MORNING BRIEFING
July 20, 2023

Defense, China & Quantum Computers

Check out the accompanying chart collection.

Executive Summary: In these geopolitically tense times, countries need to build more formidable military arsenals to deter aggressors—which for defense contractors means surging demand. Meeting it may be a challenge, admitted Lockheed Martin on its Q2 earnings call, voicing the need for a stronger supply chain; investors were swift to punish the stock. Jackie provides context with earnings and valuation data for the S&P 500 Aerospace & Defense industry. … Also: China's real estate crisis continues to deepen. News of the most recent property developers to default has sunk China's junk bond prices. … And: The race for quantum computing supremacy among Google, Amazon, and IBM.

Industrials: Playing Defense. On Tuesday, Lockheed Martin *reported* Q2 earnings that beat analysts' forecasts and an orders backlog that hit a record high. The company also upped its 2023 earnings-per-share forecast. Nonetheless, that day saw the defense contractor's share price fall by 3.0% compared to the S&P 500's 0.7% gain. A couple of company-specific problems revealed on the earnings call apparently diverted investors' attention from the strong growth in defense spending that's been occurring around the world in response to threats from China and Russia.

European members of NATO and Canada are expected to boost defense spending by 8.3% this year to $356 billion, faster than the 2.0% increase last year and 2.8% jump in 2021, according to a July 7 NATO *press release*. This year's defense spending increase by NATO's European members and Canada is higher than any annual increase over the past decade, including the prior fastest spending increase of 5.9% in 2017.

The jump in spending by NATO's European members and Canada on defense equipment specifically is even more dramatic: up an estimated 24.9% this year compared to an estimated 8.5% increase in 2022, 11.3% in 2021, and 8.9% in 2020. These spending changes are calculated using 2015 prices and would be larger had they been adjusted for inflation.

So let's take a look at what may have disappointed Lockheed investors on Tuesday, while also remembering the surge of spending that should bolster the defense industry's results for years to come:

(1) *Disappointing details.* Lockheed shares initially rose on Tuesday after the company reported that sales rose 8.1% y/y to $16.7 billion in Q2, compared to the consensus expectation of $15.9 billion, according to a July 18 *Investor's Business Daily* article. Management boosted its 2023 earnings-per-share forecast to $27.00-$27.20, up from the $26.60-$26.90 projected in April. And Lockheed's backlog grew 5.3% from the start of the year to a record $158.1 billion. The company's various product offerings include aircraft (e.g., the F-35 and the F-16), missiles, rockets, unmanned systems, helicopters, radar systems, undersea systems, space technologies, and transport systems.

The company's shares fell later in the day as more details about the quarter emerged. Management didn't increase the "single-digit growth" it sees for 2024 revenues, albeit now measured off a higher 2023 base than previously expected. Lockheed executives attributed their cautious 2024 outlook to the company's suppliers' inability to keep up with demand.

"It's not a question of demand; it'll be a question of supply. And we need to go through that analysis over the next few months and determine to what extent our growth outlook will change, if anything from this baseline of low single digit," said CFO Jay Malave on the earnings conference call.

Lockheed also reduced the number of F-35s it plans to deliver this year to 100-120 from 147-153 owing to difficulties getting certification for updated hardware and software, a July 18 Defense One *article* reported. The updated planes will have 20-25 times more computing power, more memory, and a new panoramic cockpit display. But the new systems have had reliability issues, and the Pentagon stopped accepting jets with the updates in June. By 2025, however, the company anticipates delivering 156 of the planes annually.

Lockheed suffered another blow earlier this year when it lost a contract with the US Army to produce the next generation of aircraft to Textron's Bell division's V-280 Valor. Last year, the Army placed what will likely be its last order for Lockheed's Black Hawk helicopters in a program that will run through 2027.

(2) *Dangerous world boosts defense spending.* Defense spending domestically and abroad is increasing as countries respond to the potential threats posed by China and Russia. In addition, munitions and supplies used in the Ukraine war need to be replaced.

Domestically, the US House of Representatives has passed the $886 million National Defense Authorization Act. It includes a 5.2% pay raise for military members, initiatives to counter China, an additional $300 million to support Ukraine, and increased spending on aircraft including the F-35, the July 18 *Investor's Business Daily* article reported. The spending would mark a 3.3% increase from this year's $858 billion defense budget. Senate Democrats are expected to reject social items included in the House bill.

Additionally, the US is expected to announce $1.3 billion of military aid for Ukraine within the next few days that includes air defenses, counter-drone systems, exploding drones, and ammunition, a July 18 Reuters *article* reported.

As we noted above, European nations and Canada have also been boosting their military budgets, as have other countries around the world. Lockheed received a $3 billion order earlier this month from the Israel Ministry of Defense to supply the country with 25 F-35s, which will expand that nation's fleet of the aircraft to 75. The Biden administration has agreed to let Turkey buy 40 of Lockheed's F-16s and modernization kits for other aircraft. The Czech Republic has expressed interest in the F-35, and Germany put in an order for 35 of the planes late last year. Lockheed says its F-35 backlog stands at 421 aircraft.

(3) *Lessons from Ukraine.* Russia's risky invasion of Ukraine may imply that it will take similar risks in the future. Defense ministers in NATO countries are increasing their defense budgets because of the "elevated risks that they perceive to their own countries for some foreseeable future," said Lockheed CEO James Taiclet on the earnings conference call.

In addition, Ukraine has used far more munitions than existing wargame models have implied. So in addition to replacing the munitions used by Ukraine, the US and allies' stockpiles will need to be larger than they've been in the past to deter future conflicts by showing potential adversaries that they can defend themselves for a long period of time, said Taiclet.

"We think this is a longer term, essentially, sea change in national defense strategy for the US and for our western allies, including Japan and the Philippines and others," said Taiclet. "The lessons and the future demand for these kinds of products is going to stay elevated for a very long time, we think."

As for Lockheed, it has learned that it needs a stronger, more resilient supply chain that can scale quickly if necessary. The company is also looking to expand production internationally.

(4) *Industry data.* US industrial production of defense and space equipment has been robust, climbing 5.2% y/y in June, while total industrial production fell 0.4% y/y last month

(*Fig. 1* and *Fig. 2*). Likewise, shipments of defense goods rose 7.1% y/y in June, while shipments of defense aircraft and parts increased 7.0% y/y (*Fig. 3* and *Fig. 4*).

Despite strong production, the S&P 500 Aerospace & Defense industry's stock price index has moved sideways for the better part of this year so far (*Fig. 5*). It's down 2.1% ytd through Tuesday's close, underperforming the S&P 500's 18.6% climb. That's a reversal from last year, when the industry's stock price index climbed 15.5%, way outperforming the S&P 500's 19.4% decline that year.

The S&P 500 Aerospace & Defense industry's constituent companies collectively have grown both top and bottom lines in recent years. Revenue grew by 3.2% in 2022, and it's expected to increase by 7.7% this year and 8.2% in 2024 (*Fig. 6*). The industry's earnings grew by 1.8% in 2022, and analysts' consensus estimates target earnings growth of 41.8% in 2023 and 27.4% next year (*Fig. 7*). The industry's share price index has a forward P/E of 21.6, near the high end of the range over the past 29 years (*Fig. 8*). But after hitting some bumps in recent years, Lockheed's forward earnings multiple of 16.5 is below the industry's.

China: Debt Is Such a Drag. China's government needs to put forward a comprehensive debt restructuring plan to end the two-year drip, drip, drip of bad news from real estate development companies having difficulties meeting their debt obligations. JPMorgan estimates that 50 property developers have defaulted on $100 billion of offshore bonds over the past two years, and the bad news continued this week, sending the price of China's dollar-denominated junk bonds tumbling. They're now down 10% ytd, according to a July 19 Bloomberg *article*.

Here's a look at some of the recent news that has spooked the market:

(1) *Latest default hits.* Greenland Holding Group defaulted on $432 million of debt Wednesday. The country's seventh largest property developer missed an amortization payment on a 6.75% dollar-denominated bond due in 2024. Greenland, which is partially owned by local governments, had extended payments on its dollar bonds last year. The default comes even after Shanghai officials told local state-owned enterprises to buy $350 million of new Greenland debt in late 2021, Reuters reported in a March 15, 2022 *article*.

Greenland "built Sydney's tallest residential tower and has billions of dollars worth of projects in London, New York, Los Angeles, and Paris. At home, its projects include construction of the tallest building in northwest China and it is heavily involved in building subways, highways and bridges," Reuters reported.

(2) *More negotiations proposed.* Sino-Ocean Group Holding, a Beijing-based real estate state developer, proposed extending by one year the repayment of a local note worth $277.3 million that matures on August 2. The firm reportedly has offered to pay only interest and has asked to extend its maturity, a July 19 Reuters *article* reported. Sino-Ocean Group also has a payment due later this month on an offshore bond.

Separately, Dalian Wanda Group, China's largest commercial property firm, warned that it was short the funding needed to make a $400 million payment on a dollar-denominated bond due in 2024. The bond fell 15.3 cents on the dollar to 27 cents on Wednesday.

(3) *Future problem?* Shui On Land reportedly has been trying to identify bondholders, an action often taken prior to payment delays. Its 5.5% note due in 2025 fell 10.3 cents to 57 cents on the dollar. However, the company said its efforts were part of an investor relations exercise to better understand how its bond investor base has changed in order to enhance communication.

(4) *That's not chump change.* China Evergrande Group, which defaulted on its debt in 2021, reported that it lost $81 billion in 2021 and 2022 due to writedowns of properties, return of lands, losses on financial assets, and financing costs, a July 18 CNBC *article* reported. The company's debt has risen to $340 billion, and the company says it has $350 billion in assets; but it has struggled to turn those assets into cash to pay bondholders. Trading in Evergrande's shares has been suspended since last year, and the company has warned that its finances "indicate the existence of material uncertainties that may cast significant doubt on the Group's ability to continue as a going concern," a July 18 AP *article* reported.

Disruptive Technologies: Quantum Leaps. The promise of quantum computing—and what humans can accomplish with such vast amounts of computing power—makes scientists giddy. Google, Amazon, Microsoft, and IBM are leading the race to develop these computers and offer access to them in the cloud.

Here are some recent developments in the area:

(1) *Google boasts supremacy.* The king of search claims quantum supremacy. The latest iteration of its Sycamore quantum system has 70 qubits and a quantum processor that's 241 million times more powerful than the company's previous offering. Google's quantum computer "can outperform the most powerful supercomputer in the world, running calculations that would take the massive 1.68 exaflops 'Frontier' system at Oak Ridge National Laboratories 47 years to complete," explained a July 18 *article* in *The Next*

Platform.

(2) *Amazon plays host.* Amazon Bracket is a service that lets users build their own quantum algorithms and then test them on quantum computers in Amazon's cloud. Amazon *reports* that a number of organizations are tapping into quantum computing in Amazon's cloud, including the Technology Innovation Institute, a scientific research center that's a part of Abu Dhabi's Advanced Technology Research Council; Volkswagen Group; Fidelity Center for Applied Technology; Amgen; multinational power company Enel; Aioli, an insurance agency; and the Institute for Quantum Computing at the University of Waterloo.

(3) *More qubits than others?* Last fall, IBM *reported* that it has developed a 433-qubit Osprey processor, more qubits than any other IBM processor and more than triple those of the Eagle processor made public in 2021. IBM Quantum System's goal is to have a system with 4,000 or more qubits by 2025.

IBM also hosts a number of companies that want to tap into more than 20 quantum computers in the cloud. The company said German conglomerate Bosch, telecom provider Vodafone, and French bank Credit Mutuel Alliance Federale all have joined IBM's Quantum Network.

(4) *New particles discovered.* Qubits are prone to error, so Microsoft has been building a better mousetrap. Company scientists are building qubits from quasiparticles, "which are not true particles but collective vibrations that can emerge when particles like electrons act together," a June 21 *article* in *New Scientist* reported. Called "Majorana zero modes," these antiparticles have a charge and energy that equate to zero and make "unprecedentedly reliable" qubits.

Calendars

US: **Thurs:** Leading Indicators -0.6%; Initial & Continuing Jobless Claims 242k/ 1.73m; Philadelphia Fed Manufacturing Index & Price-Paid Index -10.4 & 10.7; Existing Home Sales 4.21mu; Fed's Balance Sheet. **Fri:** Baker Hughes Rig Count. (Bloomberg estimates)

Global: **Thurs:** Eurozone Consumer Confidence -16.0; Eurozone Current Account; Germany PPI -0.4%m/m/0.0%y/y; France Business Survey 100; UK Gfk Consumer Confidence -26; Japan CPI. **Fri:** Spain Consumer Confidence 79.4; UK Headline & Core Retail Sales 0.2%m/m/-1.5%y/y & 0.1%m/m/-1.6%y/y; Canada Headline & Core Retail

Sales 0.5%/0.4%. (Bloomberg estimates)

Strategy Indicators

Stock Market Sentiment Indicators (*link*): The *Bull-Bear Ratio* moved back up to 3.01 this week after slipping from 3.00 to 2.84 last week. This week's reading is the highest reading since the week of August 10, 2021. *Bullish* sentiment bounced back to 54.2% this week from 51.4% last week, just shy of the 54.9% two weeks ago—which was the highest since November 2021, when it reached a danger level of 57.2%. *Bearish* sentiment fell this week for the ninth straight week, from 24.7% to 18.0% over the period, indicating the fewest bears since early January 2022. The *correction count* dropped to 27.8% after rising from 26.8% to 30.5% last week, with all the new bulls coming from the correction camp. Turning to the *AAII Sentiment Survey* (as of July 13), optimism decreased during the current week, though remained above average for the sixth straight week, while both neutral sentiment and pessimism moved higher. The *percentage expecting stock prices to rise* over the next six months fell to 41.0% from 46.4% the prior week—which was the highest percentage since November 11, 2021 (48.0%). Optimism remained above its historical average of 37.5% for the sixth straight week—the longest above-average spread since a six-week streak in June and July 2021. The *percentage expecting stocks to fall* over the next six months climbed to 25.9% after falling the previous two weeks from 27.8% to 24.5%. That puts it below its historical average of 30.0% for the sixth straight week—the longest below-average streak since a 23-week on from February to July 2021. The *percentage expecting stock prices will stay essentially unchanged* over the next six months rose to 33.1% this week after falling from 30.6% to 29.1% the prior week. Neutral sentiment moved back above its historical of 31.5% after being below average the last three weeks.

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 13 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 0.1% w/w from its record high a week earlier. Forward earnings fell 0.3% w/w from a nine-month high, and is only 3.3% 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 rose 0.2pt w/w to an 11-month high of 7.8% and is now 4.3pts 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 (down 0.1pt 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 (down 0.7pt w/w) and a 12.3% rise in 2024 (up 0.8ppt w/w) compared to an earnings gain of 7.1% in 2022. Analysts expect the profit margin to drop 0.3ppt y/y to 11.8% in 2023 (down 0.1pt w/w), compared to 12.1% in 2022, and to rise 0.9ppt y/y to 12.7% in 2024 (unchanged w/w). The S&P 500's weekly reading of its forward P/E rose 0.2pt w/w to a 16-month high of 19.4. 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 was rose 0.02pt w/w to a 14-month high of 2.41. 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 13 week saw consensus forward revenues rise for seven sectors and forward earnings rise for four sectors. The forward profit margin rose w/w for four sectors. Three sectors have forward revenues at a record high this week: Consumer Staples, Health Care, and Utilities. Among the remaining eight 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 (15.5, down from its 17.0 record high in October 2021), Utilities (13.0, 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 (11.0, down from its 12.8 record high in November), Materials (11.0, 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 June 2020).

S&P 500 Sectors & Industries Forward Profit Margin Since March 30 Bottom (*link*): The S&P 500's forward profit margin was steady w/w at 12.4% as of the July 6, 2023 week. It's now up 0.1ppt from a two-year low of 12.3% during the March 30 week. Six of the 11 sectors' margins have improved since then, with the S&P 500's gain paced by five sectors. It's still down 7.7%, or 1.0ppt, from its record-high 13.4% during the June 9, 2022 week, as 10 of the 11 sectors' margins have declined since then, with the S&P 500's drop paced by three of the 11 sectors. Here's the sector performance since the S&P 500's forward profit margin bottom on March 30: Communication Services (up 6.9% to 15.5%), Consumer Discretionary (up 4.4% to 7.6%), Industrials (up 3.9% to 10.7%), Information Technology (up 3.3% to 24.2%), Real Estate (up 2.1% to 17.0%), S&P 500 (up 0.8% to 12.4%), Consumer Staples (up 0.2% to 6.7%), Materials (down 0.3% to 11.0%), Financials (down 1.2% to 18.3%), Utilities (down 1.5% to 13.0%), Health Care (down 2.6% to 9.3%), and Energy (down 6.5% to 11.0%). These are the best performing industries since the March 30, 2023 bottom: Casinos & Gaming (up 66.4% to 6.4%), Publishing (up 26.4% to 3.1%), Passenger Airlines (up 19.7% to 6.3%), Multi-Sector Holdings (up 14.5% to 10.6%), Wireless Telecommunication Services (up 12.0% to 12.8%), Homebuilding (up 11.6% to 11.9%), Home Furnishings (up 11.2% to 6.0%), Commodity Chemicals (up 10.6% to 6.5%), Interactive Media & Services (up 9.1% to 21.8%), and Brewers (up 9.1% to 8.7%).

S&P 500 Q2 Earnings Season Monitor (*link*): With the Q2-2023 earnings season now 10% complete, the early indications from the companies that have reported so far suggest a stronger 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 50 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 8.9%. At the same point during the Q1 season, revenues were 2.0% above forecast and earnings had beaten estimates by 7.8%. Just 62% of the 37 Q2 reporters that have reported so far through mid-day Wednesday has reported a positive revenues surprise, while 80% has reported an earnings beat. That's on pace for the weakest revenues surprise reading since Q1-2020; but the percentage with positive earnings surprises would be the highest since Q3-2021 if it holds to the end of the season. Their aggregate y/y revenues and earnings growth rates have ticked up from their Q1-2023 readings: to 7.8% from 7.1% for revenues growth and to 11.4% from 1.3% for earnings growth. Over the past 57 quarters through Q1-2023, y/y earnings growth has trailed y/y revenues growth in only 15 quarters and for only five straight quarters, but it's likely to do so again in Q2-2023 once Energy sector results are reported. Significantly fewer companies have been reporting positive y/y earnings growth in Q2 (66%) than positive y/y revenues growth (80%). 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 decline for a third straight quarter.

US Economic Indicators

Housing Starts & Building Permits (*link*): Single-family starts contracted again in June, following May's double-digit gain, though single-family permits posted a sizable gain for the fifth straight month in June—another promising sign to go along with the recent surge in homebuilders' confidence. *Housing starts* in June slumped 8.0% to 1.43mu (saar) after a 15.7% jump in May; starts are up 5.7% ytd. *Single-family units* fell 7.0% in June to 935,000 units (saar), though that followed a four-month surge of 22.1%. Single-family starts were in a freefall from November 2021 through November 2022, plunging 34.7% over the period; they rebounded 16.3% from last November's bottom through June. Meanwhile, volatile *multi-family starts* fell 9.9% to 499,000 units (saar) after a 10.6% gain and a 6.7% loss the prior two months. These starts are up 6.7% ytd. *Building permits* fell for the third time in four months, dropping 3.7% in June to 1.44mu (saar), though are up 2.2% ytd. *Single-family permits* increased for the fifth successive month, by 2.2% in June and 23.3% over the period to 922,000 units (saar), the highest since last June. Meanwhile, *multi-family permits* are in a volatile downtrend, falling 12.8% in June and 21.6% ytd to 518,000 (saar), plunging 32.3% from its December 2021 peak. Homebuilders are optimistic. *Homebuilders' confidence* has climbed all seven months of this year, by 25pts ytd to a 13-month high of 56; that's after sliding all 12 months of 2022, by 53 points, to 31—which was the lowest since mid-2021 (excluding a drop to 30 at the height of the pandemic).

Global Economic Indicators

Eurozone CPI (***link***): The CPI rate for June moved down to 5.5%—its lowest since January 2022—from 6.1% in May; it peaked last October at a record-high 10.6%. Looking at the main components, *energy* fell 5.6% y/y, its third negative reading in four months and the weakest since December 2020, following double-digit yearly gains from April 2021 through February of this year. It peaked at a record high of 44.3% last March. The rate for *food, alcohol & tobacco* slowed for the third month to 11.6% y/y after accelerating steadily from June 2021's 0.5% to a record high of 15.5% this March. The rate for *non-energy* industrial goods eased for the fourth month to 5.5% y/y from February's record-high 6.8%. The *services* rate accelerated to 5.4% y/y in June, the highest since February 1993. Of the *top four Eurozone economies*, only Germany (6.8% y/y) and Italy (6.7) showed rates above the Eurozone's 5.5% rate, while France's (5.3) was only a few ticks below. Meanwhile, Spain's (1.6) rate was one of the lowest of the overall Eurozone economies. Here are the record-high inflation rates and dates they were achieved for the four countries: Germany (11.6%, October 2022), Italy (12.6%, October & November 2022), France (7.3%, February 2023), and Spain (10.7%, July 2022).

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