Yardeni Research

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Morning Briefing

On AI, Payrolls & Global Economy

Check out the accompanying chart collection.

Executive Summary: AI's power to transform operations in nearly every industry is bound to feed the productivity growth boom we expect, the crux of our Roaring 2020s scenario. But the unbridled propagation of AI poses some challenges. Dr. Ed looks at the AI question from multiple angles, noting prudent precautions to using AI—like restricting its access to unvetted Internet content. … Eric warns that the financial markets may be overly confident that the Fed will cut rates after September despite the strong economic data we expect for August. … And Melissa shares an update on the global export landscape.

Artificial Intelligence: Good vs Evil. There's a lot of controversy over AI. The passion of those for and against its propagation is almost religious in nature, with zealots and heretics. The zealots believe that AI is a revolutionary technological innovation that will quickly transform our lives for the better, a good development for humanity. A few of these believers do concede that it has the potential to be evil, turning against its creators.

The heretics say that AI certainly is artificial but is not intelligent. Some of them say it never will be intelligent. It is basically a statistical probability model that can digest huge amounts of information from the Internet but lacks the ability to recognize and correct its own mistakes, which is a key attribute of intelligence.

Consider the following intelligent opinions:

(1) Sam Altman, the CEO of OpenAI, said the following about AI: "This will be the greatest technology humanity has yet developed." He believes that it has the potential to revolutionize nearly every industry, not just those that stand to be radically transformed like healthcare, finance, and education.

(2) Tesla CEO Elon Musk has been warning that AI creates "existential risk" for humanity.

He sees tremendous benefits but also a great need to manage the risks of AI. He has said, “I’m particularly worried that these models could be used for large-scale disinformation.”

(3) Gary N. Smith, the Fletcher Jones Professor of Economics at Pomona College, has written extensively about AI. He wrote a book titled *The AI Delusion*. He was also one of my professors at Yale. He believes that AI isn’t intelligent and that it has the potential to pollute the Internet with lots of disinformation. See for example his January 15, 2024 *article* titled “Internet Pollution—If You Tell A Lie Long Enough…” He argues that:

“ChatGPT, Bing, Bard, and other large language models (LLMs) are undeniably astonishing. Initially intended to be a new-and-improved autocomplete tool, they can generate persuasive answers to queries, engage in human-like conversations, and write grammatically correct essays. So far, however, their main successes have been in providing entertainment for LLM addicts, raising money for fake-it-till-you-make-it schemes, and generating disinformation efficiently.

“It is said that if a lie is told long enough, people will come to believe it. In our internet age, a lie repeated in a large number of places on the Internet will eventually be accepted as truth by LLMs—particularly because they are not designed to know what words mean and consequently have no practical way of assessing the truth or falsity of the text they input and output.

“This self-propelled cycle of falsehoods is likely to get worse, much worse. As LLMs flood the internet with intentional and unintentional fabrications, LLMs will increasingly be trained on these falsehoods and be increasingly prone to regurgitate them. It won’t just be amusing garbage about Russian bears in space. It will be vicious lies about people, businesses, and governments—all spouted confidently and authoritatively—and many people will be conditioned to believe the LLMs’ rubbish.”

Artificial Intelligence II: Autofill on Speed. The simplest versions of AI have been around for a while. Microsoft Word has long had an autofill feature. When you turn it on, it anticipates your next words and suggests words or phrases as you type. When you are using it, you must check to make sure that it is correctly predicting what you intend to spell or the next couple of words you intend to write. If it makes the wrong prediction, you immediately recognize its mistake and just keep typing, ignoring autofill’s suggestions. Google describes its Autocomplete as “a feature within Google Search that makes it faster to complete searches that you start to type.”

Other examples of AI that have been around for a while are Apple's Siri and Amazon's Alexa. They can accurately answer lots of questions. They can play music, videos, and audio books. They can wake you up in the morning and tell you the weather. But they can't converse with you. They are one-trick ponies as personal assistants. In my opinion, AI will be ready for primetime once Siri and Alexa can function as multitasking personal assistants.

Google recently introduced Google Assistant for Android that does the same things as Siri and Alexa. I tried asking it for directions to JFK airport from my home in Long Island. It worked as well as Waze. But when I asked it for the nearest gasoline station, it suggested one that is 45 miles away. When I chastised it for the mistake, it apologized and said it is still in training.

Artificial Intelligence III: Search on Speed. AI can also be viewed as search on speed. Indeed, Google now often includes a short "AI Overview" at the top of search pages. At Yardeni Research, we've been using Microsoft's Copilot as a search engine. It also functions as a research assistant because it provides a short write-up of the subject we are researching with links to the sourced articles. That makes it much easier to fact-check Copilot's summary and to avoid cribbing.

In effect, Copilot is "Search and Summarize" on speed is and is an efficient way to use AI while reducing the risks of disinformation, since the sources of the AI-generated summary are readily available.

Artificial Intelligence IV: Big Data Combined with Supercomputing. AI that is fed all the data and information that are available on the Internet will collect a lot of disinformation and produce a lot of disinformation, as Gary Smith observes. However, when it is used solely to analyze limited pools of content known to be reliable—e.g., data proprietary to the researcher or information from external sources that have been properly vetted—then AI should be a significant source of productivity.

Again, AI has been around for quite some time but with limited applications and accuracy. What has changed is the use of Nvidia's lightning-fast GPU chips to speed up the processing and statistical analysis of all the data provided to the LLM. So in effect, AI is Big Data combined with supercomputing. Widespread adoption of such powerful capabilities should provide a big boost to productivity.

A great example of this is the way *Walmart* is leveraging generative AI to improve its customer's experience. Walmart is using LLMs to create or improve more than 850 million pieces of data across its product catalog, a process that would have required 100 times the head count to complete in the same amount of time, executives said.

Walmart's employees are using mobile devices to quickly locate inventory and get items on shelves or to waiting customers. That's a significant upgrade from the "treasure hunt" of finding items in years past, according to John Furner, president and CEO of Walmart U.S. He also said that inventories are down 4.5% thanks to AI.

Artificial Intelligence V: Hallucinations. A search of "AI hallucinations" on Google produced the following AI Overview: "AI hallucinations, or artificial hallucinations, are when AI models generate incorrect or misleading results that are presented as fact. These errors can be caused by a number of factors. ... AI hallucinations can be a problem for AI systems that are used to make important decisions, such as medical diagnoses or financial trading." You have been warned by AI about AI.

The Fed: Are Markets Too Dovish? Federal funds rate (FFR) futures contracts are pricing in 100bps of rate cuts over the next six months and 185bps over the next 12 months (*Fig. 1* and *Fig. 2*). We think that dovish outlook for rates is overdone and expect it to be pared back over the coming weeks.

Would that be a negative for stocks, if rate-cut hopes fade and a higher-for-longer FFR is priced back into the bond market? Not necessarily. Recall, markets were in a similar mode at the end of 2023: FFR futures expected more than 150bps of cuts in 2024, and the 10-year yield was right around its current level of 3.80% (*Fig. 3*). Yet we haven't had a single rate cut, and the S&P 500 is up more than 18% from 4,770 to 5,600.

Here's our update on what comes next:

(1) *Clearer skies*. After Hurricane Beryl affected economic data for July, we're expecting better numbers in August. There's been debate over how much the weather could have impacted July's economic indicators, particularly employment. In short, we say the impact was great: Temporary layoffs jumped, hours worked declined, and weather-impacted employment spiked. While the Bureau of Labor Statistics (BLS) disavowed any impact on its data from Beryl, the Fed said it accounted for half of the 0.6% m/m fall in industrial production (*Fig. 4*).

Fed Governor Michelle Bowman seems to agree with us, based on her *Tuesday comments*: "It is also likely that some temporary factors contributed to the soft July employment report.

The rise in the unemployment rate in July was largely accounted for by workers who are experiencing a temporary layoff and are more likely to be rehired in coming months. Hurricane Beryl also likely contributed to weaker job gains, as the number of workers not working due to bad weather increased significantly last month."

(2) *More B.S. from the BLS?* The BLS released its preliminary benchmark revisions for the 12 months ended March 2024 on Wednesday, revising payroll growth down by 818,000 over that period to 2.08 million net new jobs. Assuming that number isn't revised again early next year (it usually is), that implies average monthly payroll growth was roughly 173,500 rather than 241,600 over that time frame. That's about in line with the pre-pandemic average. We also think it's undershooting actual payroll growth, which even conservatively we figure was more like 200,000 per month. How could that be?

Many illegal immigrants aren't counted in the BLS's Quarterly Census of Employment and Wages (QCEW). That's because employers don't always pay state unemployment insurance (UI) taxes on those undocumented workers: Studies indicate that only about half (or optimistically up to 75%) of these workers are captured by UI. Using the Congressional Budget Office's (CBO) estimated net immigration of 3.3 million in fiscal 2023 (and its estimate that 65% of that figure represents illegal immigrants), we can assume that between 283,140 and 566,280 of workers weren't counted by the QCEW. That's based on 80% employment, two-thirds labor force participation, and between 50%-75% of workers captured by state UI. That takes monthly payroll growth to a range of 197,000 to 221,000. Not bad.

Reading through the lines, 0.5% lower employment implies 0.5% fewer aggregate hours worked for the same output. That means that Q1 y/y productivity growth was not 2.9% y/y but rather 3.4% (*Fig. 5*). Of course, all data are subject to revisions, and we won't put too much weight on this number. But it's worth considering the implications for the productivity boom that's coinciding with rampant investment in software and intellectual property, the crux of our Roaring 2020s thesis.

(3) *Already some confirmation*. Recent data on both unemployment claims and retail sales support our view that July's weak data were an aberration. Initial claims fell back down to 227,000 in the week ended August 9 (*Fig. 6*). Retail sales also jumped, by 1.0%, though we suspect the underlying consumption trend is a bit weaker as the headline number was boosted by two unusual developments: a rebound in auto sales (of 3.6%) due to a June cyberattack on car dealers and an uptick in sales of building materials (0.9%) due to rebuilding after the hurricane (*Fig. 7*). The next test of our theory will be Thursday's jobless

claims report.

Earnings reports by Target and Walmart also corroborate our view. Walmart CEO Doug McMillion said he's not seeing a weaker consumer, and Target's discretionary sales improved from a year ago.

The *minutes* of the July FOMC meeting, released on Wednesday, support our view that the labor market is cooling toward pre-pandemic levels but broadly in good shape: "Participants generally assessed that, overall, conditions in the labor market had returned to about where they stood on the eve of the pandemic—strong but not overheated."

(4) *Bearish for bonds?* If we are correct, the Citigroup Economic Surprise Index (CESI) should rise and boost the 10-year bond yield into our expected range of 4.00%-4.25% within the coming weeks (*Fig. 8*). That is, of course, absent a material shift in tensions between Russia-Ukraine and Iran-Israel, which could occur and swing the price of oil back up (*Fig. 9*). That geopolitical turn of events could be bullish for bonds and the dollar as a result of investors' flight to quality.

Still, a rate cut is coming in September. The FOMC minutes showed that some participants were leaning toward cutting the FFR in July, and the committee overall is in favor of a September cut. However, dissent is emerging. Participants are beginning to debate whether there's greater risk of cutting too soon and inflation rebounding or cutting too late and letting the economy fall into a recession. Growing dissent is likely to spark more volatility in market reactions to coming FOMC meetings.

Global Economy: Asian Export Resilience. Across Asia, exports are strong, led by automobiles and semiconductors, which have been exceptionally strong. Overall exports in Japan are up in yen but down in units. The exports of South Korea, Taiwan, and Vietnam are strong across the board. China is boosting its exports by cutting its prices.

Here's more:

(1) *Yen turbocharged exports*. The value of Japan's exports surged 10.3% y/y in July, boosted by the weak yen, though export volume fell 5.2% y/y (*Fig. 10*). Global demand for Japanese automobiles has largely recovered after recent certification scandals, as Melissa reported in our August 20 *Morning Briefing*.

(2) *South Korea's chip exports surge*. South Korea's exports rose 18.5% y/y in early August

(*Fig. 11*). Semiconductor shipments rose a staggering 42.5% y/y, bringing their share of total South Korean exports to 20.3%, boosted by global demand for AI development. This is not just an AI story, however—petroleum products, automobiles, and steel exports *climbed* by 11.7%, 7.8%, and 5.9% y/y, respectively, in early August.

(3) *Wider Asian export growth*. Taiwan is *mirroring* South Korea's success in semiconductors. China is *steadily* boosting exports to manufacture itself out of a property recession (*Fig. 12*). Vietnam is becoming a pivotal player in global trade as bilateral trade barriers with China mount, with exports *bolstered* across mobile phones, electronics, and textiles.

Calendars

US: Thurs: Initial Claims 233k; Existing Home Sales 3.93mu; S&P Global M-PMI & NM-PMI 49.8/54.0; Kansas City Fed Manufacturing Index; Fed's Balance Sheet; Jackson Hole Symposium. **Fri:** New Home Sales 828k; Jackson Hole Symposium; Baker-Hughes Rig Count; Powell. (FXStreet estimates)

Global: Thurs: Eurozone, Germany, France & Italy M-PMI Flash Estimates 45.7/43.4/44.2; Eurozone, Germany & France NM-PMI Flash Estimates 51.7/52.350.2; UK M-PMI & NM-PMI Flash Estimates 52.1/52.7; Eurozone Consumer Confidence -13.0; UK Gfk Consumer Confidence -12; Japan CPI 2.7%; ECB Publishes Accounts of Monetary Policy Meeting. **Fri:** Canada Headline & Core CPI -0.3%/-0.4%; Bailey. (FXStreet estimates)

Strategy Indicators

Stock Market Sentiment Indicators (***link***): The *Bull-Bear Ratio* rose to 2.28 this week after falling the prior three weeks from a 16-week high of 4.31 to 2.07. It was at 4.43 20 weeks ago—which was the highest reading since February 5, 2018. *Bullish sentiment* climbed to 50.0% this week after falling the prior three weeks from 64.2% four weeks ago—which ended seven straight months of readings above 60%—to 44.6% last week. The 64.2% reading was the most bulls since late 2020. Meanwhile, *bearish sentiment* rose the latest four weeks to 21.9%, up almost 50% from the count of 14.9% four weeks ago, which was the fewest bears since just 14.1% in late March 2024. The *correction count* fell for the second week to 28.1% after rising the prior four weeks by 15ppts (to 34.4% from 19.4%). In the *AAII Sentiment Survey* (as of August 15), bearish sentiment among individual investors about the short-term outlook for stocks decreased during the latest week, while both optimism and neutral sentiment increased. *Bullish sentiment* rose 2.0ppts to 42.5%—remaining above its historical average of 37.5% for the 40th time in 41 weeks, while *neutral sentiment* advanced 6.6ppts to 28.6%—though is below its historical average of 31.5% for the sixth successive week. Meanwhile, bearish sentiment sank 8.6ppts to 28.9% during the latest reporting week and is below its historical average of 31.0% for the eighth time in 10 weeks.

S&P 500 Earnings, Revenues, Valuation & Margins (*link*): The S&P 500's forward profit margin remained steady w/w at a 26-month high of 13.3% during the August 15 week. That's up from a 24-month low of 12.3% during the March 30, 2023 week and just 0.1ppt below its record high of 13.4% achieved intermittently in 2022 from March to June. It's now 3.0ppts above its seven-year low of 10.3% during April 2020. Forward revenues ticked down 0.1% w/w to 0.2% below its record high during the August 4 week. Forward earnings fell 0.2% w/w to 0.3% below its record high, also during the August 4 week. Revenues and earnings has been steadily making new record highs for 11 months now. That compares to its prior 16-month string of record highs from March 2021 to June 2022; prior to that, they peaked just before Covid-19 in February 2020. The consensus expectations for forward revenues growth dropped 0.1ppt w/w to 5.6% and is down from a 23-month high of 5.8% the week before that. It has gained 3.3ppts from its 33-month low of 2.3% during the February 23, 2023 week. That's down from a record high of 9.6% growth at the end of May 2021 and compares to 0.2% forward revenues growth during April 2020, which was the lowest reading since June 2009. The forward earnings growth forecast rose 0.1ppt w/w to a 35-month high of 13.6%. It's now 10.3ppts above its 31-month low of 3.3% during the February 16, 2023 week. That's down from its 23.9% reading at the end of April 2021, which was at its highest since June 2010 and up substantially from its record low of -5.6% at the end of April 2020. Analysts expect revenues to rise 4.7% in 2024 (down 0.1ppt w/w) and 5.8% in 2025 (up 0.1ppt w/w) compared to a revenues gain of 2.2% in 2023. They expect an earnings gain of 9.9% in 2024 (down 0.4ppts w/w) and a 15.1% rise in 2025 (up 0.2ppt w/w) compared to an earnings gain of 2.5% in 2023. Analysts expect the profit margin to rise 0.6ppt y/y to 12.5% in 2024 (unchanged w/w), compared to 11.9% in 2023, and to rise 1.1ppts y/y to 13.6% in 2025 (unchanged w/w). The S&P 500's weekly reading of its forward P/E jumped 1.0pt w/w to 20.7 from a 14-week low of 19.7 a week earlier. It's now just 0.9pt from its 31-month high of 21.6 during the July 11 week and is up 4.4pts from a 30-month low of 15.3 in October of 2022. It also compares to 23.1 in early September 2020, which was the highest level since July 2000, and to a 77-month low of 14.0 in March 2020. The S&P 500 weekly price-to-sales ratio rocketed 0.13pt higher w/w to 2.76 from a

14-week low of 2.63. It's now just 0.10pt from a 31-month high of 2.86 during the July 11 week. That's up from a six-month low of 2.22 during the October 26, 2023 week and compares to a 31-month low of 1.98 in October 2022. That also compares to a record high of 2.88 at the end of 2021 and a 49-month low of 1.65 in March 2020.

S&P 500 Sectors Earnings, Revenues, Valuation & Margins (*link*): During the August 15 week, forward revenues and earnings rose for four of the 11 S&P 500 sectors. This led to rising forward profit margins w/w for four sectors as well. Health Care and Information Technology had forward revenues at a record high this week. Financials' forward revenues would be at a record high too when adjusted for the incoming transfer of five former Tech sector firms in March 2023. These six sectors are less than 0.8% from their post-pandemic or record highs: Communication Services, Consumer Discretionary, Consumer Staples, Industrials, Real Estate, and Utilities. Energy and Materials are the biggest laggards at 5.5% and 11.2% below, respectively. While Financials and Utilities are the only two sectors with record-high forward earnings this week, these six sectors are less than 1.7% below their recent records: Communication Services, Consumer Discretionary, Consumer Staples, Industrials, Information Technology, and Real Estate. Health Care's forward earnings is 5.1% below its high and has stalled since late 2022. Forward earnings remains depressed for Energy and Materials; both are more than 22.1% below their post-pandemic highs. Looking at the forward profit margin, all of the sectors are showing signs of recovering from their early 2023 forward profit margin lows. While Financials is the only sector with its forward profit margin at a post-pandemic or record high this week, these four sectors were in that camp recently: Communications Services, Consumer Discretionary, Industrials, and Information Technology. Among the laggards, Energy's forward margin is only 0.1ppt above its 23-month low of 10.4% in February; Consumer Staples' is 0.2ppt above its seven-year low of 6.7% in March 2023; and Health Care's is 0.4ppt above its 8.5% record low in April. The annual profit margin is expected to fall y/y in 2024 for Energy, Materials, and Real Estate and to improve for the other eight sectors. Here's how the S&P 500 and its 11 sectors rank based on their current forward profit margin forecasts along with their record highs: Information Technology (27.3%, down from its 27.4% record high in early August), Financials (19.3, down from its 19.8 record high in August 2021), Communication Services (17.9, down 0.2ppt w/w from its 18.1 record high a week earlier), Real Estate (17.3, down 0.1ppt w/w and down from its 19.2 record high in 2016), Utilities (14.1, down from its 14.8 record high in April 2021), S&P 500 (13.3, a 26-month high and just 0.1ppt below its record high of 13.4 achieved intermittently in 2022 from March to June), Materials (11.1, down from a 20-month high of 11.6 in July and from its 13.6 record high in June 2022), Energy (10.5, down 0.1ppt w/w and from a six-month high of 10.9 in June and its 12.8 record high in November 2022), Industrials (10.8, just a hair below its 10.8 record high in September

2013), Consumer Discretionary (9.1, down 0.1ppt w/w from its 9.2 record high a week earlier), Health Care (8.8, up 0.1ppt w/w and 0.3ppt from its record low at the end of April and down from its 11.5 record high in February 2022), and Consumer Staples (6.9, down from its 7.7 record high in June 2020).

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