



Deutsche Bank
Research

Innovation, Jobs and Inflation: Lessons from 250 Years of Disruption

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Deutsche Bank Research Institute

IMPORTANT RESEARCH DISCLOSURES LOCATED IN APPENDIX 1.

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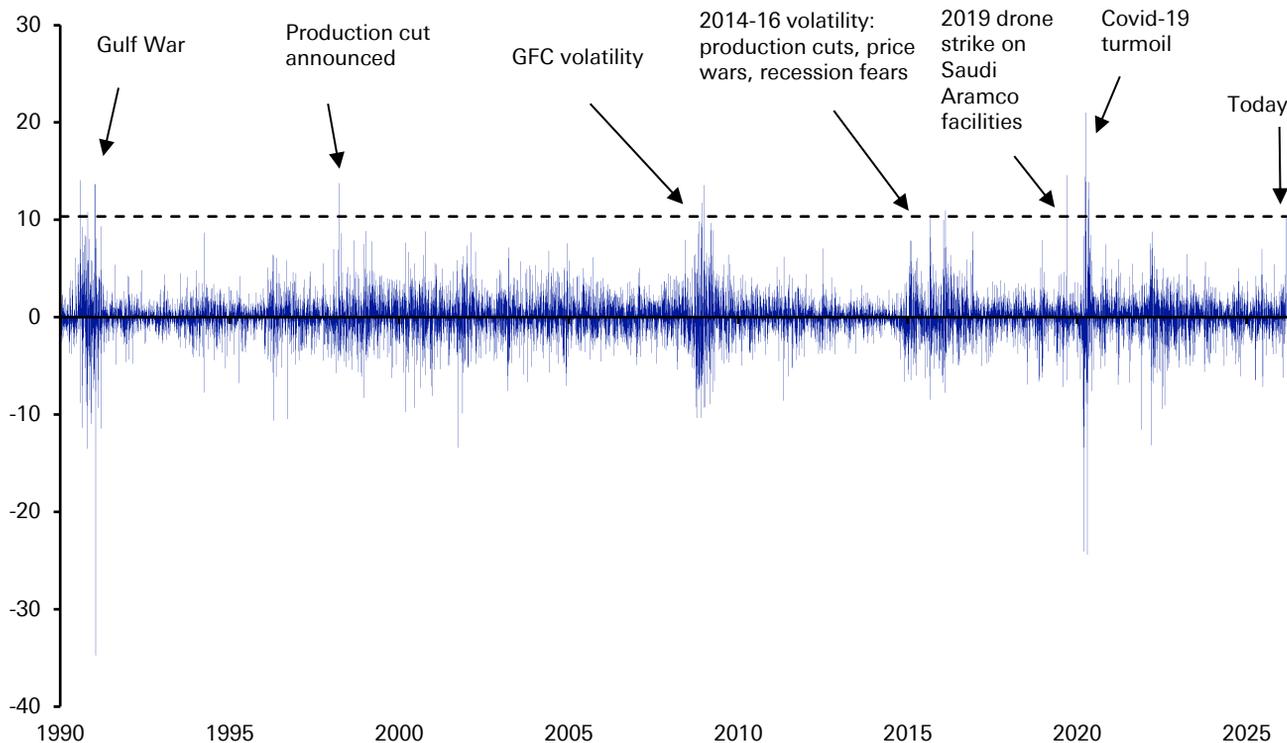


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The weekend strikes on Iran have knocked AI concerns from the front page for now... Brent crude oil prices are up over +10% this morning at time of writing... which makes it the 15th biggest daily jump since 1990... to get into the top 5 it would need to be up around +14%...



Daily Change in Brent crude oil price (%)



Source : Bloomberg Finance LP, Deutsche Bank.

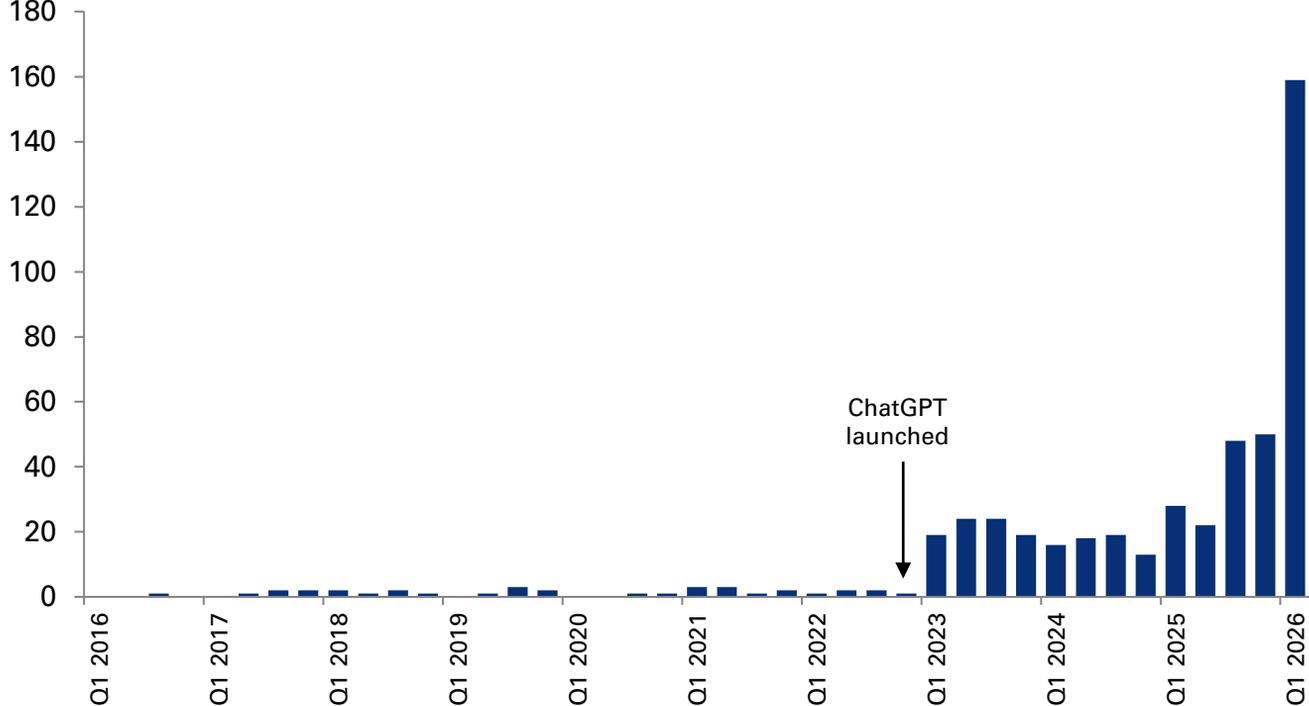


What history tells us about impact of AI..

AI disruption has been a steadily growing theme since ChatGPT was launched.... However in Q1 2026 mentions have tripled from Q4 2025 in US Earnings calls.... The world has gone AI-disruption crazy!



Mentions of AI Disruptions in Global Earnings Call Transcripts

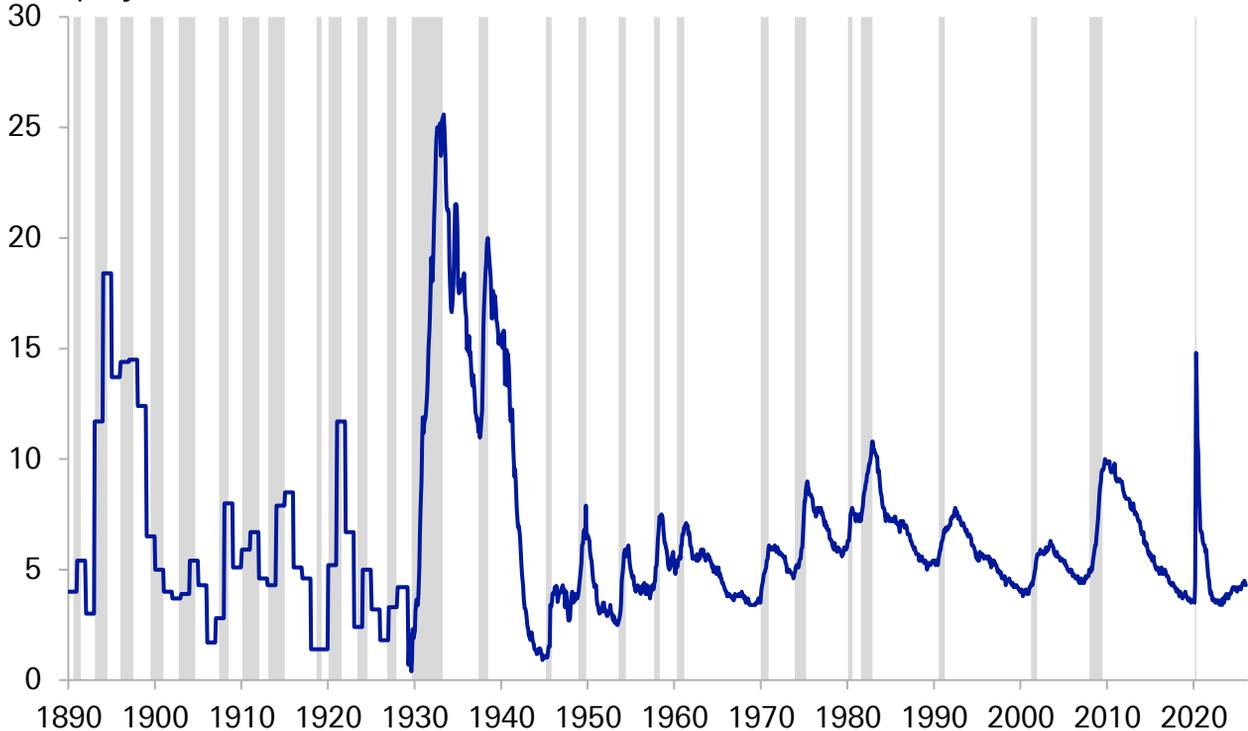


Source : Bloomberg Finance LP, Deutsche Bank., Last update : Feb 26

Unemployment rarely rises >1pp outside recessions. In this cycle, the low of 3.4% in H1 2023 was the joint lowest since 1953, possibly reflecting post-pandemic labour hoarding. So if AI were to “destroy” the labour market in aggregate, it would be the first major innovation in history to do so...



Unemployment rate in the US since 1890

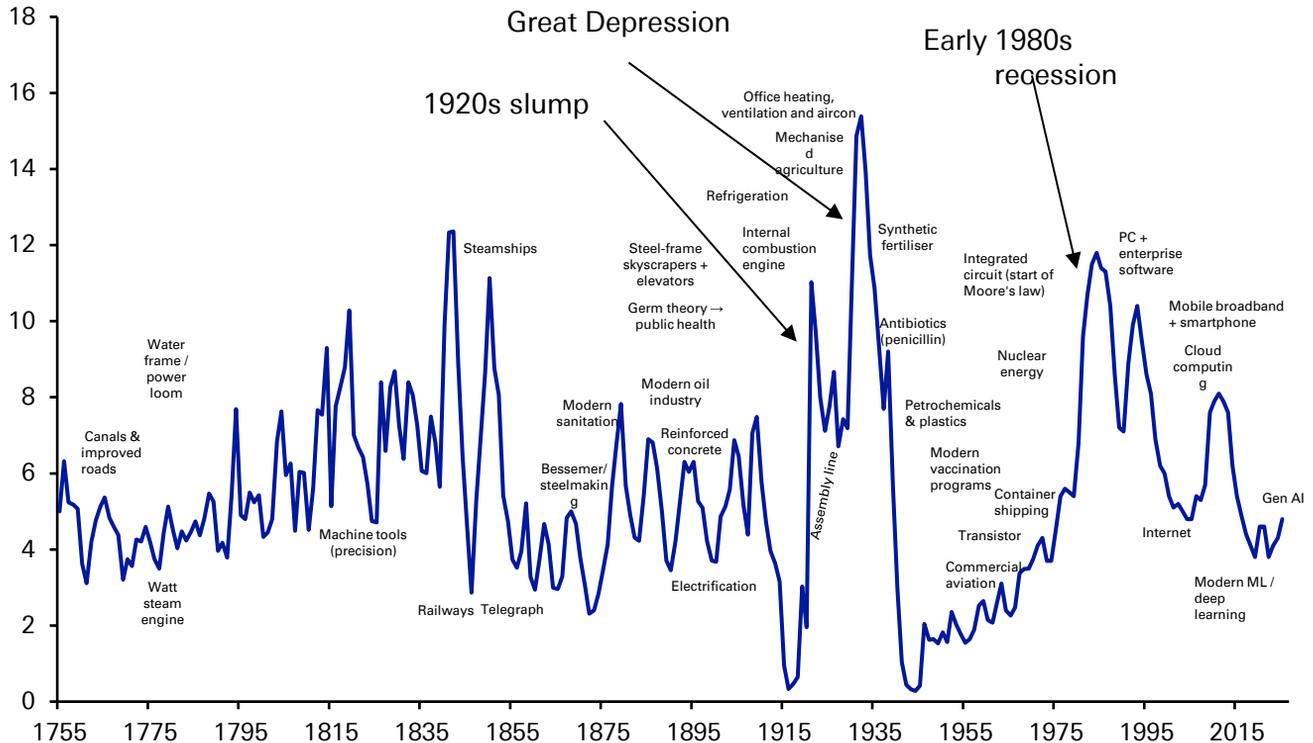


Source: Finaeon, BLS, Deutsche Bank

Since the start of the first Industrial Revolution, humans have been extraordinarily innovative with unemployment driven by macro factors like recessions, not new technologies... This time would have to be very different if AI destroys labour



Unemployment rate in UK since 1755 and major innovations since the first Industrial Revolution

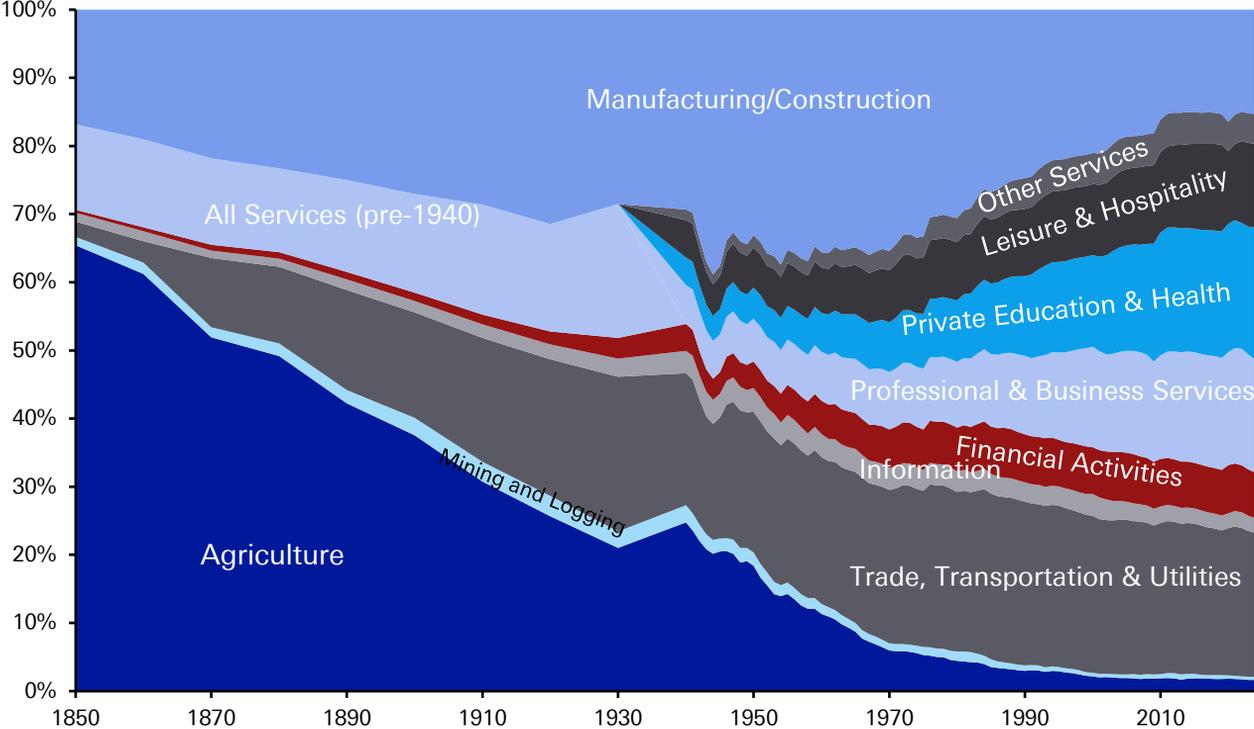


Source: Bank of England: Millennium of Macroeconomic Data, ONS, Deutsche Bank

All through history technology has shifted jobs around, and AI will shift it around again, but the most likely scenario is not huge job losses but adaptation and future jobs we didn't know existed or were needed.



US Employment by sector since 1850

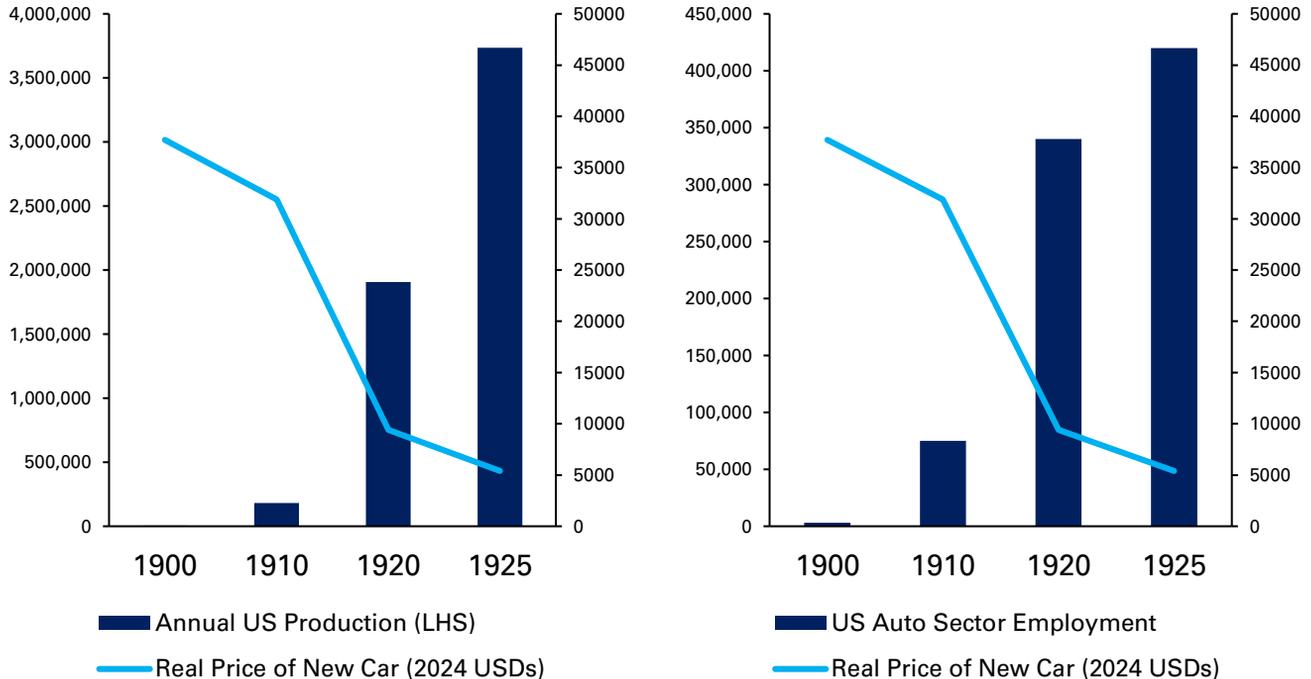


Source: Haver Analytics, US Census, Deutsche Bank

In the early days of the auto industry, Ford's move to the assembly line for the Model T chassis (c.1913) ushered in a new era of automated production. It also sparked widespread fears of deskilling and job losses. Yet mass production dramatically reduced the cost of a car, unleashing a surge in demand and ultimately creating far more jobs—not only in auto manufacturing, but across the broader economy, from suburban homebuilding to tourism and a wide range of related commerce.

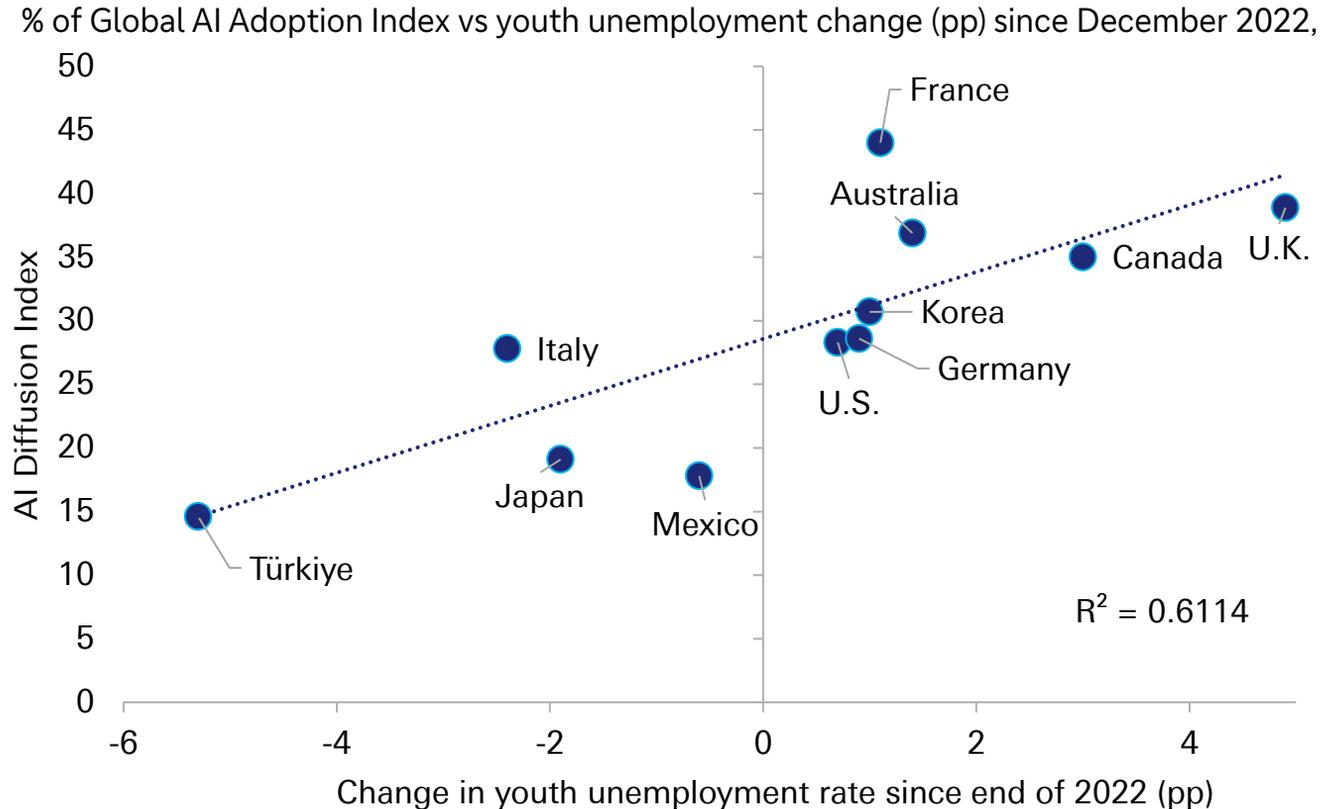


Real adjusted price of a new US car and Auto production and employment numbers.



Source: dbLumina, Deutsche Bank

However, since ChatGPT was launched there is some evidence to suggest those economies with the highest adoption rates are seeing increases in youth unemployment and vice-versa.

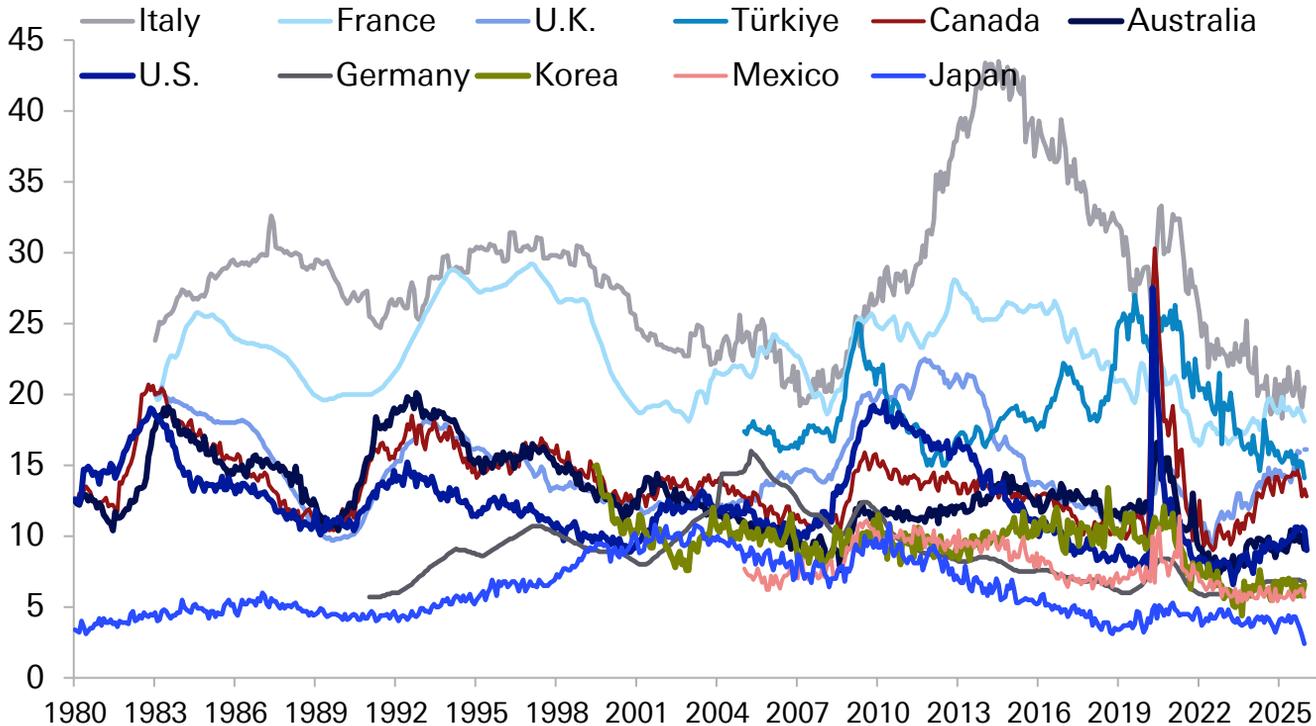


Source : Microsoft AI Economy Institute, OECD, Deutsche Bank, Note: AI Diffusion indices represent data for H2 2025



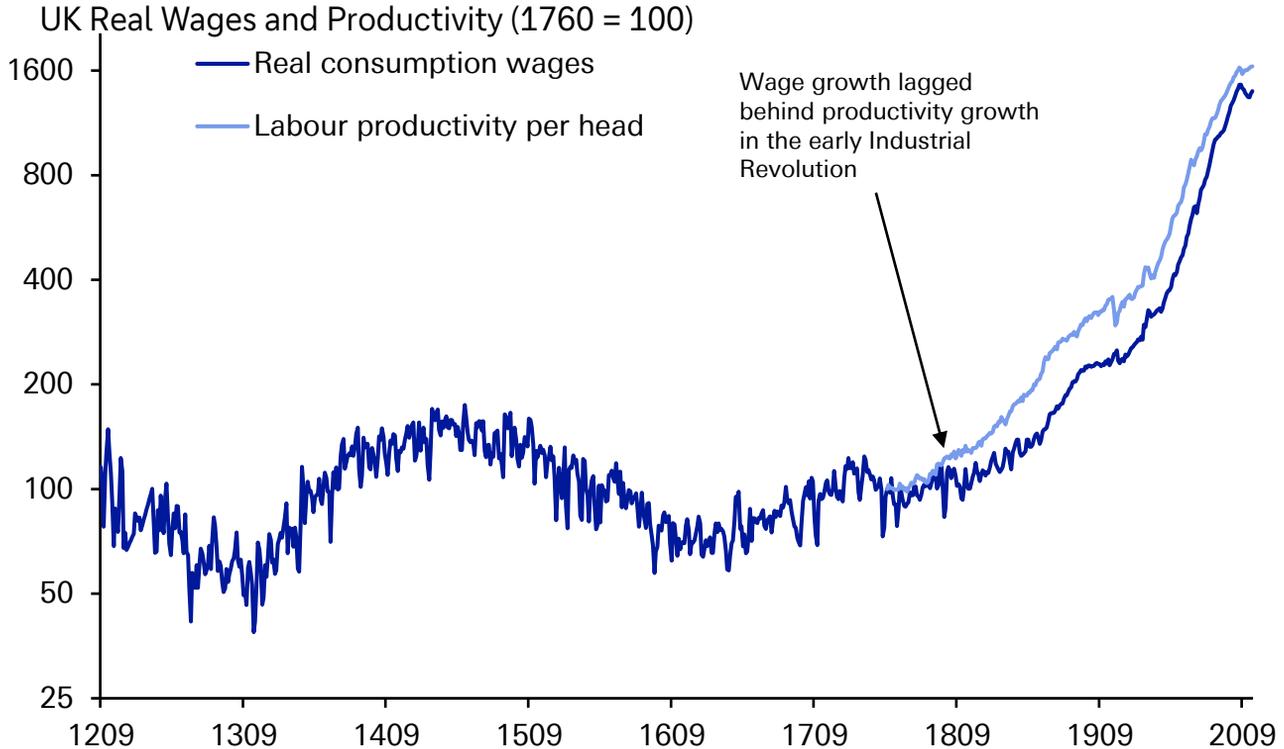
Although there are some countries seeing a pick-up in youth unemployment, perhaps due to AI, these increases are surely inconsequential versus structural or cyclical shocks like those seen in the last few decades. Surely if AI brings higher economic growth but some disruption, that will still be better for the young (and old) than weaker activity.

Harmonised youth unemployment rates (15-24yr (%)) - Legend ordered from current high to low.



Source: OECD, Haver, Deutsche Bank

Another issue is that productivity growth might exceed wage growth in an AI world. Indeed, this happened at the time of the first industrial revolution in the UK... the period from 1790-1840 has been dubbed Engels' pause, when wages stagnated despite the technological progress being made...

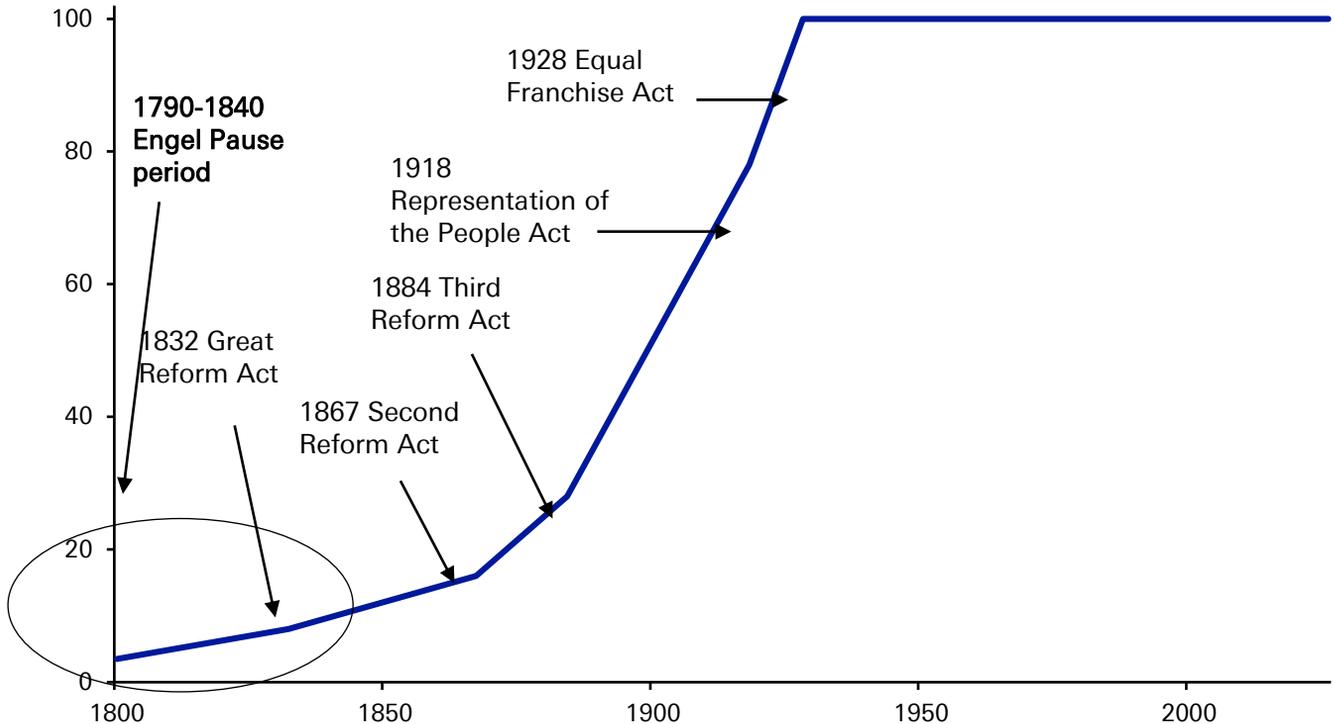


Source: Bank of England: Millennium of Macroeconomic Data, Deutsche Bank

However, a key difference back then was very few adults had the vote, so there weren't the same democratic pressures against rapid technological upheaval... Any major AI disruption to employment today will bring a huge democratic backlash...



Percentage of UK adults with the right to vote



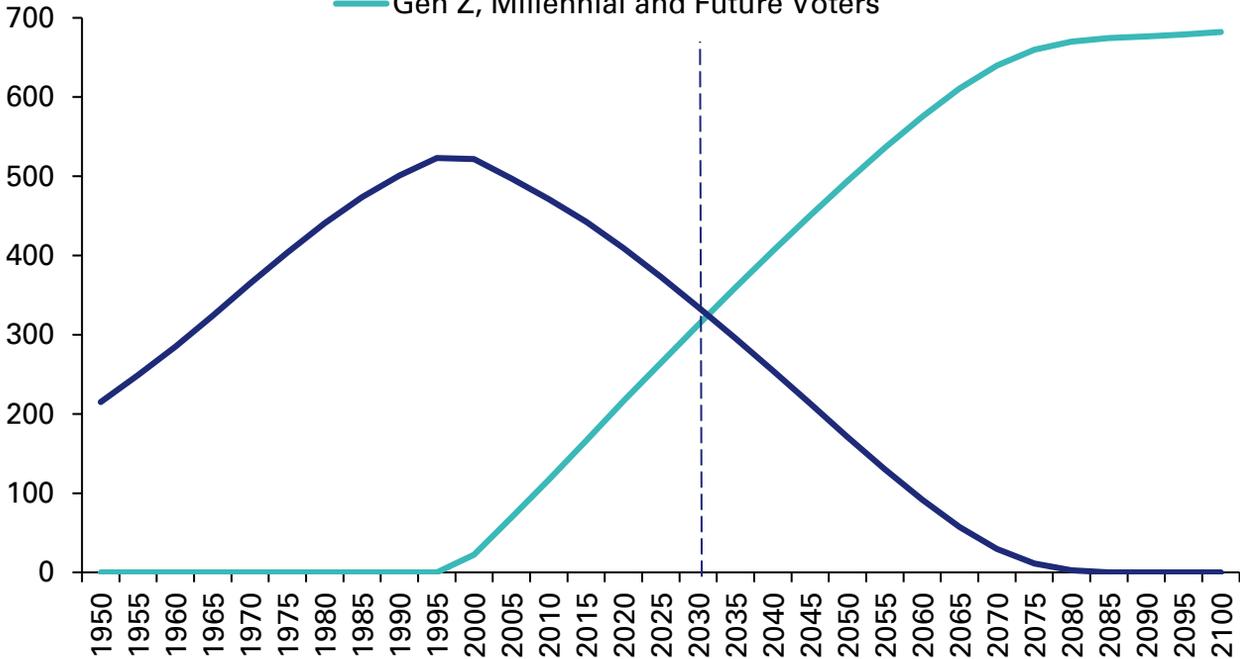
Source: House of Commons Library, UK Parliament, Deutsche Bank

Today, a key difference is that all adults have a vote, including the young. At a G7 level, Millennial and younger votes are quickly catching up with those older. If they continue to get left behind, due to AI or other reasons (e.g. lack of home ownership), the likelihood is high they will elect politicians who protect their position through financial support, AI regulation or redistributive taxation.



Voting Populations* by Generations across the G7

Millions



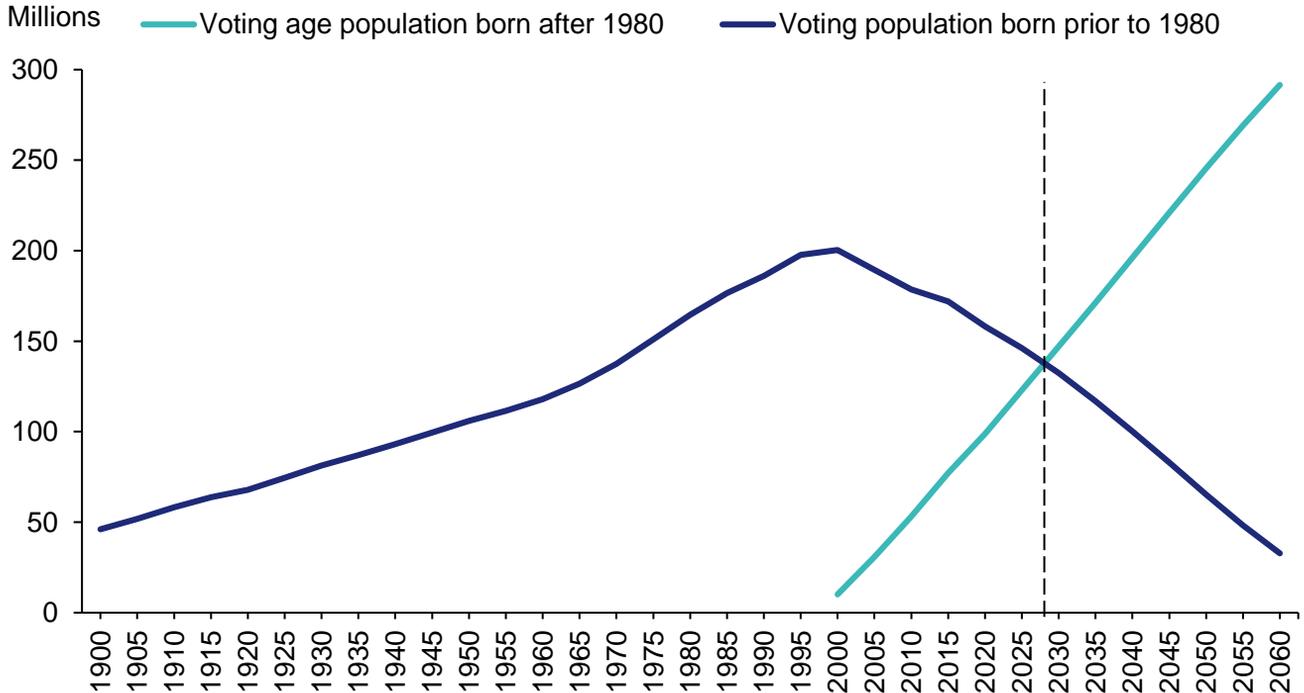
*Voting population estimated from 17.5 years and older

Source : United Nations, Haver, Deutsche Bank

In the US, this Millennial and younger voter power shift occurs as soon as the 2028 election where they will be in the majority. Some of the extreme forecasts on AI forgets that the most impacted countries are democracies where populism has either surged in recent years or is bubbling under the surface... It wouldn't take much for a significant political change and response...



Voting Populations by Generations in United States

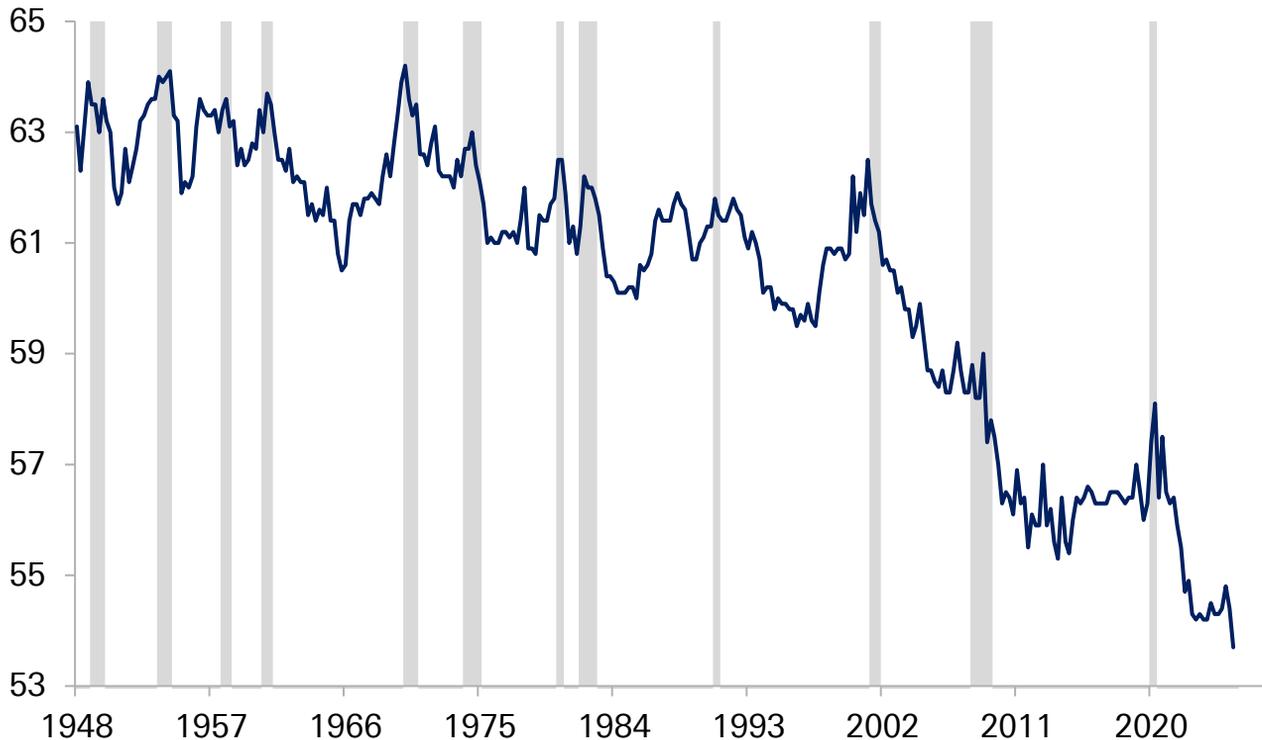


Source: US Census Bureau, Deutsche Bank

In the US, the labour share of income is already at all-time lows, so again it wouldn't take much to create a significant political backlash if AI further impacted labour...



Total Economy: Labor share (%)

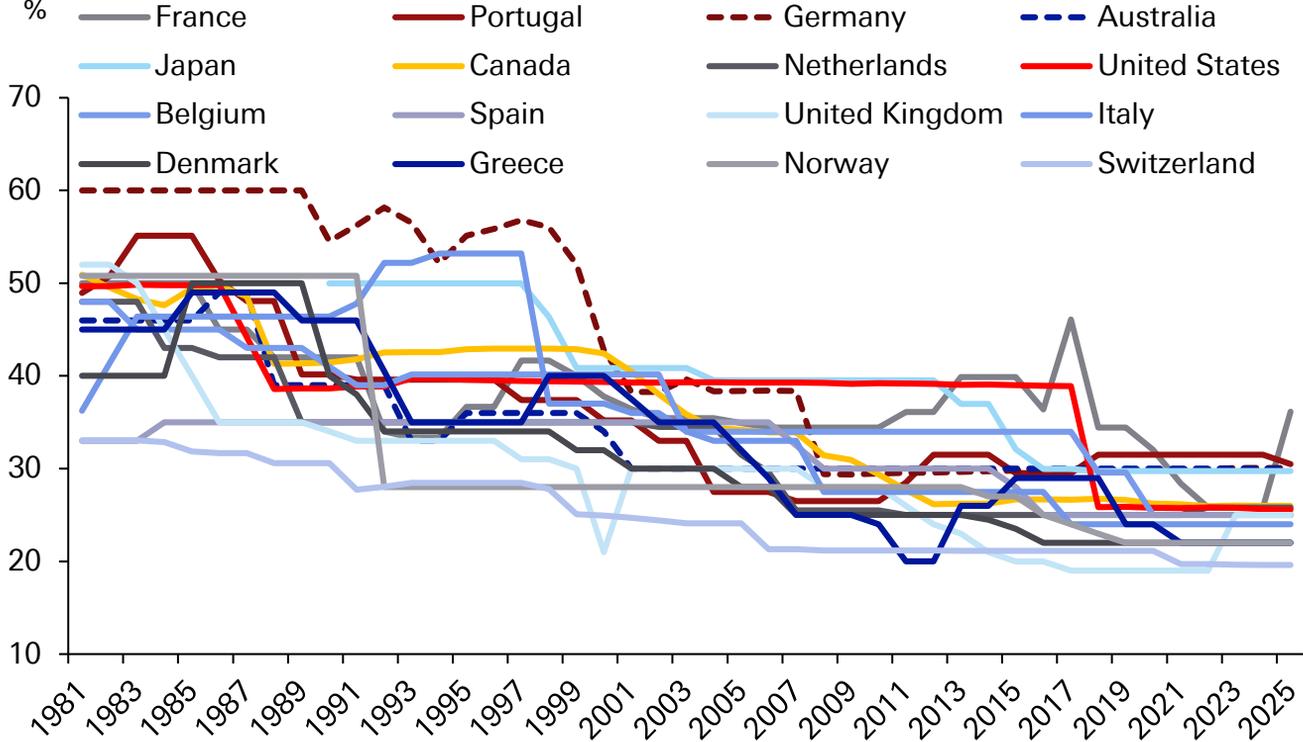


Source: BEA, Haver, Deutsche Bank

If AI did destroy jobs and boost profits, there is plenty of scope for corporate tax redistribution versus historical rates...



Statutory corporate income tax rates (%)

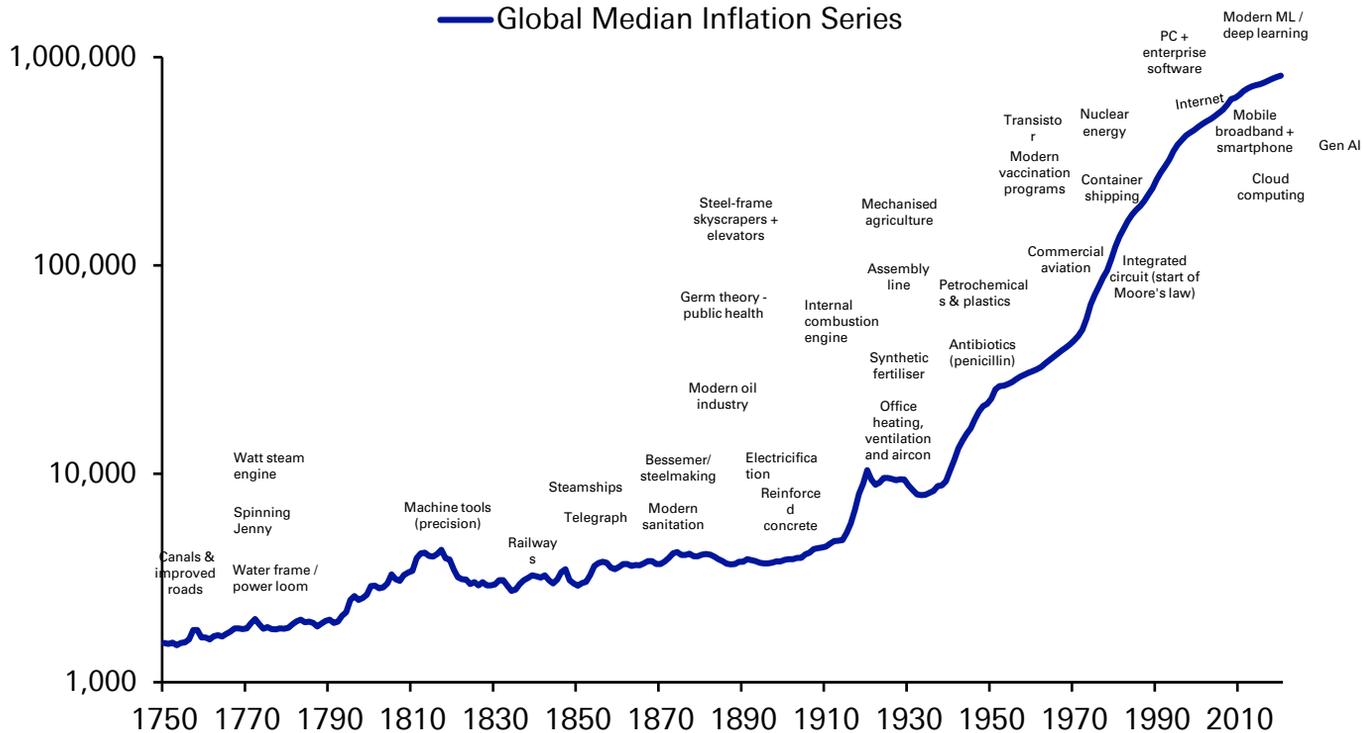


Source : OECD, Deutsche Bank, Countries are ranked from high to low tax rate in 2025

There are lots of fears that AI will be deflationary. Again, since the Industrial Revolution, humans have been remarkably innovative and yet inflation has surged. This is because “inflation is always and everywhere a monetary phenomenon” as Milton Friedman put it...



Global Inflation since 1750

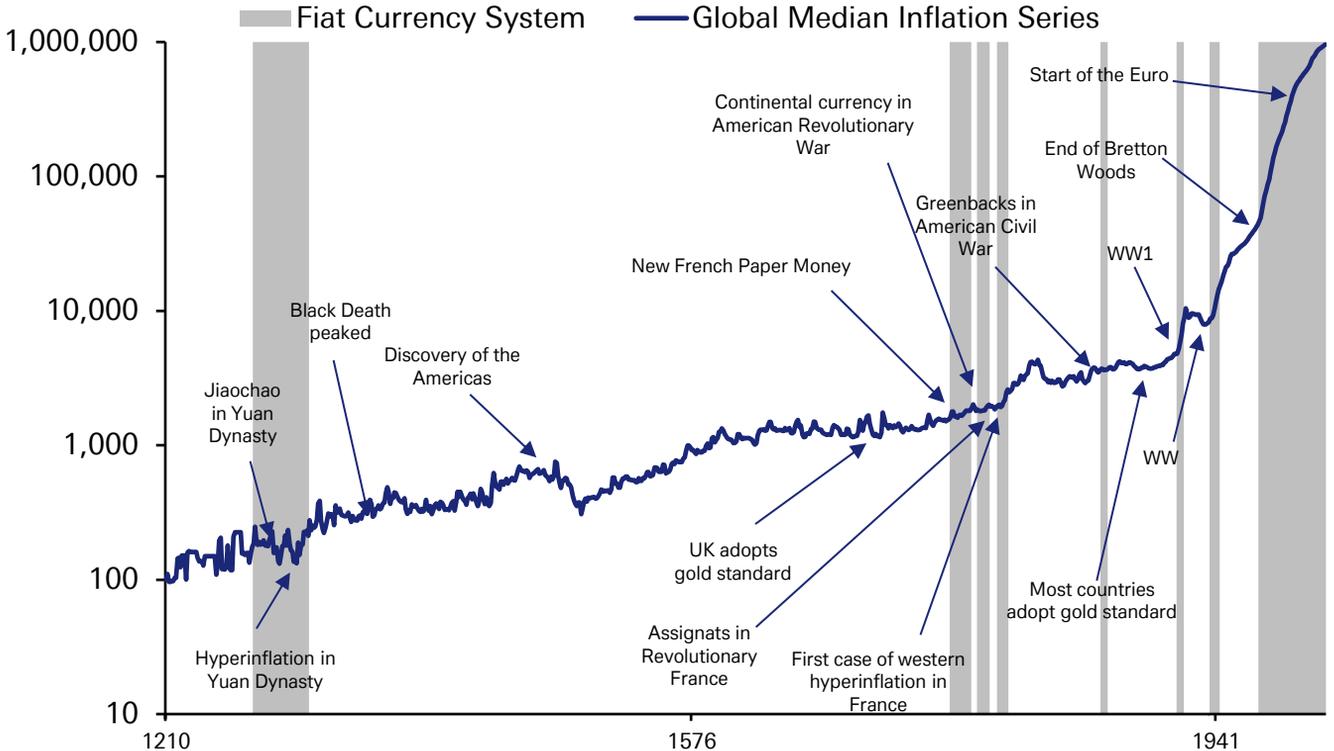


Source: Finaeon, Deutsche Bank

Fiat money regimes determine big picture inflation and not innovation. Even if AI causes large deflationary forces and unemployment, expect a huge monetary and fiscal response.



Inflation through the history of Fiat Money since 1210



Source: Finaeon, Deutsche Bank

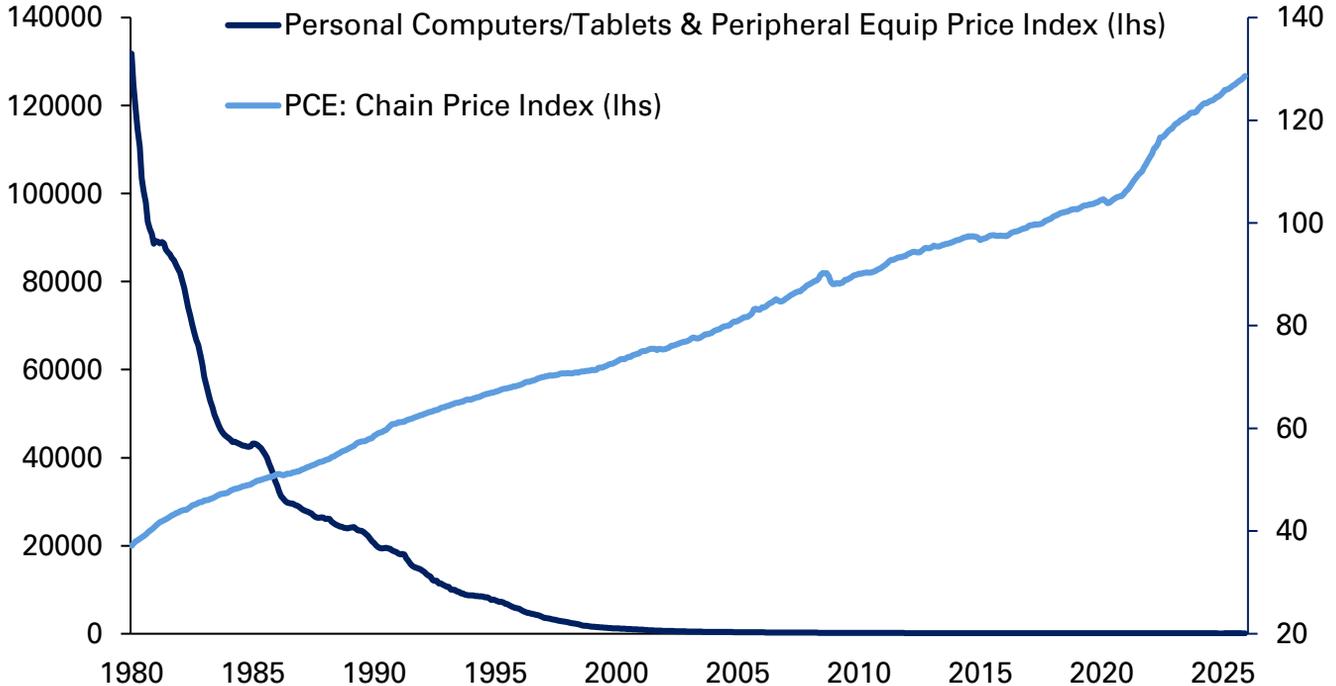
PC's have experienced enormous deflation over the last several decades... Yet actual inflation has increased substantially. Something to bear in mind when we hear how deflationary AI will be... In my view policy will be the main determinant of future inflation...



Price Indices for Personal Computers/Tablets & Peripheral Equipment vs. General Inflation Measures (US PCE)

Index 2017=100

Index 2017=100



Source : BEA, BLS, Haver, Deutsche Bank.

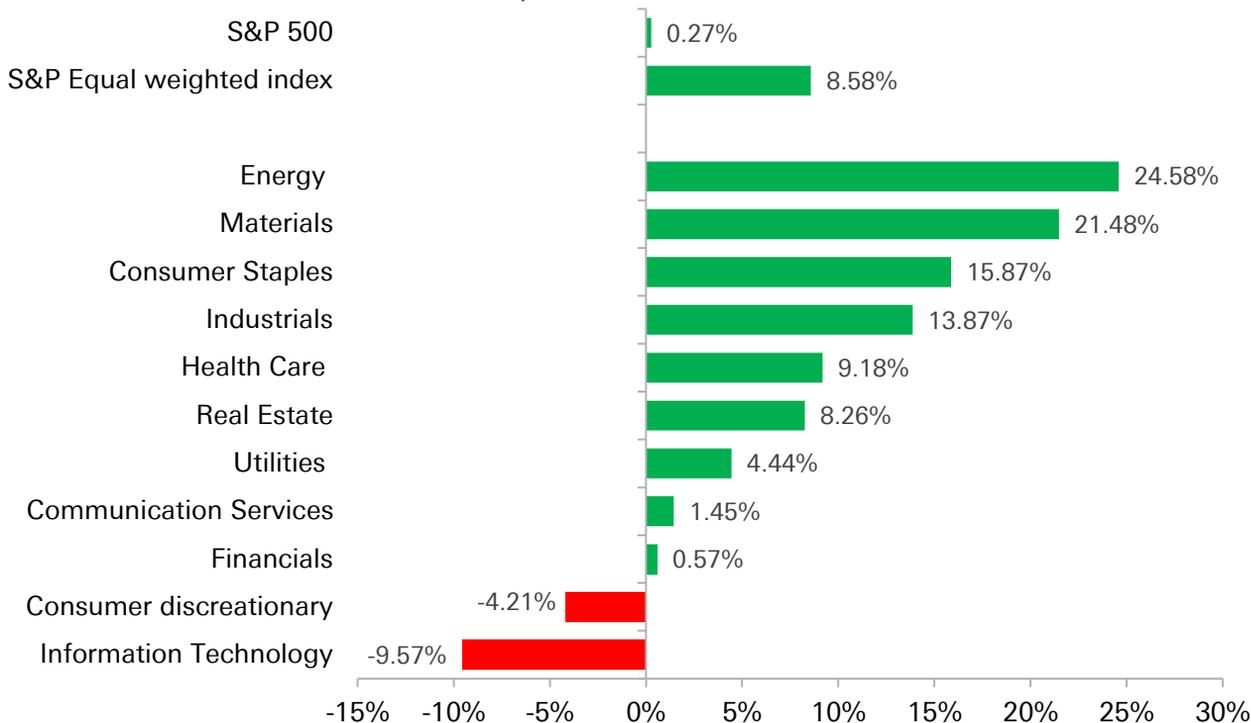


2026 so far: Rotation, dispersion and value

There's been a decent sized rotation in the US since the end of October. The S&P 500 has been broadly flat but nine out of eleven top level sectors are higher. However, the weight of tech has held back the market. Many other global markets are up strongly over this period. And the equal weight S&P 500 has performed well...



S&P Sectors return since October 29, 2025

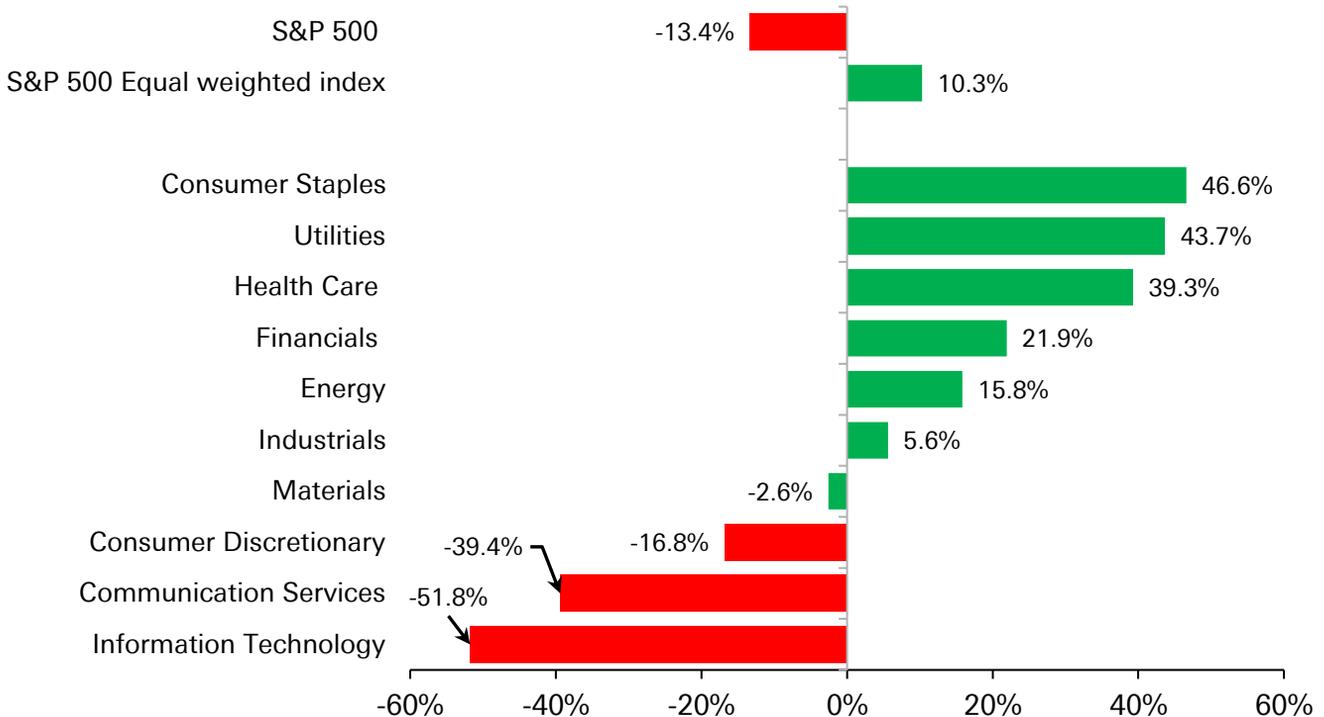


Source : Bloomberg Finance LP, Deutsche Bank., Last update : Feb 26

From the point the tech bubble burst in March 2000 until the end of 2000, we saw a huge rotation. The S&P 500 was fairly flat until September but then slipped into year-end under the weight of a continued tech sell-off even as defensives continued to do well...



S&P Sectors return since March 27, 2000 to Dec 29, 2000

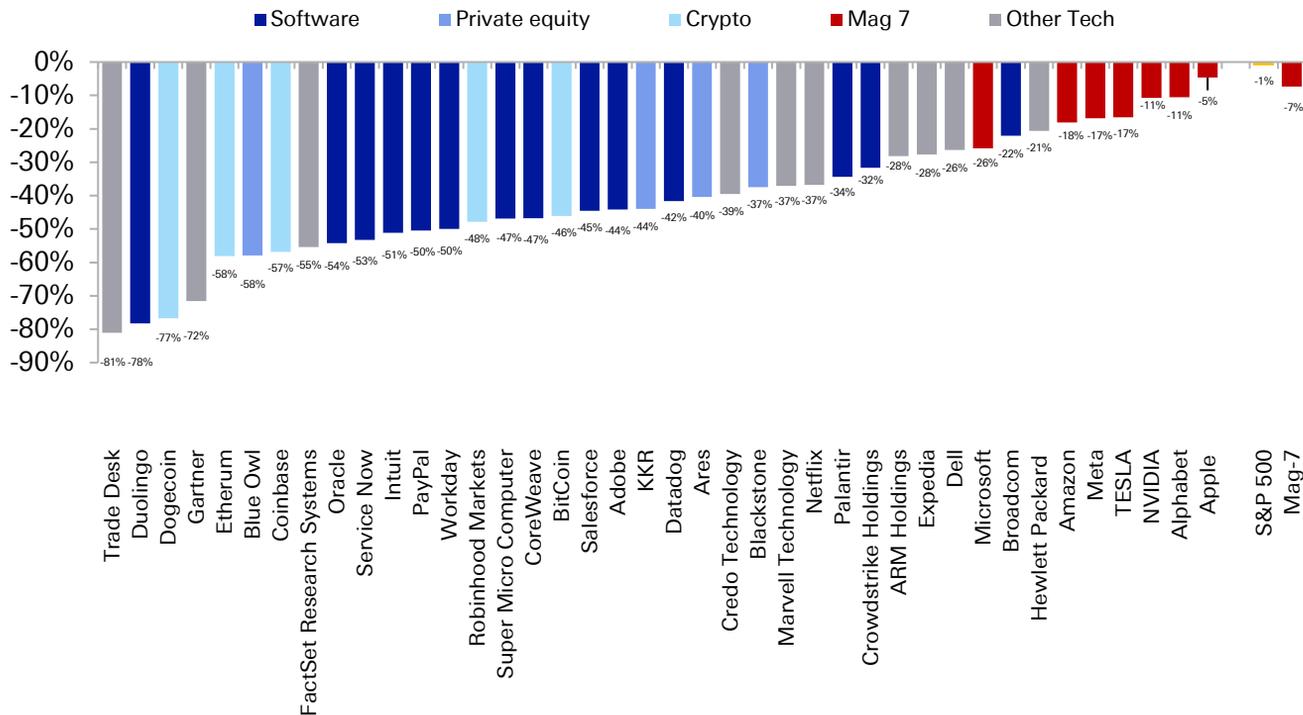


Source : Bloomberg Finance LP, Deutsche Bank

The 2026 drawdown in a lot of tech/AI stocks and related assets (e.g. crypto) has been pretty severe. It's been impressive given some of their weights in the index that the S&P 500 is only just below its all-time-highs.



How Far Are a Selection of AI & Tech Stocks From Their highs? Drawdowns From 52 Week Highs for Selected US Tech and Related Stocks

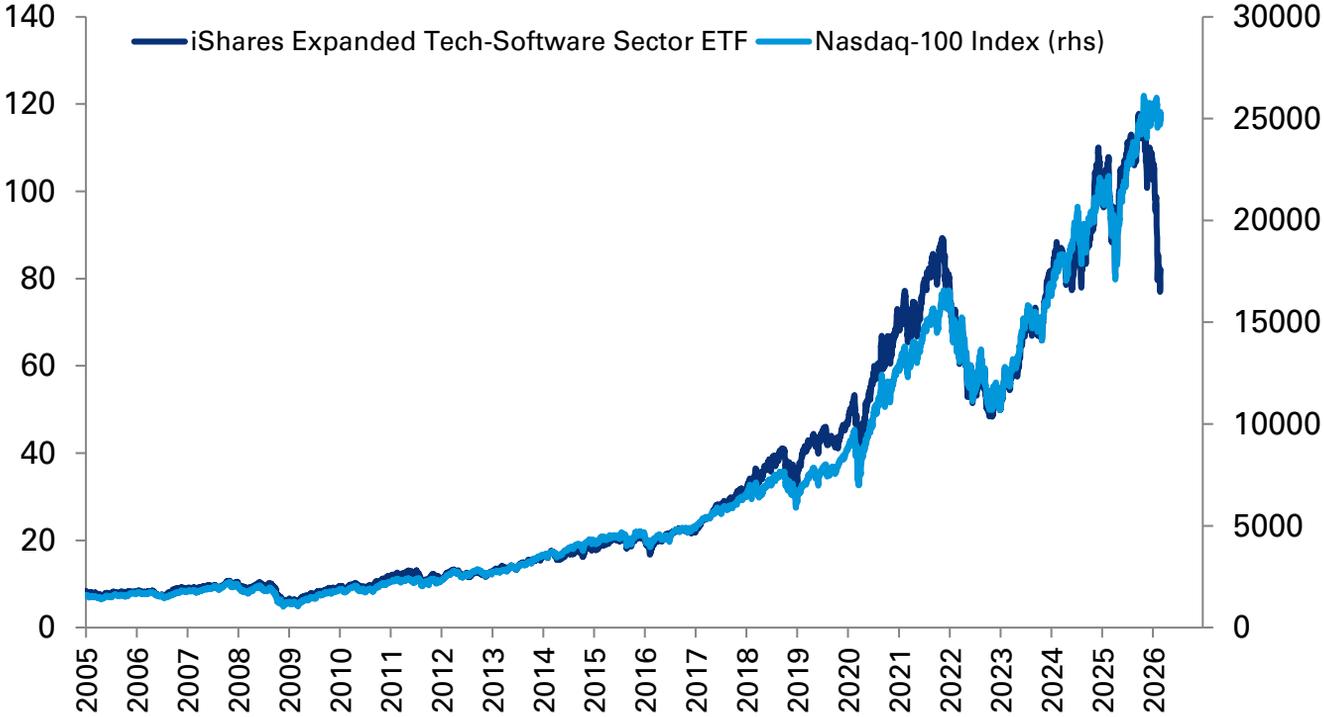


Source: Bloomberg Finance LP, Deutsche Bank, Last update: Feb 26

For two decades, tech and software have gone hand in hand. We now have winners and losers within tech and software has been a big loser in recent weeks for the first time...



iShares Expanded Tech-Software Sector ETF vs. Nasdaq 100



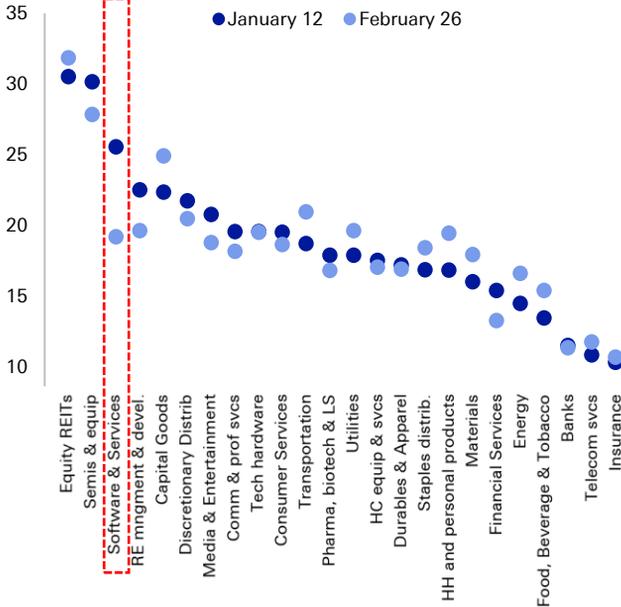
Source: Bloomberg Finance LP, Deutsche Bank

PE multiples: US software & services was the 3rd most expensive industry group in January, it's now 10th (3rd to 12th in Europe), down by -6.3x (4.8x). No other industry group has seen a similar multiple re-rating.

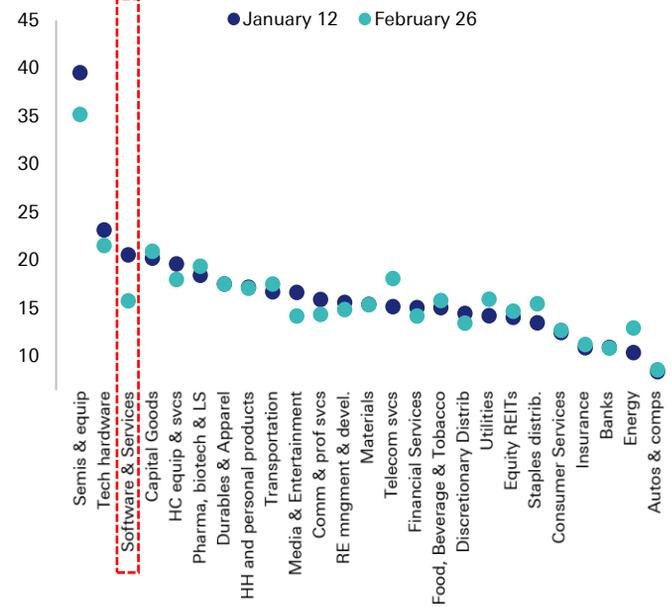


Median blended-forward P/E multiple by industry group

Median forward P/E multiple by industry group, Russell 1000



Median blended-forward P/E multiple by industry group, Stoxx 600

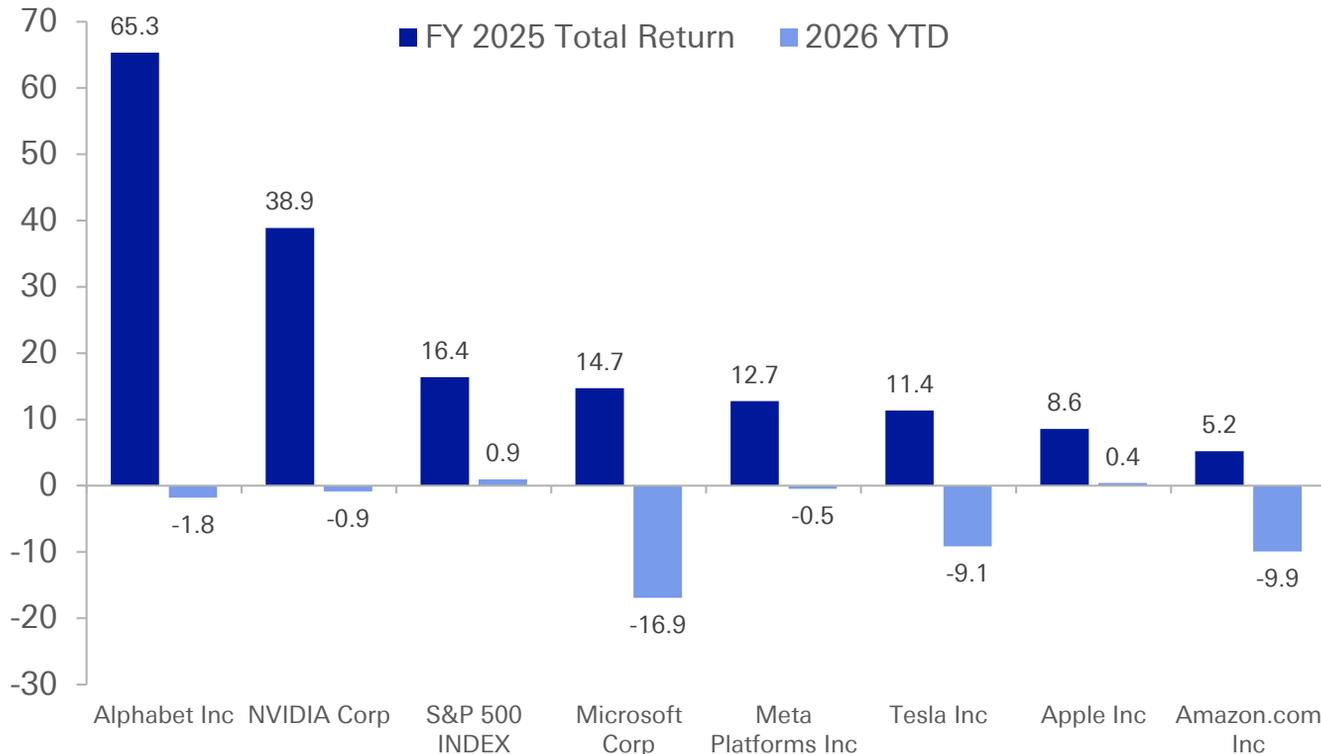


Source: Bloomberg Finance LP, Deutsche Bank

All of the Mag-7 have underperformed the S&P 500 in 2026 so far, albeit with four only just below.



Mag 7 Total Returns

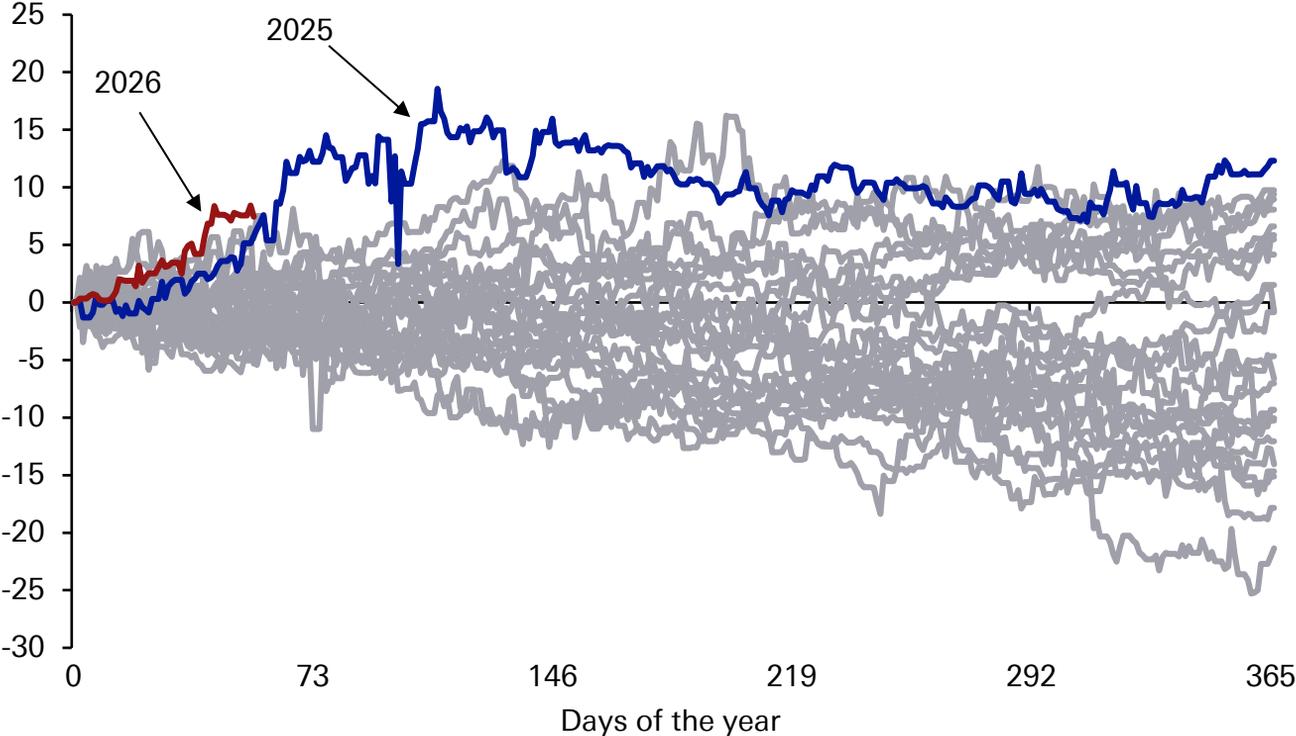


Source : Bloomberg Finance LP, Deutsche Bank., Last update Feb 26

After years of US exceptionalism in equity performance, US equities have seen a clear underperformance both in 2025, and again in 2026...



Outperformance (percentage points) between the MSCI World ex US index and the MSCI US Index since 2000

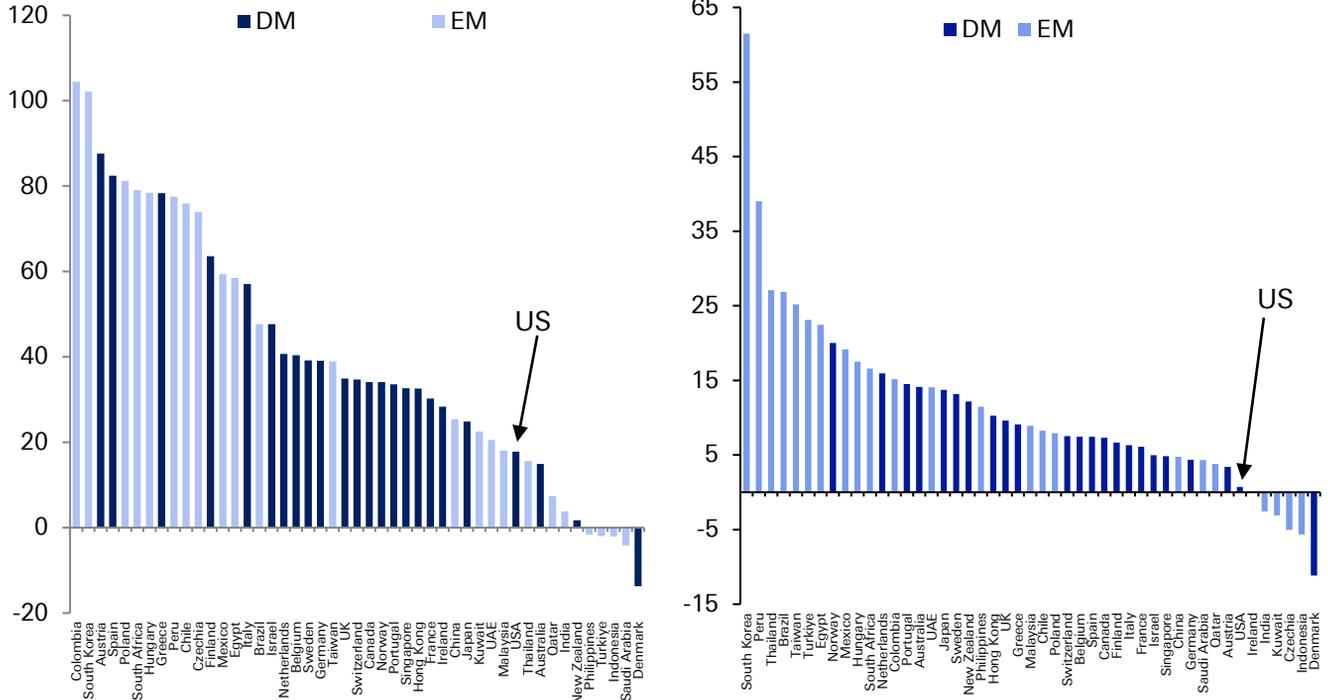


Source: Bloomberg Finance LP, Deutsche Bank

2025 was a good year for global equities, especially EM, but with the US around the bottom quartile. So far in 2026 the pattern seems to be repeating itself...



Bloomberg large/mid-cap country stock market indices: 2025 total return in USD (%) (left) and 2026 YTD (right)

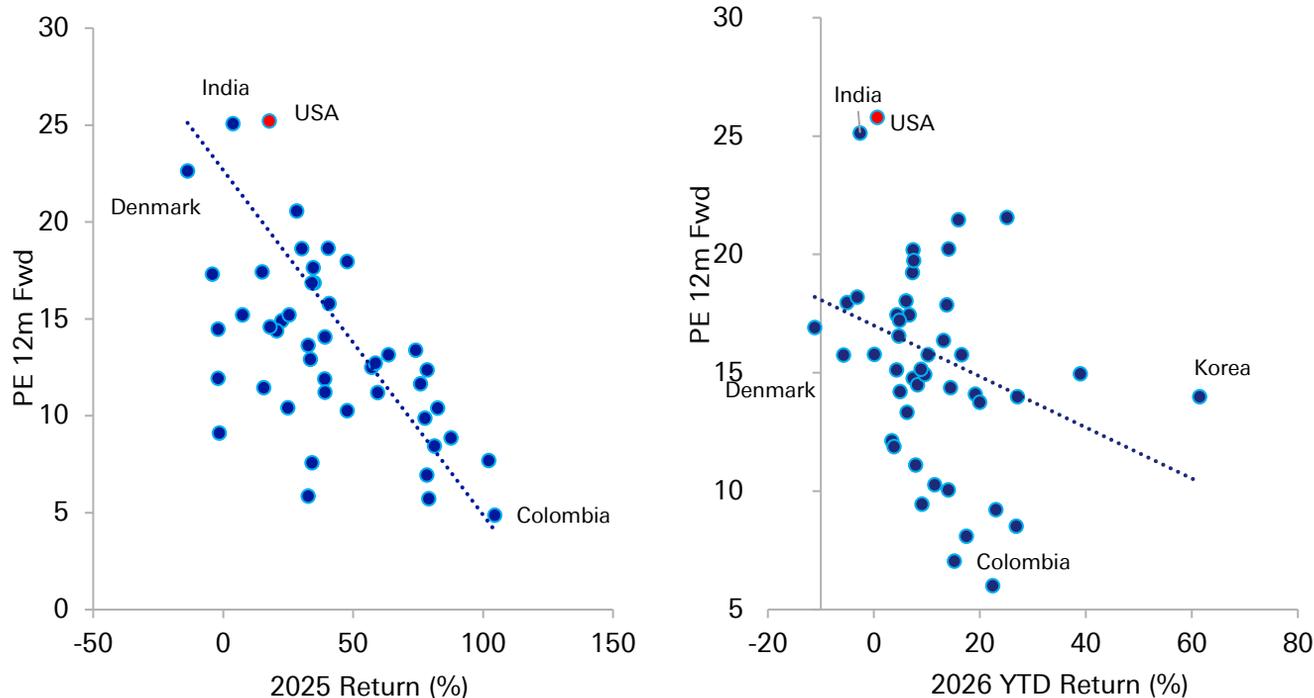


Source: Bloomberg Finance LP, Deutsche Bank, Note: 2026 YTD is updated through Feb 26

2025 Global Equity returns saw a strong correlation to starting valuations. It's early days but value seems to have been a good guide to global equity returns in January 2026 as well...



Bloomberg large/mid-cap country stock market indices, 2025 total return in USD vs. 12m fwd PE estimates at the end of 2024 (left) & Bloomberg large/mid-cap country stock market indices, 2026 YTD return in USD vs. 12m fwd PE estimates at the end of 2025 (right)

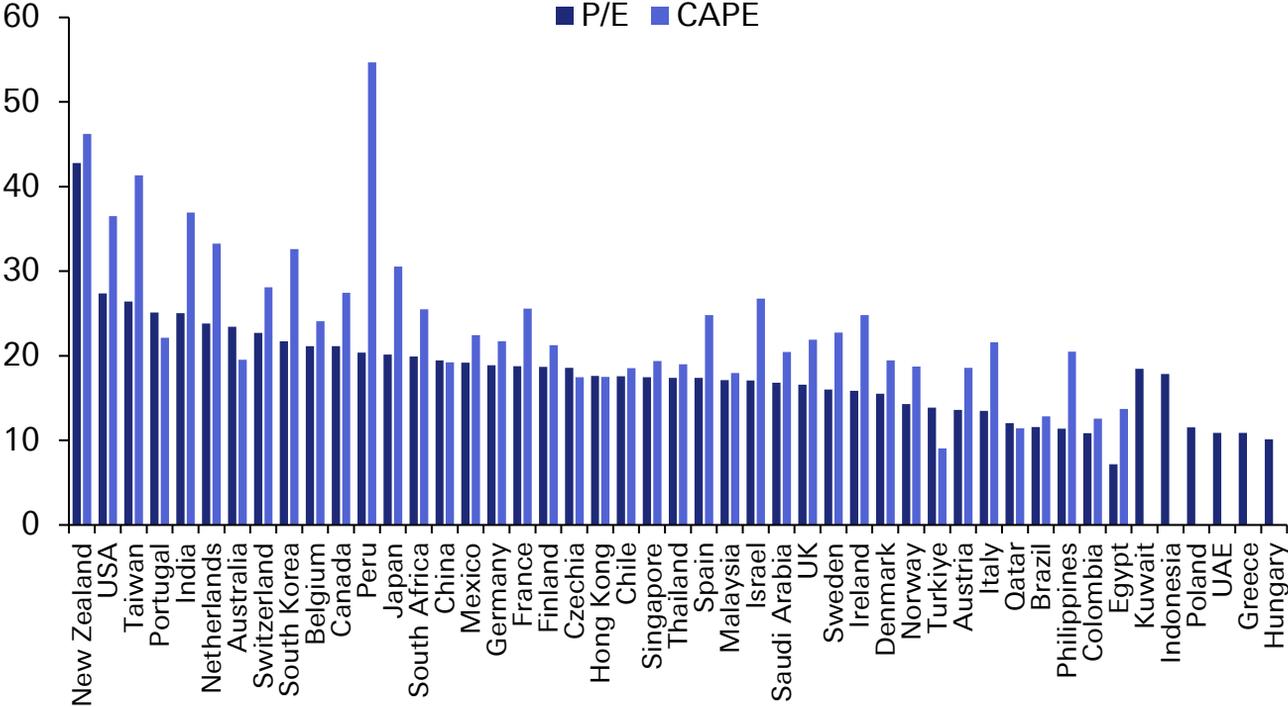


Source: Bloomberg Finance LP, Deutsche Bank Note: 2026 YTD is updated through Feb 26

If valuation is back as the key equity driver this is the high to low of Global PE ratios



Latest global valuation ratios



Source: Bloomberg Finance LP, Deutsche Bank

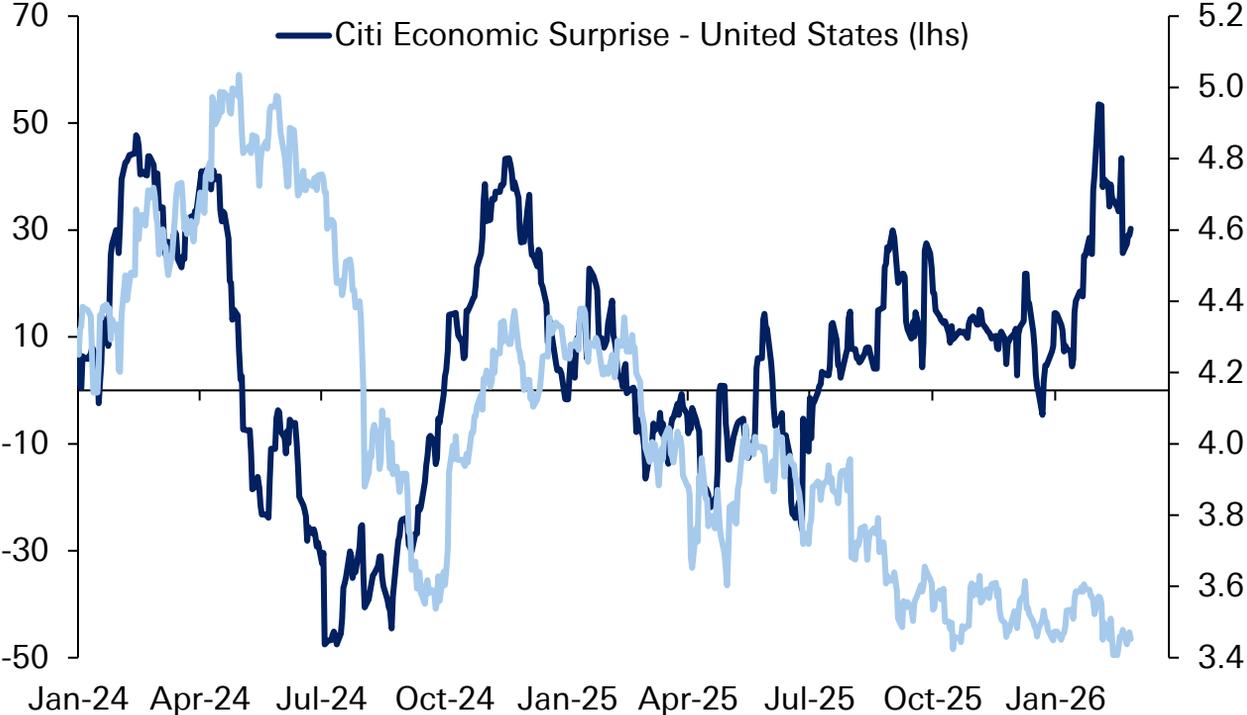


Does the US really need a rate cut... unless
tech melts

US data surprises have been at the upper end of their 2-year range in 2026 so far. It doesn't suggest lower Fed Funds or lower yields at face value...



Economic Surprises vs. 2yr US bond

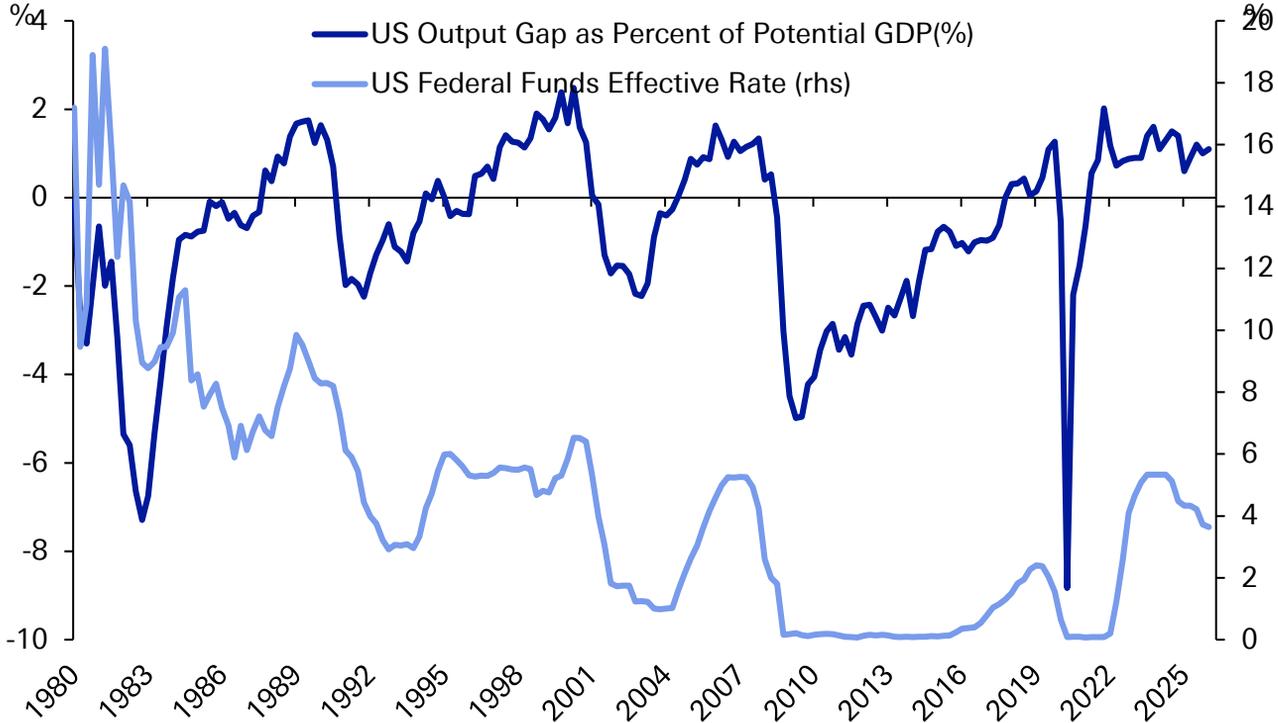


Source: Bloomberg Finance LP, Deutsche Bank

The US output gap remains firmly positive, again suggesting the economy is more running hot than cold.....



US Output Gap and Fed funds rate

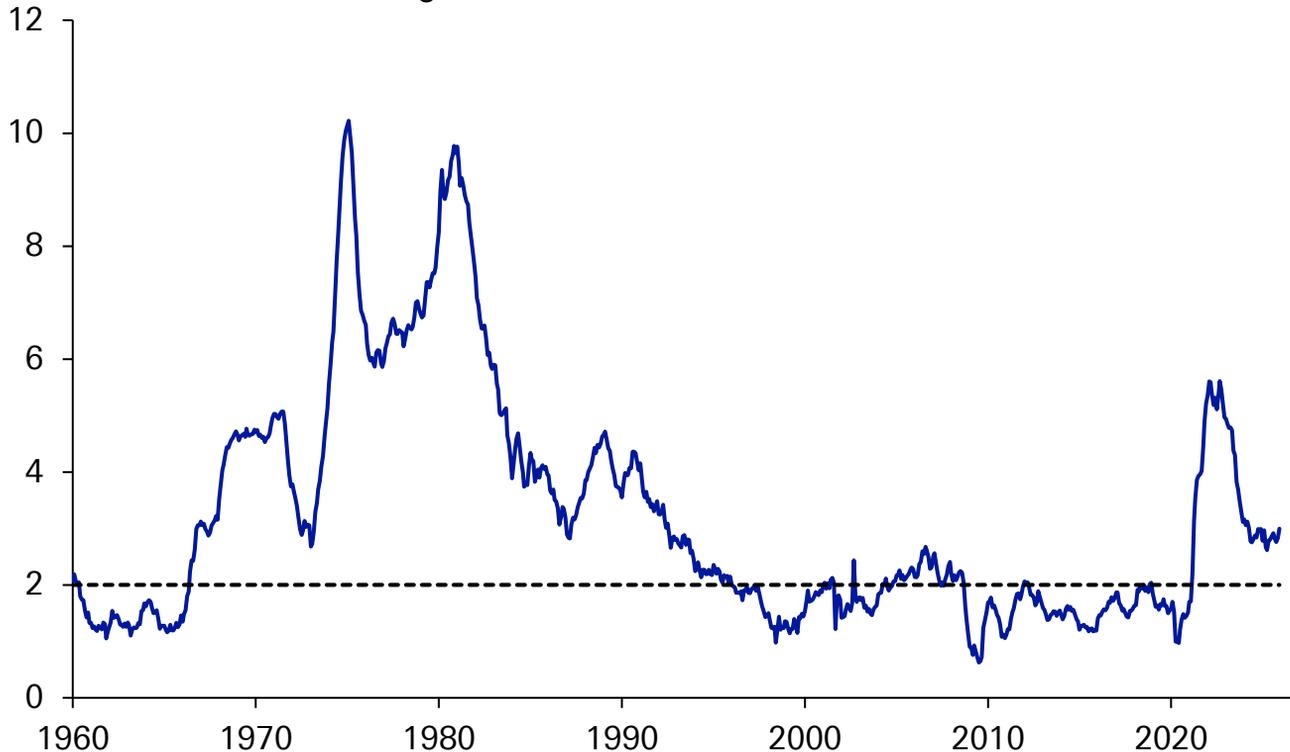


Source: CBO, FRB, Bloomberg Finance LP, Haver, Deutsche Bank

Core PCE is back up to 3.0%, and in March it'll have been above 2% for 5 full years (above 2.6% in fact)... the last time it went above 2% for 5 full years, it stayed there for almost 30 in total...



Core PCE : 12-month %Change



Source: BLS, Haver, Deutsche Bank.

Moreover, commodities have seen a huge upswing in recent months, and consensus forecasters expect US inflation to linger above target into 2027...



Bloomberg Commodity Spot Index

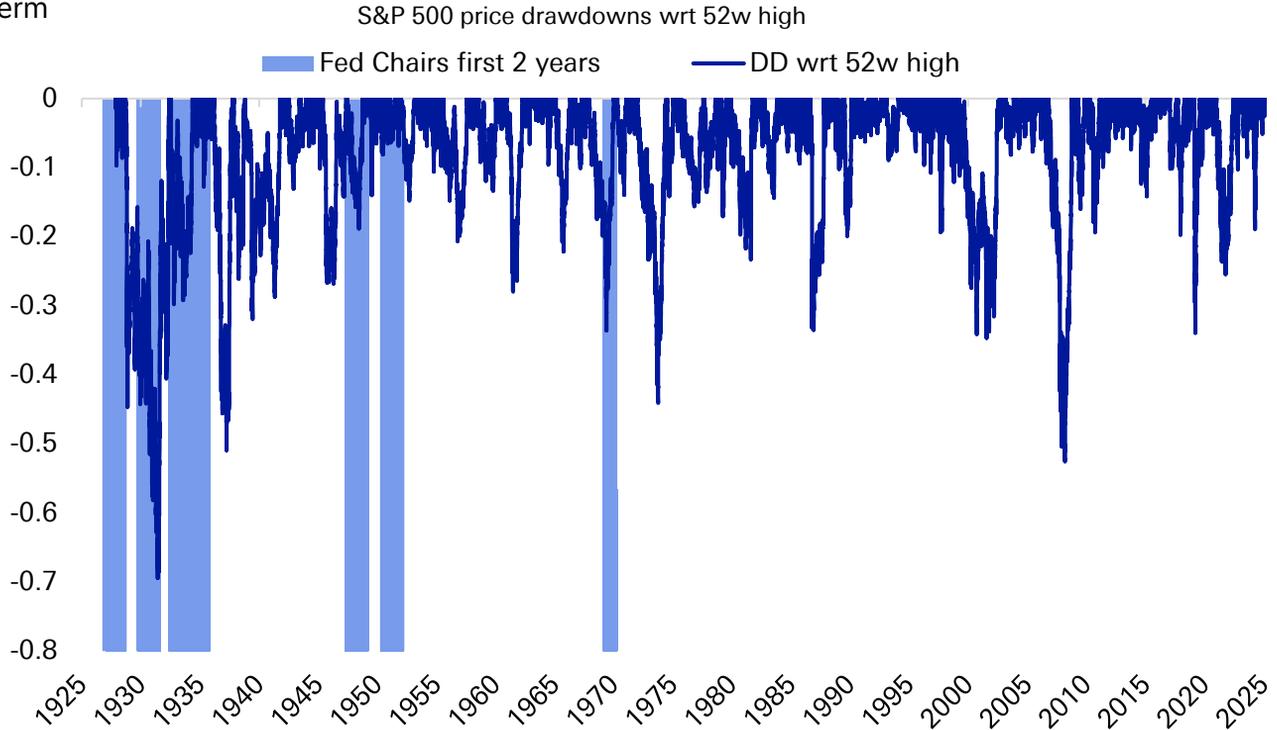


Source: Bloomberg Finance LP, Deutsche Bank

There is a perception in markets that new Fed Chairs tend to be tested soon into their tenure. However the evidence is mixed versus all history. The 1987 crash occurred very early in the Greenspan era, the GFC themes started early in the Bernanke era, but the Lehman default was 2.5 years after he started. Powell saw a very challenging late-2018 in his first year, but then Covid happened around 2 years into his term and was an outside event.



S&P 500 drawdowns from 52-week high. Blue shaded areas the first two years of a new Fed Chair's term



Source : Finaeon, Deutsche Bank



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