

Yardeni Research



December 3, 2025

Morning Briefing

Positive Spins On Al & On Australia

Check out the accompanying chart collection.

Executive Summary: Investor concerns that AI may be costing more than it's worth should be put into perspective, Melissa says. It is costing a fortune to build out AI infrastructure, and investors aren't wrong to worry that OpenAI won't make money for years, that depreciation practices unduly inflate earnings, that AI stocks may be overvalued. But compared to the GDP impact that ubiquitous AI will have as it sparks productivity growth economywide, the worriers are sweating the small stuff. AI will put our Roaring 2020s outlook into overdrive. ... Also: Nvidia's GPUs are facing new competition from TPUs, but the broader chip industry is expanding solidly. ... And: William observes that Australia's economic strength may be a bellwether for the global economy and bode well for the US.

All: Helping To Drive the Roaring 2020s. Two recent analyses have shaken investors' faith that the Al boom will bring the kinds of returns they'd previously assumed. The HSBC analysis in the news this week, tracking OpenAl's massive cloud-compute commitments, deserves the widespread attention it's getting. The second comes from investor Michael Burry, who has been warning for months that the Al boom is beginning to look like a classic valuation overshoot. He cautions that stretched depreciation schedules are resulting in overstated earnings and investors are relying on questionable narratives about the future revenue potential of Al.

We're not convinced that the boom that has driven up the valuations of Al related stocks represents a speculative cycle. What we see instead is an investment wave with familiar early-cycle overbuilding, the likes of which has supported decades of digital productivity gains. Recent quarters already are showing a notable upswing in productivity that supports the case for a renewed productivity boom (*Fig. 1*).

Funding and accounting concerns circulate; but as we see it, the high-tech cap-ex surge is building out the foundation for the BRAIN revolution, or biotech, robotics, AI, and nanotech advancing together (*Fig. 2*). Here's how we're thinking about it:

(1) *HSBC's liquidity concerns*. Technological revolutions never come cheap, but the scale of generative Al's upfront costs is striking. Spending on chips and data center construction has exploded, illustrating the massive physical front-loaded build-out required to support Al infrastructure (*Fig. 3*). If monetization lags or never materializes, the mismatch between the huge cost of fixed infrastructure and modest revenue from Al companies becomes a real problem.

HSBC goes as far as projecting a potential liquidity crunch for OpenAI by 2030 after incorporating the latest compute-capacity deals. HSBC's base-case model assumes total free cash flow of about \$282 billion through 2030. Even with that level of cash flow, plus other potential capital injections, the bank finds that OpenAI still faces a \$207 billion funding shortfall by 2030, implying that expected free cash flow falls far short of covering projected data center and compute rental obligations.

To demonstrate the shortfall, HSBC assumes AI becomes nearly ubiquitous by 2030. The analysts presume that OpenAI obtains 3 billion users, but with only 10% paying, and roughly \$129 billion in consumer AI revenue, mostly from search and ads, which represents just the consumer slice rather than total revenue (the enterprise estimates aren't disclosed). Even so, the *Financial Times* <u>notes</u> that these numbers "might prove overly cautious," but the OpenAI-specific risks are hard to wave away.

- (2) *Burry's depreciation distortion*. We've also noted Burry's point on depreciation: extending useful-life assumptions for Al infrastructure pads today's earnings at the expense of tomorrow's. Front-loaded costs don't vanish; they simply surface later. Burry argues that hyperscalers are *depreciating* fast-obsoleting Al hardware over five to six years, even though the realistic economic life may be closer to two to three. His broader claim is that under-depreciation across the sector could *overstate* profits by as much as \$176 billion.
- (3) YRI's optimistic scenario. But while Burry flags hidden excesses and HSBC outlines a funding gap, the macro backdrop still argues for a multi-year run of stronger productivity and profits. That's the crux of our Roaring 2020s scenario, which we believe is solidly underway.

Sure, some individual firms may stumble under the weight of their own balance sheets. But deals will be struck, capital will reallocate, and the broader productivity cycle will move on. And there is logic to depreciating front-loaded investments over longer horizons. Even a five-year-old GPU may find a second life in internal or low-intensity workloads. The strain on power and compute isn't a red flag but evidence of demand and momentum. Electricity costs continue to move higher, reflecting both rising demand from data centers

and the strain on power-supply infrastructure (*Fig. 4*). Meanwhile, S&P 500 operating earnings have consistently recovered through multiple cycles, and we expect them to continue to trend higher (*Fig. 5*).

What's been overlooked in press reports on HSBC's analysis is its conclusion: All is expected to penetrate "every production process and every vertical," generating broad productivity gains. That supports our Roaring 2020s thesis that a productivity boom will foster continued strong GDP growth.

We calculate that even a few basis points of additional GDP growth in the US's enormous \$23.8 trillion economy could generate more output than the entire surge in high-tech capital spending since 2020. Small gains in a very large economy can quickly eclipse the impact of big-sounding cap-ex numbers (*Fig.* 6).

To be clear, corrections are certainly possible. Early-cycle overbuilding could pressure semiconductor and construction stocks, and their weakness could spill over into broader cyclicals. But the underlying productivity pulse will beat stronger, last longer, and have further reaching ramifications than any such correction. To us, that seems to be the more powerful story.

Al II: A Chip in Nvidia's Armor. GPUs, or graphics processing units, are flexible, massively parallel processors originally built for graphics but now used for training and running Al models, while TPUs (tensor processing units) are purpose-built accelerators designed specifically to perform the matrix math that powers large-scale machine-learning workloads more efficiently.

While GPUs still dominate flexible model training, TPUs continue to gain traction for model execution where tighter integration outweighs raw versatility. From a broad market perspective, the push and pull between GPUs and TPUs is a healthy reflection of an AI hardware landscape that is growing more competitive as it matures.

Nvidia's grip on GPUs looked strong until Meta's talks with Google over TPU purchases were <u>reported</u>. The financial markets <u>reacted</u> negatively at first, then overcame their fears. Nvidia still anchors frontier training thanks to CUDA (compute unified device architecture), its ecosystem that long has <u>kept</u> developers tied to its platform.

But Google's TPUs have <u>matured</u>, and <u>Barron's</u> has highlighted their efficiency on large workloads. If hyperscalers begin to <u>shift</u> even a slice of that demand, Nvidia's pricing power

could come under fire. It won't collapse, but the competition finally has arrived.

Even as competition from TPUs introduces new competitive pressures, the broader chip industry remains on the solid earnings and cap-ex trajectories that typify an expanding sector (see our <u>Semiconductors</u> chart book).

Australian Economy I: Strength Down Under May Augur Well for US. The nearly 9,800 miles separating Reserve Bank of Australia (RBA) Governor Michele Bullock and Federal Reserve Chair Jerome Powell can be viewed a topographical metaphor—for the gulf between the decisions that the two central bankers face as 2025 draws to a close. For Bullock, the question is when to hike interest rates; for Powell, it's when to lower them once again (hike interest rates; for Powell, it's when to lower them once again (Fig. 7).

That's not to say that events in Sydney don't touch Powell and his board in Washington. Bullock's dilemma suggests that the global economy might be entering 2026 on better-than-feared footing.

Thanks to RBA easing moves earlier this year, many economists think Australia will finish 2025 growing around 2.0% y/y. Some think it could grow 2.2%, which would be a three-year high.

Let's look at the good things for the US that Australia's economic expansion may portend:

(1) *Early warning system*. While Australia isn't *in* Asia, it's certainly *of* the most dynamic trading region. The resource-rich nation is as exposed to China's zigs and zags as any. As such, Australia's sizable and open Group of 20 economy may be the closest thing the West has to an early warning system.

This global barometer role came into focus in late 2009, when Australia became the first G20 member to <u>boost interest rates</u> following the global financial crisis. It was one of the first major signs that the world economy had begun to dust itself off.

(2) *Testing speed limits*. Today, Australia is flashing green for the biggest economies, including Powell's. As Australian GDP tests three-year highs, the economy is experiencing hotter inflation than policymakers would prefer amid tight labor markets. This has the RBA setting the current <u>speed limit</u> for the <u>13th largest economy</u> at around 2% (<u>Fig. 8</u>). "With so little spare capacity, the economy cannot sustain above-trend growth without putting <u>upward pressure</u> on prices and wages," says Sally Auld of National Australia Bank.

The challenge is complicated by Australia's weak productivity growth.

- (3) *The China factor*. Relations between Australia and China aren't great. Few would call Australian Prime Minister Anthony Albanese a Beijing-friendly leader. The tensions were on display in October, when Albanese was in the Oval Office signing a rare earths minerals deal with President Donald Trump. But the economy's performance offers hope that the US tariffs and China's trajectory aren't slamming global growth as much as feared.
- (4) *Eye-popping US data*. Still, Australia's 2026 is looking very different from the US's. Recession talk is hard to shake. In mid-November, Fed Governor Christopher Waller said he saw "eye-popping" signs the economy is "significantly slowing."

Hence, there's an almost universal expectation that the Fed will cut the federal funds rate on December 10. Yet the US, like Australia, is holding up considerably better than the conventional wisdom expected. Employment and consumption continue to beat the odds.

Even China's economy could be about to surprise to the upside. In yesterday's <u>Morning Briefing</u>, we discussed Goldman Sachs' expectation that GDP in Asia's biggest economy could <u>accelerate to 6%</u> in 2026 from around 5% this year (<u>Fig. 9</u>).

Australian Economy II: What Could Go Wrong. While Australia's strength has been confounding the economic bears, let's examine where the potential pitfalls exist:

(1) *Geopolitical tensions*. Of course, caveats abound for both economies and the global economy writ large. No one can say what Trump might do with tariffs over the next 12 months. Geopolitical risks from Russia versus Ukraine, the US versus Venezuela, and China versus Japan have oil markets on edge (*Fig. 10*).

These and other economic imponderables explain why Fed policymakers seem uniquely divided on whether weak employment or 3% inflation is the bigger worry a week ahead of a December 10 rate decision—and why Bullock appears to be hedging her bets. On *November 4*, she said, "it's possible that there's no more rate cuts," but "anything is possible."

(2) *Rate cuts working*. Rate uncertainty isn't helping Australia's stock market; the Australia MSCI equity index is up just 0.8% (in local currency) this year (*Fig. 11*). The RBA cut rates *three times* this year: In each of February, May, and August, it eased by 25bps, leaving the benchmark rate at 3.6%. Signs that stimulus has gained traction aren't hard to find. In

September, new capital expenditures <u>jumped 6.4% y/y</u> in Q3. Manufacturing is <u>growing</u> <u>again</u> (<u>Fig. 12</u>).

To be sure, some of the increase reflects outlays on data centers to capitalize on the artificial intelligence boom. Yet increased business investment is key to boosting the nation's tepid productivity growth.

(3) Remarkable resilience. Australia's home prices are rising, too, as credit growth accelerates. Discretionary spending is increasing. Household consumption <u>rose 5.1% y/y</u> in September. "Household resilience has been <u>remarkable</u>," notes Belinda Allen at Commonwealth Bank.

Virtually no one thinks the RBA will hike rates at its <u>December 8-9</u> meeting. But the global forces pushing officials in Sydney to consider tapping the brakes could augur in favor of fewer US rate cuts than some expect.

Calendars

US: Tues: Total Vehicle Sales; Bowman. **Wed:** ADP Employment Change 10k; ISM NM-PMI 52.1; Import Price Index 0.1%; MBA Mortgage Applications. (Source: FX Street)

Global: Tues: Eurozone Headline & Core CPI 2.1% & 2.4% y/y; Eurozone Unemployment Rate 6.3%. **Wed:** Eurozone, Germany & France C-PMIs 52.4, 52.1 & 49.9; Eurozone, Germany & France NM-PMIs 53.1, 52.7 & 50.8; Eurozone PPI 0.2%; Lagarde; Lane. (Source: FX Street)

Strategy Indicators

S&P 500 Q3 Earnings Season Monitor (*link*): While 97% of the S&P 500 companies have already reported Q3 results through mid-day Tuesday, the companies left to report will add more clarity about the state of AI and consumer spending. For the 484 reporting companies in aggregate, Q3 revenues are ahead of the consensus forecast by 2.3% and earnings have exceeded estimates by a 16-quarter-high 9.6%, compared to 2.6% for revenues and 8.2% for earnings in Q2. Their revenues have risen by a 12-quarter-high 8.2% y/y, and earnings are up a 16-quarter-high 16.5%, compared to 6.3% and 12.8% in Q2. So far, a 14-quarter-

high 83.5% of the 455 companies have higher revenues y/y, and a 15-quarter-high 73.1% have higher earnings y/y, up from 81.1% and 69.0% rising y/y in Q2. Among the 11 sectors, all have positive y/y revenues growth and all but Energy have higher earnings y/y. Excluding Energy, y/y revenues growth for the S&P 500 is 0.6ppt higher at 8.8% and earnings growth improves 1.0ppt to 17.5%.

Global Economic Indicators

Eurozone CPI Flash Estimate (*link*): The *Eurozone's CPI* is expected to be 2.2% in November, according to the flash estimate, ticking up from 2.1% in Oct. The report notes the CPI fell 0.3% during the month, following a 0.2% increase in October. The ECB held its key rate steady at 2.0% at the end of October, based on the assessment that inflation remains close to the 2% medium-term target and that the inflation outlook is broadly unchanged. The *core rate*, which excludes energy, food, alcohol, and tobacco, is expected to hold at 2.4% in November for the third successive month. *Looking at the components*, the *services* rate accelerated for the third month, from 3.1% in August to 3.5% in November, while the *food, alcohol & tobacco* rate eased from 3.3% in July to 2.5% in October and November. The rate for *non-energy industrial goods* was at 0.6% for the second straight month, following three months at 0.8%. *Energy* prices remained negative, though the rate of decline is nearing zero, increasing from -2.6% June to -0.5% in November. *Among the top four largest Eurozone countries*, CPI flash estimates were a mixed bag. Rates moved lower in Italy (to 1.1% from 1.3% in October) and Spain (to 3.1 from 3.2), while Germany's (2.6 from 2.3) rate accelerated. France's rate was unchanged at 0.8%.

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