

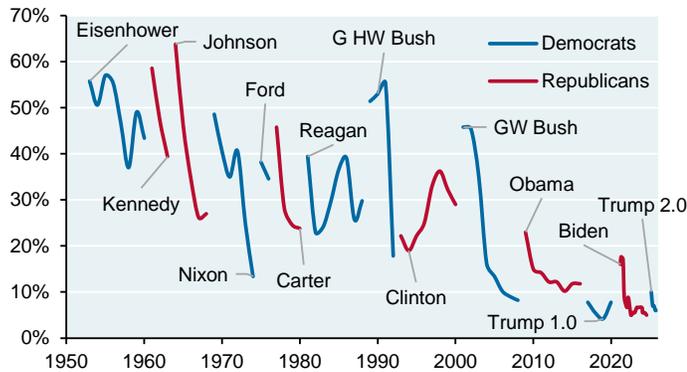


Mad Libs: just fill in the blanks

Based on the title, you might think that the subject of this piece is the rock-bottom approval levels of the Trump Administration by Liberals. Presidential approval ratings from Democratic respondents are ~6% according to Pew Research, and just 1% according to an August 2025 Gallup poll. On a related political note, there's something important to watch before the midterms: how many seats will end up being redistricted from one party to another, and will the Supreme Court rule that Section 2 of the Voting Rights Act that mandates majority-minority districts violates the 14th and 15th Amendments? We wrote about these issues [in detail](#) in the Labor Day Eye on the Market; the upshot is that 12-15 House seats could conceivably switch parties before the midterm elections, although the actual number is likely to be less than that.

Presidential approval ratings from the opposing party

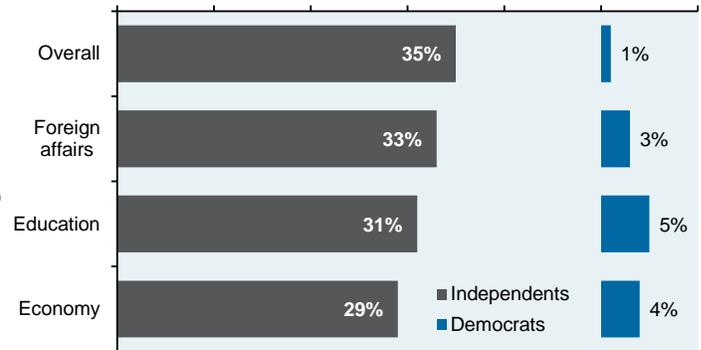
Percent who approve of president's job performance



Source: Pew Research Center, September 2025

Trump approval ratings by party and policy area

Percent who approve



Source: Gallup, August 2025

But Mad Liberals is not what this piece is about. Instead, I use a Mad Libs format (for those of you that remember them) to allow you to fill in the adjectives and nouns of your choice on topics related to tariffs, US immigration policy, Chinese rare earth export controls, Oracle debt levels, central bank gold holdings and the gender balance of psychiatric medication. I add my answers to each; one specific conclusion: I'm much more worried about labor force growth than tariffs as it relates to US growth risks.

I'm working on our biennial Alternative Investment Review (for early December), our 2026 Outlook (January 1) and the 2026 energy paper (March 2026). The 2026 Outlook will focus primarily on the following question: how indestructible is the NVIDIA-TSMC-ASML moat which stretches from chip design to EUV lithography to chip production, and which is now the foundation of the US equity market? Four risks deserve scrutiny: US power constraints, China's ability to scale the moat on its own, China/Taiwan and the profitability of AI investments relative to the capital deployed. Below: a picture of me in the newly completed 270 Park Ave working on mad libs with some guests from our April tariff webcast. The food court alone is worth the price of admission.

Michael Cembalest

JP Morgan Asset Management





China's critical mineral controls

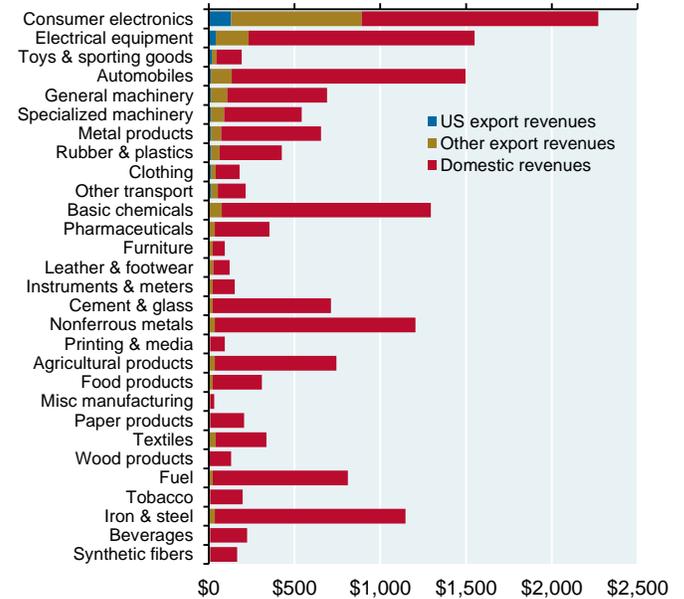
China announced new critical mineral export controls targeting the US. If these restrictions remain in place, the eventual impact on US military, industrial and renewable energy output would be _____ (adjective).

Critical minerals subject to Chinese export restrictions

	US net import reliance	Share of US imports from China	Primary uses
<i>Announced Apr 2025, updated Oct 2025</i>			
Samarium*	~80%	~70%	Nuclear reactor control rods, small motors
Gadolinium*	~80%	~70%	Neutron absorbers in nuclear reactors, MRI imaging
Terbium	~100%	~100%	Night-vision goggles, sonar, magnets, x-rays
Dysprosium*	~80%	~70%	Industrial magnets for F-35 jets, EVs, wind turbines
Lutetium*	~80%	~70%	Cancer treatment, LED lighting, petroleum refining
Scandium	100%	<50%	Aerospace, industrial metals
Yttrium	100%	93%	Jet engine coatings, high frequency radar systems, precision lasers, industrial metals, superconductors
<i>Announced Oct 2025</i>			
Holmium	~100%	~100%	Medical lasers, nuclear control rods. Magnets
Erbium	~100%	~100%	Fiber optics, nuclear neutron absorber
Thulium*	~80%	~70%	X-rays, lasers, superconductors
Ytterbium*	~80%	~70%	X-rays, fiber optics, stainless steel
Europium*	~80%	~70%	Nuclear neutron absorber
<i>Announced Apr 2025</i>			
Tungsten	>50%	27%	Ammunition, machine tools for oil rigs and jet engines
Tellurium	<25%	<5%	Metal alloys
Bismuth	89%	67%	Pharma
Indium	100%	8%	Fiber optics, laser diodes, LCD screens
Molybdenum	0%	<6%	Metal alloys

Source: CleanTechnica, USGS, MBMG, JPMAM, October 2025. * USGS does not break out information by mineral; we use the USGS rare earths as a proxy

Few Chinese industries depend on exports to the US



Source: Gerard DiPippo (Rand China Research Center), JPMAM, 2025

I wrote “**yuuuuge**”. China broadened the scope of its rare earth export controls to require licenses for any product containing more than 0.1% in value of Chinese rare earths, or manufactured using equipment containing Chinese rare earths or related magnets. The regulations include a presumption of denial for military end-uses and close scrutiny on uses related to high-end semiconductor production. The new rules expand the number of specific rare earth minerals covered and also limit the export of rare earth mining and manufacturing equipment from China. China's new rare earth rules match what the US has imposed for high end chips and semiconductor production equipment: a "foreign direct product rule" that controls not only direct exports of a targeted product, but other countries exports that embed that product. **If these controls are aggressively implemented by China, the impacts would be felt** in semiconductor, automotive, consumer electronics, aerospace, defense, robotics, medical imaging, medical equipment and telecommunications industries. One notable example: ASML lithography machines which rely on high performance rare earth magnets from China.

While bilateral negotiations may soften some of these rules and Trump’s threatened 100% retaliatory tariff, China may have more leverage than the White House appreciates. As shown above on the right, few industries in China rely heavily on exports to the US as a share of revenues. China has also now mirrored a lot of the US national security toolkit and appears more inclined to use it:

Chinese analogs to US national security tools

National security tool	China	US
Process & equipment technology controls	Rare earths/magnets	Lithography/semiconductors
Critical input controls	Rare earths and other critical minerals	Semiconductors
Extraterritorial reach	Rare earths	Foreign Direct Product Rule
List based sanctions	Unreliable entity list	Commerce/Treasury lists
Retaliation frameworks	Anti-foreign sanctions laws	IEEPA/Magnitsky Act
Security & market access reviews	Cybersecurity/antitrust/data transfer	CFIUS/ICTS/FCC
Tariff & trade retaliation	Port fees on US vessels	Section 301/232/122
Financial and investment controls on outbound investment	State guidance	Treasury rules

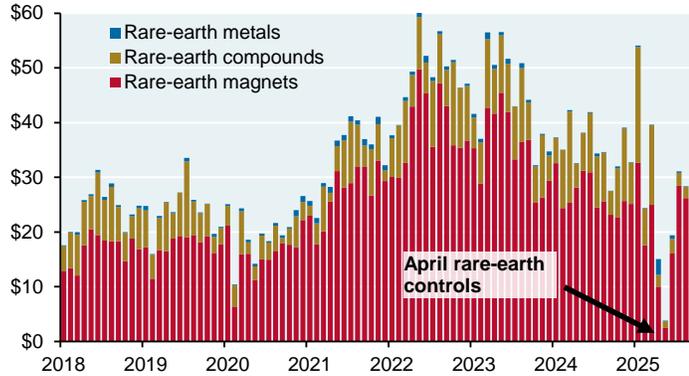
Source: Gerard DiPippo (Rand China Research Center), JPMAM, 2025



As we will discuss in the 2026 Outlook, China's latest stance on critical minerals may indicate greater progress on its own semiconductor ecosystem, and on energy security after its natural gas and crude oil arrangements with Russia. In other words, if the West responds with sanctions related to semiconductors and energy, China may be more prepared to weather the storm. One path toward de-escalation could involve China agreeing to grant licenses while keeping its regulatory framework on the books. That's more or less what happened when April export controls were put in place, after which China agreed to expedite export licenses but did not remove the licensing requirement, and export of critical minerals to the US resumed. The last chart: the performance of a critical minerals mining ETF whose largest holdings include MP Materials, Lynas, Northam Platinum, Taseko Mines, Capstone Copper, Hudbay, Aurubis, Sandfire, Boliden and Anglo American.

China rare earth exports to the US

US\$, millions



Source: General Administration of Customs of China, JPMAM, August 2025

Indicative US rare earth miners ETF

Index (200 = November 30, 2023)



Source: Bloomberg, JPMAM, October 13, 2025

On the US and critical minerals: from Hero to Zero in 20 years

- From 1950 to 1980, the US was the world's leading producer of critical minerals and was self sufficient in uranium as well. Over time, national security took a back seat to cost and the US is now almost entirely important dependent on both
- In 1980, the US Nuclear Regulatory Commission reclassified rare earth mining waste material as a nuclear hazard since these waste products can include thorium. This led to a large increase in costs and liabilities for handling rare earths in the US. At the same time, China identified rare earth elements as a strategic resource, increased production and reduced rare earth prices. Falling prices and increased US regulatory headwinds led most US mines and processing facilities to shut down. The end came in 1995 when the American magnet manufacturing company Magnequench, a spinoff from GM that produced neodymium magnets, was sold to a Chinese consortium. US regulators stipulated that magnet production stay in the US for five years; so of course exactly five years later, the Magnequench factory in Indiana was shut down with all equipment and expertise moved to China. The net result: the US went from dominance of rare earths in 1980 to almost zero presence in mining and processing in just 20 years
- To be clear, China does not monopolize the mining of most critical minerals; they mine less than 10% of the world's nickel, lithium and cobalt. But they signed contracts to secure supplies of these minerals from other countries, and process them all back in China. Similarly, the US has less than 1% of the world's nickel and cobalt, 2% of the world's rare earths and less than 1% of the world's graphite; the US will need strategic alliances to solve this problem
- With lithium, nickel and cobalt prices down 60%-85% over the last three years, Western governments may need more deals like the MP Materials guaranteed price floor to keep their domestic critical minerals businesses afloat. One example: Chinese nickel producers in Indonesia ramped up production from 500k tons to 2.5 mm tons per year, driving prices down and forcing BHP and Glencore to shut down operations. While GM has invested in MP Materials and Thacker Pass to secure critical mineral supply, Ford has not and briefly had to shut production of the Explorer early this year
- Globally it takes an average of 18 years to bring a mine from planning to production, and in the US it takes closer to 29 years given all the overlapping permits required

Sources include the Critical Minerals Security Program at the Center for Strategic and International Studies, and "China and Rare Earth Metals, the US Self-Inflicted Challenge", Stratechery, October 13, 2025

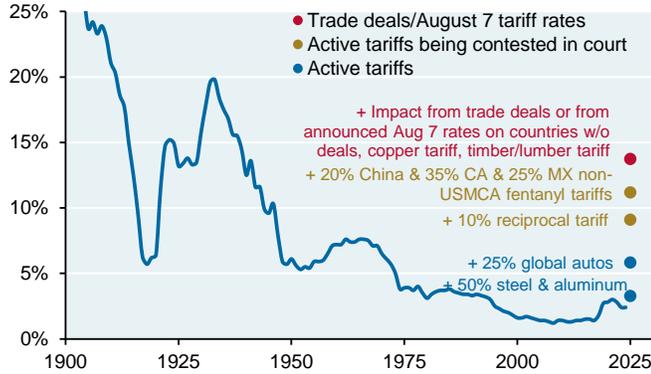


Tariffs and US economic growth

Our latest chart on the evolution of US tariff rates appears on the left. The impact of these tariffs on US growth will be _____ (adjective).

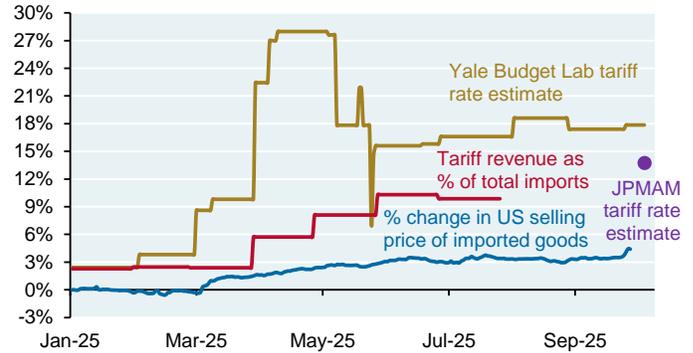
Average tariff rate on all US imports

Assuming 20% US domestic and 20% foreign substitution from China



Source: Tax Foundation, USITC, White House, JPMAM, 2025

US effective tariff rates, tariff revenues and imported goods selling prices, Percent



Source: Digital Data Design Institute Pricing Lab, Yale Budget Lab, Bipartisan Policy Center, JPMAM, October 2025

I put in “manageable”. That’s not because foreigners are paying for tariffs; US import prices have actually risen this year, so that rationale is fiction. The chart on the right is the better explanation:

- The Yale Budget Lab publishes estimates of how effective tariff rates have evolved. These estimates are difficult to make since you have to interpret rules on thousands of country-import combinations for which rules keep changing regarding tariff rates, exemptions, special treatment and the US-Mexico-Canada Trade Agreement¹. Furthermore, some analysts assume some domestic substitution and substitution away from China (which is already happening) while others do not. While Yale’s latest estimate is 18%, ours is 14%
- Some US importers “misclassify” goods by registering them under more advantageous import codes, which is impossible to model since it’s essentially tax avoidance. That might partially explain why as of August, actual tariff receipts tracked by the Bipartisan Policy Center (the red line in the chart on the right) were running 5%-6% below the Yale figure
- Lastly, many consumer imports are marked up by over 100%, so the consequential price increase seen by consumers would be lower. That might explain the blue line in the chart on the right: the rise in the retail price of imported goods is only 5% so far, as estimated by the Digital Data Design Institute Pricing Lab

Many businesses may still be repricing their goods and services in the wake of tariffs, so the retail price of imported goods may keep rising. But I think that the ultimate impact will be manageable.

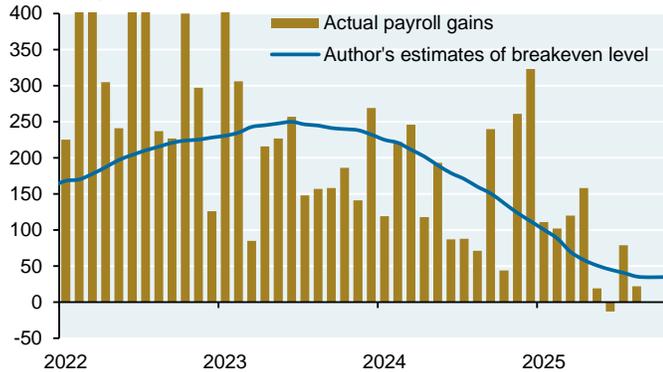
¹ Tariff rates were so low last year that some US firms importing goods from Canada and Mexico did not bother to register them as MCA-compliant. Now that tariff rates are higher, one needs to estimate the degree of such imports that will be registered under the MCA.



Immigration and labor force growth

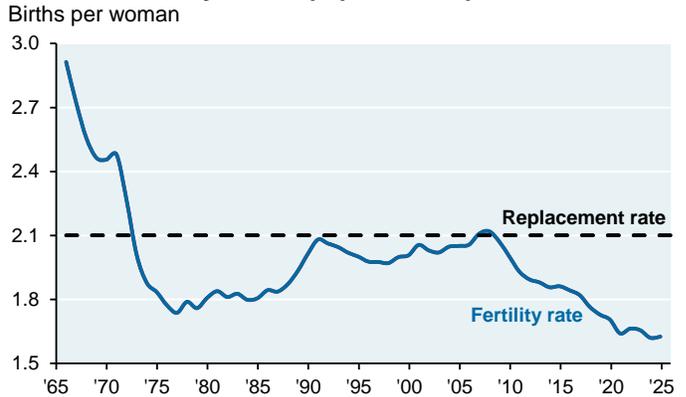
The bigger risk as it relates to US economic growth is not tariffs, but _____ (noun).

Estimates of the breakeven level of payroll gains vs actual payroll gains, Thousands, monthly



Source: Dallas Fed, October 2025

US annual fertility rate vs population replacement rate



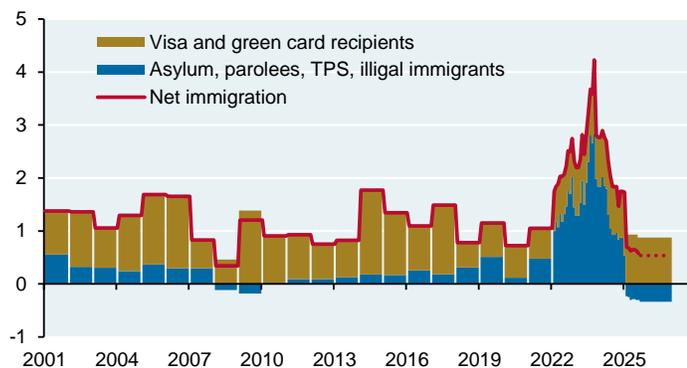
Source: National Center for Health Statistics, Axios, JPMAM, 2024

I put **“immigration policy”** given the decline in the estimated breakeven level of labor force growth. The chart above on the left from the Dallas Fed shows the degree of payroll growth that results in a balanced labor market (i.e., anything above that level would result in wage inflation). The report² found that half of the decline in the break-even number is explained by the slowdown in population growth and the other half by the slowdown in the labor force participation rate.

The chart on the right shows US birth rate vs the population replacement rate, and the chart below shows the latest estimate of net immigration after taking account of changes in asylum seekers, parolees, illegal entrants and temporary protected status persons³. Net immigration isn't zero, but looks to be declining to roughly half the rate seen from 2001 to 2022. Bottom line: US growth will eventually need either (a) more workers, (b) a rising labor force participation rate or (c) a substantial positive productivity shock. While many forecasts for future growth show much more reliance on productivity than on labor supply, the jury is out on the magnitude of the former.

US net immigration

Millions of people, annualized



Source: Goldman Sachs, DHS, CBP, ICE, August 2025

² *“Break-even employment declined after immigration changes”*, A. Cheremukhin, Dallas Fed, October 9, 2025

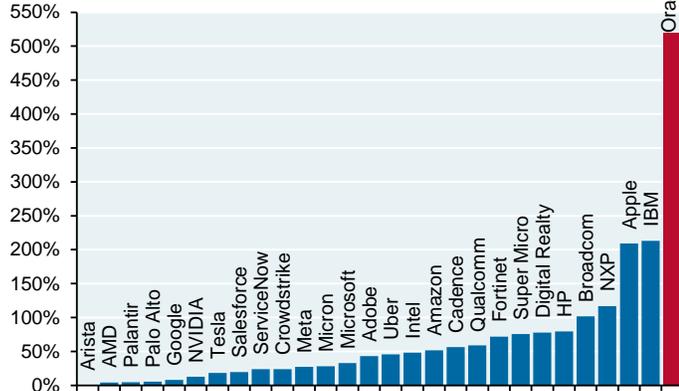
³ The current number of immigrants arrested is roughly the same as in 2021-2022, with a shift from the border to the interior: CBP arrests at the border have collapsed, while ICE arrests increased sharply. According to Trace Reports run by Syracuse University, as of September 21, 2025: 71.5% of people held in ICE detention facilities had no criminal convictions and of those that did, many were minor violations such as traffic violations



Oracle

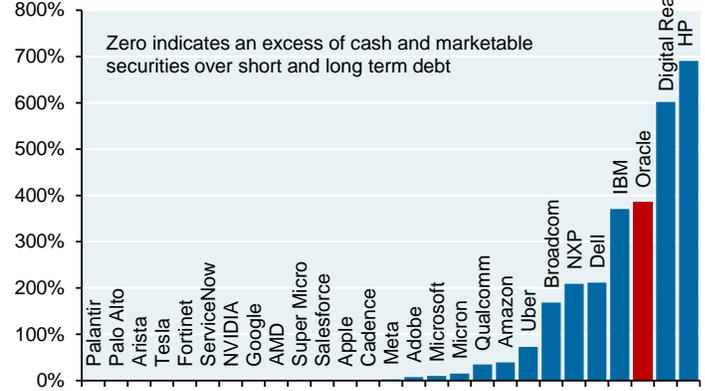
I showed the first chart in the last Eye on the Market as part of a discussion on how Oracle would likely have to borrow to meet their capital commitments to OpenAI, particularly since its free cash flow ratios are much lower than peers. I also mentioned that Oracle’s high debt ratios might make large amounts of debt capital raising a challenge. This first chart was _____ (adjective).

Debt to equity ratios of Direct AI stocks



Source: Bloomberg, JPMAM, October 3, 2025

Net debt to EBITDA ratios of Direct AI stocks

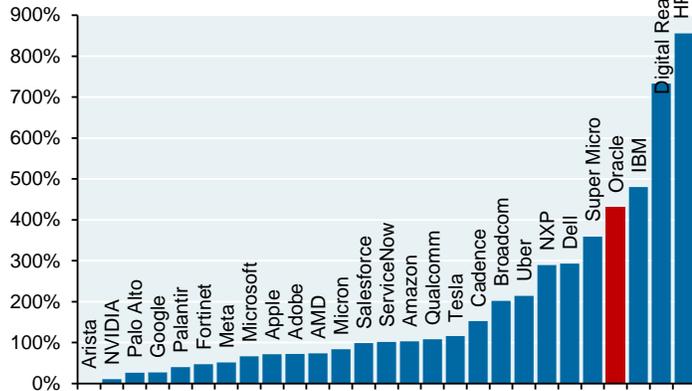


Source: Bloomberg, JPMAM, October 3, 2025

I put in “**misleading**” since I agree with feedback I received that Oracle’s debt/equity ratio is heavily impacted by stock buybacks which increased Ellison’s ownership stake from 22% in 2011 to 41%. There are better measures of Oracle borrowing capacity such as debt to EBITDA and net debt to EBITDA (i.e., net of cash and marketable securities). Across the technology sector there’s a clear distinction between firms borrowing in the debt markets to establish a foothold with investors and increase future flexibility (Apple, Google, AMD), and those borrowing at scale to fund current period capital expenditures.

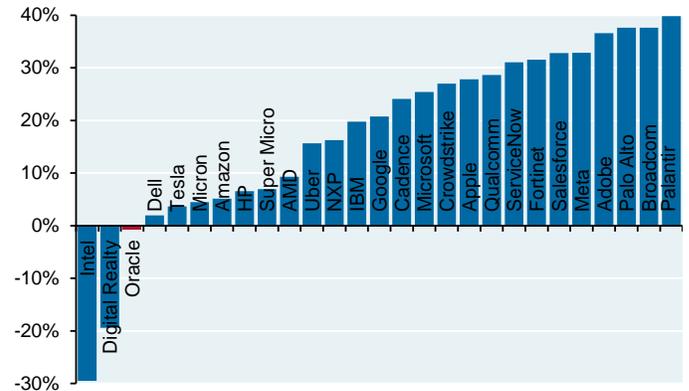
While Oracle’s net debt to EBITDA ratios are much higher than the other Direct AI stocks in our universe, my original debt-equity chart exaggerated that. Oracle is rated BBB/Baa2, consistent with its net debt ratio of 4x, and its 30-year bonds have been trading at spreads of 110-170 bps over Treasuries all year. Bond investors would likely gladly buy more at comparable spreads.

Debt to EBITDA ratios of Direct AI stocks



Source: Bloomberg, JPMAM, October 3, 2025

Free cash flow to revenue ratios of Direct AI stocks



Source: Bloomberg, JPMAM, October 3, 2025



Central bank gold holdings

Gold prices are soaring along with commentary about the reasons why. One frequent observation: the share of central bank foreign exchange reserves invested in gold has risen from 11% to 23%, and indicates substantial institutional concern about the US\$. This logic is very _____ (adjective).

World FX reserve gold holdings & gold price



Source: IMF, Bloomberg, JPMAM, August 2025

Gold share of world FX reserves



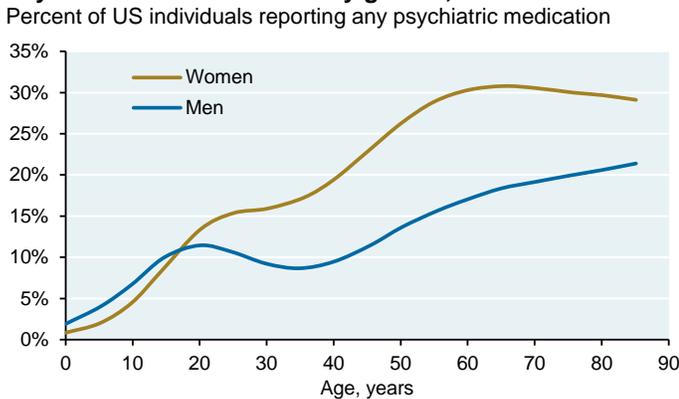
Source: IMF, Bloomberg, JPMAM, August 2025

I put in “**flawed**”. As shown on the left, troy ounces of central bank gold holdings bottomed in 2009 and have since risen by ~20% to where they were before the gold shedding era of 1994-2008. So yes, central banks have added gold. **But almost the entire increase in the gold share of reserves since 2009 is a function of the rising market price of gold itself.** As shown on the right, if we hold central bank gold allocations constant at their trough March 2009 level of 963 mm troy ounces, the gold share of reserves still rises to almost the same level, 20%. But if we flip the switch and keep gold prices flat at 2009 levels and use actual central bank gold holdings, the gold share of reserves actually *falls* to 8%. The partial disintegration of the post-war world order and rising developed world government debt is driving gold prices higher, that part I get. But central bank gold allocations do not appear to be a big part of the reason why, nor are they clear verdicts on the US\$ as reserve currency.

Psychiatric medication by gender

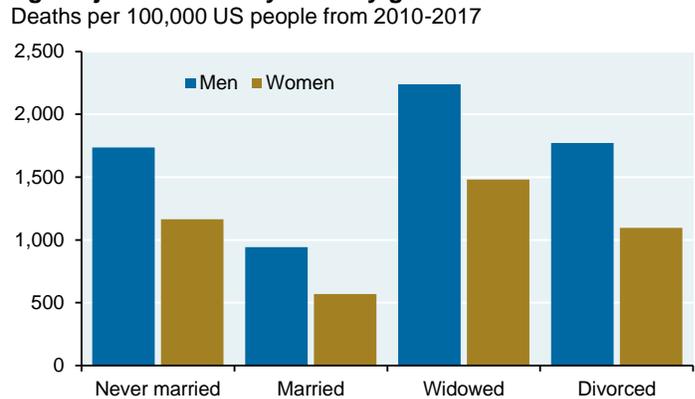
The first chart below shows psychiatric medication use frequency by age and gender. The reason for the much higher female psychiatric medication rate is _____ (noun).

Psychiatric medication use by gender, 2015-2018



Source: Johansen, Journal of American Board of Family Med, JPMAM, 2021

Age-adjusted mortality rates by gender and marital status



Source: CDC, JPMAM, 2019

I wrote “**men**” since I couldn’t think of another plausible explanation. In related research, widowed men have higher age-adjusted mortality rates than any other combination of gender and marital status. In other words, men appear to drive women crazy and then suffer disproportionately once their spouses are gone.

Michael Cembalest, JP Morgan Asset Management

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