MORNING BRIEFING
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Consumers, Lithium & Waves

Check out the accompanying chart collection.

Executive Summary: With recession fears topping investors' worry list, why has the cyclical S&P 500 Consumer Discretionary sector outperformed every other sector over the past two months? Jackie explores. … Also: Lithium demand is expected to surge in coming years, driven by EVs—but can supply keep up? Would-be lithium producers face daunting roadblocks. … And: A look at the latest wave in alternative energy, wave energy.

Consumer Discretionary: So Bad It's Tempting? The S&P 500 Consumer Discretionary sector has underperformed the broader stock market for much of the year, down 23.5% ytd through Tuesday's close versus the S&P 500's 19.1% ytd decline. But an interesting thing has happened since the S&P 500 bottomed on June 16: Consumer Discretionary has outperformed all other sectors.

Here's the performance derby for the S&P 500 and its 11 sectors from the June 16 low through Tuesday's close: Consumer Discretionary (17.1%), Utilities (13.7), Financials (6.8), S&P 500 (5.2), Information Technology (4.9), Health Care (4.5), Industrials (4.1), Consumer Staples (3.7), Real Estate (1.1), Energy (0.8), Materials (-3.0), and Communication Services (-3.9) (*Table 1*).

Among the Consumer Discretionary sector's industries, three have outperformed the sector's strong performance since June 16. Automobile Manufacturers posted the most dramatic outperformance, rising 41.4%, followed by Casinos & Gaming (23.7%) and Internet & Direct Marketing Retail (17.7).

Let's consider what investors might see in this very economically sensitive sector at this time of economic uncertainty:

(1) *Employment's still strong.* Despite all the worry about interest rates and economic growth abroad, the US labor market remains exceptionally strong. The August unemployment rate came in at 3.7%, only 1.2ppts above its all-time low of 2.5% posted in May and June 1953 (*Fig. 1*).

(2) *Prices lower at the pump.* Gasoline prices have come down sharply in recent weeks. Since peaking at $5.11 during the June 13 week, the price of a gallon of gasoline has fallen 26% to $3.77 (*Fig. 2*). That certainly helps when it comes time to fill up the tank.

(3) *Interest rates close to a top?* The Federal Reserve has been busy this year. It boosted the fed funds rate by 75bps to a range of 3.00%-3.25% on Wednesday, marking the fifth consecutive FOMC meeting that resulted in an increased fed funds target and the third consecutive increase of that size. The Fed has raised the fed funds rate by a total of 300bps during the current tightening cycle. The two-year Treasury yield has hit 4.02%, and the 10-year Treasury yield has jumped to 3.51% (*Fig. 3*). Given the sharp slowdown in the housing industry and surge in interest rates, investors may be presuming that, even though Powell & Co. indicate that they could raise fed funds as high as 4.6% next year, the FOMC may stop raising rates far sooner.

We do see a possible yellow flag for the sector: Americans have been taken aback by the pace at which grocery bills have been rising. The food inflation rate in August's CPI was 11.6% on a three-month-change basis and 11.4% on a yearly basis (*Fig. 4*). Prices are expected to remain elevated, as drought has affected crops in the US and South America and war has created uncertainty about supply from the Ukraine. We'll be watching food inflation to see if it saps consumers' purchasing power.

Materials: Lithium Keeps Rising. Fears of a global recession have hurt the prices of most metals and materials. One notable exception is the price of lithium. It's up 119% ytd thanks to the expected surge in demand for lithium batteries used to power electric cars and provide backup storage for utilities using solar and wind power (*Fig. 5*). Large and small companies around the world are hoping to open new mines and to build processing plants for the mineral. But they've faced outcry from environmentalists and "NIMBYs" ("not in my backyarders"). Mining is a dirty business, and lithium mining is no exception.

Let's take a look at what's happening with metals prices, the obstacles new lithium mines will need to overcome, and some of the funding out of Washington, DC that's attracting old and new companies alike:

(1) *A metals meltdown.* Concern about a global economic slowdown has weighed on the prices of materials in general and of metals specifically. The price of US Midwest domestic hot rolled coil steel has tumbled to $798 per ton from a recent peak of $1,541 at the end of March (*Fig. 6*). Copper has fallen to $3.55 per pound from its record high of $4.93 in early March (*Fig. 7*). And the amount fetched for aluminum has dropped to $2,245 per metric

tonne from its record high of $3,984 in early March (*Fig. 8*).

Not surprisingly, the stock price indexes of most industries in the S&P 500 Materials sector reflect metals' sliding prices. Only Fertilizers & Agricultural Chemicals is up on a ytd basis (by 28.8%), while the rest are down: Steel (-0.6%), Diversified Chemicals (-5.3), Industrial Gases (-18.9), Materials sector (-20.0), Construction Materials (-23.0), Copper (-28.8), Specialty Chemicals (-30.0), and Gold (-31.0) (*Fig. 9*).

Earnings forecasts for the S&P 500 Materials sector have melted down as well. While earnings are expected to grow 16.7% this year, they're forecasted to fall 7.5% in 2023, and revisions have been decidedly negative for the past six months (*Fig. 10*). Given all this negativity, the 119% ytd jump in the price of lithium is all the more impressive.

(2) *Objections to lithium mines.* Demand for electric vehicles (EVs) is expected to grow rapidly around the world, driving global demand for lithium up six-fold by 2030 from about 350,000 tons in 2020, according to a March 28 Associated Press *article*. But supply may not keep pace with demand in part because the dirty process of mining invites opposition from environmentalists. The lofty price of lithium is telling us that proposed mining projects aren't going to get done in the numbers necessary to fulfill demand.

Environmentalists stymied BYD's attempts to set up a mining operation in Chile, which has among the largest lithium deposits and existing mining operations. Protesters worried about the environmental impact and the percentage of profits Chile would receive from the mine.

The US has about 4% of the world's lithium reserves, but it produces only 2% of the world's supply, or roughly 5,000 tons a year, primarily from Nevada's Silver Peak mine, owned by Albemarle. One US mine under development—and the closest to production—is in Thacker Pass, NV. Owner Lithium Americas (11% owned by Chinese company Ganfeng Lithium) hopes to start construction late this year on a facility expected to produce 66,000 tons a year of lithium carbonate once operational. Native American tribes are opposed to the mine, however, saying it's on sacred lands and could pollute the region.

The project will include a chemical processing plant, waste dumps, and an open-pit mine that could be 370 feet deep, a May 6, 2021 *NYT* *article* explained. The company has said the mine will consume 3,224 gallons of water per minute, and locals worry it will cause the water table to drop. There's also concern that the mining could pollute the water with metals like arsenic. "The lithium will be extracted by mixing clay dug out from the mountainside with as much as 5,800 tons a day of sulfuric acid. This whole process will also create 354 million cubic yards of mining waste that will be loaded with discharge from the sulfuric acid treatment, and may contain modestly radioactive uranium, permit documents disclose," the *NYT* reported. That's certainly not what EV drivers think about as they make their auto purchase.

California Governor Gavin Newsom, a Democrat, has called California the "Saudi Arabia of lithium." There are fewer objections to the lithium mining projects proposed for an area around the state's Salton Sea, a lake that sits atop underground volcanos called the "Salton Buttes." CalEnergy and Energy Source long have tapped the Buttes for geothermal heat to produce electricity. Now three companies—Berkshire Hathaway Energy Renewables, Controlled Thermal Resources, and Materials Research—plan to separate out the lithium from the heated brine water expelled by two geothermal plants before it's injected back into the earth. This is considered the greenest way to extract lithium. The project aims to be operational in 2023. GM is backing another such project on the Salton Sea that targets 2024 for lithium production.

(3) *Lithium refiners needed too.* After lithium is extracted from the earth, it needs to be processed to be used by battery manufacturers. Most lithium is processed in China. Tesla is considering building a lithium hydroxide refinery facility near Corpus Christi, TX. If the plan is approved with the tax relief Tesla requested, the company would invest $365 million, break ground in Q4, and aim for production by year-end 2024, according to a September 12 *article* on Electrive.com.

Piedmont Lithium wants to develop an open-pit mining project for the Kings Mountain area west of Charlotte, NC as well as a lithium hydroxide processing plant in Tennessee. The Tennessee plant would cost $600 million to develop and produce 20,000 metric tonnes a year of lithium hydroxide starting in 2025, a September 2 *article* in *Mining Technology* reported.

(4) *A hand from Uncle Sam.* The US government has lined up funding to expand US lithium production in an effort to reduce the US's lithium dependence on China. The Biden administration's Bipartisan Infrastructure Law provides $3.1 billion in funding to make more batteries and components in America and build out domestic supply chains. It's part of the administration's goal to have EVs make up half of all car sales in the US by 2030.

But just as the government giveth, it taketh away. The Inflation Reduction Act makes it tougher to receive a rebate for purchasing an EV. For buyers to qualify for incentives, the EV purchased must have been made with source materials from North America or a country with which the US has a trade agreement. And that includes the lithium used in batteries.

The Act also provides $7 billion in funding to strengthen the US battery supply chain. Included in that funding is $3.2 billion to support battery manufacturing, processing, and recycling. Separately, the Inflation Reduction Act provides a 10% tax write-off of operational costs for US companies producing critical minerals.

The expected demand and federal funding up for grabs have spawned a slew of startup would-be lithium miners and suppliers to lithium miners. Rover Metals, Lilac Solutions, Standard Lithium, and Patriot Battery Metals are among those vying to become the Exxon of Lithium.

Disruptive Technologies: Catching A Wave. Humans have harnessed the energy of the sun, wind, and rivers. Next up: Companies are attempting to turn the motion of waves in the ocean into electricity that can be used on land. Doing so is difficult, because the motion of waves isn't linear but oscillating, ocean water is corrosive, conditions on the sea can be brutal, and costs are problematic. Costs need to drop from about $0.60-$1.00 per kilowatt hour to about $0.06 for ocean energy to be competitive with inland competitors.

Nonetheless, small companies are building platforms and buoys to learn which technologies are most efficient. And US government funding has become more plentiful with the passage of the Inflation Reduction Act. A September 7 CNBC *article* described some of the technologies being explored. Here's a quick look:

(1) *Bobbing below the surface.* CalWave has a large, block-like device that rises and falls with the waves under the surface of the water. Inside the block are dampers that convert the waves' motion into torque, which drives a generator to produce electricity that's sent back to the shore via an underwater cable.

(2) *Two bobbing devices.* Oscilla Power has one large, block-like device that floats on the ocean's surface and is connected to a large ring-shaped item below the surface. "The difference in motion between the float and the ring generates force on the connecting lines, which is used to rotate a gearbox to drive a generator," the CNBC article explained.

(3) *Floaters near shore.* Eco Wave Power has developed floating devices that attach to piers or jetties, but all the machinery that converts the wave energy into electricity is located on land. This dramatically decreases the costs of installation, operation, and maintenance. The company's product is being used in Gibraltar, and there are plans to deploy it in Israel

and the Port of Los Angeles.

(4) *A windmill below the waves.* UK-based Sustainable Marine has built platforms that float on the ocean's surface while the motion of the ocean turns turbines below the surface. The electricity they generate is sent back to the shore via an undersea cable. The platforms are being tested off Canada's Nova Scotia. It will be interesting to see whether marine life is affected.

Calendars

US: Thurs: Leading Indicators -0.1%; Initial & Continuous Jobless Claims 218k/1.40m; Kansas City Manufacturing Index; Current Account -$260.6b; Natural Gas Storage. **Fri:** M-PMI & NM-PMI Flash Estimates 51.1/45.0; Powell. (Bloomberg estimates)

Global: Thurs: France Business Survey 102; UK Gfk Consumer Confidence -42; Japan Core CPI 1.9% y/y; ECB Economic Bulletin; BOE Interest Rate Decision 2.25%; BOJ Press Conference; Fernandez-Bollo Tuominen. **Fri:** Eurozone, Germany, and France C-PMI Flash Estimates 48.2/46.0/49.8; Eurozone, Germany, France M-PMI Flash Estimates 48.7/48.3/49.8; Eurozone, Germany, and France NM-PMI Flash Estimates 49.0/47.2/50.5; Spain GDP 1.1%q/q/6.3%y/y; Canada Headline & Core CPI -2.0%/-1.2%; Nagel. (Bloomberg estimates)

Strategy Indicators

S&P 500 Sectors Basic Shares Outstanding (*link*): With the Q2-2022 earnings season now 100% complete, the S&P 500's aggregate basic share count rose 0.3% q/q for its first gain in five quarters. However, the S&P 500's share count would have actually declined 0.3% q/q after adjusting for the impact of new shares issued in the merger between Discovery and WarnerMedia. Still, that adjusted figure remains above the average 0.4% q/q drop recorded during 2018-19 before the pandemic. During Q2-2022, shares outstanding declined q/q for nine of the 11 sectors, up from eight sectors with declines during Q1-2022 and Q4-2021, which compares to just three sectors declining during Q2-2021. However, just two of the 11 sectors, Industrials and Utilities, reduced their share counts at a faster rate (or issued shares at a slower rate) during Q2. That's down from six doing so during Q1, which suggests companies are beginning to preserve cash as the economy weakens and interest rates rise. The share count for Communication Services rose 4.2% q/q, largely due to the new shares issued in the Warner Brothers Discovery merger. Absent that gain, the sector's share count would have *fallen* 0.3% q/q. Here's how the sectors ranked by their share-count decline during Q2: Materials (-0.6%), Consumer Discretionary (-0.6), Industrials (-0.5), Financials (-0.4), Health Care (-0.2), Utilities (-0.2), Consumer Staples (-0.2), Information Technology (-0.1), and Energy (less than -0.1). Here's the ranking for the two sectors that continued to increase their share count: Communication Services (4.2 [14-year high]), and Real Estate (0.1).

S&P 500 Buybacks (*link*): S&P 500 quarterly buybacks tumbled 21.8% q/q during Q2-2022 to a four-quarter low of $219.6 billion from record-high $281.0 billion during Q1-2022. Still, that's up from a 22-quarter low of $88.7 billion during Q2-2020, when companies were seeking to preserve cash amid the highly uncertain economic outlook caused by Covid-19. The four-quarter sum of buybacks breached the trillion-dollar mark for the first time ever, rising 2.1% q/q to $1.005 trillion and making its second straight record-high since Q1-2019. S&P 500 buybacks as a percentage of the S&P 500's total market capitalization dropped to a two-quarter low of 0.69% in Q2-2022 from an eight-quarter high of 0.73% in Q1-2022. That's up from an 11-year low of 0.35% during Q2-2020, and compares to a 29-quarter high of 1.06% in Q4-2018 and the record high of 1.28% during Q3-2007.

S&P 500 Sectors Buybacks (*link*): Buybacks rose q/q during Q2-2022 for just four of the S&P 500's 11 sectors. That was the lowest count since Q2-2020 during the pandemic when only one sector rose. None of the 11 sectors had buybacks at a record high during Q2, but Energy was the highest since Q3-2008. Still, all but Financials and Health Care managed to exceed their pre-pandemic Q4-2019 buyback level. Information Technology accounted for 32.8% of the S&P 500's buybacks in Q2-2022, the most of any sector and well ahead of Communication Services (13.4) and Consumer Discretionary (12.6). The Financials sector placed fourth with its share of the buyback total down sharply to 9.7% from 19.5% in Q1-2022. The sector's buyback absence comes ahead of the Fed's stress test of the banking industry's balance sheets. Materials was the most prolific repurchaser during Q2, as companies in that sector repurchased 1.05% of their market cap, followed closely by Communication Services (1.04%), Tech (0.84), and Consumer Discretionary (0.82). Energy's companies bought back just 0.24% of their market cap, but that was the sector's highest percentage in 14 quarters.

Stock Market Sentiment (*link*): The BBR sank below 1.00 this week for the first time since the July 12 week, falling to 0.96 after rising from 1.00 to 1.15 last week. *Bullish sentiment* slipped back to 30.0% after rising from 29.7% to 32.4% last week; it was at 45.1% four weeks ago. Meanwhile, *bearish sentiment* moved up from 28.2% to 31.4% this week, the highest since late July. The *correction count* dropped for the second week from 40.6% to 38.6%, though remains the largest group. In the meantime, the AAII Sentiment Survey (as of September 15) showed a large reversal from the prior week, with optimism jumping and pessimism dropping. T*he percentage expecting stocks will rise over the next six months* climbed for the first time in four weeks to 26.1% after sliding the previous three weeks by 15.2ppts (to 18.1% from 33.3%). Despite the increase, optimism remained below its historical average of 38.0% for the 43rd successive week, and was unusually low for the third successive week and the 26th time in 37 weeks. *The percentage expecting stocks to fall over the next six months* declined for the first time in five weeks, by 7.3ppts to 46.0%, after a four-week jump of 16.6ppts (53.3 from 36.7). Bearish sentiment has been above its historical average of 30.5% in 42 of the last 43 weeks, and is at an unusually high level for the 27th time in 35 weeks. (The breakpoint between typical and unusually high readings is currently 40.5%.)

US Economic Indicators

Existing Home Sales (*link*): “The housing sector is the most sensitive to and experiences the most immediate impacts from the Federal Reserve’s interest rate policy changes,” said Lawrence Yun, NAR’s chief economist. “The softness in home sales reflects this year’s escalating mortgage rates. Nonetheless, homeowners are doing well with near nonexistent distressed property sales and home prices still higher than a year ago.” Existing home sales contracted for the seventh consecutive month, by a smaller-than-expected 0.4% in August and 26.0% over the period to 4.80mu (saar)—the lowest level since November 2015, discounting the Covid-related plunge. Meanwhile, *single-family sales* slipped 0.9% in August and 25.6% over the seven months through August to 4.28mu (saar), while *multi-family sales* rose 4.0% and fell 29.7% over the comparable periods to 520,000 units. *Regionally,* sales in August were mixed, though yearly comparisons were all in the red: Northeast (1.6% m/m & -13.7% y/y), West (1.1 & -29.0), South (0.0 & -19.3), and Midwest (-3.3 & -15.9). The *median existing home price* (7.7% y/y) increased for the 126th month on a y/y basis, the longest streak on record, though posted its second monthly decline since reaching a record high of $413,800 in June—the usual seasonal trend of prices declining after peaking in the early summer, according to the report. *Total housing inventory* at the end of August was 1.28mu, down 1.5% m/m and flat y/y—with unsold inventory at a 3.2 months’ supply at the current sales rate, matching July’s rate and up from 1.6 months in

January. According to Yun, “Inventory will remain tight in the coming months and even for the next couple of years. Some homeowners are unwilling to trade up or trade down after locking in historically-low mortgage rates in recent years, increasing the need for more new-home construction to boost supply.”

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