MORNING BRIEFING
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On Central Bankers, Stocks & Batteries

Check out the accompanying chart collection.

Executive Summary: Policymakers in both China and the UK recently have made policy 180s, abandoning their former plans. Now US financial markets seem to think economic conditions will compel the Fed to do the same, ending this round of tightening sooner rather than later. … Did the stock market's impressive comeback rally of the past two days benefit the same S&P 500 sectors and industries as last summer's two-month rally did? Jackie takes a look, isolating the most dramatic winners and losers of both. … And: GM and other companies are charging ahead on the development of solid-state batteries for electric vehicles. In our ongoing coverage of disruptive technologies, we highlight some of their plans.

Strategy I: Central Bankers Blink. Government officials and central bankers around the world have been talking tough about squashing inflation and squeezing the excesses out of their economies. But the financial markets have other ideas. Recent market actions in the UK and China have forced authorities to backpedal on their plans. And even in the US, the markets have started to behave as if a monetary policy U-turn is imminent.

Here's a look at how financial markets have been calling the shots:

(1) *Getting closer to peak fed funds rate.* US central bankers may want to raise the federal funds rate by at least another 75bps in coming months, but the bond and currency markets may be saying rates have moved high enough already. The 10-year Treasury bond yield has fallen to 3.62%, down from its recent high of 3.97% on September 27 (*Fig. 1*). The two-year Treasury note yield has fallen a bit to 4.10%, down from a peak of 4.30% also on September 27. And the US dollar has eased 1.5% to 134.69 since hitting a peak on September 28 of 136.74 (*Fig. 2*).

High interest rates have already broken the housing market. The interest rate on a 30-year mortgage was 6.85% on Monday, down a bit from Friday's record high 7.10%, going back to 2004 (*Fig. 3*). And the spread between the 30-year mortgage and the 10-year Treasury bond has blown out to 318 bps, a level last seen in 2020 during the Covid shutdown and in 2008 during the housing crisis (*Fig. 4*). Existing home sales have slowed sharply. In August, 4.80 million homes were sold, down from a recent peak of 6.49 million in January. And pending home sales, which have followed a similar pattern, show no signs that the slowdown is over (*Fig. 5*).

Recent days have brought several weak economic releases and disappointing earnings reports. On Monday, the ISM manufacturing purchasing managers index fell to 50.9 in September, lower than expected and down from 52.8 in August and 63.7 at its peak in 2021 (*Fig. 6*). That was followed yesterday by news that US job openings fell by 10% m/m to 10.1 million in August, though job openings still far exceed the number of unemployed people. Disappointing earnings news from Micron Technology, Nike, CarMax, and Carnival added to the impression that the economy is slowing down sharply enough that the Fed's tightening work might be done or at least close to done.

There's also been growing concern about the strength of Credit Suisse Group, as its shares have fallen to single digits. The investment bank, which has a new CFO and CEO, is expected to sell stock to fund a pending restructuring and to pay legal costs; the details of the restructuring are scheduled to be announced on October 27.

(2) *China faces its property problems.* With the 20th National Congress of the Chinese Communist Party approaching this month, it's not surprising that the Chinese government has begun to address the downturn in its property sector more aggressively. Many one-off financing programs have been announced at the local and national levels to boost demand for residential real estate. It remains to be seen whether these programs will increase would-be home buyers' confidence in real estate companies after so many have defaulted and failed to deliver paid-for apartments.

It's quite an about-face from the situation in 2020, when Chinese leaders began tightening the funding available to real estate buyers and developers. But with almost 20 Chinese real estate developers in default on their debt and dragging down the economy, Chinese leaders have finally blinked.

A Bloomberg *report* on Monday described one of the largest programs to date: "[T]he People's Bank of China and the China Banking and Insurance Regulatory commission told the [country's] six largest banks to each offer at least [$14.1 billion] of financing support, including mortgages, loans to developers, and purchases of their bonds."

Additionally, the People's Bank of China (PBOC) is allowing local governments to reduce the mortgage rates for first-time home buyers in cities where new home prices fell from June through August m/m and y/y, a September 30 *South China Morning Post* *article* reported. Buyers in 23 of the 70 largest Chinese cities could qualify.

The PBOC announced on Friday that it will "lower the interest rate for housing provident fund loans by 0.15 percentage points for first-time homebuyers starting from October, the first cut in such loans since 2015," an October 2 *FT* *article* reported. The interest rate on loans maturing in more than five years will be lowered to 3.1%.

China's Ministry of Finance announced on Friday that individuals who buy new homes within one year of selling their previous homes will be eligible to receive a refund on income taxes. The banking and insurance regulator and the PBOC "relaxed" a floor on mortgage interest rates for some first-time homebuyers. Banks can offer cheaper loans to support demand based on the banks' profitability.

The moves have yet to spark a stock market rally, however, with the China MSCI stock price index up marginally on Tuesday from a new low this year on Monday, bringing its ytd decline to 30.9% (*Fig. 7*).

(3) *UK backpedals.* New UK Prime Minister Liz Truss and her Chancellor Kwasi Kwarteng might have wanted to boost the sluggish UK economy by cutting income taxes on the wealthy, but the financial markets would have none of it. The tax cuts were in addition to other tax cuts and government support to offset the spike in energy bills. And all of this was going to be funded by borrowing funds.

The market reacted violently, with bond yields surging to almost 5.00%. The abrupt move in interest rates prompted some banks to stop making new mortgage loans and resulted in losses at pension funds with liability-driven investment strategies.

Officials' retreat from the plan was swift. The Bank of England suspended its quantitative tightening plan last Wednesday and instead announced plans to buy long-term bonds "at whatever scale necessary." Then on Monday, Truss and Kwasi ditched their plans to cut taxes on the wealthy. The UK MSCI stock price index has risen 2.8% so far this week through Tuesday's close (*Fig. 8*). And the 10-year UK bond yield has fallen back to 3.86% (*Fig. 9*).

Strategy II: Examining The Rallies. The financial market's sharp rally in reaction to the slightest hint that monetary tightening may be about to pause or even end has been impressive. Monday and Tuesday's gains in the S&P 500 amounted to 205 points, or 5.7%.

We wondered whether the same industries outperformed during this rally as during the rally from June 16 to August 16. The upshot: Some of the outperforming industries were the same and some weren't. Here's a closer look:

(1) *Energy jumps now, but not last summer.* The S&P 500 rallied by 2.6% Monday, and the top-performing sector was Energy, as rumors of OPEC's plan to cut production circulated. That's very different from last summer's rally, when the S&P 500 gained 17.4% and the worst performing S&P 500 sectors were Energy and Materials.

Here's the performance derby for the S&P 500 sectors' performance on Monday and during last summer's rally: Energy (5.8%, -0.8%), Materials (3.4, 9.2), Information Technology (3.1, 22.8), Industrials (3.1, 17.5), Utilities (3.0, 18.9), Communication Services (3.0, 12.9), Financials (2.8, 16.4), S&P 500 (2.6, 17.4), Health Care (2.1, 12.0), Real Estate (1.9, 18.0), Consumer Staples (1.7, 12.1), and Consumer Discretionary (0.2, 29.4) (*Table 1* and *Table 2*).

Here are some of the top performing industries in the Energy sector on Monday, along with their performances that day and during last summer's rally: Oil & Gas Exploration & Production (7.3%, -3.7%), Oil & Gas Equipment & Services (6.7, -11.9), and Integrated Oil & Gas (5.3, 1.1).

(2) *Outperformers in both time periods.* A few industries were top performers both on Monday and during last summer's rally. To derive this exclusive list, we took the top 10 performing industries on Monday and dropped from the list those that did not also outperform the S&P 500 during the summer rally. Then we took the top 10 performing industries during the summer rally and excluded those that weren't also outperformers of the S&P 500 on Monday.

Here's this rarefied group: Steel (6.9% Monday, 26.7% during last summer's rally), Auto Parts & Equipment (5.7, 24.2), Health Care Facilities (5.1, 21.5), Semiconductor Equipment (4.9, 26.5), Trucking (4.7, 29.1), Homebuilding (4.6, 28.5), Independent Power Producers (4.2, 32.3), Real Estate Services (4.1, 28.1), Casinos & Gaming (3.4, 30.7), Technology Hardware Storage & Peripherals (3.1, 32.0).

Using the same methodology for the worst performing industries of both rallies, we learned that only three industries were among the worst performers both on Monday and during last summer's rally. They are Food Retail (0.0%, -1.5%), Pharmaceuticals (0.4, 3.6), and Reinsurance (1.3, 4.6).

(3) *Tesla's not helping.* Another big difference between Monday's rally and last summer's

rally is the performance of the Consumer Discretionary sector. On Monday, it was the worst performing S&P 500 sector (0.2%), dragged down by the sharp selloff in Tesla shares and the underperformance of Amazon shares. During last summer's rally, Consumer Discretionary was the best performing sector, up 29.4%.

Tesla is a member of the Auto Manufacturers industry, which turned in the strongest performance this summer (42.6%) but the worst performance on Monday (-7.4%). Likewise, the second-best performing industry last summer was Internet & Direct Marketing Retail (39.5%), home to Amazon. But on Monday, that industry underperformed the S&P 500, gaining only 2.5%. Finally, the Movies & Entertainment industry, home of Netflix, was the fifth best performing industry last summer, gaining 31.2%, and on Monday it gained 2.6%, which only matched the S&P 500's performance.

Disruptive Technologies: Building Better Batteries. Most electric vehicles (EVs) drive for 250-350 miles on one charge, but scientists are hopeful that the range can be extended if solid-state EV batteries are developed.

Today's EV batteries have two poles separated by a liquid. When batteries charge, lithium ions move from one pole (the cathode) to another pole (the anode). After many charges, dendrites (small spikes) grow on the lithium anode, eventually piercing the barrier separating the two poles. As a result, the battery dies or catches fire. Some scientists are working to develop solid-state batteries to avoid such suboptimal results. Others are experimenting with different metals, like zinc and iron, to develop longer-lasting, less expensive batteries. Here are some of their advancements:

(1) *Solid improvement.* Adden Energy hopes to commercialize solid-state battery technology that it has licensed from Harvard University. The company contends that its solid-state battery charges in only three minutes in the laboratory and can last for 5,000-10,000 charging cycles, a vast improvement over the typical 2,000-3,000 charge lifecycles of today's batteries. Adden hopes to develop the materials into a vehicle battery within the next three to five years.

Adden, which was started by Harvard researchers, has raised $5.2 million in seed funding, a September 13 *article* on electrive.com reported. We first wrote about the Harvard solid-state battery development in the May 20, 2021 *Morning Briefing*.

(2) *OneD gets GM nod.* General Motors recently participated in a $25 million series C funding round for OneD Battery Sciences and announced plans to jointly develop OneD's

battery technology. OneD boosts the amount of energy a battery can hold by adding “more silicon onto the anode battery cells by fusing silicon nanowires into EV-grade graphite. Silicon can store 10 times more energy than graphite,” a September 29 GM *press release* stated.

Using silicon allows for faster charging and greater power. Increasing the battery’s density could make car batteries lighter, smaller, and more efficient. By reducing the graphite and increasing silicon, the cost of the battery falls and its carbon footprint is reduced. If the technology proves itself, it could be used in GM’s Ultium battery cells.

Earlier this year, GM launched its Wallace Battery Cell Innovation Center to focus on the development and production of batteries. In addition, the company has one Ultium battery factory running in Ohio, two under construction, and another in the planning stage.

(3) *Considering iron.* Form Energy is trying to replace the costly lithium used in batteries with less expensive and more abundant iron. It believes iron batteries will hold more energy and last longer than their lithium ion counterparts. The startup is raising $450 million from investors that include ArcelorMittal, TPG, and Bill Gates’ Breakthrough Energy Ventures, an October 4 *WSJ* *article* reported. It plans to use the funds to build its first big manufacturing plant.

Form Energy’s iron battery, which uses a water-based electrolyte, takes in oxygen and converts iron pellets to rust. When it discharges energy, the rust is turned back into iron and oxygen is expelled. Form Energy isn’t the first to try to develop a battery using iron. Past hurdles have included corrosion that occurs faster than expected and shortens the life of the battery. In addition, the batteries need to be larger to hold the same amount of energy a lithium ion battery can hold.

Lithium ion batteries can hold 100 watt hours of electricity per kilogram, while iron air batteries only hold 40 watt hours per kilogram, a March 12 Popular Science *article* explained. Lithium’s ability to hold more energy per kilogram enabled the evolution of cell phones that fit into our pockets. But that doesn’t mean iron batteries couldn’t be deployed when size isn’t an issue, such as when building large arrays of batteries to store utility-scale wind or solar energy.

(4) *Air out of the balloon.* Some of the stock market’s excitement about solid-state batteries has been squashed. QuantumScape uses a ceramic divider that it says will improve a solid-state battery’s density. The company, which went public after merging with a SPAC (special

purpose acquisition corporation), saw its share price soar as high as $131 in December 2020 before falling into the $40s the following January and down to $9 as of Monday's close. Volkswagen Group of America Investments owns a 20% stake in the company, according QuantumScape's last annual report.

Solid Power, another solid-state battery company, hasn't had much better luck in the stock market. It too went public via a SPAC merger, in December 2021. Its shares, which traded as high as $13.04 that month, closed Monday at $5.39. It counts Ford, BMW, and SK Innovation as investors.

Calendars

US: Wed: Trade Balance -$67.7b; ISM NM-PMI 56.0; ADP Employment 200k; MBA Mortgage Applications; Crude Oil Inventories & Gasoline Production; OPEC Meeting; Bostic. **Thurs:** Initial & Continuous Jobless Claims 203k/1.345m; Natural Gas Storage; Waller; Mester; Cook; Evans. (Bloomberg estimates)

Global: Wed: Eurozone, Germany, and France C-PMIs 48.2/45.9/51.2; Eurozone, Germany, and France NM-PMIs 48.9/45.4/53.0; Germany Trade Balance €4.0b; France Industrial Production -0.3%; UK C-PMI & NM-PMI 48.4/48.9; European Central Bank Non-Monetary Policy Meeting; Beerman. **Thurs:** Eurozone Retail Sales -0.4%m/m/-1.7%y/y; Germany Factory Orders -0.7%; Spain Industrial Production 4.8% y/y; UK Construction PMI 48.0; Japan Household Spending 0.2%; China M-PMI & NM-PMI; ECB Publishes Account of Monetary Policy Meeting; RBA Financial Stability Report; Macklem. (Bloomberg estimates)

Strategy Indicators

S&P 500 Growth vs Value (*link*): The S&P 500 Growth price index was still in a deep 30.2% bear market as of Monday's close, while the Value index was only in a 16.9% correction. Both made new lows for the year last Friday; Growth was down 19.0% from its recent high on August 15 to 31.8% below its December 27 record high; and Value was down a lesser 14.6% from its August 16 high to 19.2% below its January 12 record high. Looking at their ytd performance through Monday's close, Growth has tumbled 29.2%, well behind the 15.7% ytd decline for the S&P 500 Value index. Growth's underperformance relative to Value began on November 30, 2021 when its price index peaked at a record high. Since then, Value's price index has dropped 9.9%, while Growth's has tumbled 27.5%. Looking at the fundamentals, Growth is expected to deliver higher revenue growth (STRG) than Value over the next 12 months, but Value is expected to have slightly higher earnings growth (STEG). Growth has forecasted STRG of 7.7%, but its STEG is lower at 7.3%. Value has forecasted STRG and STEG of 4.9% and 7.4%, respectively. Growth's forward P/E peaked at a 20-year high of 30.4 on January 26, 2021, and tumbled 40% to a 27-month low of 18.4 on June 16. After rebounding to 23.3 in mid-August, it was down to 18.9 on Friday before rebounding to 19.3 on Monday. Over the similar time period, Value's forward P/E fell 24% from 17.6 to 13.4, and was down even further on Friday to a 30-month low of 13.0 before rising to 13.4 on Monday. Regarding NERI, Growth's and Value's were negative for a third straight month in September following 26 positive monthly readings. Growth's dropped to a 27-month low of -9.9% in September from -8.4% in August, and Value's was down to a 26-month low of -9.1% from -8.6%. Growth's forward profit margin of 18.2% is down 0.9ppts from its record high of 19.1% in mid-February and compares to its prior pre-Covid record high of 16.7% during September 2018. Value's has held up better, dropping to 0.5ppt to 10.9% from its record high of 11.4% in December.

US Economic Indicators

JOLTS (*link*): Job openings in August fell for the fourth time in five months, by 1.12 million m/m and 1.63 million over the period to a 14-month low of 10.05 million; this compares with a record high of 11.86 million in March. There were 6.01 unemployed in August, so there were 1.7 available jobs for each unemployed person that month, down from 2.0 in July and the lowest since last November. By industry, the largest declines in job openings were in healthcare & social assistance (-236,000), other services (-183,000), retail trade (-143,000), professional & business services (-119,000), financial activities (-117,000), manufacturing (-115,000), and leisure & hospitality (-111,000). Industries showing an increase in job openings were construction (54,000) and wholesale trade (47,000). The number of quits rose for the first time since March, up 100,000 in August to 4.16 million after a four-month drop of 391,000; the level is only 352,000 below November's record high of 4.51 million. Hirings were little changed, rising 39,000 in August to 6.28 million, after a five-month drop of 594,000.

Manufacturing Orders & Shipments (*link*): Factory orders was flat in August after posting a 1.0% drop in July—which was its first decline since last September. Factory shipments climbed 0.5% after falling 0.9% in July, which was its first decline since February 2021. Manufacturing orders in August were only fractionally below March's cyclical high, while shipments were within 0.5% of March's record high. Meanwhile, core capital goods orders and shipments continued to set new record highs, as companies have been attempting to boost productivity to compete with high inflation and a tight labor market. *Nondefense capital goods shipments excluding aircraft* (used in calculating GDP) has climbed every month but one since its April 2020 bottom, rising 0.4% in August and 35.0% over the period. Meanwhile, *core capital goods orders* (a proxy for future business investment) has advanced during all but four months since April 2020, up 1.4% and 36.2% over the comparable periods. Machinery billings hit yet another new record high, with the industrial equipment component near record highs and mining, oil field & gas field machinery on an upswing. Electrical equipment, appliances & components also reached a new record high. Orders remained on uptrends, both motor vehicles & parts and furniture and related products, though the latter dipped slightly in August. Overall factory shipments remained stalled around June's record high, though are up 7.8% ytd and 12.2% y/y.

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