Yardeni Research

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Morning Briefing

China, Nvidia & Humanoid Robots

Check out the accompanying chart collection.

Executive Summary: The collapse of China's real estate segment and the response of the Chinese government—stimulating not consumption but production—are keeping the country's exports high and effectively exporting deflation along with goods. This has ramifications for the economies of its trading partners, as Jackie reports. China's weak economy is hurting multinational companies doing business there and domestic corporations alike. … Also: A look at Nvidia's fundamental and valuation stats in the wake of strong earnings that nonetheless failed to excite investors. … And in our Disruptive Technologies segment, more on humanoid robots: Optimus and Figure 2.0.

China: The Hits Keep Coming. China's real estate collapse may be morphing into something much larger: a deflationary economic bust that's starting to have a global impact.

China's three-year housing bust continued in July with new home prices falling by 5.0% y/y, marking the 13th month of consecutive declines (*Fig. 1*). Buying a home was one of the primary ways that Chinese citizens historically used to invest and build wealth. So the bust has taken a toll on Chinese consumers' confidence, now at near-record lows, and their willingness to make purchases. China's real retail sales growth was only 2.2% y/y in July, far below the 10% y/y increases regularly logged prior to 2018 (*Fig. 2* and *Fig. 3*).

Instead of focusing on ways to stimulate consumer spending, the Chinese government has enacted policies that boost industrial production to the point where it's causing global gluts in certain areas. China's industrial production rose 5.1% y/y in July, compared to declines in the US (-0.2% in July), the Eurozone (-4.0% in June), and Japan (-4.8% in June) (*Fig. 4*, *Fig. 5*, and *Fig. 6*).

While its domestic economy remains sluggish, China's exports are holding near peak levels (*Fig. 7*). China essentially is exporting deflation along with its goods. In July, Chinese producer prices fell 0.8% y/y and US import prices from China declined 1.2% (*Fig. 8*). This

has created a hornet's nest of problems that has driven Chinese 10-year bond yields down to 2.18%, hovering around more than two-decade lows (*Fig. 9*).

Earlier this week, PDD's Q2 results missed expectations, further inflaming concerns about Chinese consumers. More problematic news came from IBM, which announced plans to pull its research operations out of the country. Neither news item indicates that China's economy will turn around anytime soon. Here are the details:

(1) *IBM says "adieu."* This week, IBM announced plans to shut its China research and development department and move the operations to other international locations. IBM follows Microsoft's plans to downsize its cloud computing and AI research operations in China.

IBM's revenue in China fell 19.6% last year, making it the 9th out of 10 years that the company's China revenue has fallen. Tech companies have been hurt by the Chinese government's 2022 policy requiring state-owned companies in certain sectors to purchase technology from domestic tech companies in the government's "Delete America" campaign, a March 7 *WSJ* *article* reported. The country aims to be self-sufficient in technology, both hardware and software, and to protect itself from any security breaches caused by the US government. Private companies, too, are increasingly willing to buy tech gear from domestic manufacturers.

Private equity shops also have reduced their investments in China. The 10 largest global buyout firms have only made five new investments in Chinese companies this year, compared to the 30 investments made in 2021, an August 25 *FT* *article* reported.

(2) *PDD misses.* PDD Holdings, parent of online retailers Temu and Pinduoduo, reported an 85.7% y/y increase in Q2 revenue to $13.4 billion, but that missed analysts' expectations for $14.0 billion of revenue and marked a slowdown from the 131% y/y revenue Q1 growth rate.

Management sounded cautious on PDD's Q2 earnings *conference call*: "On the one hand, consumers are increasingly choosing experience-based consumption over material purchases. On the other hand, there is a growing emphasis on rational consumption. Consumers are making more thoughtful decisions to balance quality and value," said Co-CEO Lei Chen.

He also cited escalating competition among e-commerce platforms and noted that profits

will be hit by investments planned. The company will offer incentives to its “high quality merchants” while identifying and removing unlawful vendors from its platforms. He concluded: “In the long run, the decline in profitability is inevitable.” PDD shares lost almost a third of their value on Monday and Tuesday.

The company’s message may have been exactly what government officials wanted to hear, however. “PDD Holdings faced a public relations crisis in July when hundreds of Temu merchants descended on its Guangzhou offices to protest heavy fines and penalties levied by the company as punishment for customer returns, resulting in a swarm of police descending on the area,” an August 27 *FT* *article* reported. The company—and the government—undoubtedly wants to avoid a repeat of that fracas and is investing in its operations.

Technology: Nvidia Fights Expectations. Nvidia reported fiscal Q2 results that beat expectations, with revenue climbing more than 122.4% y/y, but that still wasn't enough to make investors happy. Shares of the tech giant sold off roughly 5% after hours, but remain up almost 150% ytd.

Nvidia reported adjusted earnings per share of 68 cents on revenue of $30.0 billion for its fiscal Q2 (ended July), beating analysts’ expected earnings of 65 cents on revenue of $28.7 billion. In its Q1 earnings press release, the company guided to $28.0 billion of Q2 revenue, plus or minus 2%. That compares with Q2-2023 earnings of 27 cents a share on revenue of $13.5 billion.

Nvidia projected Q3 revenue of $32.5 billion, plus or minus 2%, which is slightly above the $31.7 billion Wall Street is expecting and an increase of 80% from a year ago, according to a CNBC *article*.

Here are some additional details:

(1) *Not without worries.* Despite frenzied headlines and concerns over slowing growth, analysts' consensus earnings estimates for Nvidia continue to rise. The estimate for this fiscal year (ending January) has risen about 10% from $2.50 three months ago to $2.75 currently. And next fiscal year’s estimate has risen 17% from $3.25 to $3.81.

There has been concern about a rumored delay in the sale of the company’s latest generation of chips, Blackwell, and speculation about whether its current generation of chips, Hopper, will be able to fill any void. In its press release, Nvidia said Blackwell chips

are shipping to its partners and customers.

Additional concern revolves around whether the company can maintain its dominant market share and amazing operating margins, north of 50%, given the gaggle of startups gunning to be the next Nvidia. Cerebras, d-Matrix, and Groq are working to build "cheaper, more specialized chips designed for running AI models," the *FT* *reported* on Tuesday. The Q2 profit margin was 56%.

(2) *AI rocket fuel.* Since the introduction of ChatGPT on November 30, 2022, Nvidia shares have soared 703% through Wednesday's close on the back of exceedingly strong revenue and profit growth (*Fig. 10*). The shares have vastly outperformed the comparable 41.3% gain in the S&P 500. Since ChatGPT's introduction, Nvidia's forward revenues has climbed 410%, and its forward operating earnings per share has jumped 716% (*Fig. 11* and *Fig. 12*).

As impressively, Nvidia's forward profit margin, 56.1%, is wider than the margins of the other MegaCap-8 companies by 50% or more (*Fig. 13*). While those three financial metrics are all at record levels, Nvidia's forward P/E, at 38.1, is elevated relative to the S&P 500's forward P/E of 21.1, but it's only in the middle of Nvidia's very wide forward P/E range over the past 15 years (*Fig. 14*).

Much will depend on whether the company can hit earnings growth forecasts. Analysts see earnings more than doubling—rising 111.5%—this fiscal year to $2.75 a share, growing only 38.5% to $3.81 in fiscal 2026 and then 17.0% to $4.46 in fiscal 2027.

Disruptive Technologies: Optimus vs Figure 2.0. Millions of humanoid robots, those that look and move like humans, could become regular fixtures in factories and homes, bringing down manufacturing costs, eliminating dreary and dangerous work, and launching humanity into an age of abundance, according to the CEOs of Tesla and Figure AI. Both companies have humanoid prototypes that look amazingly lifelike and are trained using artificial intelligence.

Here's a head-to-head comparison of these humanoid robots and a summary of what their CEOs expect in the future:

(1) *Adcock's vision.* Brett Adcock, CEO of Figure AI, has a plan. The company has built 10 humanoid robots, and it's building one additional robot a week. A planned production line in California should produce hundreds of robots next year; shortly thereafter, thousands of robots will be manufactured annually.

At first, robots will be used in factories, filling vacant jobs, and doing work that isn't desirable or dangerous, Adcock said in an August 22 *podcast*. Within the next three years, humanoid robots will also work in homes, doing chores, running errands, and even walking the dog. Figure AI's humanoids won't be on the battlefield because the company doesn't do defense-related work, he said. He believes there's plenty of opportunity in the civilian market, where he forecasts 3 billion to 5 billion robots will be in the workforce by 2040. At some point, Adcock believes, everyone will own a humanoid.

As manufacturing ramps up, the cost of producing a humanoid robot should fall below $20,000. And ultimately, when robots build robots in factories powered by renewable energy, the price tag should fall much further. Adcock also envisions owners generating income by leasing or renting their robots to others when they're not in use.

Companies will buy humanoid robots because they can be added to manufacturing lines without changing the layout of the factory floor or bringing in additional new equipment. Powered by artificial intelligence, humanoid robots will be trained easily through verbal commands or physical demonstration. And as one robot gets trained, its "knowledge" can be instantly shared with a fleet of robots. At first, humanoid robots will work in areas separated from humans. But within this decade, they'll be working alongside humans. Here's a *video* of Figure 2.0 working on a BMW assembly line in South Carolina during a trial run earlier this year.

(2) *Optimus' edge.* Optimus is currently working on Tesla's manufacturing lines, Elon Musk noted in Tesla's Q2 earnings *conference call*: "[We] expect to have several thousand Optimus robots produced and doing useful things by the end of next year in Tesla factories." In 2026, production will be ramped up "quite a bit," and an updated version of Optimus will be sold to outside customers.

Tesla uses what it has learned from training its autonomous cars and from manufacturing electric vehicles (EVs) in the training and manufacturing of Optimus. It can work out any kinks that Optimus has while the robot works in Tesla's factories. The auto arm of Tesla should benefit from Optimus as well. If successfully deployed, the robot presumably would bring the company's labor costs down sharply, allowing it to sell its EVs at lower prices than competitors' cars produced using human labor.

Musk believes the long-term value of Optimus will exceed that of all of Tesla's other parts. Optimus will be able to do "pretty much anything you ask of it. I think everyone on earth is going to want one." Long-term retail and commercial demand for general purpose humanoid

robots could exceed 20 billion units, he estimates.

(3) *Comparing humanoids.* The exteriors of Figure 2.0 and Optimus seem very similar, and both are being updated so rapidly that anything one robot lacks today, it likely won't in its next iteration.

Both robots are roughly the same size: Optimus is five foot eight inches tall and 161 pounds, while Figure 2.0 is five foot six inches tall and 154 pounds, and both can carry roughly 45 pounds maximum. Both robots have human-like hands with five "fingers" but different ranges of freedom (16 degrees for Figure 2.0, 11 for Optimus). An expected upgrade will give Optimus' hands 22 degrees of freedom. In a video, Figure 2.0 was shown handing a human an apple, and in another video, Optimus delicately handled an egg.

Other differences between the two include the number of cameras (six for Figure 2.0, four for Optimus) and power of battery packs (2.25 kWh and five hours runtime for Figure 2.0, 2.3 kWh and eight hours for Optimus)—as detailed in this August 13 *video*.

Figure 2.0 can respond to human voice commands. In a video we highlighted in our March 20 *Morning Briefing*, the robot correctly sorted items and answered a human's questions. Either Figure 2.0, which uses OpenAI software, is ahead of Optimus on this score or Optimus hasn't shown what it's capable of yet. Tesla kept Optimus under wraps—literally in a clear container—during the 2024 World Robot Conference in China earlier this month. Hopefully, we'll see Optimus's latest tricks after its upgrade later this year.

Calendars

US: Thurs: GDP & GDP Price Index 2.8%/2.3%; Real Consumer Spending 2.3%; Headline & Core PCED 2.6%/2.9%q/q; Jobless Claims 234k; Wholesales Inventories 0.2%; Pending Home Sales 0.2%; Fed's Balance Sheet; Natural Gas Storage; Bostic. **Fri:** Personal Income & Spending 0.2%/0.5%; Headline & Core PCED 0.2%m/m/2.5%y/y & 0.2%m/m/2.7%y/y; Consumer Sentiment Index Headline, Current Conditions, and Expectations 67.8/60.9/72.1; 1-Year & 5-Year Inflation Expectations 2.9%/3.0%; Atlanta GDPNow 2.0%; Chicago PMI 44.4; Baker-Hughes Rig Count. (FXStreet estimates)

Global: Thurs: Eurozone Business and Consumer Survey 95.9; Germany CPI 0.0%m/m/2.3%y/y; Spain CPI 0.2%m/m/2.5%y/y; Japan Industrial Production 3.7%; Japan Retail Sales 0.5%; Japan Unemployment Rate 2.6%; Japan Household Confidence 36.9;

Eurogroup Meetings; Lane; Nagel; Schnabel. **Fri:** Eurozone Headline & Core CPI 2.2%/2.8%y/y; Eurozone Unemployment Rate 6.5%; Germany Import Prices 0.1%; Germany Retail Sales 0.4%; Germany Unemployment Change & Unemployment Rate 16k/6.0%; France Consumer Spending 0.5%; France CPI 0.6%m/m/1.8%y/y; France GDP 0.3%q/q/1.1%y/y; Italy Headline & Core CPI 0.3%m/m/1.1%y/y & 0.0%m/m/1.3%y/y; Italy Unemployment Rate 7.0%; Spain Retail Sales; Japan Housing Starts -1.1%y/y; Schnabel. (FXStreet estimates)

Strategy Indicators

Stock Market Sentiment Indicators (*link*): The *Bull-Bear Ratio* rose for the second week to 2.35 this week after falling the prior three weeks from a 16-week high of 4.31 to 2.07. It was at 4.43 21 weeks ago—which was the highest reading since February 5, 2018. *Bullish sentiment* climbed again for the second week, to 53.2%, after falling the prior three weeks from 64.2% four weeks ago—which ended seven straight months of readings above 60%—to 44.6% two weeks ago. The 64.2% reading was the most bulls since late 2020. Meanwhile, *bearish sentiment* rose during the latest five-week period, to 22.6%, up almost 50% from the count of 14.9% five weeks ago, which was the fewest bears since just 14.1% in late March 2024. The *correction count* fell for the third week to 24.2% after rising the prior four weeks by 15ppts (to 34.4% from 19.4%). In the *AAII Sentiment Survey* (as of August 22), bullish sentiment among individual investors about the short-term outlook for stocks increased during the latest week, while both bearish and neutral sentiment decreased. *Bullish sentiment* jumped 9.1ppts to 51.6%—and is now unusually high—and above its historical average of 37.5% for the 41st time in 42 weeks. Meanwhile, *bearish sentiment* sank 5.2ppts to 23.7%, below its historical average of 31.0% for the ninth time in 11 weeks, while neutral sentiment fell 3.8ppts to 24.7%, below its historical average of 31.5% for the seventh successive week.

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