MORNING BRIEFING
July 27, 2023

Industrials, Tech & Identifying Humans

Check out the accompanying chart collection.

Executive Summary: US government incentives offered to entice manufacturers to set up shop in the USA have hit their mark: Manufacturers in huge numbers, domestic and foreign, have been revamping their supply chains to relocate their production facilities to the US. It's not always easy, as Jackie explains. But the boost to US economic activity is quantifiable and growing. … Also: AI is here, but all the ways it may disrupt markets are still unknown; will it dislodge the leaders in search and office software, Alphabet and Microsoft? … And: The dilemma of how to tell whether online content was human- or AI-generated has a solution, says one father of AI, involving eyeballs, orbs, and Worldcoin.

Industrials: Onshoring Bumps. Foreign and domestic manufacturers have pounced on the opportunity to receive trillions of dollars in tax breaks and other incentives offered in the Biden administration's CHIPS and Science Act, the Inflation Reduction Act, and the Infrastructure Investment and Jobs Act. Add that to supply-chain disruptions and geopolitical tensions, and it's no wonder that manufacturers have been reconsidering their sourcing options. Reshoring, nearshoring, and "friendshoring" (sourcing from countries that are political allies) have been getting a second look.

In a recent survey of 2,000 US and UK CEOs, 43% said they have been or are currently actively looking at onshoring or nearshoring some or all of their supply chains, according to a July 6 Proxima *press release*. Plants making everything from solar panels to semiconductors are under development or have come online already. The positive economic impacts of more US manufacturing jobs are showing up in the data and should only intensify.

As might be expected, some problems have cropped up. Companies are grousing about the length of time it takes to receive environmental approvals and local permits, and they're not happy about the cost of US labor. This week, Taiwan Semiconductor Manufacturing reported that the opening of its Arizona semiconductor chip factory will be pushed back a year to 2025 due to difficulty finding skilled workers in the US and the need to bring in workers from Taiwan. And in March, Stanley Black & Decker shut down the automated Craftsman tool plant built in Texas that was plagued by problems with its machinery among other things.

The Wall Street Journal recently relayed the experience of two manufacturers. Jervois Global tried and failed to launch a cobalt mine in Idaho. Bath & Body Works managed to bring its manufacturing and packaging operations and suppliers to Ohio from their previous locations at home and abroad. Their different outcomes are instructive. Let's take a look at what these two companies encountered, along with data on how the manufacturing boom is boosting the US economy:

(1) *A tale of defeat.* Jervois halted progress on its mine because the price of cobalt fell from almost $40 a pound in May 2022 to about $15 more recently. The mine's breakeven price is about $17.50 a pound, and the company will wait until prices rebound to $25 or more before reopening the mine, a July 22 *WSJ* *article* reported. The company spent almost twice what it had expected to spend constructing the Idaho facility and obtaining permits; the required red tape—including environmental reviews and dealing with appeals by rival miners—took almost a decade. A fire in the area presented another challenge.

Even though the mine is closed, its maintenance costs about $1 million a month. Despite the mine's closure, the Pentagon awarded Jervois $15 million last month to keep drilling in Idaho and to study the potential for a US refinery. The funding, which needs regulatory approval, is expected in August, and the company has also applied for an Energy Department loan.

"A senior official at the Pentagon, which under the Defense Production Act could get priority to buy cobalt in an emergency, said such investments are risks worth taking. With the exception of some deposits in Idaho and Missouri, additional U.S. production would have to come as a byproduct of another metal, the U.S. Geological Survey said in a report earlier this year," the *WSJ* article noted.

(2) *A tale of success.* In 2008, Bath & Body Works wanted to get its products to market more quickly, so it decided to move its production from China, Canada, and Virginia to the outskirts of Columbus, Ohio near the company's existing distribution center. There, the company and its suppliers now make soaps, bottles, labels, and anything else needed with 5,000 employees during peak season, a July 25 *WSJ* *article* reported.

Replicating Bath & Body Work's success may be tough for companies that produce items like semiconductors or smartphones, which rely on very specialized suppliers located in Asia. Bath & Body Works had to guarantee its suppliers business for a set number of years, and suppliers had to fill their factories with automation to remain competitive. "[P]roduction in the U.S. employs around 10 people and required $12 million in capital investment, versus

employing around 50 people with under $2 million in investment for similar production capacity in China," one supplier told the *WSJ*. But the company reaped the benefit of production times that shrunk to under a month from five months previously.

(3) *Quantifying the boom.* The move to bring manufacturing back to US shores may be in the early innings, but the impact is already being felt. Jobs in manufacturing are on the rise. New jobs announced in Q1 related to reshoring and foreign direct investment (FDI) in the US rose to 406,214 on an annualized basis, up 11% from 2022, according to a May 18 *press release* from the Reshoring Initiative. The figure has jumped dramatically since 2019, when only 100,487 jobs were added due to reshoring or FDI.

Labor Department figures tell a similar tale. The number of people working in manufacturing, 13.0 million as of June, has climbed past the prior peak hit in 2019 to a level last seen in November 2008. Likewise, the number of employees in goods producing jobs—including manufacturing, construction, mining, oil and gas extraction, agriculture, forestry, fishing, and hunting—has climbed to 21.6 million, past 2019 levels and back to levels not seen since May 2008 (*Fig. 1*).

Companies and suppliers building factories have helped to push up construction machinery orders up 13.5% y/y (*Fig. 2*). Several categories of machinery orders have posted double-digit gains. Here's a look: turbines, generators, and other power transmission equipment (20.5% y/y), mining, oil field & gas field machinery (14.8), and material handling equipment (12.8) (*Fig. 3*).

The influence is also apparent in construction spending. While residential construction spending has slumped over the past year, spending on nonresidential construction has soared 20.5% y/y in May, while spending on public construction was up a more modest 12.3% (*Fig. 4*).

All this activity has benefited the S&P 500 Industrials sector's price index. Here's the performance derby for the S&P 500 and its 11 sectors ytd through Tuesday's close: Information Technology (45.9%), Communication Services (36.7), Consumer Discretionary (33.5), S&P 500 (19.0), Industrials (11.6), Materials (9.9), Real Estate (4.5), Financials (3.2), Consumer Staples (2.0), Health Care (-0.2), Energy (-1.9), and Utilities (-3.0) (*Fig. 5*).

Some industries in the Industrials and Materials sectors that are closely tied to industrial activity have also risen sharply ytd through Tuesday's close: Construction Materials (31.0%), Steel (23.5), Electrical Components & Equipment (18.3), Industrial Conglomerates

(17.6), Industrial Machinery (17.0), Industrial Gases (13.7), and Construction Machinery & Heavy Trucks (12.8).

Technology: The AI Shakeup. Artificial intelligence (AI) may dramatically change how we search for news and how we use computer software like Word and Excel. The question is: Will it change which search engines and which software programs we use? The answer may have a material impact on the future of Alphabet and Microsoft.

Both companies are spending billions to infuse AI into their cloud services, office software, and search engines. Google undoubtedly wants to expand its share of the office software market and defend its dominance in search, while Microsoft would like to make Bing a search leader instead of an afterthought and defend its dominance of the office software market.

While the two companies' shares have risen by a similar amount this year, investors seem to be betting that Microsoft will come out ahead. Microsoft shares climbed 46.4% ytd and Alphabet shares 38.4% ytd through Tuesday's close. However, Microsoft shares sport a much higher valuation, with a forward P/E of 31.3, while Alphabet shares trade at 20.0 times forward earnings estimates. (FYI: "Forward P/E" is the multiple based on forward earnings, or the time-weighted average of analysts' consensus operating earnings-per-share estimates for the current year and following one.)

Here's a look at some of the highlights of the companies' earnings from last quarter and some data on the S&P 500 industries in which the stocks reside:

(1) *The search jump ball.* Alphabet generated $42.6 billion in advertising revenue from "Google Search & other" in Q2, up 4.8% y/y. Even though the company has diversified into different businesses, Google search remains a cornerstone. Google search advertising revenue is 57.1% of the company's total Q2 revenue, and the company maintains a dominant share of the search market—83.5% as of March (no wonder "google" has become a verb!). That's far larger than the 8.2% market share of its largest competitor, Bing, according to Statista *data*.

Therein lies the opportunity for Microsoft, where search and news advertising increased 3% y/y to $86 million last quarter, a pimple on the company's $56.2 billion in total revenues. Microsoft has demonstrated AI-infused Bing, which serves up answers with citations showing where the information was sourced. The company will have to offer up a demonstrably better search experience before users shake their googling habit.

(2) *Spend big or go home.* Spending on AI and on boosting cloud capacity rose much more sharply at Microsoft than it did at Alphabet last quarter. Microsoft's spending on capital expenditures rose 23.0% y/y last quarter to $10.7 billion "to support cloud demand, including investments in AI infrastructure," explained CFO Amy Hood on the company's earnings *conference call*. Hood said spending will accelerate again next quarter.

Alphabet's capex was $6.9 billion last quarter, largely unchanged y/y and lower than expected because of construction projects delays. Spending should pick up in H2-2023 and in 2024. "The primary driver is to support the opportunities we see in AI across Alphabet, including investments in GPUs and proprietary TPUs, as well as data center capacity," said CFO Ruth Porat.

(3) *Cloud growth slowing.* Revenue growth from both companies' cloud operations continues to grow fast, but it's decelerating. Microsoft's Azure cloud revenue increased 26% y/y last quarter, down from 40% growth a year earlier. The company doesn't report Azure's revenue in dollars. Likewise, Alphabet's cloud revenue jumped by 28.0% y/y to $8.0 billion, but that was down from 40%-plus growth a year earlier.

(4) *Industry stats.* Microsoft and Alphabet reside in two different S&P 500 industries and sectors: Microsoft is housed in the S&P 500 Information Technology sector's Systems Software industry, while Alphabet is in the S&P 500 Communication Services sector's Interactive Media & Services industry.

The Systems Software stock price index has risen 46.1% ytd through Tuesday's close, and it has topped its December 2021 high after tumbling sharply in 2022 before rebounding this year (*Fig. 6*). Revenues and earnings growth slowed a touch this year but have been amazingly resilient over the years. Earnings grew 20.7% in 2020, 33.9% in 2021, and 13.1% in 2022; they're expected to climb 6.6% this year and 14.3% in 2024 (*Fig. 7*). Earnings estimate revisions have been net positive in May, June, and July after declining for much of the prior year (*Fig. 8*). The industry's only potential drawback is its forward P/E of 31.5, which is up from 20.8 in 2022 and not far from its 34.3 high in 2021 (*Fig. 9*).

The S&P 500 Interactive Media & Services industry (which includes industry giant Meta) has seen its price index rise 60.7% ytd, but it remains 18.5% off of its September 2021 high (*Fig. 10*). The industry posted a 22.0% drop in earnings in 2022, hurt by a slowdown in digital advertising, but analysts are expecting a strong rebound with targets of 22.7% earnings growth this year and a 20.3% increase in 2024 (*Fig. 11*). Net earnings revisions have been positive since March, after being negative for more than a year prior (*Fig. 12*).

Yet the industry's forward P/E remains in the doldrums at 21.5, still down sharply from its peak of 32.3 in September 2020 (*Fig. 13*).

Disruptive Technology: Altman's Worldcoin Starts Trading. AI has created a problem. It is increasingly difficult for consumers of online content to know whether what they're reading, listening to, or watching is the handiwork of humans or robots. Sam Altman, one of the creators of ChatGPT, has devised a solution.

Altman founded Tools for Humanity, a company that uses an orb—a five-pound shiny, round device—to snap pictures of humans' irises. Each picture is translated into a code that reflects the uniqueness of each iris. It will be used to identify humans as humans and solve the problem that AI has created, as we discussed in the June 1 *Morning Briefing*. Humans who get their eyes scanned receive 25 free Worldcoin tokens, a cryptocurrency that can be stored in the company's payment app, the World App.

This week marked a milestone for Worldcoin. It started trading on markets where cryptos can legally trade. That means it does not trade on US exchanges. But internationally, the price of Worldcoin surged more than 60% to a high of $3.58 on Monday from its initial price of $1.70 that morning. It since has settled down to $2.32 by late Wednesday. So far, 110.6 million of Worldcoins have been issued and $294.3 million of the coins have traded, according to *Coinbase*.

Worldcoin plans to sharply increase the pace of iris scans by boosting the number of available orbs to 1,500 in 35 cities around the world this summer and fall. Doing so will increase the number of signups it can handle five-fold, up to 200,000 a week. Although Worldcoins don't trade in the US, iris scanners are available in New York, Los Angeles, San Francisco, and Miami, the company's *blog* states.

Calendars

US: Thurs: GDP & GDP Price Index 1.7%/3.0%; Core PCE Prices 4.0%; Kansas City Manufacturing Index -6; Durable Goods Orders, Total and Nondefense Capital Goods Orders Ex Aircraft 0.7%/-0.1%; Goods Trade Balance -$91.8b; Initial & Continuous Jobless Claims 235k/1.75m; Pending Home Sales -0.6%; Natural Gas Storage. **Fri:** Personal Income & Spending 0.5%/0.4%; Headline & Core PCED -0.1%m/m/3.1%y/y & 0.2%m/m/4.2%y/y; Employment Cost Index Total, Wages, and Benefits 1.1%/1.2%/1/3%; University of Michigan Consumer Sentiment Index, Headline, Current Condition, and

Expectations 72.6/77.5/69.4; Baker-Hughes Rig Count. (Bloomberg estimates)

Global: Thurs: Germany Gfk Consumer Climate -24.7; Italy Business & Consumer Confidence 99.8/107.6; Spain Retail Sales 0.6%; Spain Unemployment Rate 13.8%; ECB Interest Rate Decision & Deposit Facility Rate 4.25%/3.75%; BOJ Interest Rate Decision -0.10%; Lagarde. **Fri:** Eurozone Business & Consumer Confidence 95.0; Germany GDP; Germany CPI 0.3%m/m/6.2%y/y; Germany Import Prices; France GDP 0.1%; France CPI 0.1%m/m/5.0%y/y; France PPI -2.2%; Spain CPI -0.5%m/m/1.7%y/y; Spain GDP 0.5%q/q/2.0%y/y; Italy PPI -6.3%m/m/-12.9%y/y. (Bloomberg estimates)

Strategy Indicators

Stock Market Sentiment Indicators (*link*): The *Bull-Bear Ratio* moved back below 3.00 this week, to 2.87, after climbing from 2.84 to 3.01 last week; it's been bouncing around 3.00 the past four weeks. Last week's reading was the highest since the week of August 10, 2021. *Bullish* sentiment advanced for the second week, from 51.4% to 55.6%—the most bulls since November 2021, when it reached a danger level of 57.2%. Meanwhile, *bearish* sentiment rose for the first time in 10 weeks to 19.4%, after falling the following nine weeks by 6.7ppts (from 24.7% to 18.0%), which was the fewest bears since early January 2022. The *correction count* dropped for the second week, from 30.5% to 25.0% this week—the lowest since the start of this year. Turning to the *AAII Sentiment Survey* (as of July 20), optimism rose sharply to an unusually high level, while neutral and bearish sentiment fell. The *percentage expecting stock prices to rise* over the next six months soared 10.4ppts (to 51.4% from 41.0%), the seventh successive month that bullish sentiment was above its historical average of 37.5%—the longest streak since a 13-week stretch from February to May 2021. It was last higher on April 20, 2021 (52.7%). The *percentage expecting stock prices will stay essentially unchanged* over the next six months sank by 6.0ppts (to 27.1% from 33.1%), remaining below its historical average of 31.5% for the fifth time in 10 weeks. The *percentage expecting stocks to fall* over the next six months fell 4.4ppts (to 21.5% from 25.9%). That puts it below its historical average of 30.0% for the seventh straight week—the longest below-average streak since a 23-week one from February to July 2021. The report notes that bearish sentiment is the lowest since June 10, 2021's 20.7%—nearing the bottom of its typical range.

S&P 500 Earnings, Revenues, Valuation & Margins (*link*): The S&P 500's forward profit margin was unchanged w/w at 12.4% during the July 20 week. That's up from a 24-month low of 12.3% during the March 30 week, but down 1.0pt from its record high of 13.4%

achieved intermittently in 2022 from March to June. It's now 2.1pts above its seven-year low of 10.3% during April 2020. Forward revenues dropped for a second week to 0.1% below its record high during the July 6 week. Forward earnings edged up less than 0.1% w/w to 0.3% below its nine-month high during the July 6 week, and is only 3.2% below its record high during the June 16, 2022 week. Both had been steadily making new highs from the beginning of March 2021 to mid-June; prior to that, they peaked just before Covid-19 in February 2020. The consensus expectations for forward revenues growth remained steady w/w at an eight-month high of 3.6% and is now up 1.3pts from its 33-month low of 2.3% during the February 23 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. Forward earnings growth fell 0.1pt w/w to 7.7% from an 11-month high of 7.8% and is now 4.2pts above its 31-month low of 3.5% in mid-February. That's down from its 23.9% reading at the end of April 2021, which was 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 1.7% in 2023 (unchanged w/w) and 4.7% in 2024 (unchanged w/w) compared to a revenues gain of 12.3% in 2022. They expect an earnings decline of 0.8% in 2023 (unchanged w/w) and a 12.2% rise in 2024 (down 0.1ppt w/w) compared to an earnings gain of 7.1% in 2022. Analysts expect the profit margin to drop 0.3ppt y/y to 11.9% in 2023 (up 0.1pt w/w), compared to 12.1% in 2022, and to rise 0.8ppt y/y to 12.7% in 2024 (unchanged w/w). The S&P 500's weekly reading of its forward P/E rose 0.4pt w/w to a 17-month high of 19.8. That's up from a 30-month low of 15.3 in mid-October. It also compares to 23.1 in early September 2020, which was the highest level since July 2000 and up from a 77-month low of 14.0 in March 2020. The S&P 500 weekly price-to-sales ratio rose 0.05pt w/w to a 15-month high of 2.46. That's up from a 31-month low of 1.98 in mid-October and down from a four-month high of 2.38 in mid-August; it 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*): Looking at the 11 S&P 500 sectors, the July 20 week saw consensus forward revenues rise for five sectors and forward earnings rise for six sectors. The forward profit margin rose w/w for seven sectors. Two sectors have forward revenues at a record high this week: Health Care, and Tech. Among the remaining nine sectors, only Energy and Financials have forward revenues more than 5.0% below their post-pandemic highs. Consumer Staples and Industrials are the only sectors with forward earnings at a record high this week. Among the remaining nine sectors, just three have forward earnings down more than 10.0% from their post-pandemic highs: Energy, Financials, and Materials. Since mid-August 2022, all but the Industrials sector have seen forward profit margins retreat from their record highs, but eight

of the 11 sectors are showing early signs of recovering from their lows in early 2023. Industrials' forward profit margin is at a record high again this week, but Consumer Staples and Health Care are at record lows. Those of Communication Services, Consumer Discretionary, Financials, Real Estate, and Tech remain close to their post-pandemic highs. Energy and Industrials were the only two sectors to have their profit margins improve y/y for full-year 2022, and these five sectors are expected to see them improve y/y in 2023: Communication Services, Consumer Discretionary, Financials, Industrials, and Utilities. Here's how the sectors rank based on their current forward profit margin forecasts along with their record highs: Information Technology (24.2%, down from its 25.4% record high in June 2022), Financials (18.3, down from its 19.8 record high in August 2021), Real Estate (17.0, down from its 19.2 record high in 2016), Communication Services (15.6, down from its 17.0 record high in October 2021), Utilities (13.1, down from its 14.8 record high in April 2021), S&P 500 (12.4, down from its record high of 13.4 achieved intermittently in 2022 from March to June), Energy (10.9, down from its 12.8 record high in November), Materials (10.9, down from its 13.6 record high in June 2022), Industrials (10.7, record high this week), Health Care (9.3, record low this week and down from its 11.5 record high in February 2022), Consumer Discretionary (7.6, down from its 8.3 record high in 2018), and Consumer Staples (6.7, record low this week and down from its 7.7 record high in February 2022), Consumer Discretionary (7.6, down from its 8.3 record high in 2018), and Consumer Staples (6.7, record low this week and down from its 7.7 record high in June 2020).

S&P 500 Q2 Earnings Season Monitor (*link*): With the Q2-2023 earnings season now over 30% complete, the early indications from the companies that have reported so far suggest a similar earnings surprise than in Q1-2023 but a weaker revenues surprise. During Q4-2022, the earnings surprise was the lowest since Q4-2008 and the revenue surprise the smallest since Q1-2020. Furthermore, the earnings surprise failed to outpace the revenue surprise in Q4-2022 for the first time since we began tracking that data in Q1-2009. With 152 of the S&P 500 companies finished reporting for Q2-2023, revenues are ahead of the consensus forecast by 1.5%, and earnings have exceeded estimates by 7.1%. At the same point during the Q1 season, revenues were 2.2% above forecast, and earnings had beaten estimates by 8.0%. For the 152 companies that have reported Q2 results so far through mid-day Wednesday, 61% has reported a positive revenues surprise, while 77% has reported an earnings beat. That's on pace for the narrowest revenues beats reading since Q1-2020; but the percentage with positive earnings surprises is on par with those of the prior seven quarters. The reporters' aggregate y/y revenues and earnings growth rates have improved from their Q1-2023 readings: to 3.6% from 1.3% for earnings growth and to 6.2% from 5.9% for revenues growth. Over the past 57 quarters through Q1-2023, y/y earnings growth has trailed y/y revenues growth in only 15 quarters including the past five, and it's

already doing so again in Q2-2023 as Energy sector results are being reported. Significantly fewer companies have been reporting positive y/y earnings growth in Q2 (55%) than positive y/y revenues growth (69%). These figures will continue to change as more Q2-2023 results are reported in the coming weeks. While we expect y/y revenues growth rates to remain positive in Q2, earnings are sure to post their biggest y/y decline since Q2-2020.

US Economic Indicators

New Home Sales (*link*): New home sales (counted at the signing of a contract) took a step back in June following a three-month surge. Sales dipped 2.5% in June to 697,000 units (saar) after jumping 14.4% during the three months through May; June's decline was only the third in the past 11 months. These sales are 23.8% above the level of last June, benefitting from the exceptionally low inventory of existing homes. New home shortages are boosting housing prices, with the National Association of Home Builders noting that fewer builders were offering incentives, including cutting prices to increase sales. The median sales price for a new home fell for the second time in three months, by 5.4%, and are down month 13.4% ytd. Of the 697,000 homes sold in June, 287,000 units were under construction, while 246,000 were completed and 164,000 not yet started—the highest not started since February 2022. There were 432,000 new homes for sale at the end of June, down from a recent peak of 466,000 last October, representing 7.4 months' supply at the current sales pace. Of the 432,000 units, only 72,000 units were completed and 100,000 not yet started, with 260,000 were under construction. Builders are rushing to create new inventory to satisfy pent-up demand.

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