSTA, Bloomberg, Dec 26, 2023

Pan European high yield
Yield, percent



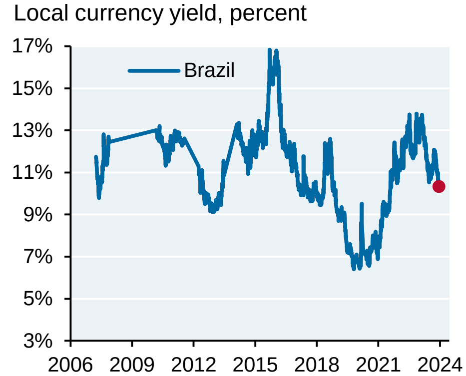
Source: Bloomberg, JPMAM, December 22, 2023

European "CoCo" preferreds
Yield to worst, percent



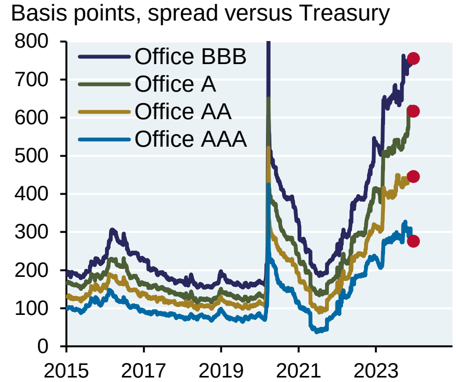
Source: Bloomberg, JPMAM, December 26, 2023

Sovereign bond 10 yr yields
Local currency yield, percent



Source: Bloomberg, JPMAM, December 26, 2023

Single asset single borrower
Basis points, spread versus Treasury



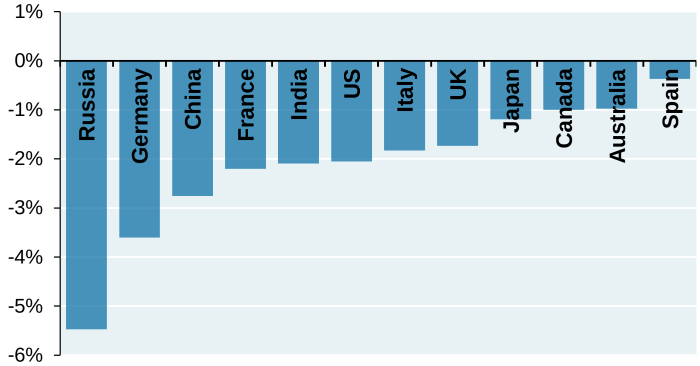
Source: Dataquery, JPMAM, December 26, 2023

The European Contingent Capital chart shows two series on yield to worst, one from ICE/Bank of America and another from JP Morgan. The ICE/BofA series includes Emerging Market issuers as well as subordinated T2 issues, while the JPM series is just Europe and only includes preferreds that qualify as AT1 capital.

US Debt Sustainability: The Boiling Frog

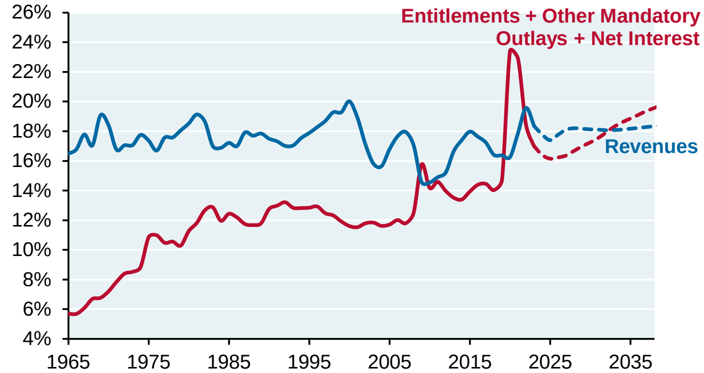
The deterioration of the US budget deficit from 2018 to 2023 was hardly unique; other developed country deficits rose sharply as well. The problem for the US is the starting point; every round of fiscal stimulus brings the US one step closer to debt unsustainability. I don't think we're there otherwise we wouldn't recommend long duration US government bonds. We also wrote last year on how there has been no material change in the dollar's role as reserve currency[7]. However, we're accustomed to deteriorating US government finances with limited consequence for investors, and one day that may change (the boiling frog analogy).

Estimated change in general government deficit as % of GDP, Percent, FY2024 vs FY2018



Source: IMF, JPMAM, November 2023

Entitlement spending, mandatory outlays and net interest payments vs revenues, % of GDP



Source: Congressional Budget Office, JPMAM, June 2023

By the early 2030's, the CBO projects that all Federal government revenues will be consumed by entitlement payments and interest on the Federal debt. Sometime before this happens, I expect a combination of market pressure and rating agency downgrades (which have already begun) to force the US to make substantial changes to taxes and entitlements. Some likely policies appear in the text box. A wealth tax is also a possibility; there's an active Supreme Court case that might impact its constitutional feasibility (*Moore vs United States*, which is related to the constitutionality of the Mandatory Repatriation Tax in the 2017 tax bill). What's not in the text box? Further cuts to discretionary spending, since the US has run out of road on that one. In the CBO's recent publication on deficit reduction options[8], the benefit from reducing non-defense discretionary spending was the smallest on the CBO list since it has been cut so much already.

Policies to raise revenue

- Eliminate or raise the cap on income used to compute Social Security contributions, or raise payroll tax rate
- Lifetime/means-tested cap on 401k contributions
- Further limits on itemized deductions (i.e., mortgages)
- Federal tax on municipal bonds for AGI > $250k
- Unify capital gains and income tax rates at higher level for AGI > $250k
- Value added taxes, carbon taxes

Source: CBO, JPMAM, 2023. AGI = Adjusted Gross Income.

Policies to reduce entitlement spending

- More gov't price-setting on drugs/treatments within Medicare/Medicaid
- Higher Medicare co-pay and deductibles for everyone
- Means-test Medicare outlays based on lifetime income
- Caps on Medicaid spending
- Higher Medicare eligibility age and/or Social Security retirement age
- Chained CPI for Social Security benefit payments

[7] "**Oh, The Places We Could Go**", Eye on the Market, April 26, 2023

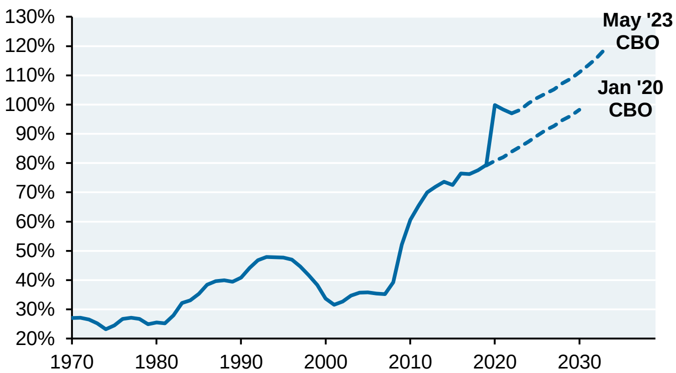
[8] "*Options for Reducing the Deficit, 2023 to 2032*", Congressional Budget Office, Volume 1

The remainder of this section walks through exhibits we maintain on the Federal debt

- The jump in the Federal debt as a % of GDP due to COVID stimulus
- The rise in gross and net interest expense, with forecasts showing that net interest expense may reach new post-war highs in the next few years, and exceed defense spending for the first time since the 1990's
- The anticipated deterioration in the budget deficit out to 2030
- The budget deficit vs the unemployment rate, highlighting how unusual it is to have a large fiscal deficit at a time of full employment
- Two projections for the primary (ex-interest) deficit. While the CBO expects the primary deficit to remain flat, a series of downside events could result in a lower trajectory

Debt held by the public

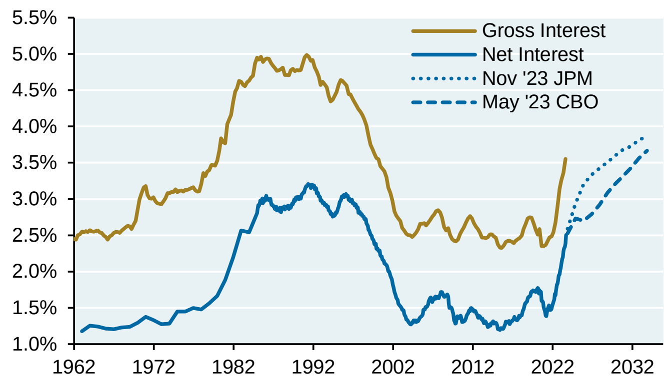
Percent of GDP



Source: CBO, JPMAM, May 2023

Interest expense

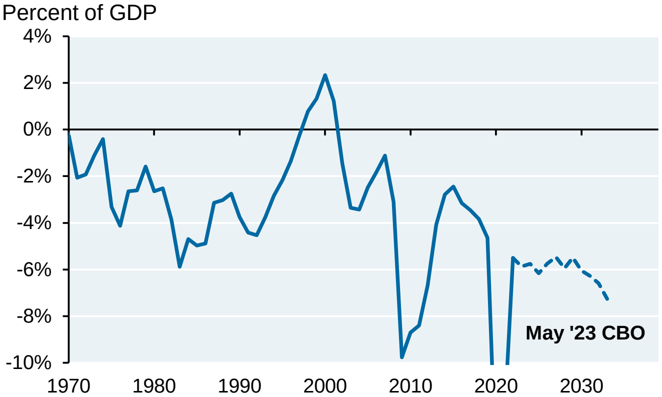
% of GDP



Source: BEA, CBO, US Treasury, JPMAM, November 2023

Budget deficit

Percent of GDP

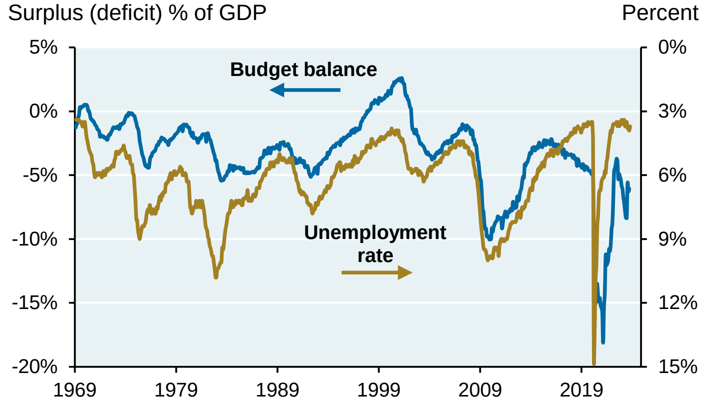


Source: CBO, JPMAM, May 2023

US budget balance vs unemployment rate

Surplus (deficit) % of GDP

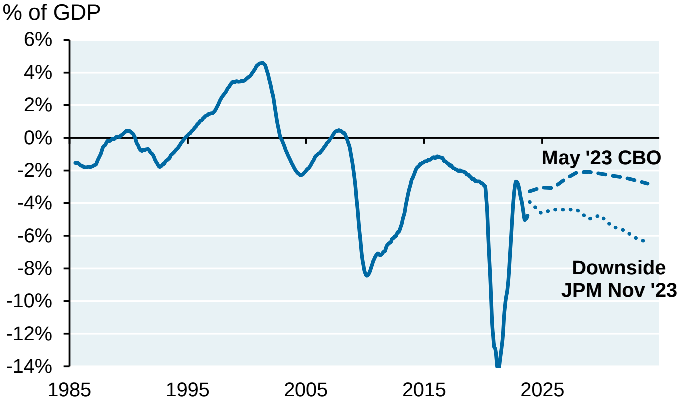
Percent



Source: Bloomberg, JPMAM, November 2023

Primary budget balance (ex. interest)

% of GDP



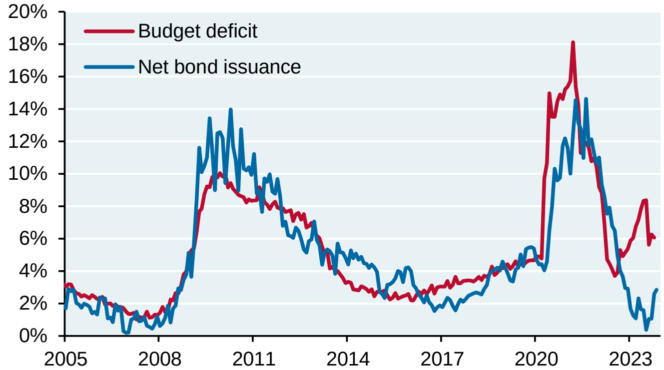
Source: BEA, CBO, US Treasury, JPMAM, November 2023

Downside primary deficit catalysts:

- Lower revenue than CBO projections even after Tax Cuts and Jobs Act cuts expire
- Discretionary spending above CBO projections that it grows in line with inflation, possible due to defense
- More frequent federal disaster funding

- Treasury bond issuance has been below its normal relationship with the budget deficit, and the T-Bill share of issuance is rising; both suggest that the bond share of financing may increase in 2024
- Treasury demand from the Fed is scheduled to keep shrinking, and demand from US banks has been weak since many are overloaded with underwater bonds purchased at lower rates

Bond issuance vs budget deficit
Percent of GDP

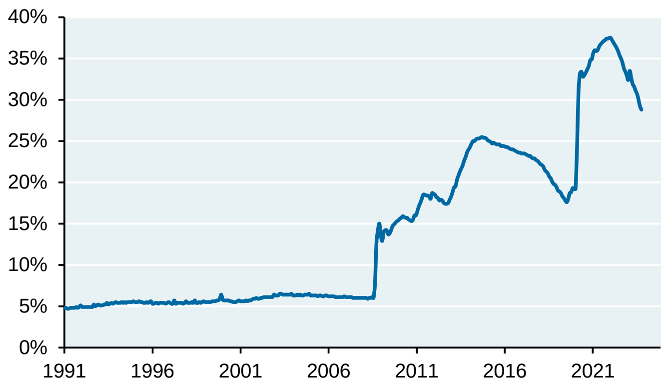


Source: US Treasury, JPMAM, November 2023

US T-Bill share of US debt
Percent

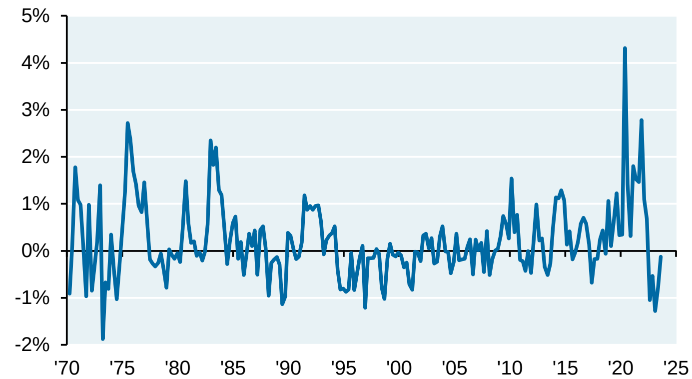
Source: US Treasury, JPMAM, November 2023

Federal Reserve balance sheet
Percent of GDP



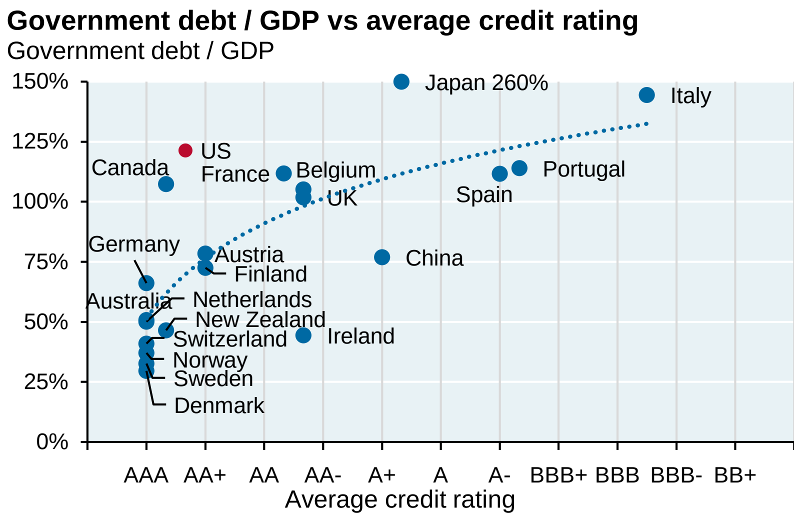
Source: Bloomberg, JPMAM, November 2023

Bank purchases of treasuries
Percent of GDP



Source: Federal Reserve, JPMAM, Q3 2023

It's hard to believe that in 2005, the CBO projected a US budget surplus (!!) by 2012. We conclude with a chart on how the US is an outlier with respect to its credit rating relative to its debt ratio. As explained in our piece on the dollar (see below and following page), there are few signs that the dollar is losing its reserve currency status. But it's impossible to know how long this good fortune will last.



Source: Bloomberg, IMF, JPMAM, 2022

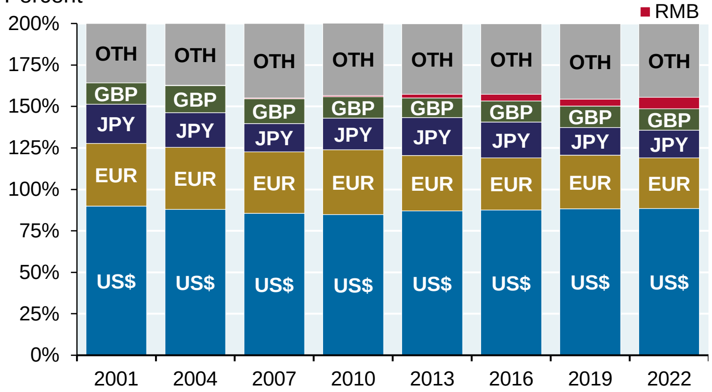
Timeline of reserve currencies or dominant trade currencies (years are approximate):
- Rome: 1st century BC – 4th century AD
- Byzantine empire: 5th century
- Arabian Dinar: 7th to 10th centuries
- Florence: 13th to 15th centuries
- Portugal: 1450 to 1530
- Iberian Union: 1530 to 1640
- Netherlands: 1640 to 1720
- France: 1720 to 1815
- UK: 1815 to 1920
- US: 1920 – to be determined

A warning sign that you may read about: China's falling allocation to US$ in its official FX reserves. **But this conclusion may be wrong; China's holdings of US$ are probably pretty stable.** To explain why I will cite some excellent research from Brad Setser at the Council on Foreign Relations. Brad concludes that the dollar share in China's reserves has been stable since 2015 after adjusting for its Treasuries held by offshore custodians like Belgium's Euroclear and its apparent reallocation into US Agencies. That's the blue line in the chart below, which tracks closely with another series estimating China's US$ assets using IMF data (green).

Source: "*China Isn't Shifting Away From the Dollar or Dollar Bonds*", Brad W. Setser (CFR), October 3, 2023

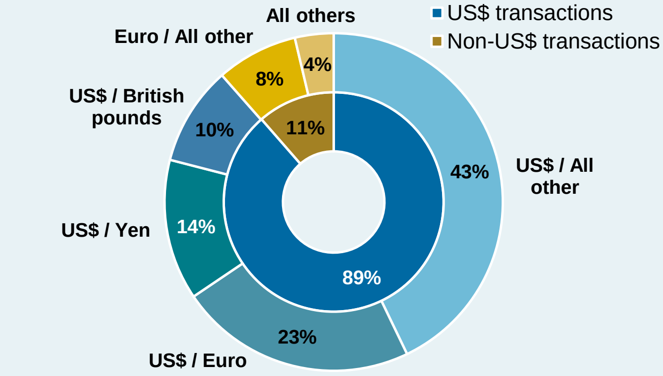
From our April 2023 piece on the US dollar:

Foreign exchange turnover by currency
Percent



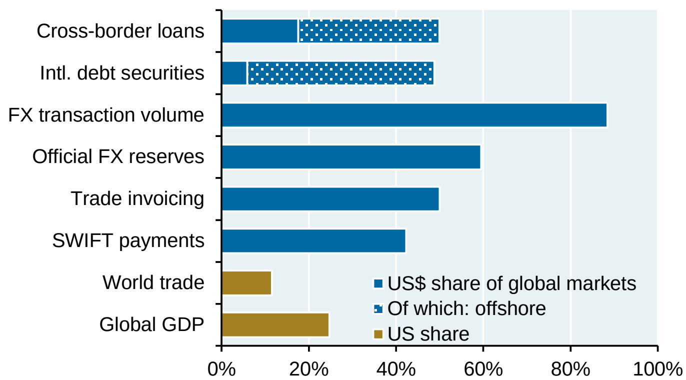
Source: BIS. April 2022.

Dollar still dominates FX transactions
% of world transactions by currency pair



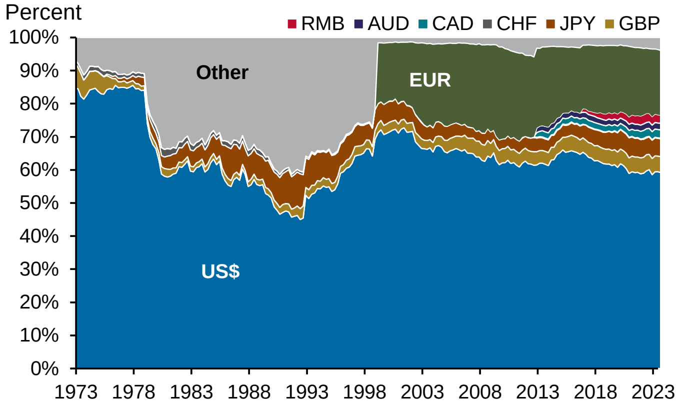
Source: BIS. April 2022.

The international role of the US dollar
Percent



Source: BIS Quarterly Review. December 5, 2022.

Share of global foreign exchange reserves by currency
Percent

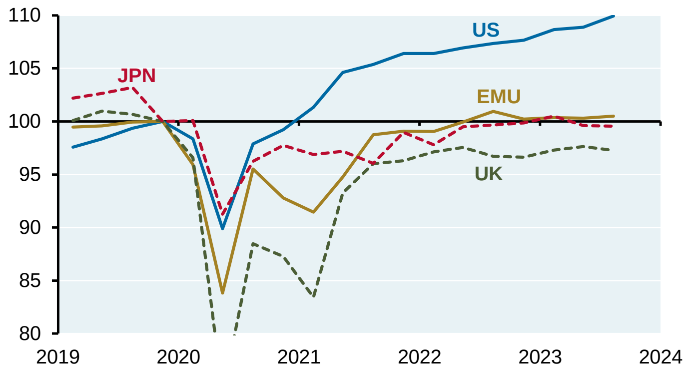


Source: International Monetary Fund, JPMAM, Q3 2023

US Consumer: Still going strong but gradually running out of ammunition

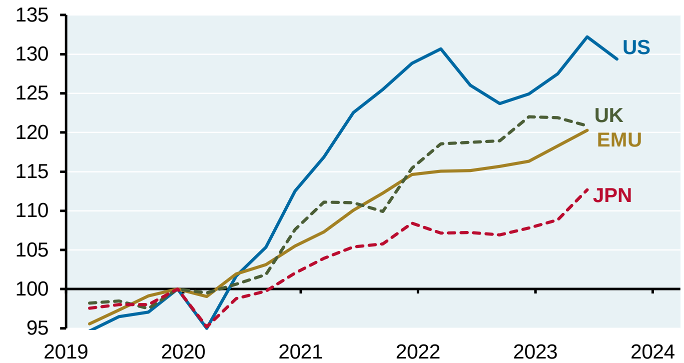
The holiday spending season started off with a bang last November with online sales up 7.5% on Black Friday and up 9.5% on Cyber Monday. US consumer spending consistently surprised to the upside in 2023, a reflection of tight labor markets, a wealth effect from rising equity and home prices, and excess savings which are still being drawn down. The fourth chart shows estimates from different groups within JP Morgan regarding exhaustion of excess savings; this compares to a San Francisco Fed estimate of "sometime in the first half of 2024"[9]. When excess savings run out, consumer spending will likely slow.

Real personal consumer spending
Index, (100 = Q4 2019)



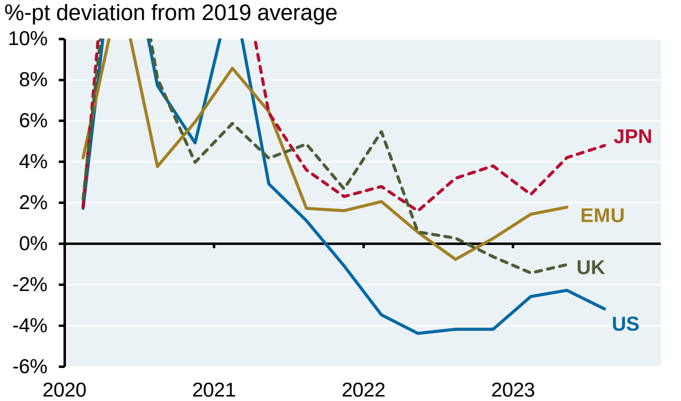
Source: National sources, JP Morgan Economics, JPMAM, Q3 2023

Wealth relative to pre-pandemic level
Index (100 = Q4 2019)



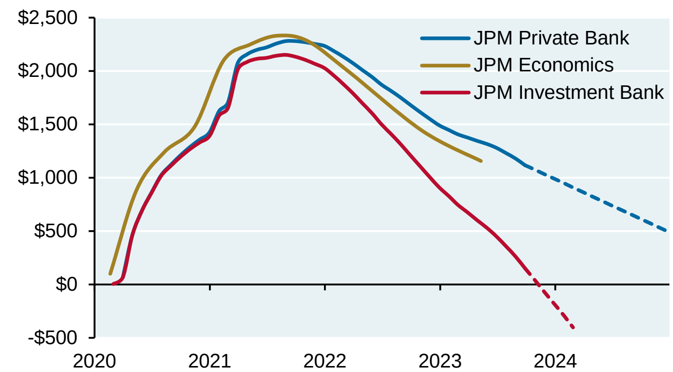
Source: National sources, JP Morgan Economics, JPMAM, Q3 2023

Saving rate deviation from pre-pandemic levels
%-pt deviation from 2019 average



Source: BEA, COJ, Eurostat, ONS, JP Morgan Economics, JPMAM, Q3 2023

Estimates of US household excess savings
US$, billions

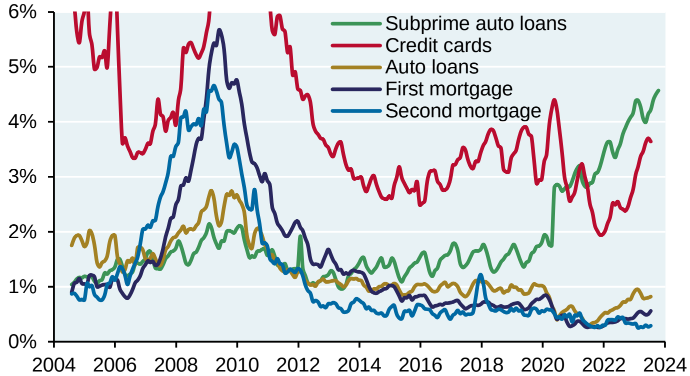


Source: J.P. Morgan, September 2023

[9] *"Data Revisions and Pandemic-Era Excess Savings"*, Federal Reserve Bank of San Francisco, November 8, 2023

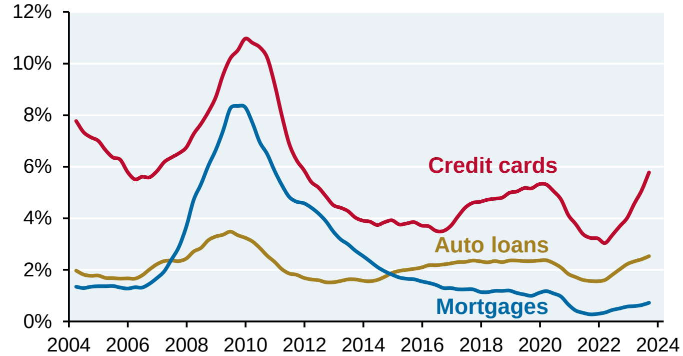
So far, delinquencies are rising for subprime auto and credit cards although only the former is breaching new all-time highs. Mortgage and prime auto delinquency rates are still quite low. Household interest costs are rising but from very low levels, in part since US consumers locked in very low mortgage rates below 4%.

US 90+ days loan delinquency transition rates
Percent



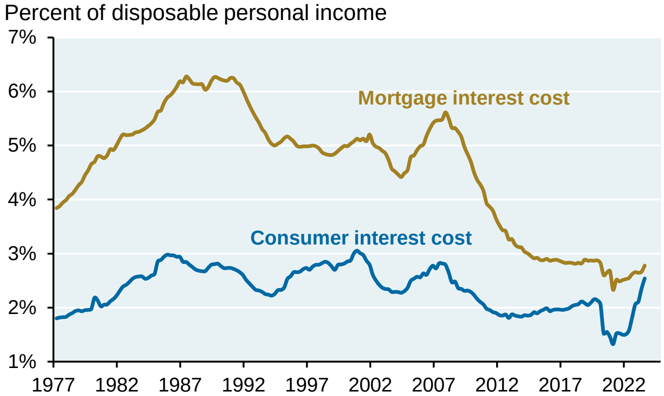
Source: Experian, S&P Dow Jones Indices, JPMAM, July 2023

US 90+ days delinquency transition rates
% of current balances, annualized



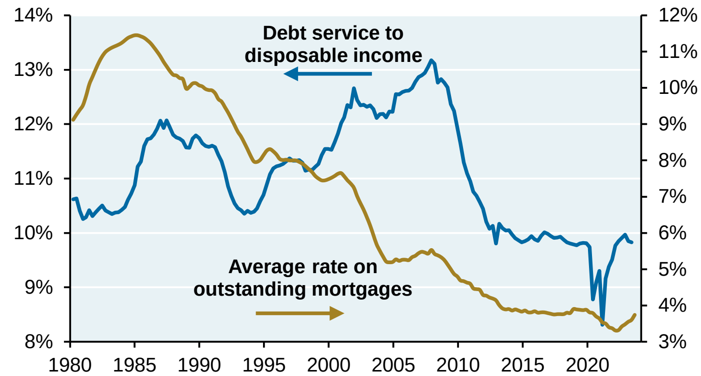
Source: Federal Reserve Board of New York. Q3 2023. Delinquency rates as % of balance are a 4 quarter sum.

Household interest costs
Percent of disposable personal income



Source: BEA, JPMAM, Q3 2023

US household debt
Percent | Percent

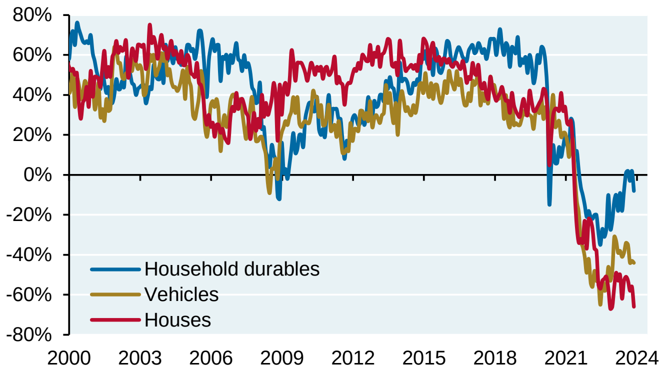


Source: Bloomberg, BEA, JPMAM, Q3 2023

There are some cracks in the consumer such as weak readings on surveys of buying conditions for durables, vehicles and homes, and a weak survey of household financial conditions. Despite low unemployment rates and rising wages, households are grumpy and the third and fourth charts may explain why: while personal income has risen above its 2015-2019 trend, in real terms households have been getting crushed by inflation that is now just beginning to subside. A collapse in home affordability could be playing a role as well in sentiment.

US buying conditions

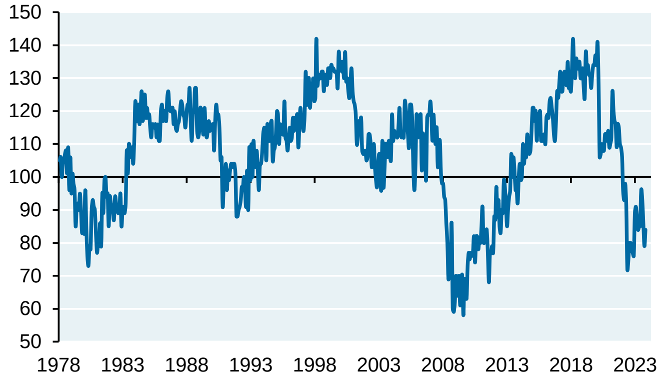
Net percentage of consumers who think it's a good time to buy



Source: University of Michigan, JPMAM, November 2023

Current financial situations vs one year ago

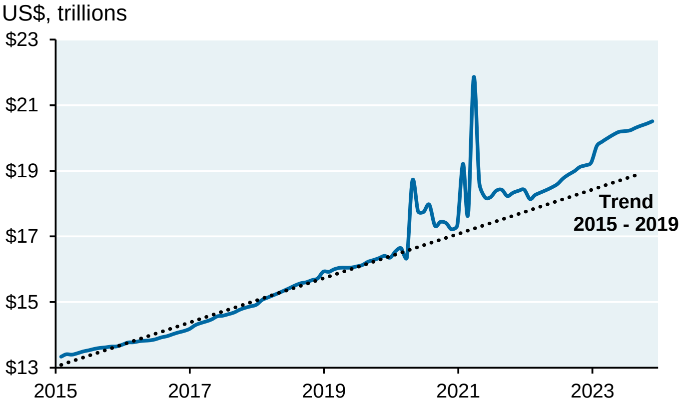
UMich Index Score (% Favorable - % Unfavorable + 100)



Source: Bloomberg, JPMAM, November 2023

US nominal disposable personal income

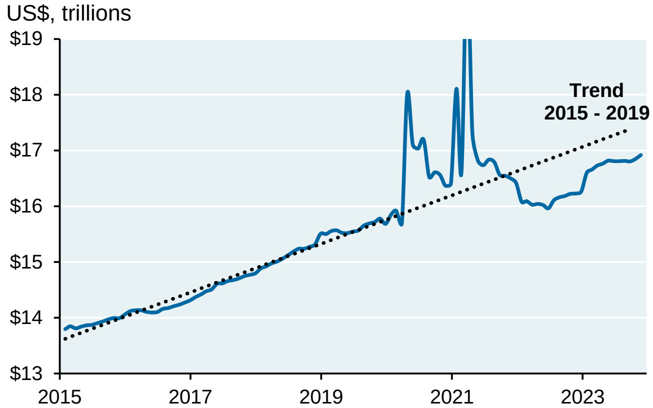
US$, trillions



Source: Bloomberg, JPMAM, November 2023

US real disposable personal income

US$, trillions



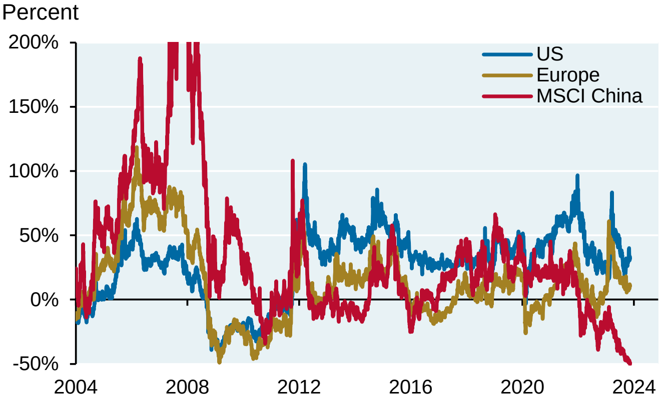
Source: Bloomberg, JPMAM, November 2023

China equities: all value traps come to an end…eventually

China's roaring equity outperformance in the wake of its 2001 acceptance into the World Trade Organization is a distant memory. China has consistently traded at lower P/E multiples than the US and most of the time at even lower multiples than Europe. The net result: subpar performance for investors in China equities. Since Jan 1, 2019: US large cap equities +107%, Europe equities + 58%, and China equities -17%. The December 2022 agreement between China and the US allowing the SEC access to Chinese financial statements did not improve investor sentiment as some predicted, and neither did the post-COVID reopening. There may be more China stimulus coming, but so far it looks modest. If you're waiting for a policy shift in support of national champions, you will be disappointed by China's latest effort to curb gaming and spending incentives which drove Tencent's stock down by ~10% on December 22.

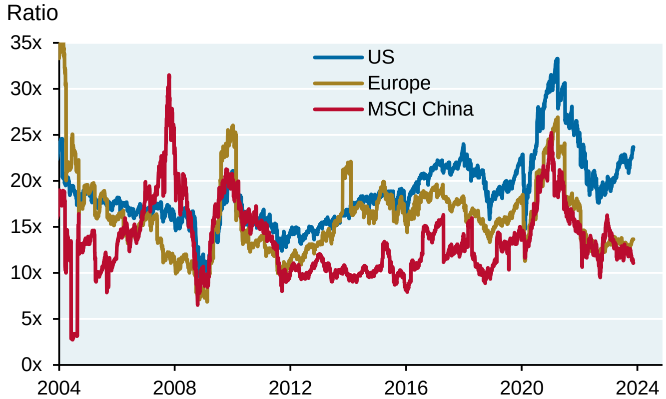
China has become the ultimate value trap in recent years. In my experience, most value traps eventually come to an end. I thought we were close last year, but that was wrong. China's massive 40% savings rates represent potential ammunition for an equity market rebound, but there's no catalyst yet. **If anything, China has been backsliding**: the market cap share of private sector companies dropped from its peak at 55% in June 2021 to 39% in June 2023[10]. If you had a multiyear time horizon and believed that China will eventually take demand side or supply side steps to end its current malaise, a long position could be rewarding. After all, how many of us thought 5 years ago that we'd be talking about an equity market renaissance in Japan today?

US, China and Europe rolling 3 year equity performance



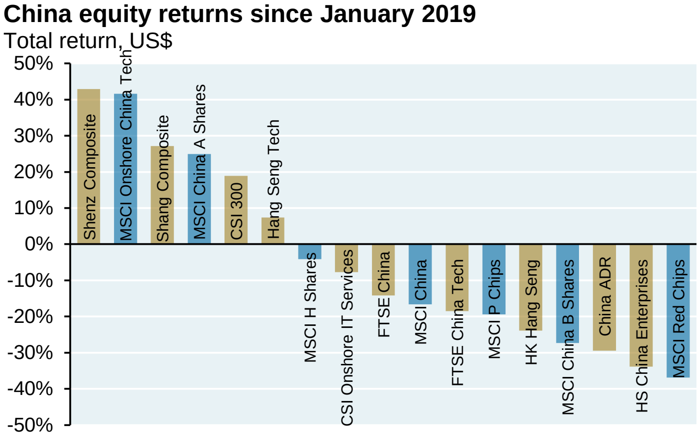
Source: Bloomberg, JPMAM, December 26, 2023

US, China and Europe forward P/E ratio



Source: Bloomberg, JPMAM, December 26, 2023

China equity returns since January 2019



Source: Bloomberg. Dec 26, 2023. Blue: MSCI subcomponent. Gold: Index.

China's equity alphabet soup

MSCI China: A/H/B shares, Red Chips, P Chips and ADRs

A shares: incorporated in China, trading on Shanghai and Shenzhen exchanges, accessible through Stock Connect

H shares: large/mid caps incorporated in China, listing in HK

B shares: incorporated in China trading on the Shanghai and Shenzhen exchanges in foreign currency

Red Chips: large/mid cap Chinese companies incorporated outside China, listed on HK exchange; generally SOEs

P Chips: same as Red Chips, not state-owned

ADRs: trading on NYSE/NASDAQ

[10] Petersen Institute for International Economics, July 2023

China might need to do something unorthodox to jump-start its asset prices and economy, particularly with another round of anti-China measures pending in the US, and due to bad timing for international investors

The "Select Committee on Strategic Competition Between the United States and the Chinese Communist Party" released a 53-page report with over 100 bipartisan recommendations. The report is a sign of growing support for higher tariffs on China, tighter restrictions on Chinese imports, more restrictions on high-tech exports to China and prohibitions on trade with a broader group of Chinese companies. This Committee cannot pass legislation and it's unlikely that anything new passes before the election. But it's a sign of what may happen after that; the last bastion of bipartisanship in Washington are policies targeting the Chinese Communist Party.

Here's a summary of some of the Committee's notable recommendations[11]:

- Move China to a new tariff category that results in higher tariffs
- Impose duties on legacy semiconductors from China
- Large public companies must annually disclose key risks related to China
- Impose sanctions on China if it invades Taiwan
- Ban import and exports of products and services critical to national security if entities are owned, controlled or developed by a foreign adversary (quantum computing, biotechnology, AI, autonomous systems, advanced energy search, space-based tech and surveillance technology)
- Force divestment or ban foreign adversary-controlled social media platforms such as TikTok
- Place Huawei, ZTE and other telecom vendors on the blocked entity list
- Prohibit investment in Chinese companies on government sanctions and restrict investment in sectors in which China intends to dominate
- Tax capital gains and dividends from investments in Chinese companies as ordinary income (!!)
- Grant the Committee on Foreign Investment in the US jurisdiction over broader types of investment

Bad timing: MSCI ratcheted up China's weight in its Emerging Markets Equity Index to an all-time peak level of 40% right before Xi's "progressive authoritarianism" campaign was launched. In other words, index-driven investors might have loaded up on Chinese stocks right before they crashed. The decline in China's economic disclosures shown in the chart on the right is not a confidence booster either.

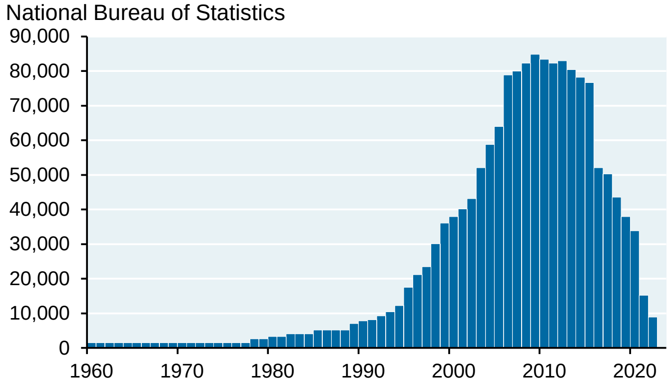
China's index weight, performance and policy changes

China outperformance, 28 day smooth — China index wt

Source: Bloomberg, JPMAM, December 22, 2023

China economic disclosures

Annual number of economic indicators made available by China's National Bureau of Statistics

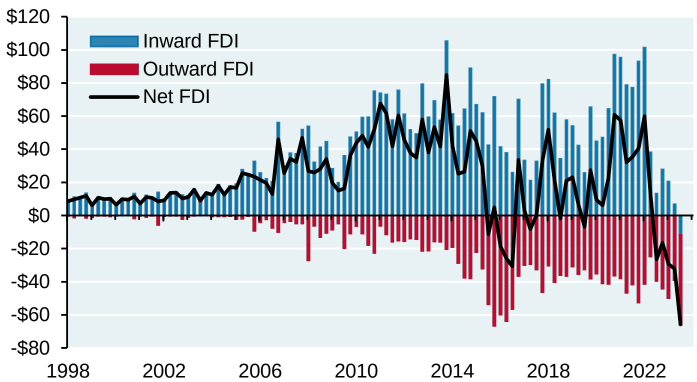


Source: FT, October 21, 2022 based on CEIC/CNBS data

[11] "*Congress Preparing to Get Tougher on China*", Piper Sandler, December 21, 2023

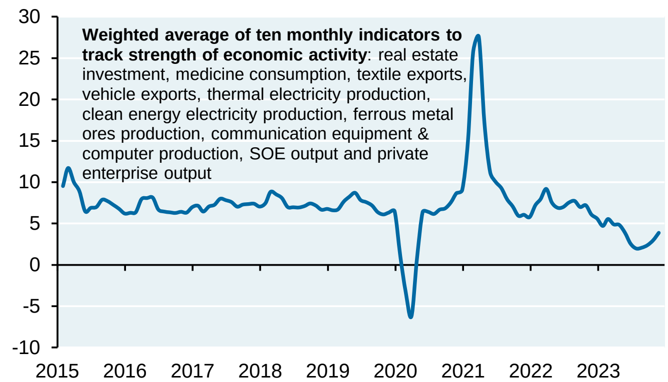
Economic data. Inbound foreign direct investment fell into negative territory for the first time. While indicators of China's real activity and housing are improving from low levels, the Conference Board still expects GDP growth to decline from 5% in 2023 to 4% in 2024. China's challenge stems from misallocated investment in real estate rather than from excess industrial capacity. Its home ownership rate peaked at ~90% and 20% of Chinese households own more than one home. The latest data also show broad-based producer and consumer price disinflation and continued weakness in the banking system, where net interest margins are just 1.75% compared to 3.25% in the US. For 2024, JP Morgan China economists project a slightly higher budget deficit, small cuts in rates and reserve requirements and programs to mitigate local government stress[12].

FDI into China fell into negative territory for the first time
US$, billions



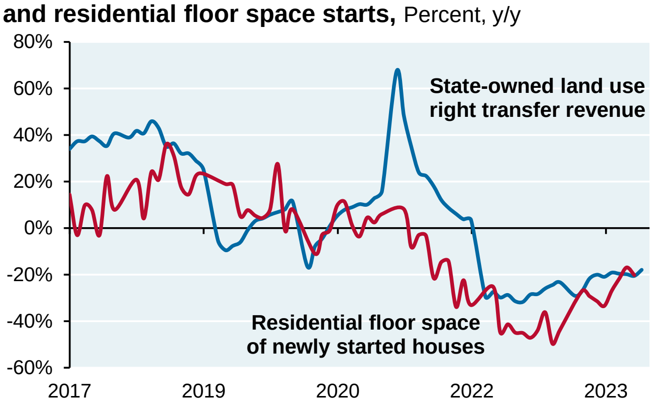
Source: Bloomberg, JPMAM, Q3 2023

China real activity remains weak
Index



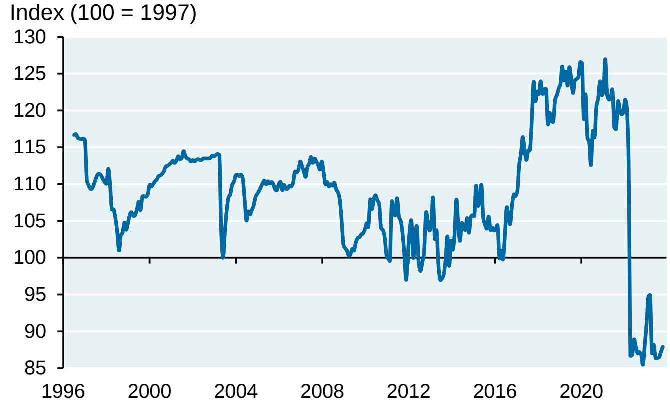
Source: Bloomberg, JPMAM, November 2023

China housing drag: weak state-owned land transfer fees and residential floor space starts, Percent, y/y



Source: Bloomberg, JPMAM, November 2023

China consumer confidence
Index (100 = 1997)



Source: Bloomberg, JPMAM, October 2023

China / US housing comparison

	China (peak)	US		China (peak)	US
Value of housing stock relative to personal consumption expenditures	6.0x	2.2x	Home price to income ratios, mid-2023*	~40x	~10x
Direct real estate related activities as a share of GDP	18%	6%	Home ownership rate	90%	66%

Source: Empirical Research, CEIC, NIH, Numbeo, Fed, Rogoff & Yang, 2022. * China: Shanghai, Shenzhen, Beijing, Guangzhou. US: NY, SF

China's 430 square feet of housing stock per capita is double the levels in Europe or Japan (D. Gros/Project Syndicate)

[12] "*Greater China 2024 outlook: The burdens of normality*", JP Morgan Asia Pacific Economic Research

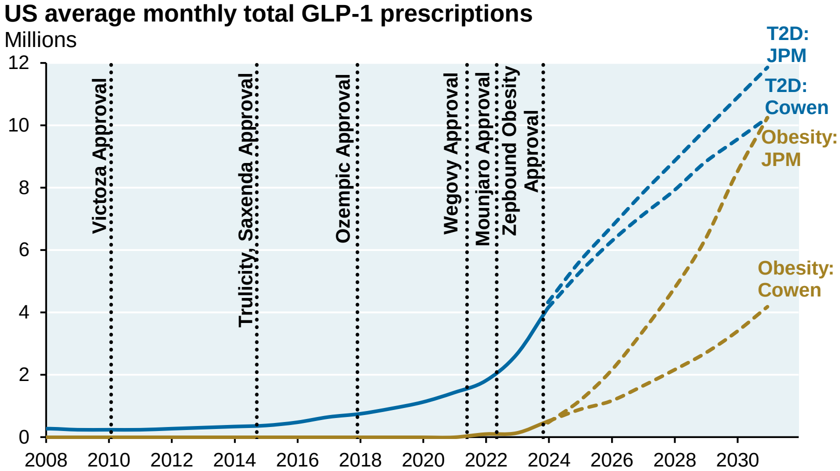
The Fats Dominoes: the impact of weight loss drugs on equity markets

GLP-1 drugs[13] show substantial efficacy in treating diabetes and obesity, and preliminary data suggest that they might also be useful in treating co-morbidities associated with obesity and even addictive behaviors/diseases like alcoholism. Equity markets have already priced in major changes in human behaviors, with stocks prices of insulin manufacturers and makers of alcoholic/sugary beverages and snack foods being negatively affected.

More than 100 weight loss agents are being developed to treat the diabetes and obesity marketplace. Pharma researchers expect GLP drugs to reach $100 billion+ in global sales by 2030, even if penetration in the obesity market remains in single digits of the eligible population. As a sign of how enthusiastic big pharma companies are about this space, Roche just paid $2.7 billion to buy Carmot and its oral and injectable Phase 1 and Phase 2 GLP drugs in December, pre-empting Carmot's planned IPO. Our Life Sciences Private Capital team believes that the size of this opportunity may compel Pfizer, Bristol, Merck, AstraZeneca, GlaxoSmithKline, Sanofi, Takeda and a slew of European and Japanese pharmas to buy their way in via venture-backed companies.

However, questions remain regarding the durability of weight loss results when treatments end, who will pay for GLPs given their current high cost, and whether any reduction in comorbidities is significant. In this section, we address the 7 most important GLP issues related for investors.

US average monthly total GLP-1 prescriptions



Source: TD Cowen, JP Morgan Equity Research, December 2023. Projections start in 2023.

[13] GLPs refer to glucagon-like peptides. For purposes of this section, GLP also refers to similar enzymes used to treat diabetes, weight loss and related conditions. T2D refers to Type II Diabetes. All Fats Domino images were created by prompts entered into Dall-E.

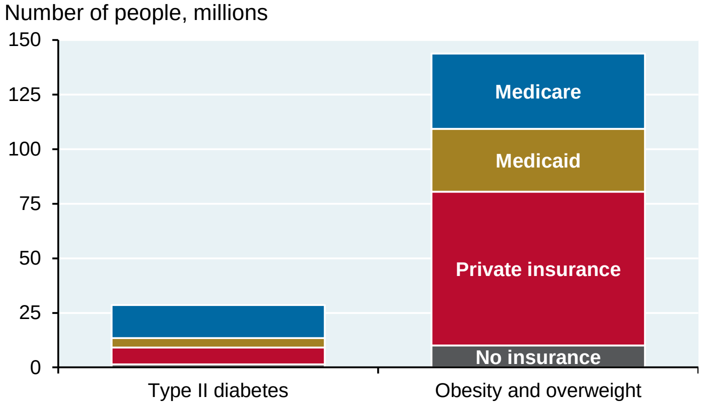
Who pays?

GLP adoption is likely to depend on expansion of coverage. There are three insurance categories to consider:

- **Private insurance** benefit consultants estimate that 30%-40% of employers have plans in place to cover Wegovy for obesity treatment and expect this figure to rise to 60%-80% in the next few years[14]. However, authorization hurdles may be added as coverage expands; in other words, employees would have to try cheaper treatments first. In addition, their coverage could be dependent on how much weight they lose, and be time-limited in terms of coverage (despite the fact that GLP benefits fade when treatments end). Roughly 60% of US employers are self-insured, so GLP manufacturers would probably opt to deal with the 40% of employers that pay health insurance companies. As for the health insurers, they are unlikely to cover GLP drugs until they are paid to do so via higher premiums
- **Medicare** is prohibited by law from covering drugs to treat obesity. While the Treat and Reduce Obesity Act would require Part D to cover weight loss, there does not appear to be much momentum to pass it (it has been introduced in the last 6 Congresses). The CBO is waiting for more research before concluding that GLP coverage would result in net savings for the Federal government; to date, the CBO sees GLP coverage as a **net expense**[15]. It's not clear that modest reductions in cardiovascular conditions discussed on page 33 will be enough to change that view. Another obstacle: at current prices for semaglutide (Wegovy), if all Medicare patients diagnosed as obese were treated with it, Medicare costs would increase by ~$135 bn annually which is 94% of current Medicare prescription drug Part D spending[16]
- **Medicaid** plans can opt in to weight loss drug coverage on a state-by-state basis, but prices would probably have to come down a lot before states opt to cover it. Hep-C drug prices fell by ~70% before some states offered it through Medicaid

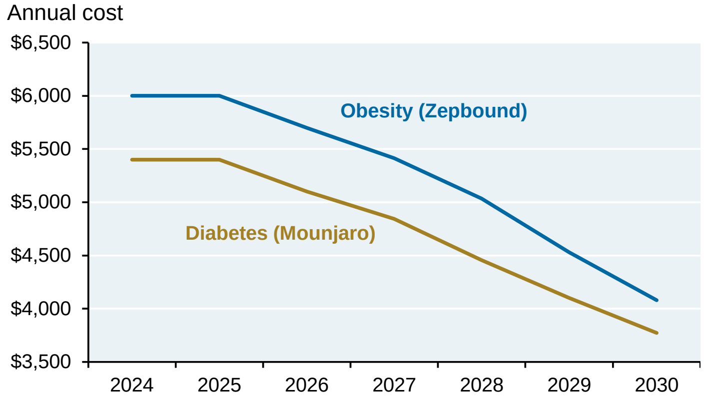
How much do GLPs like Mounjaro and Zepbound cost? Pharmaceutical companies show a list price which is around $1,000 per month. However, they negotiate discounts with insurance company payers resulting in net costs of closer to $500 per month. As shown below (right), JP Morgan Equity Research expects the price of these drugs to fall by one third by the year 2030. While the price of innovative drugs with little competition often stay flat or rise, in this case some analysts believe lower prices could dramatically increase the market.

Potential user base of GLPs by coverage type
Number of people, millions



Source: TD Cowen, November 15, 2023

Expected GLP pricing by year
Annual cost



Source: JP Morgan Equity Research, September 2023

[14] *"Examining the Broader Impact of GLP-1s"*, JP Morgan Global Equity Research, October 24, 2023

[15] *"A call for new research in the area of obesity"*, CBO, October 5, 2023

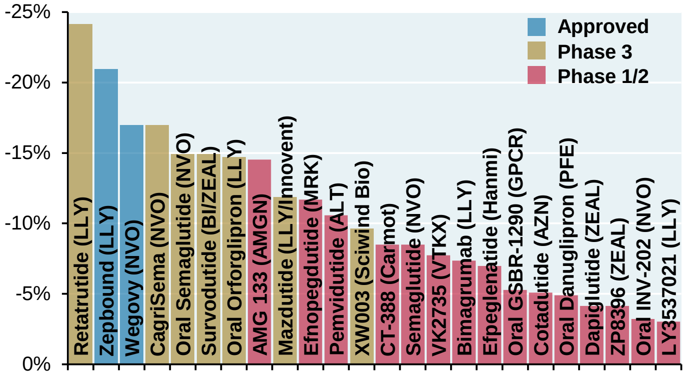
[16] "*Medicare Part D Coverage of Antiobesity Medications*", New England Journal of Medicine, March 16, 2023

How well do GLPs work for weight loss and what are their side effects?

As per the first chart, weight loss observed in clinical trials varies by drug and dosage regimen. Other research points to increased weight loss as a function of treatment duration; at 20 weeks, average weight loss was ~10% and at 40 weeks, it was ~15%; after that, weight loss tends to flatline. These weight loss results compare to 25%-30% for bariatric surgery.

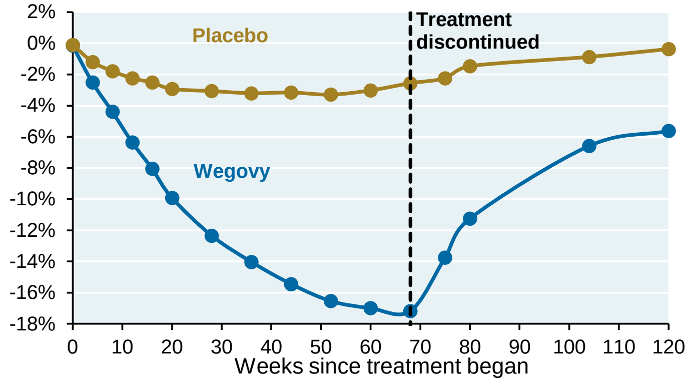
However, weight was mostly regained when Wegovy and Zepbound treatments ended. Similarly, other cardio-metabolic improvements regressed to baseline levels after treatments ended such as blood pressure, LDL levels and hemoglobin readings[17]. Each participant was provided both Wegovy and lifestyle intervention guidance (counseling on diet and exercise every four weeks); at week 68, all forms of treatment were halted.

Weight loss observed in clinical trials
Percent of body weight



Source: TD Cowen, November 15, 2023

Change in body weight during and after treatment
Percent



Source: DOM Journal of Pharmacology and Therapeutics, April 2022

While GLP treatments are generally well tolerated, they do entail side effects which are important to monitor

- The two most frequent side effects: nausea, ranging from 20%-45% of participants in Phase II/III trials, and vomiting which occurred in 10%-30% of participants[18]. Other side effects in trials included headaches, abdominal pain, constipation, diarrhea and dyspepsia
- GLPs are also associated with rare adverse events including pancreatitis (inflammation of the pancreas)[19]
- Name-brand semaglutide drugs are sold in pre-filled pens with safeguards to prevent overdosing. However, drugstores also sell their own non-FDA tested GLP compounds in concentrated form which require patients to fill their own syringes. Calls to poison control centers have increased by people using these compounds after overdosing on them (nausea, vomiting, headache, etc)[20]
- Some people taking GLPs lose muscle mass and bone density. More research may be needed to develop weaning and discontinuation strategies to avoid these effects[21]
- GLPs mitigate dopamine rewards and might lead to a condition called "anhedonia" which is linked to depression[22]. Such adverse effects were reported in certain GLP variations, but there was no difference in psychiatric effects between treatment and placebo groups in Phase III semaglutide obesity trials[23]

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[17] "*Weight regain and cardiometabolic effects after withdrawal of semaglutide*", Diabetes, Obesity and Metabolism Journal of Pharmacology and Therapeutics, Wilding et al, April 2022

[18] "*The next wave of antiobesity assets*", Goldman Sachs Equity Research, September 26, 2023

[19] "*Risk of Gastrointestinal Adverse Events Associated With Glucagon-Like Peptide-1 Receptor Agonists for Weight Loss*", University of British Columbia Department of Medicine, October 2023

[20] CNN, December 14, 2023

[21] "*The Big Trial of a GLP-1 drug to reduce Major Cardiovascular Events*", Eric Topol (Scripps Research), Nov 2023

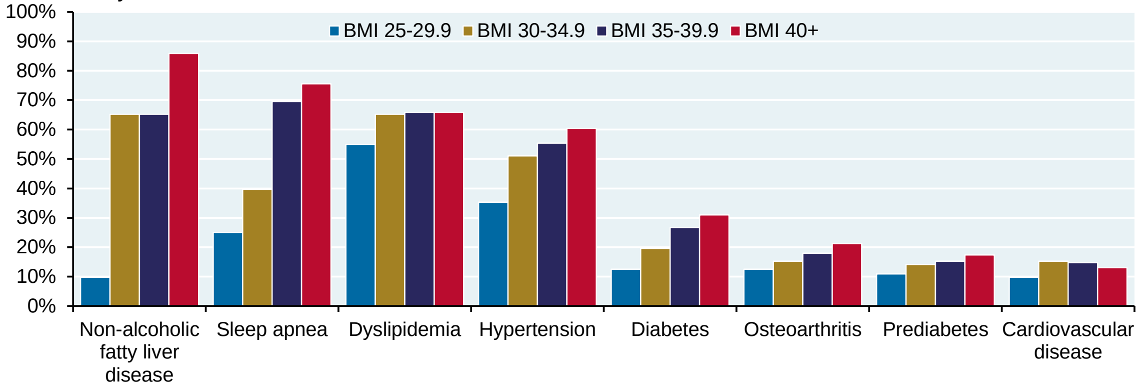
[22] "*Hot weight loss drugs tested as addiction treatments*", Science, Leslie, August 2023

[23] "*Case Report: Semaglutide-associated depression*", Frontiers in Psychiatry (NIH), Li et al, August 2023

Do GLPs reduce co-morbidity conditions?

If private and government insurance coverage does expand, it might be due to findings that GLPs also reduce the severity of diseases and conditions associated with obesity. Around 80% of obese individuals exhibit at least one of the co-morbidities below. The chart illustrates how the incidence of these co-morbidities rises with obesity, with the latter measured via BMI (Body Mass Index).

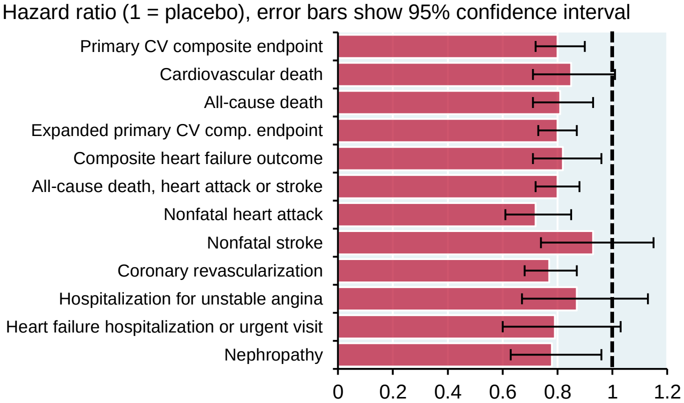
Estimated rates of obesity-associated co-morbidities by BMI
Co-morbidity rate



Source: TD Cowen, November 15, 2023

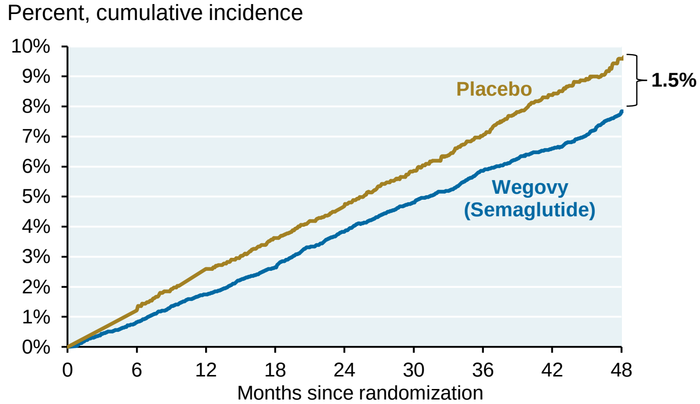
Novo's SELECT trial assessed cardiovascular outcomes for patients taking Wegovy. The trial did show a reduction in major adverse cardiac events (MACE) of ~20% relative to the placebo group. However, the absolute reduction in MACE incidence was low, just 1.5% (placebo group 8.0%, Wegovy 6.5%) and it took three years of GLP treatments to derive that absolute benefit[24]. In other words, there are important policy issues to sort through regarding the MACE reduction benefit as a basis for coverage of an expensive drug. That said, the trial did demonstrate a ~70% reduction in progression to diabetes, which is a positive finding. Novo is working with the FDA to determine a potential basis for approving its GLP for "diabetes prevention"; the hurdle is that the FDA requires durable gains even after patients stop taking the drug.

Major adverse cardiovascular event: semaglutide vs placebo
Hazard ratio (1 = placebo), error bars show 95% confidence interval



Source: Eric Topol, Scripps Research, November 2023

Primary cardiovascular composite end point
Percent, cumulative incidence



Source: Eric Topol, Scripps Research, November 2023

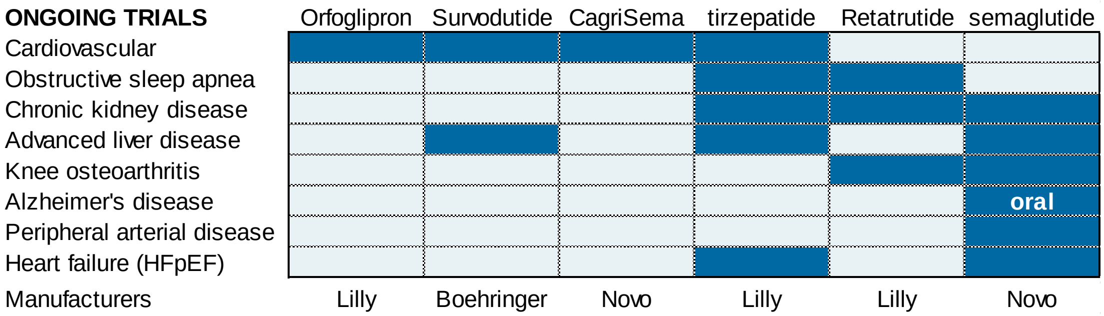
Understanding the first chart
The red bars show the occurrence of each adverse outcome relative to the placebo which has a score of 1. The lines show 95% confidence intervals around the mean result. For example, the risk of a non-fatal heart attack declined by 28% compared to the placebo group, with 95% confidence that this value lies between 15% and 39%.

[24] "*The Big Trial of a GLP-1 drug to reduce major cardiovascular events*", Eric Topol, Scripps Research, Nov 2023

How do GLPs work, and what are the most important trials that could increase the size of the market?

As mentioned earlier, there's a long road ahead if Medicare adoption is contingent on legislation to explicitly cover obesity drugs. However, analysts with much higher GLP adoption forecasts than those shown earlier believe that if ongoing trials are successful, GLP drugs could be branded as cardiovascular drugs and/or other treatments which Medicare already covers. Goldman projects twice as many monthly GLP users than the Cowen and JP Morgan estimates on page 30 for this reason[25].

There are currently 20+ ongoing studies which could expand the list of conditions that GLP drugs are explicitly designated to treat, in addition to T2D and obesity:



Source: Goldman Sachs, JPMAM. We capitalize brand names and show molecular compounds as lower case. Boehringer refers to a partnership between Boehringer Ingelheim and Zealand Pharma

GLPs appear to work through brain pathways. One notable recent GLP findings comes from Daniel Drucker at the University of Toronto. Drucker found that GLPs work via brain pathways to reduce inflammation[26]. If so, this could be a promising indicator for potential use of GLPs to treat conditions that involve inflammation such as Alzheimer's disease and Parkinson's disease. Drucker notes that the reduced MACE benefits shown on the prior page started to occur even before patients started losing weight, indicating that weight loss is not the only contributor to reduced risk.

As a general outline, here are the ways that GLPs positively affect the body's organs[27]:

- Stomach: decrease gastric emptying and gastrointestinal motility (food movement from mouth to intestines)
- Liver: decrease gluconeogenesis and steatosis (reduced liver fat, reduced non-alcoholic fatty liver disease)
- Brain: decrease food intake stimuli and reward behavior
- Muscle: increase insulin sensitivity and glucose uptake
- Pancreas: increase insulin secretion and synthesis, decrease glucagon secretion, increase beta cell survival

[25] "*The Option Value of Weight Management*", Goldman Sachs Equity Research, December 18, 2023

[26] "*Ozempic and Wegovy may reduce inflammation by targeting the brain*", New Scientist, December 18, 2023

[27] "*Anti-obesity drug discovery: advances and challenges*", Nature Reviews, 2022, Figure 4

Can GLPs be used to treat addiction?

GLPs affect what is referred to as "reward circuitry" in the brain by mitigating dopamine activity. As a result, researchers are evaluating whether GLPs could be used to treat compulsive behaviors such as alcoholism and smoking. The results are very preliminary but here's what we know so far.

Addiction researchers found that GLPs alter reward pathways in lab animals. Rodents and primates taking GLPs get less of a dopamine hit from alcohol, cocaine, nicotine and oxycodone:

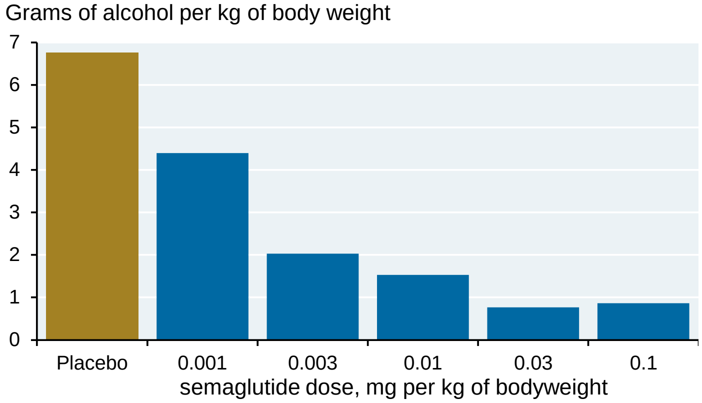
- In addition to reducing caloric consumption, semaglutide reduced binge-like alcohol drinking in mice[28]
- GLP treatments significantly reduced alcohol consumption in monkeys[29], reduced cocaine seeking in rats[30], and reduced oxycodone seeking in rats[31]. These must be wild experiments to actually carry out

Studies are being conducted to test anti-addiction effects of GLPs on humans, but more work still needs to be done before drawing any conclusions:

- In a study of 127 patients with alcohol use disorder (AUD), heavy drinking days and total alcohol intake were significantly reduced in the subgroup of patients taking GLPs that were also obese. Additionally, when shown pictures of alcohol, those who received treatment had significantly less activation of brain reward centers. However, GLP treatment did not reduce drinking for other less overweight cohorts[32]
- University of Texas researchers found that 46% of patients who wore nicotine patches and received injections of GLPs stopped smoking, while 27% of people who relied only on the patches were able to stop[33]

Consumption of sweet alcohol by mice taking GLPs

Grams of alcohol per kg of body weight



Source: Journal of Clinical Investigation, Chuong et al, May 2023

[28] *"Semaglutide reduces alcohol drinking and modulates central GABA neurotransmission"*, Journal of Clinical Investigation, Chuong et al, May 2023

[29] Monkeys were given access to alcohol for 4 hours each day for 10 days (!!!), and then allocated to either the GLP or placebo group. After a loading period of 2-5 weeks, consumption levels were measured and compared for monkeys in the GLP and placebo groups. "*Effects of glucagon-like peptide 1 analogs on alcohol intake in alcohol preferring vervet monkeys*", University of Copenhagen, Fink-Jensen et al, October 2018

[30] *"Glucagon-like peptide-1 receptor activation in the ventral tegmental area attenuates cocaine seeking in rats"*, Neuropsychopharmacology, Hernandez et al, February 2018

[31] Rats were allowed to lever press for injections of oxycodone for 3 hours per day. Their motivation to self-administer oxycodone was then tested by increasing the difficulty of self-administering oxycodone for rats receiving GLPs and rats not receiving GLPs. "*Activation of GLP-1 receptors attenuates oxycodone taking and seeking without compromising the antinociceptive effects of oxycodone in rats"*, Neuropsychopharmacology, Zhang et al, February 2020.

[32] *"Exenatide once weekly for alcohol use disorder investigated in a randomized, placebo-controlled clinical trial",* Journal of Clinical Investigation, Fink-Jensen et al, October 2022

[33] *"Exenatide Adjunct to Nicotine Patch Facilitates Smoking Cessation and May Reduce Post-Cessation Weight Gain: A Pilot Randomized Controlled Trial",* Nicotine & Tobacco Research, Yammine et al, October 2021

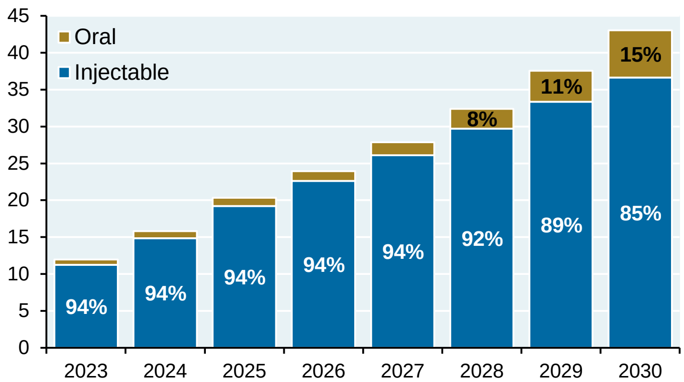
What share of the GLP market will be injectable vs oral?

Oral versions of next generation GLPs could hit the market in the coming years and expand the market since many patients prefer pills to injections, and pills are generally easier to make, store and transport. However, oral GLPs require more of the semaglutide active ingredient per dose and may result in more side effects:

- Rybelsus, a pill version of Novo Nordisk's diabetes GLP treatment, underperforms injectable counterparts with respect to weight loss (5% vs 15% for injectable version after one year[34]) and had a 10% discontinuation rate in trials due to side effects
- Oral semaglutide demonstrated weight loss results that are similar to injectable versions in a Phase III obesity trial with 17% weight loss at week 68. However, the oral version requires food restrictions and its efficacy is more variable
- Eli Lilly's Orforglipron delivered weight loss between 9%-15% by week 35 in a Phase II obesity trial and doesn't have food intake restrictions, but nausea and vomiting were still common side effects and led to a discontinuation rate ranging from 10%-21% depending on dosage
- Pfizer had oral GLPs in trials (Danuglipron, Lotiglipron) which were terminated due to high discontinuation rates in the former and liver function test abnormalities in the latter

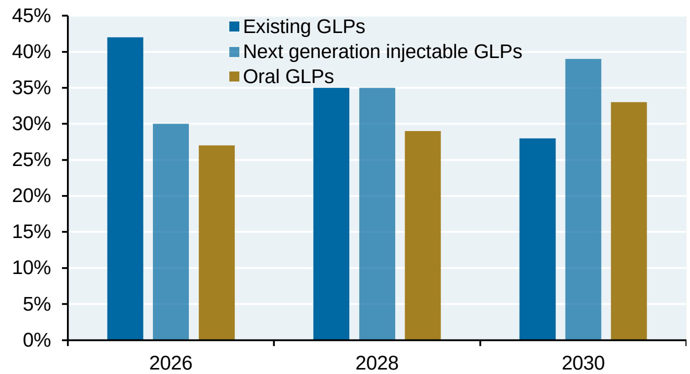
Cowen projects that by 2030, only 15% of the GLP market for diabetes and obesity will be oral. JP Morgan Equity Research expects a larger shift to oral GLPs, and so do a group of physicians that JP Morgan surveyed. We expect estimates to conform once we have better data on the next generation of oral GLP drugs.

Projected oral vs injectable treatment prevalence, obesity and T2D, Millions



Source: TD Cowen, November 15, 2023

Physician survey of T2D treatment type
Percent of GLP use



Source: Survey conducted by J.P. Morgan Equity Research in Feb 2023.

[34] *"Once-weekly semaglutide in adults with overweight or obesity"*, NEJM, Wilding et al, March 2021

How do GLPs impact consumer behavior and equity markets?

Let's start with rough estimates of how consumer behavior changes when people take GLPs. JP Morgan Equity Research analysts published estimates in an October 2023 report[35]. There are a lot of caveats since the sample size was only ~500 people, but I like the approach: data scientists collect actual spending receipts of households and scan the results. Then, they overlay whether households take GLP drugs. Changes in consumption are shown per GLP household whether each household consumes those items or not; as a result, unit consumption declines are even larger for the GLP households that do consume these items.

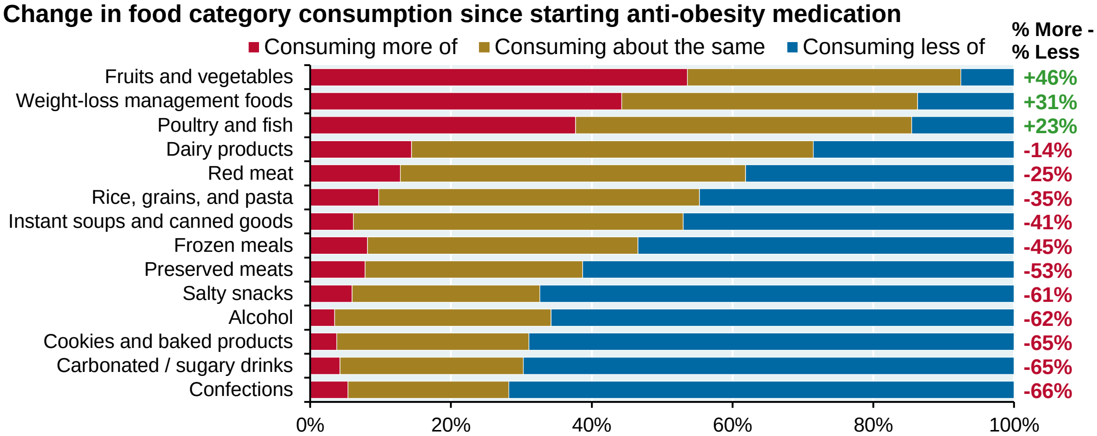
Year-on-year change in projected units of consumption by household

Category	GLP Users	Total US	Difference
Meat snacks	-27%	-2%	-26%
Snack seeds, nuts, trail mixes	-31%	-5%	-25%
Popcorn	-27%	-4%	-24%
Crackers	-23%	1%	-23%
Chips	-19%	-1%	-18%
Packaged portable sweet snacks	-11%	3%	-15%
Baking & cooking	-8%	5%	-13%
Packaged cookies	-11%	1%	-12%
Soft drinks	-15%	-4%	-11%
Canned	-11%	0%	-11%
Pasta & noodles	-3%	7%	-11%
Deli & prepared foods	-12%	-2%	-10%
In-store bakery	-8%	2%	-10%

Source: JP Morgan Global Equity Research, Numerator, JPMAM, September 17, 2023

Surveys are less precise since they rely on household recall of spending behaviors. For what it's worth, here are the results of a survey of 311 GLP patients with BMI > 27 in the summer of 2023[36]. The patients had been taking GLPs for more than two weeks. Note that the survey does not measure declines in unit consumption; **it simply measures whether overall unit consumption is higher, lower or the same**. Directionally, both results are similar: less unhealthy foods and beverages.

Change in food category consumption since starting anti-obesity medication



Source: Morgan Stanley AlphaWise survey, August 2023

[35] *"Examining the Broader Impact of GLP-1s"*, JP Morgan Global Equity Research, October 24, 2023

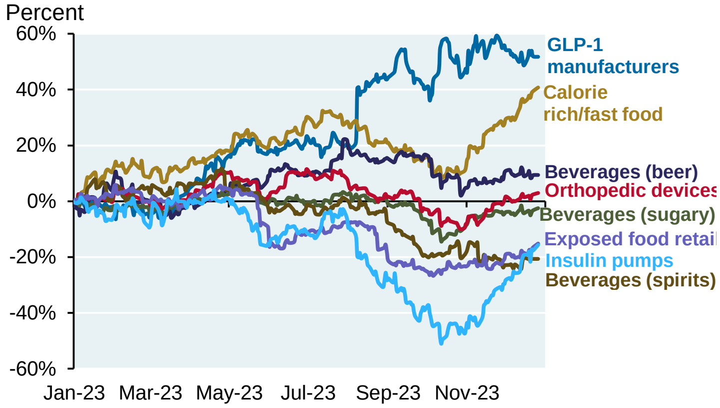
[36] *"Thematic Alpha: Obesity"*, Morgan Stanley Equity Research, October 19, 2023

In the summer of 2023, coincident with Novo Nordisk's obesity trial results for Wegovy, the equity markets began to price in winners and losers from increased GLP penetration. The charts below show sector examples, with large gains in GLP manufacturers and losses in insulin manufacturers and distributors of alcoholic beverages and snack foods (Dollar Tree, Dollar General, BJ's Wholesale). GLP returns were almost as high as FAANGM and AI returns in 2023 (with AI returns based on an illustrative AI ETF with 36 stocks).

Note how fast food and insulin sectors recovered later in the year. This could be a simple reflection of rising equity markets, or it could reflect more investor caution regarding the speed of GLP adoption and impacts on other medical conditions. There's a lot of variability in the research community regarding adoption rates. As one example, TD Cowen estimates that US GLP penetration for diabetes and obesity will reach 33% and 3%, respectively, by the year 2030 with penetration being defined as the portion of potential patients taking the drug. JP Morgan Research analysts agree on diabetes penetration (35% by 2030) but project higher obesity penetration of 15%.

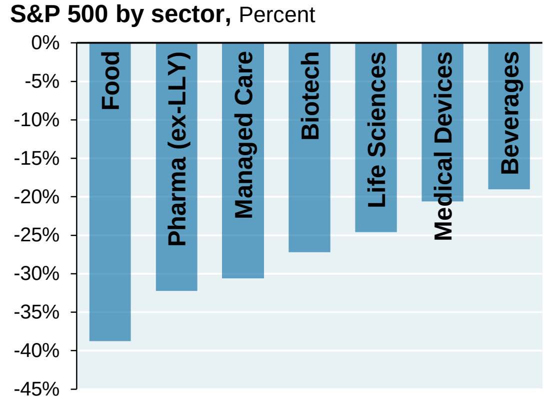
TD Cowen's lower penetration forecast for obesity explains why they don't believe that GLPs will negatively impact adjacent healthcare sectors. One example: cardiovascular events that affect the obese population. The share of obese individuals that experience such events is 13%. Based on Cowen's 3% obesity penetration forecast, this would only translate into 400,000 people treated with GLPs by 2030. This number of people, *even if GLPs were perfectly curative for cardiovascular disease*, would only amount to a reduction of 0.5% in the overall pool of all people suffering cardiovascular events. The same relative magnitudes appear below in the table for other conditions, suggesting that sharp declines in share prices of adjacent condition drugs and treatments may be very premature.

The GLP-1 effect on equity sectors and industries
Percent



Source: Bloomberg, JPMAM, December 26, 2023

YTD relative return of large-cap stocks to S&P 500 by sector, Percent



Source: Bloomberg, JPMAM, December 26, 2023

Projected pool reductions due to obese patients taking GLPs by 2030

Co-morbidity	Avg co-morbidity rate with obesity	Co-morbidity prevalence reduction in obese GLP patients (mm)	Reduction in total pool size due to obese GLP patients (%)
Non-alcoholic fatty liver disease	72%	2.1	1.0%
Obstructive sleep apnea	62%	1.8	1.1%
Chronic Kidney Disease	20%	0.6	0.5%
Osteoarthritis	18%	0.5	0.4%
T2D / Prediabetes	15%	0.4	0.4%
Cardiovascular Disease	14%	0.4	0.5%

Source: TD Cowen, November 15, 2023

Top ten surprises for 2024 in honor of Byron Wien

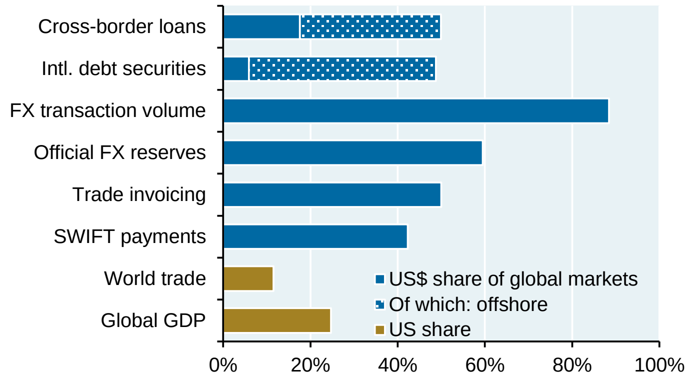
Market Strategist Byron Wien passed away last year at the age of 90. For over 30 years whether at Morgan Stanley or Blackstone, Byron published a top ten list of surprises for the following year. I never read any of the articles that kept score on how well Byron's predictions did since that's not the point. They were an exercise in thinking against the grain about what *might* happen in an industry dominated by consensus. In Byron's honor, for one time only, here's my list of top ten possible surprises for 2024.

[1] The US dollar remains stable. Despite all the hand-wringing about the weaponization of the US dollar via US sanctions, the trade weighted dollar ends 2024 +/- 7% from where it began. Furthermore, the dollar will retain its roughly 50% share of global trade invoicing.

US Fed trade-weighted nominal broad dollar index
Index (100 = January 1980)

Source: Bloomberg, JPMAM, December 22, 2023

The international role of the US dollar
Percent

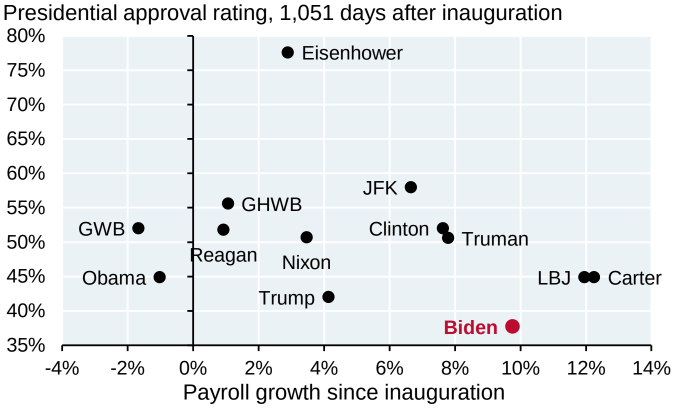


Source: BIS Quarterly Review. December 5, 2022.

[2] The DoJ/FTC win a big antitrust case. After a drought of 20+ years since the Microsoft antitrust case[37], the Department of Justice and/or Federal Trade Commission win one of the big antitrust cases currently underway against Google, Amazon, Meta or T-Mobile (see pages 9-12 for more details).

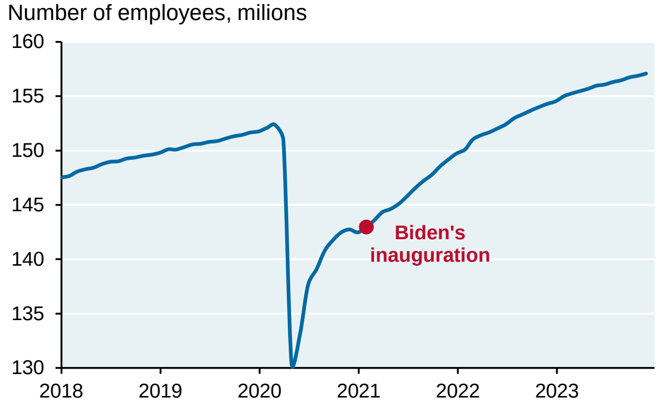
[3] President Biden withdraws sometime between Super Tuesday and the November election, citing health reasons. Biden passes the torch to a replacement candidate named by the Democratic National Committee. Biden has a low approval rating for a President with ~10% job creation since his inauguration, although that figure is the by-product of his inauguration coinciding with the rollout of COVID vaccines and a reopening US economy. See our [November 2023 Eye on the Market] for details on the process of candidate replacement during the primary season or before/after the general election.

Presidential popularity and job creation
Presidential approval rating, 1,051 days after inauguration



Source: 538, Bloomberg, JPMAM, December 6, 2023

Nonfarm payrolls
Number of employees, milions



Source: Bloomberg, JPMAM, November 2023

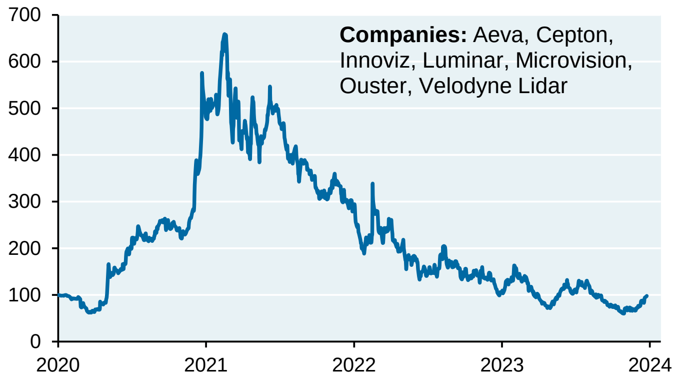
[37] The DC District Court ruled in 2001 that Microsoft's actions constituted unlawful monopolization under Section 2 of the Sherman Act, but the US Court of Appeals partially overturned that judgment. The DoJ and Microsoft eventually reached a settlement in which Microsoft agreed to modify some business practices

[4] The driverless car backlash is coming. In the few places where full Level 5 autonomous cars are being tested in real world conditions (San Francisco, Austin), they have blocked ambulances on their way to the hospital, hampered other emergency responders, caused accidents, increased congestion and run over pedestrians, one instance of which reportedly resulted in the resignation of Cruise's CEO. Waymo has added technology to reportedly allow firefighters to take control of its vehicles if they stop moving.

LiDAR (autonomous vehicle technology) stocks have collapsed by 85% from their peak, and I don't think a rebound is imminent. I believe a possible backlash is coming from citizens who believe, as in the case of the despised urban scooter plague[38], that convenience for some results in dangers and inconvenience for others.

Tesla is experiencing problems even at Level 2, which requires driver oversight. The NHTSA investigated a series of crashes involving Tesla autopilot and found that its methods of insuring driver compliance are inadequate and can lead to "foreseeable misuse". In December, Tesla issued a recall of 2 million vehicles to update the software to require greater driver compliance.

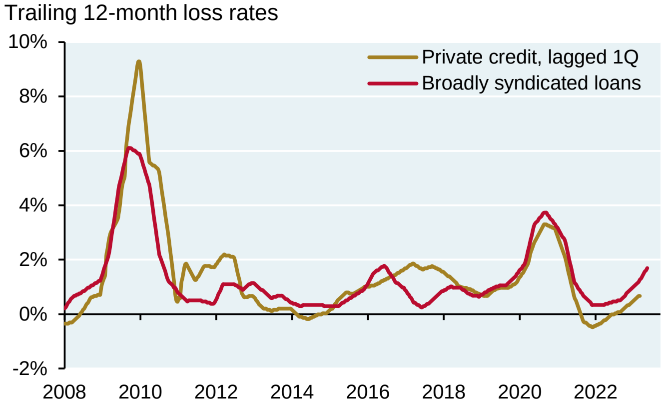
LiDAR stock basket
Index (100 = December 2019)



Source: Bloomberg, JPMAM, December 27, 2023

[5] Broadly syndicated loan (BSL) losses rise above private credit losses for the first time. Historically, there hasn't been much difference in their loss respective rates. But after a decade of comparatively lax loan underwriting with respect to maintenance covenants, EBITDA add-backs, maturity priming clauses, intellectual property transfer restrictions and other terms and conditions, that will change. In other words, the underwriting chickens come home to roost in the loan markets moreso than in private credit. See our December 5 Eye on the Market Alternative Investment Review for more details.

Loss rate estimates on BSLs and private credit
Trailing 12-month loss rates



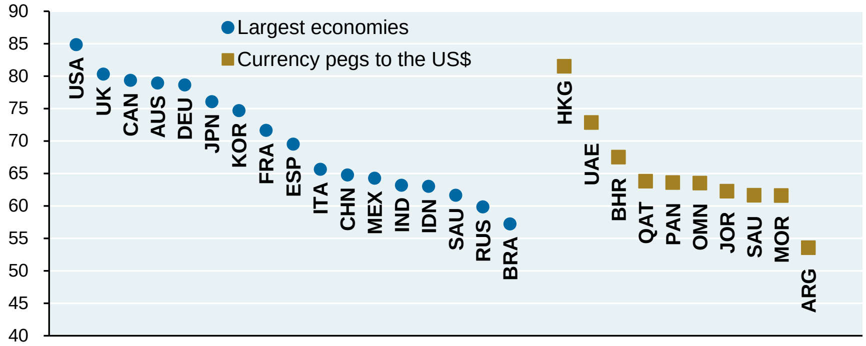
Source: Cliffwater, Moody's, GS Global Investment Research, Q2 2023

38 The scooter company Bird went public via SPAC at a valuation of $2.3 billion. Bird market cap now: $7 million

[6] Argentine dollarization will fail if implemented. Whenever the Cato Institute, American Enterprise Institute and City Journal agree (like they do on positive prospects for Argentine dollarization), I get suspicious. Argentine President Milei needs a two-thirds majority to pass constitutional reforms required for dollar convertibility. Furthermore, Argentina would need substantial foreign exchange reserves and much higher savings rates to even try it. But even if these goals were met, dollarization would fail after being implemented.

Convertibility to another currency is generally only workable in places with some combination of the following: (a) high levels of productivity, flexibility and business dynamism to allow the economy to absorb domestic and external shocks; (b) white knight lenders such as the ECB and European Commission; and/or (c) substantial commodity related foreign exchange reserves to defend the currency peg when needed. Argentina has none of these attributes, and while Milei is trying (see box), I doubt he will be able to sufficiently de-Peronize Argentina. Dollarization would yield to de-dollarization in a fairly short period.

Institutions, labor market flexibility, business freedoms and business dynamism
Score, 0-100 (100=highest)

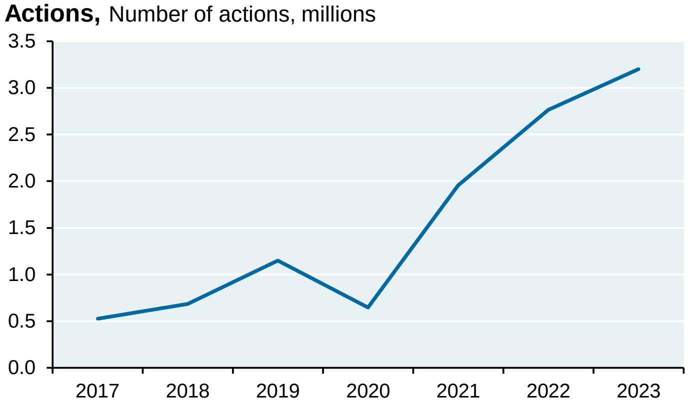


Source: World Economic Forum, World Bank, Fraser Institute, WSJ, JPMAM, 2023

Milei proposals/milestones so far
- Privatization of airlines, energy, rail, media, water and sewer
- $20 billion cuts in public spending
- Liberalize energy prices, food prices, labor markets and healthcare prices
- Eliminate 9 out of 18 ministries
- End incentives for industrial development in disadvantaged areas
- Fire 5,000 government employees
- No restrictions on foreign land purchases
- Legalize crypto for contract payments

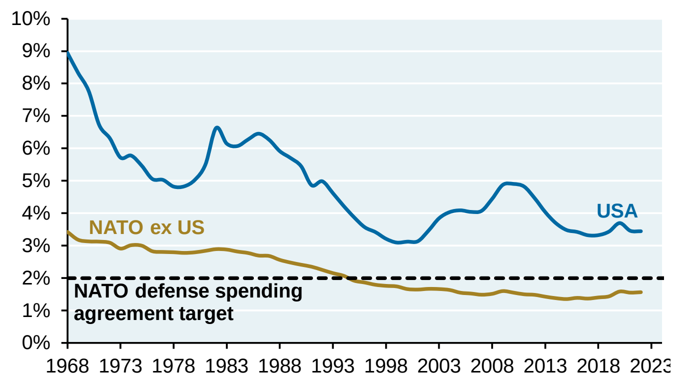
[7] Russian invasion of Ukraine drags on with no ceasefire in 2024. Despite Russia reportedly losing 87% of its prewar active troops (315,000 killed or injured) and two-thirds of its tanks[39], there is no ceasefire and the war drags on for another year. Some US financial support for Ukraine is maintained after Democrats agree with the GOP to provide greater funding for US border security given surging cross-border crossings coinciding with an election year. Russia's prosecution of the war finally pushes Europe to spend 2% of GDP on defense, which is what Europe agreed to in the 2006 NATO agreement but hasn't been adhering to. According to our calculations, Europe has underspent on its own defense by $2.0 trillion since 1983, relying on the US to spend instead[40].

Total US Customs and Border Protection Enforcement Actions, Number of actions, millions



Source: US CBP, JPMAM, FY 2023 (October 2022 - September 2023)

US vs European defense spending
Percent of GDP



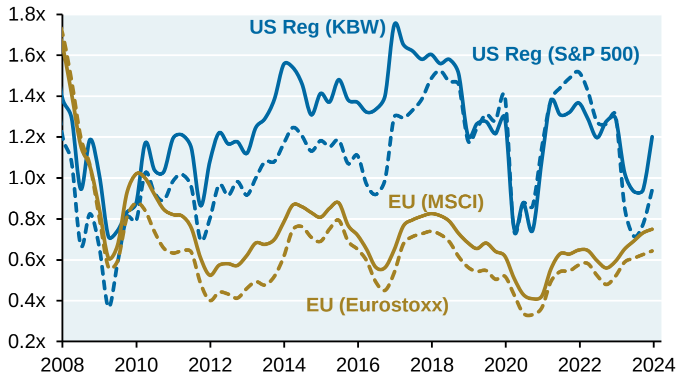
Source: World Bank, SIPRI, Federal Reserve, JPMAM, 2022

[39] NYT and WSJ, December 12, based on a declassified US intelligence report given to Congress

[40] Eye on the Market, November 14, 2023; see page 5

[8] Despite storm clouds over US regional banks, their stocks will do well in 2024 with stable or rising price to book values. When Silicon Valley Bank failed, US regional bank valuations temporarily converged with Europe. Unprecedented rescues by the Fed and FDIC then slowed deposit outflows. Despite challenges related to underwater Treasuries, commercial real estate writedowns, competition for deposits and slowing loan growth, US regional bank price to book ratios remain at 1.0x or higher in 2024 and widen the gap vs Europe.

US regional banks vs European banks
Price to book ratio



Source: Bloomberg, JPMAM, December 2023

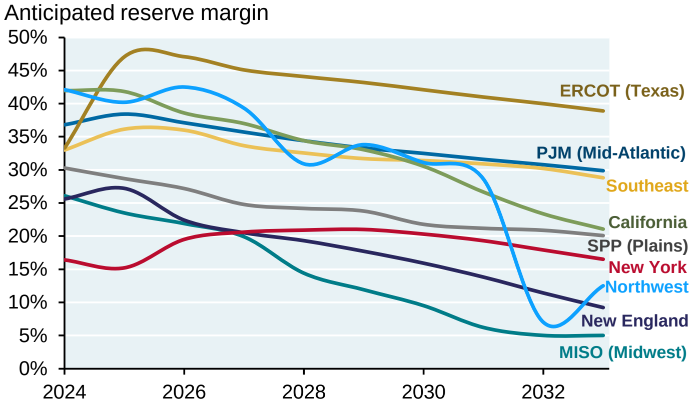
Regional bank rescue: in some ways, unprecedented

Fed: for the first time, banks can post collateral at the Fed and borrow 100% of par value even if the security is worth less (Bank Term Funding Program)

FDIC: SVB depositors were bailed out despite it being a venture capital piggy bank. SVB deposits rose and fell with the IPO calendar; only 3% of its deposits were fully insured; it offered venture loans in exchange for deposit exclusivity; its average account balance was > $1 mm; its average uninsured account balance was > $4 mm; and its top ten depositors had $13 billion in uninsured deposits, **all of whom were bailed out despite the long history of losses imposed on uninsured depositors in FDIC resolutions**

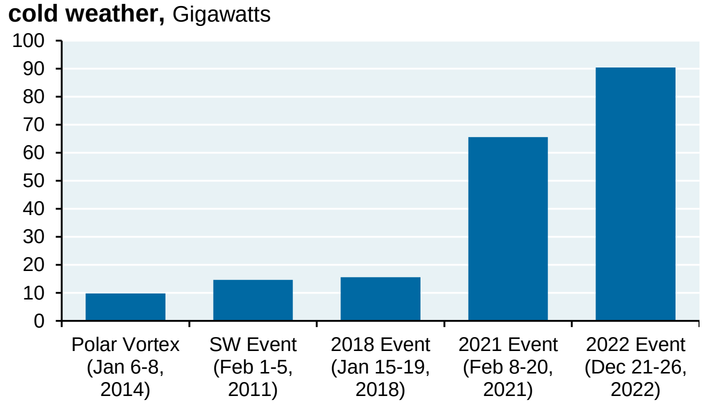
[9] Due to retirement of dispatchable power generation (nuclear, coal, gas) and underinvestment in pipelines, gas storage and winterization, major US cities will face electricity outages and/or natural gas outages (which are much worse). The North American Electricity Reliability Association just released its 2023 risk assessment. The region NERC highlights as having the greatest risk of power outages, even in normal peak conditions: Midwest MISO, which stretches from Minnesota down to Louisiana. Outage risk in more extreme weather conditions is cited for New York, New England and the entire Western US. NERC cites peak loads rising at "an alarming rate" due to electrification, coinciding with increasingly intermittent new sources of generation (wind and solar power) and 80-110 GW of nuclear and fossil fuel generation retirements by 2033 which is ~7% of current installed capacity. Reserve margins indicate the buffer each region has to a spike in summer demand; the chart on the left summarizes NERC's assessment of future reserve margins. Note as well how unplanned outages have been rising during cold weather storms.

Generation capacity buffer during peak summer demand
Anticipated reserve margin



Source: *"2023 Long-Term Reliability Assessment"*, NERC, December 2023

Peak unavailable national electricity generation due to cold weather, Gigawatts



Source: *"Winter Storm Elliott Report"*, FERC, NERC, October 2023

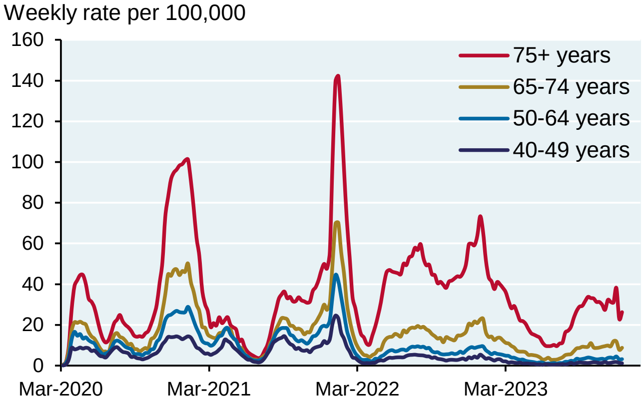
If you think power outages are bad, natural gas outages would be far worse. During winter storm Elliott in December 2022, cold weather resulted in failure of gas production wellheads, pipelines and distribution. Dry gas production in the lower 48 states fell by 16%, with Marcellus and Utica production falling by 23%-54%. On December 25, interstate natural gas pipelines serving Con Edison experienced drops in pressure due to production losses and operational issues. Con Ed restored pressure from a backup LNG system until systemwide pressure was normalized, and ended up narrowly avoiding a gas system outage.

During a gas outage, local gas distribution companies would need to go **building-by-building** and shut off gas valves to ensure that residual gas does not seep through units whose pilot lights are out. During the system restoration process, the main distribution system would be purged; then workers would have to insure at each point of service that heating and cooking gas lines are safely purged and operational before restoring service and relighting pilot lights. Any homes or buildings with safety issues would need remediation before any gas restoration. Even losing service to 130,000 customers would be considered a major outage and could have taken five to seven weeks (!!) to restore. A large outage could also cause extensive property damage due to burst water pipes within homes and buildings, since water expands when it freezes.

[10] Researchers will complete work on an inhaled COVID vaccine that will sharply reduce transmission. The COVID wave this winter is much milder than the prior three, particularly for those below 75; most of the rise in hospitalizations is attributable to the over 75 cohort. There's also evidence that the monovalent XBB.1.5 booster works: the Netherlands reports ~70% XBB vaccine efficacy rates with respect to risk of hospitalization and ICU admission even for older people. However, the XBB booster doesn't do much to prevent transmission; at best it might suppress infection risk by 30%-40% in the first month and then its efficacy vs infection declines.

What's needed: an inhaled vaccine to produce mucosal immunity, block infection and reduce transmission. Several inhaled and tracheally administered proteins are under development and have already elicited robust immune and T cell responses against COVID in non-human primates. I suspect one will be approved in 2024.

US COVID hospitalizations by age
Weekly rate per 100,000



Source: CDC, JPMAM, December 16, 2023

Happy New Year. Given the election, I think it's going to be a long one.

Michael Cembalest
JP Morgan Asset Management

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