Cicadian Rhythms: Fading prospects of a US disinflationary boom; Japan's structural reform/M&A emergence; Eye on the Market mailbag on Tesla/Musk, GLPs, housing, China, Truth Social and Meta

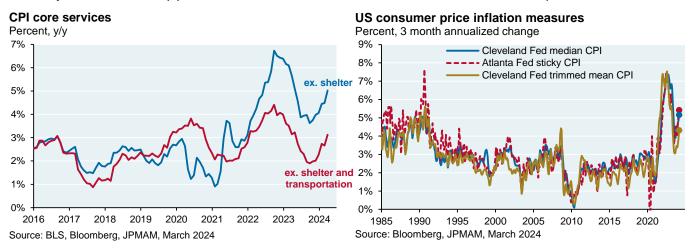
The co-emergence this year of two batches of cicadas (Broods XIII and XIX) is something that happens only once every 221 years. In a similar vein, markets were pricing in a US disinflationary boom earlier this year (rising growth and falling inflation), which is a very rare event as well. One occurred in 1982 and another in 1991 but other than that, they're very infrequent and now its prospects are fading. Resilient US growth is still evident; many of the economic and profit leading indicators we track have improved since last August.

#	Category	Leading indicator	Advanced by…	Predicts a change in	Pulse 4/2024	Pulse 8/2023
1	Bankruptcy	Banks tightening C&I loans	6 months	Corporate bankruptcy filings		
2	Capex	Banks tightening C&I loans	9 months	Non-residential capex		
3	Capex	Earnings	3 months	Non-residential capex		
4	Construction	Leading economic indicators	18 months	Construction activity		
5	Economy	New orders less inventories in ISM survey	3 months	ISM manufacturing index		
6	Economy	Interest rates and ISM prices paid	12 months	ISM manufacturing index		
7	Economy	Interest rates, input prices, and US dollar	12 months	Global PMI manufacturing index		
8	Employment	Single family home sales	18 months	US unemployment rate		
9	Lending	Respondents reporting tighter credit standards	9 months	Bank lending		
10	Production	Real inventory-to-sales ratio	4 months	US manufacturing production		
11	Profits	Fed funds, corp. tax rate, unemployment & productivity	8 months	Economy-wide profits		
12	Profits	Economic activity, business confidence, supplier deliveries, wages, inflation, cyclical GDP	12 months	S&P profits		
13	Profits	US\$, PMI, cons. confidence, housing, spreads	12 months	S&P profits		
14	Sales	NFIB pricing survey	4 months	S&P sales growth		
15	Sales	Producer prices finished goods	4 months	S&P sales growth		
16	Wages	Avg. growth in wages advertised in job postings	4 months	Corporate wage expense		
17	Wages	Rehiring rate proxy	12 months	Corporate wage expense		
18	Equities	China credit impulse	9 months	US high beta vs low beta stocks		

Source: Bloomberg, Morgan Stanley, Piper Sandler, JPMAM, April 2024. Weakness projection colors: red = substantial, orange = modest, yellow = slight

But: CPI measures have experienced a U-turn since January, driving 10-year Treasury rates back up to ~4.7%.

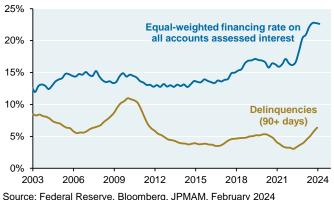
That's the highest level since the brief 5% peak last October; before that, the summer of 2007 was the last time 10-year Treasury rates were 5%. Most of the March CPI increase was due to non-discretionary items rising at 6% such as medical care, child care, car insurance, wireless fees and items related to the energy transition¹; discretionary categories rose just 0.6%. The March PPI report was also benign and most labor market indicators still point to slowing wage pressures (see link above for online inflation monitor), but futures markets now assume just 1-2 Fed cuts by year end; even this is at risk based on the next few inflation reports.

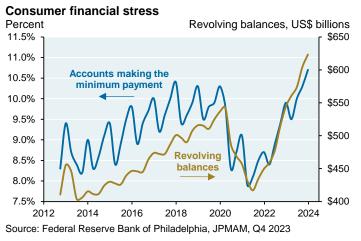


¹ **The energy transition and inflation**. Of all 47 categories of core goods in the US PPI report, the highest increase since 2019: transformer equipment at 71%, even though electrification of winter heating and transportation has barely begun. Since 2019, electricity prices increased faster than food prices, commodity prices and core CPI.

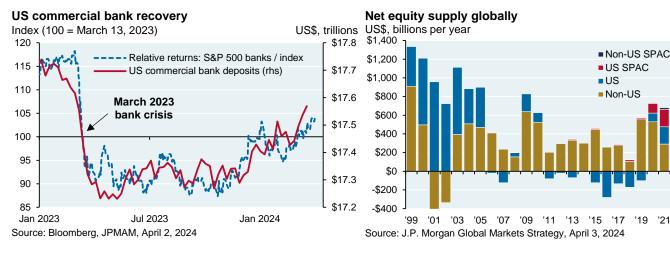
While markets still expect the Fed to ease, there are residual impacts of rising rates affecting consumers. When rates rise, existing obligations like mortgages and fixed rate auto loans are not immediately impacted. But new credit card balances *are* impacted by higher rates, which may explain why delinquencies for credit cards are rising faster than for mortgages or prime auto loans. The first chart shows credit card financing rates alongside delinquency rates. Most of the rate increase is tied to rising Prime rates, although the CFPB reports an increase in credit card spreads as well. The second chart shows rising credit card balances and a new high in the share of accounts only making minimum credit card payments. Bottom line: while many leading indicators have improved, lingering pressure on household finances are still a risk to growth.

Credit card interest rates and delinquencies Percent of credit card balances





While there's uncertainty about Fed policy rates after the inflation U-turn, other indicators are supportive and should mitigate the duration and magnitude of any equity market selloff. Last year's regional bank bailout stabilized financial system risks, as shown in the next chart. In addition, net equity supply has been tight for three years in a row. It's a strange environment; despite a recovery in risk appetite and high valuations, the new issue market is extremely tight with buybacks exceeding primary and secondary issuance. Tight supply conditions are generally more favorable for market returns, indicating more investor scrutiny on new issues.





"In-A-Cicada-Da-Vida"

'21 '23

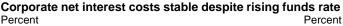
Other good news: we also see limited signs of a large profits or capital spending decline that often coincides with recessions. We highlighted the second and third charts last year as we formulated our "Pillow Talk" soft landing thesis. While an inverted yield curve has a pattern of predicting recessions, prior inversions were also accompanied by deeply negative corporate cash flow and rising corporate interest costs. This time, the story is different: the corporate sector is in surplus and corporate interest expense is still stable.

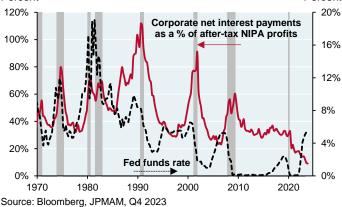
Wrapping up: fading prospects of a disinflationary boom are a risk to P/E multiples, particularly for tech stocks whose multiples are close to 2020/2021 highs. And as shown in the fourth chart, investors may hold onto more excess cash since the ratio of cash yields to S&P dividend yields is at its highest level on record other than a spike in 2000. While US equities may experience a correction similar to the one last summer, 2024 still looks like a year of high single-digit returns. That is until the election, after which markets might have to contend with the following risks highlighted by Don Schneider at Piper Sandler Research:

- Trump victory, unified gov't: 60% tariff on Chinese goods (up from 20%-25% currently); repeal of corporate AMT and buyback tax combined with increased defense spending and full extension of TCJA tax cuts leads to even wider budget deficit; militarized mass deportations impact labor force growth and wage inflation
- **Biden victory, unified gov't**: ~\$2 trillion in tax increases (half corporate, half high net worth) to support \$2 trillion safety net expansion; risk of wider deficit as tax collections undershoot estimates while spending exceeds them (i.e. the pattern with the energy bill², ironically named "the Inflation Reduction Act")

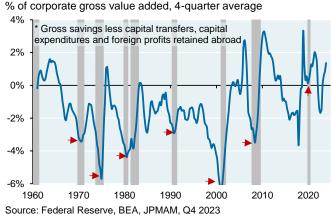
US economy-wide profits and S&P 500 operating profits Index (100 = January 1995), log scale



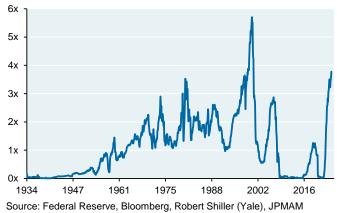




US corporate sector financial balance



Ratio of cash yields to S&P 500 dividend yields



² See "Why the Cost of Biden's Climate Law Keeps Going Up", NYT, February 8, 2024, and "The Cost of Biden's Climate Tax Credits is Soaring", WSJ, February 10, 2024

Eye on the Market mailbag: Tesla/Musk, GLPs, housing, China, Truth Social and Meta's open-source models

Erica G. from a California pension plan asked if there's any news regarding weight loss drugs (**GLPs**) tested for conditions other than diabetes and obesity. As explained in the 2024 Outlook, one key valuation premise for GLP stocks is their eventual use for other conditions. One neutral, one positive with more studies pending:

- GLPs appear to work via brain pathways to reduce inflammation. Some experts speculate that GLPs could be used to treat conditions that involve inflammation such as Alzheimer's and Parkinson's. While a study of early Parkinson's disease found no degradation of motor symptoms for patients taking GLPs³, the placebo group barely experienced worsening conditions either (only 3%), so no major breakthroughs here
- More than half of all patients with heart failure experience "preserved pump function" (HFpEF). Previous studies show that GLPs can reduce HFpEF risk but excluded participants with Type 2 diabetes. A recent study of patients with Type 2 diabetes found that GLPs led to larger reductions in HFpEF symptoms than the placebo group after 1 year⁴, so that's a positive finding

Kyle P from Mammoth Lakes asks about **Tesla's** pivot to robotaxis. Musk stated that Tesla will be going "balls to the wall for autonomy", and its Q1 report showed a 7-fold increase in GPU training capacity. Some thoughts:

- San Francisco and Austin are the only major cities where driverless taxis are broadly road-tested with paying customers, and we see no evidence that Tesla has engaged with regulators on this. Also: while Tesla's Level 2 features (steering, lane following and break/acceleration support) reduce accident rates⁵, Level 2 is a long way from Level 5 full self-driving capabilities. Mercedes is actually the first manufacturer to release cars in the US with Level 3 capabilities (self-driving in very limited conditions, in California and Nevada only)
- There has been no recovery in LiDAR stocks (which we would expect if we were on the cusp of greater autonomous taxi adoption), and even Tesla's most ardent fanboys at Morgan Stanley are dubious, urging investor caution on commercialization timelines for a fully autonomous Tesla taxi service⁶
- The Federal government currently limits the number of autonomous vehicles (AVs) in the US at 2,500. The NHTSA proposed increasing this cap and intended to proceed with "AV STEP" rulemaking last fall but missed its deadline; I can guess as to why. Last year, an AV industry lobbying group wrote to Transportation Secretary Buttigieg requesting support for AV development to avoid falling behind China. But a trust gap may exist after California regulators accused GM of withholding video footage of its Cruise driverless vehicle striking a passenger, and more importantly, 26 transportation unions collectively wrote to Buttigieg urging caution given "grave safety concerns" about AVs and risks to public safety (details below)

LiDAR stock basket

Index (100 = December 2019)



Transportation Unions note to DoT, November 2023

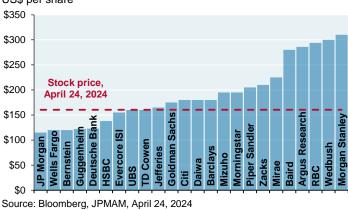
- AVs are unsafe and untenable in current form
- Police/fire have to evade rogue AVs in restricted areas
- Transport/sanitation workers cut off/trapped by AVs
- AV reporting rules should include near-crashes involving AVs travelling into construction sites, bike lanes and pedestrian crossings; and malfunctions, degradations, remote human interventions, clustering and connectivity incidents as well (i.e., not just crashes)
- Local jurisdictions need more input into AV deployment
- "Fail fast, fail hard" approach taken by many technology companies is anathema to public safety
 Signed by 26 unions with more than 5 million members
 (UAW, fire, aviation, rail, marine, sheet metal, Teamsters etc)

- ⁴ "Semaglutide in Patients with Obesity-Related Heart Failure and Type 2 Diabetes" NEJM, April 6, 2024
- ⁵ 2023 Eye on the Market energy paper, page 45
- ⁶ "Tesla plans to lay off more than 10% of workforce", WSJ, April 15, 2024, citing Adam Jonas from MS

³ "Trial of Lixisenatide in Early Parkinson's Disease" NEJM, Meissner et al, April 3, 2024

In its Q1 earnings release yesterday (which entailed misses vs consensus on sales, EPS and units sold), Tesla announced accelerated development of the new Model 2. I'm not surprised at the revised guidance given the lackluster market reception to the robotaxi announcement, and since its Cybertruck has experienced accelerator jamming which Inside EVs describes as turning the truck into a 6,800 pound land missile⁷. Model 2 production will reportedly benefit from gigacasting that casts large parts of the car's body in one piece (reducing the number of metal pieces from 171 to 2 and requiring 1,600 fewer welds). That would be an impressive feat and could sharply reduce unit costs of production, which will be critical for a vehicle expected to have a ~\$25k price tag. Let's see how quickly Tesla can accelerate development; as of last week, some analysts weren't expecting 500k+ Model 2 units until 2026/2027. See below for a sampling of Tesla analyst share price forecasts.

Select Tesla analyst price targets as of April 24, 2024 US\$ per share



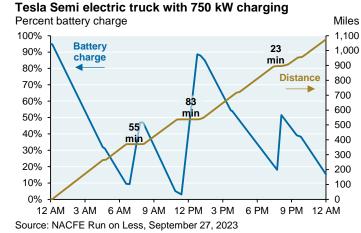
From the ARKham Asylum

To avoid distorting the chart, I had to leave off ARK's Cathie Wood whose Tesla forecast is \$2,000 per share as per an April 2024 article in Barron's. This would value the company at \$6.3 trillion (the mostly highly valued company on Earth). Wood forecasts \$130 billion in robotaxi pretax earnings by 2027 for a segment which does not exist today.

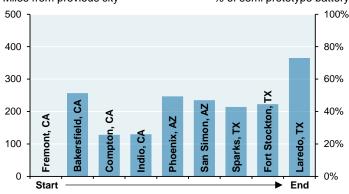
I reached out to other Arkham Asylum residents for their Tesla forecasts (Clayface, Two-Face and Doctor Phosphorous); no responses yet.

An early-stage Tesla success with less hype: its prototype Class 8 long-haul truck. It's unclear how much it will cost since it's not commercially available yet. It's also unclear if Tesla will prioritize it since its 900 kWh battery is 12x larger than its Model Y battery. That said, I'm impressed by its performance in real-world conditions during a demo event last fall. A few years ago, the dominant narrative on long haul trucking was all about hydrogen due to faster refueling times despite its terrible round-trip efficiency. Advances in charging capabilities have changed that, and the future of low carbon long haul trucking will almost certainly be electric.

As shown below, the Tesla Semi prototype traveled 1,000 miles in a single day on a route for Pepsi in California, requiring three stops for recharging⁸. This is twice the distance of a typical daily long-haul truck route and is positive regarding the future of EV trucking. Tesla may proceed with a 9-station Southwestern truck charging corridor even without Federal funding (part of which the gov't is wasting on hydrogen fueling stations).







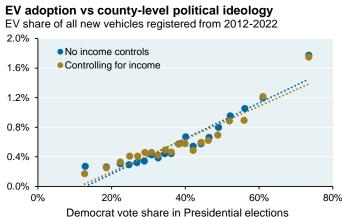
Source: Tesla, South Coast Air Quality Mgmt District, JPMAM, March 2024

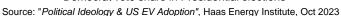
⁷ "*Tesla cybertruck's stuck accelerator pedal problem creates 6,800 pound land missile*", Inside EVs, April 15, 2024 ⁸ Other participants in the NAFCE road test included OrangeEV, Freigntliner, Ford, Volvo, Motiv and Navistar

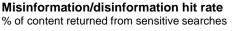
As for Tesla stock being among the worst performers this year, a WSJ article last week cited something I hadn't seen before⁹: the possible impact of Musk alienating Democratic buyers of Tesla vehicles. Strategic Vision research estimates that the proportion of Democrats buying Tesla vehicles fell by more than 60% last fall before rebounding in March. The decline coincided with a barrage of Musk tweets on a variety of topics including immigration and religion¹⁰. According to Strategic Vision, some Democratic EV buyers opted instead for a Cadillac Lyriq, Hyundai Ioniq or Mercedes EQE SUV¹¹.

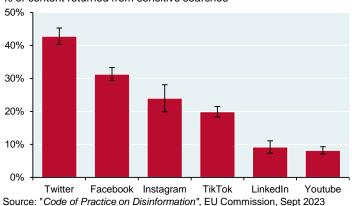
Musk has since doubled down on politics, saying in March that **"There is either a red wave this November or America is doomed**". The reliance of the EV industry on Democratic buyers was analyzed in 2023 by Lucas Davis at UC Berkeley: from 2012 to 2022, ~50% of all EVs went to the 10% most Democratic counties in the US and one-third went to the top 5%¹². The chart below illustrates the direct relationship between Democratic county vote shares and EV adoption, even after adjusting for income levels.

Musk's tweets take place alongside the evolution of Twitter into what a Foreign Policy magazine article calls a "**sewer of disinformation**"¹³, and an EU announcement that it suspects Twitter of breaching rules regarding illegal content and disinformation. The chart below appeared in the EU report and shows Twitter having the highest misinformation frequency of social media platforms it analyzed. Twitter also experienced a surge in climate denialism after Musk's acquisition¹⁴. **The big picture amounts to a series of views that appear highly inconsistent with the politics of many Tesla buyers; we will continue to monitor its potential impact on sales.**









⁹ "Elon Musk turned Democrats off when he needed them most", WSJ, April 20, 2024

¹⁰ According to news reports, **Musk tweets include**:

- promoting Pizzagate conspiracy theories
- replying to Hillary Clinton after the attack on Paul Pelosi with an article claiming the attack was the result of "a drunk fight with a male prostitute"
- replying in agreement with a tweet claiming that "Jews push dialectical hatred against whites"
- criticizing Mackenzie Bezos for giving money away, saying "super-rich ex-wives will be the downfall of civilization"
- saying that George Soros wants to "erode the very fabric of civilization" and that he "hates humanity"
- saying that his pronouns are "Prosecute/Fauci"
- comparing Canadian PM Trudeau to Hitler, clarifying that at least the latter had a budget
- accusing a British cave diver of being a "pedo guy" since he said Musk's idea of using a submarine to rescue trapped miners wouldn't work. Musk then paid a private investigator \$50k to investigate him
- ¹¹ S&P cites Tesla as having 80% market share in 2020, falling to 55% in 2023

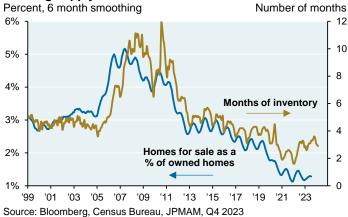
¹² "Political Ideology and US Electric Vehicle Adoption", Lucas Davis et al, UC Berkeley Haas Institute, October 2023

¹³ "Elon Musk's Twitter Is Becoming a Sewer of Disinformation", Foreign Policy, Hammond-Errey, July 15, 2023

¹⁴ Max Falkenberg and Andrea Balonchelli, City University of London, January 2023

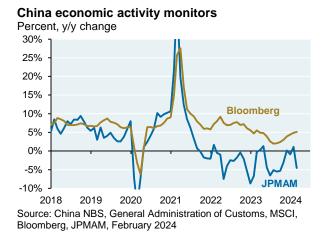
Rachel H from Brooklyn writes, "why are US **housing** prices stable despite higher interest rates?" US housing inventories are extremely tight whether measured against the pace of sales or against the housing stock. Historically, home prices usually declined only when months of inventory were above 6.0x; they are currently ~3.0x. While existing home sales have declined by ~30% from their pre-COVID pace, falling *sales* are not always accompanied by falling *prices*. Existing home sales have since risen 10%-15% despite ~7% mortgage rates.

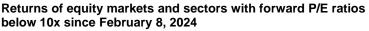
Housing supply

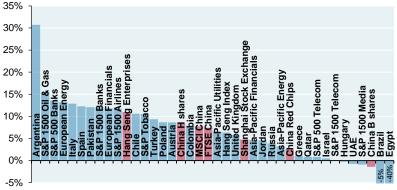


David F from Connecticut asks about **China**, wanting to know if a 10x P/E is enough of a discount to offer value on China equities and if we expect improvement in China's economy.

- Economy. Some China indicators have risen from depressed levels although our own indicator is still pretty weak¹⁵. China's real estate situation is still in bad shape with many years of unsold supply, weakening demand and falling prices. Since a lot of government spending is done by local entities relying on land sales, fiscal policy hasn't been very stimulative. Q1 GDP growth was reported at 5.3% but China is experiencing deflation, capacity utilization is falling and inventories are rising
- Markets. In the February EoTM we explained that while China equities were trading at a 10x P/E, there were a *lot* of equity markets and sectors trading at or below that level; China was not the only deep value market in town. Since February 8, more than half of these non-China deep value equity markets rose more than MSCI China. Deep value categories outperforming China include Argentina, US/European oil & gas, US airlines, Italy, Spain and US/European bank stocks





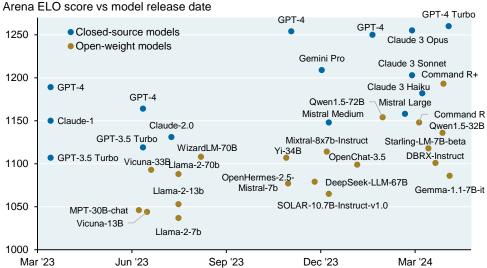


Source: Bloomberg, JPMAM, April 23, 2024

¹⁵ Variables included: exports, electricity consumption, industrial production, retail sales, corporate earnings, steel production, non-SOE fixed asset investment, residential construction starts and a credit impulse index

Max C (my oldest son) from Brooklyn writes that **Meta** will release a 400 billion parameter open-source version of Llama 3 in a few weeks/months. Max believes this could make the "buy vs build" language model decision even more compelling for companies with the ability to do the latter. He adds: "Open-source models can be fine-tuned using Llama 3 for specialized domains like finance. Some businesses may prefer the security of not having to make API calls to OpenAI. Even before the Llama 3-400B release, in just one year Meta was able to reduce Llama 3-8B's parameter count by 90% vs Llama 2-70B *and* match its performance. This can improve accessibility of high-quality models running at high speeds on affordable hardware. Training costs for the Llama 3 series is almost certainly in the billions of dollars when taking GPU cluster costs and FLOPs into account".

Meta is apparently spending all of this money for AI engagement on open-source models without an explicit revenue model. As shown, crowd-sourced LLM assessments performance such as Arena ELO measures indicate that the open-source vs closed source performance gap has narrowed. Some research cites a lag of just 6-10 months for open-source models to catch up, compared to years when GPT was first launched.



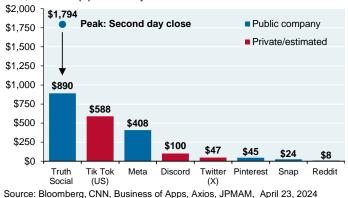
Closed-source vs open-weight model performance

Source: "Chatbot Arena: An Open Platform for Evaluating LLMs", Chiang et al, JPMAM, April 2024

Last mailbag entry for today: Alex W from MSNBC asked me what I think of **Truth Social's** valuation. My response:

Social media market cap per active user

US\$, Market cap per monthly active users

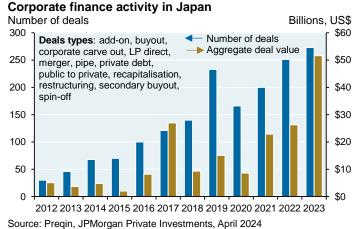


Another cicadian rhythm: the surprising emergence of Japanese structural reforms and M&A activity

The Nikkei 225 Index recently rose to a level last seen in 1989. In other words, it took 34.5 years (twice the underground lifecycle of cicada Brood XIII) for Japanese equities to reach their prior peak; I'm glad I lasted long enough at JP Morgan to witness it. That compares to 25 years for the S&P 500 to reach its prior peak after 1929, and 15 years for the NASDAQ to reach its prior peak after 1999. From 1991 to 2022, the annual return on the Nikkei 225 was just 1.6%; you would have made more in US Treasury bills which generated a return of 2.5%. Nikkei returns were anemic compared to annual returns of 9.6% on US equities; after compounding, cumulative US equity returns were 68x higher than the Nikkei over this period.

Despite the dismal history for global equity investors in Japan, I started writing about its potential merits last year given a rebirth in Japanese M&A and corporate governance. Before 2022, I cannot remember meeting anyone who said "Hi. I work in private equity focused on unlocking shareholder value in Japanese companies. Nice to meet you". That's changing as shown in the first two charts below. As per the third chart, Japan's free cash flow over the last two decades was not that different from the US; low valuations on Japanese equities were more a reflection of how cash was mostly accumulated rather than being used to enhance shareholder value. That's why Japanese M&A is such an important signal for global equity investors.

Have portfolio investors benefitted from re-embracing Japan? Nothing has outperformed US equities in recent years, but over the last 18 months Japan outperformed a combination of Europe and Emerging Markets even after accounting for the decline in the Yen, which is at its lowest level since the early 1990's. To be clear, Japan P/Es are not cheap anymore; they have risen from 12.2x in September 2022 to 17.0x.



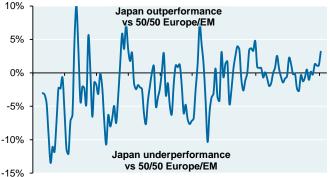
Free cash flow yield



Japanese deal making accelerates







1988 1992 1996 2000 2004 2008 2012 2016 2020 2024 Source: Bloomberg, JPMAM, Q1 2024

Some positive governance changes and other developments I mentioned last year.

- As shown in the table, there's 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 rates are -2%)
- The Tokyo Stock Exchange has threatened to delist companies trading below book value unless they enact • governance reforms. Bloomberg also reports a decline in the number of poison pills in Nikkei 225 companies from 65 in 2012 to 8 as of April 2024. Over 50 activist funds are prodding the Japanese corporate sector with governance proposals, and 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. Japan has the highest share of age 65+ retirees in the world at 28%, creating incentives for the Japanese government to increase returns on retiree equity portfolios

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%			

• • •

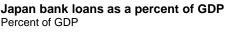
Japan finally exits deflation Japan CPI ex fresh food and energy, % y/y



Source: Bridgew ater, JPMAM, December 2023

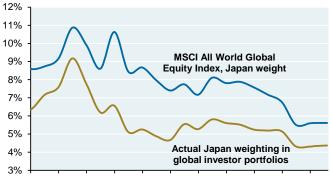
Source: Bloomberg, JPMAM, February 2024

To be clear, Japan is still a slow-growing economy with demographic and competitive pressures. Growth in 2023 was still dominated by exports rather than by domestic consumption, its industrial production growth is not much different than Europe, and China has 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. And rising rates combined with a falling Yen could be a big problem for the country with the world's highest debt/GDP ratio. But an exit from years of deflation is a powerful force; Japanese aggregate demand is rising, as seen in the rise in loan demand relative to GDP. While Japanese equities are not as cheap as they were last year, and while global investor underweights to Japan have also narrowed (second chart), we believe that Japan still offers attractive return prospects for global investors compared to Europe and EM.





Global investor underweight to Japanese stocks Percent, portfolio weight



2003 2005 2007 2009 2011 2013 2015 2017 2019 2021 2023 Source: JP Morgan Securities Japan, JPMAM, Q1 2024

2024 Outlook / 2024 energy paper / US inflation monitor / US Federal debt monitor

IMPORTANT INFORMATION

KEY RISKS

This material is for information purposes only, and may inform you of certain products and services offered by private banking businesses, part of JPMorgan Chase & Co. ("JPM"). Products and services described, as well as associated fees, charges and interest rates, are subject to change in accordance with the applicable account agreements and may differ among geographic locations. Not all products and services are offered at all locations. If you are a person with a disability and need additional support accessing this material, please contact your J.P. Morgan team or email us at accessibility.support@jpmorgan.com for assistance. Please read all Important Information.

GENERAL RISKS & CONSIDERATIONS

Any views, strategies or products discussed in this material may not be appropriate for all individuals and are subject to risks. **Investors may get back less than they invested, and past performance is not a reliable indicator of future results**. Asset allocation/diversification does not guarantee a profit or protect against loss. Nothing in this material should be relied upon in isolation for the purpose of making an investment decision. You are urged to consider carefully whether the services, products, asset classes (e.g. equities, fixed income, alternative investments, commodities, etc.) or strategies discussed are suitable to your needs. You must also consider the objectives, risks, charges, and expenses associated with an investment service, product or strategy prior to making an investment decision. For this and more complete information, including discussion of your goals/situation, contact your J.P. Morgan team. **NON-RELIANCE**

Certain information contained in this material is believed to be reliable; however, JPM does not represent or warrant its accuracy, reliability or completeness, or accept any liability for any loss or damage (whether direct or indirect) arising out of the use of all or any part of this material. No representation or warranty should be made with regard to any computations, graphs, tables, diagrams or commentary in this material, which are provided for illustration/reference purposes only. The views, opinions, estimates and strategies expressed in this material constitute our judgment based on current market conditions and are subject to change without notice. JPM assumes no duty to update any information in this material in the event that such information changes. Views, opinions, estimates and strategies expressed herein may differ from those expressed by other areas of JPM, views expressed for other purposes or in other contexts, **and this material should not be regarded as a research report**. Any projected results and risks are based solely on hypothetical examples cited, and actual results and risks will vary depending on specific circumstances. Forward-looking statements should not be considered as guarantees or predictions of future events.

Nothing in this document shall be construed as giving rise to any duty of care owed to, or advisory relationship with, you or any third party. Nothing in this document shall be regarded as an offer, solicitation, recommendation or advice (whether financial, accounting, legal, tax or other) given by J.P. Morgan and/or its officers or employees, irrespective of whether or not such communication was given at your request. J.P. Morgan and its affiliates and employees do not provide tax, legal or accounting advice. You should consult your own tax, legal and accounting advisors before engaging in any financial transactions. <u>YOUR INVESTMENTS AND POTENTIAL CONFLICTS OF INTEREST</u>

Conflicts of interest will arise whenever JPMorgan Chase Bank, N.A. or any of its affiliates (together, "J.P. Morgan") have an actual or perceived economic or other incentive in its management of our clients' portfolios to act in a way that benefits J.P. Morgan. Conflicts will result, for example (to the extent the following activities are permitted in your account): (1) when J.P. Morgan invests in an investment product, such as a mutual fund, structured product, separately managed account or hedge fund issued or managed by JPMorgan Chase Bank, N.A. or an affiliate, such as J.P. Morgan Investment Management Inc.; (2) when a J.P. Morgan entity obtains services, including trade execution and trade clearing, from an affiliate; (3) when J.P. Morgan receives payment as a result of purchasing an investment product for a client's account; or (4) when J.P. Morgan receives payment for providing services (including shareholder servicing, recordkeeping or custody) with respect to investment products purchased for a client's portfolio. Other conflicts will result because of relationships that J.P. Morgan has with other clients or when J.P. Morgan acts for its own account.

Investment strategies are selected from both J.P. Morgan and third-party asset managers and are subject to a review process by our manager research teams. From this pool of strategies, our portfolio construction teams select those strategies we believe fit our asset allocation goals and forward-looking views in order to meet the portfolio's investment objective.

As a general matter, we prefer J.P. Morgan managed strategies. We expect the proportion of J.P. Morgan managed strategies will be high (in fact, up to 100 percent) in strategies such as, for example, cash and high-quality fixed income, subject to applicable law and any account-specific considerations.

While our internally managed strategies generally align well with our forward-looking views, and we are familiar with the investment processes as well as the risk and compliance philosophy of the firm, it is important to note that J.P. Morgan receives more overall fees when internally managed strategies are included. We offer the option of choosing to exclude J.P. Morgan managed strategies (other than cash and liquidity products) in certain portfolios.

The Six Circles Funds are U.S.-registered mutual funds managed by J.P. Morgan and sub-advised by third parties. Although considered internally managed strategies, JPMC does not retain a fee for fund management or other fund services.

LEGAL ENTITY, BRAND & REGULATORY INFORMATION

In the United States, bank deposit accounts and related services, such as checking, savings and bank lending, are offered by JPMorgan Chase Bank, N.A. Member FDIC.

JPMorgan Chase Bank, N.A. and its affiliates (collectively "JPMCB") offer investment products, which may include bank managed investment accounts and custody, as part of its trust and fiduciary services. Other investment products and services, such as brokerage and advisory accounts, are offered through J.P. Morgan Securities LLC ("JPMS"), a member of FINRA and SIPC. Insurance products are made available through Chase Insurance Agency, Inc. (CIA), a licensed insurance agency, doing business as Chase Insurance Agency Services, Inc. in Florida. JPMCB, JPMS and CIA are affiliated companies under the common control of JPM. Products not available in all states.

In Germany, this material is issued by J.P. Morgan SE, with its registered office at Taunustor 1 (TaunusTurm), 60310 Frankfurt am Main, Germany, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB). In Luxembourg, this material is issued by J.P. Morgan SE – Luxembourg Branch, with registered office at European Bank and Business Centre, 6 route de Treves, L-2633, Senningerberg, Luxembourg, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Luxembourg Branch is also supervised by the Commission de Surveillance du Secteur Financier (CSSF); registered under R.C.S Luxembourg B255938. In the United Kingdom, this material is issued by J.P. Morgan SE – London Branch, registered office at 25 Bank Street, Canary Wharf, London E14 5JP, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – London Branch is also supervised by the Financial Conduct Authority and Prudential Regulation Authority. In Spain, this material is distributed by J.P. Morgan SE, Sucursal en España, with registered office at Paseo de la Castellana, 31, 28046 Madrid, Spain, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE, Sucursal en España is also supervised by the Spanish Securities Market Commission (CNMV); registered with Bank of Spain as a branch of J.P. Morgan SE under code 1567. In Italy, this material is distributed by J.P. Morgan SE - Milan Branch, with its registered office at Via Cordusio, n.3, Milan 20123, Italy, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Milan Branch is also supervised by Bank of Italy and the Commissione Nazionale per le Società e la Borsa (CONSOB); registered with

EYE ON THE MARKET • MICHAEL CEMBALEST • J.P. MORGAN • April 24, 2024

2024 Outlook / 2024 energy paper / US inflation monitor / US Federal debt monitor

Bank of Italy as a branch of J.P. Morgan SE under code 8076; Milan Chamber of Commerce Registered Number: REA MI 2536325. In the Netherlands, this material is distributed by J.P. Morgan SE – Amsterdam Branch, with registered office at World Trade Centre, Tower B, Strawinskylaan 1135, 1077 XX, Amsterdam, The Netherlands, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Amsterdam Branch is also supervised by De Nederlandsche Bank (DNB) and the Autoriteit Financiële Markten (AFM) in the Netherlands. Registered with the Kamer van Koophandel as a branch of J.P. Morgan SE under registration number 72610220. In Denmark, this material is distributed by J.P. Morgan SE – Copenhagen Branch, filial af J.P. Morgan SE, Tyskland, with registered office at Kalvebod Brygge 39-41, 1560 København V, Denmark, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Copenhagen Branch, filial af J.P. Morgan SE, Tyskland is also supervised by Finanstilsynet (Danish FSA) and is registered with Finanstilsynet as a branch of J.P. Morgan SE under code 29010. In Sweden, this material is distributed by J.P. Morgan SE - Stockholm Bankfilial, with registered office at Hamngatan 15, Stockholm, 11147, Sweden, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Stockholm Bankfilial is also supervised by Finansinspektionen (Swedish FSA); registered with Finansinspektionen as a branch of J.P. Morgan SE. In Belgium, this material is distributed by J.P. Morgan SE – Brussels Branch with registered office at 35 Boulevard du Régent, 1000, Brussels, Belgium, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE Brussels Branch is also supervised by the National Bank of Belgium (NBB) and the Financial Services and Markets Authority (FSMA) in Belgium; registered with the NBB under registration number 0715.622.844. In Greece, this material is distributed by J.P. Morgan SE – Athens Branch, with its registered office at 3 Haritos Street, Athens, 10675, Greece, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Athens Branch is also supervised by Bank of Greece; registered with Bank of Greece as a branch of J.P. Morgan SE under code 124; Athens Chamber of Commerce Registered Number 158683760001; VAT Number 99676577. In France, this material is distributed by J.P. Morgan SE – Paris Branch, with its registered office at 14, Place Vendôme 75001 Paris, France, authorized by the Bundesanstaltfür Finanzdienstleistungsaufsicht(BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB) under code 842 422 972; J.P. Morgan SE – Paris Branch is also supervised by the French banking authorities the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and the Autorité des Marchés Financiers (AMF). In Switzerland, this material is distributed by J.P. Morgan (Suisse) SA, with registered address at rue du Rhône, 35, 1204, Geneva, Switzerland, which is authorised and supervised by the Swiss Financial Market Supervisory Authority (FINMA) as a bank and a securities dealer in Switzerland.

This communication is an advertisement for the purposes of the Markets in Financial Instruments Directive (MIFID II) and the Swiss Financial Services Act (FINSA). Investors should not subscribe for or purchase any financial instruments referred to in this advertisement except on the basis of information contained in any applicable legal documentation, which is or shall be made available in the relevant jurisdictions (as required).

In Hong Kong, this material is distributed by JPMCB, Hong Kong branch. JPMCB, Hong Kong branch is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission of Hong Kong. In Hong Kong, we will cease to use your personal data for our marketing purposes without charge if you so request. In Singapore, this material is distributed by JPMCB, Singapore branch. JPMCB, Singapore branch is regulated by the Monetary Authority of Singapore. Dealing and advisory services and discretionary investment management services are provided to you by JPMCB, Hong Kong/Singapore branch (as notified to you). Banking and custody services are provided to you by JPMCB Singapore Branch. The contents of this document have not been reviewed by any regulatory authority in Hong Kong, Singapore or any other jurisdictions. You are advised to exercise caution in relation to this document. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. For materials which constitute product advertisement under the Securities and Futures Act and the Financial Advisers Act, this advertisement has not been reviewed by the Monetary Authority of Singapore. JPMorgan Chase Bank, N.A., a national banking association chartered under the laws of the United States, and as a body corporate, its shareholder's liability is limited.

With respect to countries in Latin America, the distribution of this material may be restricted in certain jurisdictions. We may offer and/or sell to you securities or other financial instruments which may not be registered under, and are not the subject of a public offering under, the securities or other financial regulatory laws of your home country. Such securities or instruments are offered and/or sold to you on a private basis only. Any communication by us to you regarding such securities or instruments, including without limitation the delivery of a prospectus, term sheet or other offering document, is not intended by us as an offer to sell or a solicitation of an offer to buy any securities or instruments in any jurisdiction in which such an offer or a solicitation is unlawful. Furthermore, such securities or instruments may be subject to certain regulatory and/or contractual restrictions on subsequent transfer by you, and you are solely responsible for ascertaining and complying with such restrictions. To the extent this content makes reference to a fund, the Fund may not be publicly offered in any Latin American country, without previous registration of such fund's securities in compliance with the laws of the corresponding jurisdiction.

JPMorgan Chase Bank, N.A. (JPMCBNA) (ABN 43 074 112 011/AFS Licence No: 238367) is regulated by the Australian Securities and Investment Commission and the Australian Prudential Regulation Authority. Material provided by JPMCBNA in Australia is to "wholesale clients" only. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001 (Cth). Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

JPMS is a registered foreign company (overseas) (ARBN 109293610) incorporated in Delaware, U.S.A. Under Australian financial services licensing requirements, carrying on a financial services business in Australia requires a financial service provider, such as J.P. Morgan Securities LLC (JPMS), to hold an Australian Financial Services Licence (AFSL), unless an exemption applies. JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (Cth) (Act) in respect of financial services it provides to you, and is regulated by the SEC, FINRA and CFTC under US laws, which differ from Australian laws. Material provided by JPMS in Australia is to "wholesale clients" only. The information provided in this material is not intended to be, and must not be, distributed or passed on, directly or indirectly, to any other class of persons in Australia. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Act. Please inform us immediately if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

This material has not been prepared specifically for Australian investors. It:

- may contain references to dollar amounts which are not Australian dollars;
- may contain financial information which is not prepared in accordance with Australian law or practices;
- may not address risks associated with investment in foreign currency denominated investments; and
- does not address Australian tax issues.

References to "J.P. Morgan" are to JPM, its subsidiaries and affiliates worldwide. "J.P. Morgan Private Bank" is the brand name for the private banking business conducted by JPM. This material is intended for your personal use and should not be circulated to or used by any other person, or duplicated for non-personal use, without our permission. If you have any questions or no longer wish to receive these communications, please contact your J.P. Morgan team.

© 2024 JPMorgan Chase & Co. All rights reserved.