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**[Posted: April 21, 2023—9:30 AM EDT]** Global equity markets are lower this morning. In Europe, the Euro Stoxx 50 is currently down 0.1% from its prior close. In Asia, the MSCI Asia Apex 50 Index closed down 1.1%. Chinese markets were lower, with the Shanghai Composite closing down 2.0% from its previous close and the Shenzhen Composite closing down 2.5%. U.S. equity index futures are signaling a lower open.

With 84 companies having reported so far, S&P 500 earnings for Q1 are running at \$50.80 per share, compared to estimates of \$50.89. Of the companies that have reported thus far, 77.4% have exceeded expectations while 20.2% have fallen short of expectations.

The Confluence macro team publishes a plethora of research reports and multimedia offerings on a weekly and quarterly basis, all available on our [website](#). We highlight recent publications below, with new items of the day emphasized in bold:

- [Bi-Weekly Geopolitical Report](#) (4/17/2023) (with associated [podcast](#)) “U.S. Intelligence Sharing as a Tool of International Relations”
- [Weekly Energy Update](#) (4/20/2023): Thinking about an EV? Wondering what models qualify for a tax credit? We have a link to the government website to see if the car you are considering qualifies for the incentive. We also update the weekly data.
- [Asset Allocation Quarterly – Q1 2023](#) (1/19/2023): Discussion of our asset allocation process, Q1 2023 portfolio changes, and our outlook for the markets.
- [Asset Allocation Q1 2023 Rebalance Presentation](#) (2/2/2023): Video presentation featuring the Asset Allocation Committee as they review our asset allocation strategies, recent portfolio changes, and the current macro environment.
- [Asset Allocation Bi-Weekly](#) (4/10/2023) (with associated [podcast](#)): “Increasing Concerns About Commercial Real Estate”
- [Confluence of Ideas podcast](#) (3/8/2023): “Reflections on Inflation”

Good morning! Today’s *Comment* begins with a discussion about the growing popularity of generative artificial intelligence. Next, we give our thoughts on crypto’s sudden resurgence this year. Lastly, we review the latest developments in the race for clean technology and how they may impact the rivalry between the U.S. and China.

**Artificial Intelligence:** Five months after the launch of ChatGPT, generative AI has sparked both concerns from lawmakers and the imagination of Big Tech firms.

- The multiple applications of artificial intelligence can potentially disrupt the global economy. The ability of machine-learning algorithms to improve chatbots will make it easier for people to conduct research and develop solutions. Although the products are currently in the early stages of development, there are fears that the technology could have negative side effects. For example, there are concerns that governments could use [artificial intelligence to enhance spy capabilities](#) or that the [new technology could allow hackers to access company trade secrets](#).
- That said, the largest tech companies are clamoring to join the generative AI market. The innovation is expected to revolutionize the way businesses generate content. Google (GOOGL, \$105.91) is [using the technology to create sophisticated ad campaigns](#). Meanwhile, Amazon (AMZN, \$103.81) intends to utilize AI in its web services cloud business. After investing \$10 billion into parent company Open AI, Microsoft (MSFT, \$286.11) plans to integrate [artificial intelligence into its employee platform Viva](#). We suspect more companies will follow this trend. The year-to-date performance of Microsoft's stock has outpaced the NASDAQ, 20.58% to 16.10%, in a possible sign that investors are confident in AI's earning potential.
- AI will likely be a boon to tech companies as long as governments do not stand in the way. These machine learning apps will be able to provide major tech firms with an alternative source of revenue and could improve company efficiency. However, if the technology leads workers to being displaced, lawmakers may implement regulations to limit the use of these algorithms. The biggest winners of the growing popularity of AI may be the semiconductor industry, as special chips will be needed to handle the large amounts of data required for training and interfacing with AI applications.

**Is Crypto Cool Again?** Investors have flocked to digital currencies despite fears of a regulatory crackdown as some traders view crypto as an alternative safe-haven asset.

- Governments are studying ways to prevent speculation within the crypto market from spreading into the economy. Lawmakers in the European Union just [approved a comprehensive regulatory framework for the crypto industry](#). Meanwhile, the United Kingdom is set [to roll out its own set of rules over the next few months](#). The push to regulate digital currencies is due to concerns that the multi-trillion-dollar industry is rife with scams. During his testimony before Congress, U.S. Security and Exchange Commission Chair Gary Gensler [testified that he has never seen an industry so non-compliant with laws](#).
- Crypto has come back into focus with investors as they look to hedge against exposure to the U.S. dollar. Bitcoin has gotten off to a strong start in 2023. The most actively traded cryptocurrency is up 69.72% since January, significantly outpacing the U.S. dollar index, which is down 1.56% in the same period. The rush into digital currencies is largely related to the speculation that the Fed will end its hiking cycle before it has successfully tamed inflation. Additionally, the strong returns of crypto may be a reflection of investor wariness of U.S. dollar dominance.

- The surge into digital currencies will likely be bumpy but may be suitable for an investor with a substantially high risk tolerance. The strong performance of crypto is likely being driven by a relatively small group of traders. For example, cryptocurrency exchange volume, by month, peaked [at over \\$2 trillion in May 2021](#), less than a third of [the \\$6.6 trillion in volume during a typical forex trading day](#) in 2019. As a result, the crypto market has a lot of liquidity concerns for those traders looking to invest in digital assets. That said, as the world moves toward deglobalization, we suspect that crypto may benefit as countries look to diversify away from the greenback.

**Climate Change Competition:** Competition for market share in the renewable tech industry is heating up.

- The Chilean government [has announced its plan to nationalize the country's lithium industry](#). As the world's second-largest producer of the metal, Chile has decided to seize control of this key mineral resource to prevent the country's resources from falling into foreign hands. Chile is the latest country to seek greater control over lithium. Last year, [Mexico nationalized its lithium sector](#), while Zimbabwe [banned unprocessed lithium exports](#). Meanwhile, Indonesia is expected to restrict the [export of battery-related commodities](#). The move to protect key renewable commodities is a reflection of the growing importance that green technology will play over the next few years.
- Additionally, there is a growing turf war among EV automakers as new firms begin looking to expand into foreign markets. On Thursday, Tesla (TSLA, \$162.99) [announced another round of sweeping price cuts for some of its vehicles](#) as it looks to compete with rivals entering the space. The move was shunned by investors, which led the automaker to adjust the prices of its higher-end vehicles but appears to be a part of the company's long-run strategy to remain competitive. Meanwhile, motor shows in [Shanghai have allowed Chinese automakers to display advancements in vehicle and battery technology](#). The country is already the world's biggest market for electric vehicles but there are expectations that Chinese firms may look to sell to other countries. After overtaking Germany in 2022, China is now set to dethrone Japan as the top exporter of cars in terms of volume later this year.
- The fight over clean energy supremacy will play a major role in the rivalry between the U.S. and China. Renewable technology is one area where China performs better than anyone else. Despite being the [world's top carbon emissions emitter](#), China has been at the forefront of green technology development. The government [has invested significantly in its clean technology and is currently better positioned to capitalize](#) on the global pivot toward sustainable energy. Many U.S. renewable companies use Chinese technology in their products, which explains why the Biden administration has been so adamant in its quest for automakers to source materials from firms operating in North America. Although U.S.-China cooperation is ideal for these countries to meet their climate goals, it doesn't seem likely at this juncture.
  - If we are correct, governments will be reluctant to completely move away from fossil fuels as the green energy transition is going to take longer than lawmakers realize.

## U.S. Economic Releases

No major economic reports have been released so far today. The table below lists the economic releases and/or Fed events scheduled for the rest of the day.

Economic Releases							
EST	Indicator			Expected	Prior	Rating	
9:45	S&P Global Manufacturing PMI	m/m	Apr P	49.0	49.2	***	
9:45	S&P Services PMI	m/m	Apr P	51.5	52.6	**	
9:45	S&P Composite PMI	m/m	Apr P	51.2	52.3	**	
Federal Reserve							
EST	Speaker or Event	District or Position					
16:35	Lisa Cook Discusses Economic Research	Member of the Board of Governors					

## Foreign Economic News

We monitor numerous global economic indicators on a continuous basis. The most significant international news that was released overnight is outlined below. Not all releases are equally significant, thus we have created a star rating to convey to our readers the importance of the various indicators. The rating column below is a three-star scale of importance, with one star being the least important and three stars being the most important. We note that these ratings do change over time as economic circumstances change. Additionally, for ease of reading, we have also color-coded the market impact section, which indicates the effect on the foreign market. Red indicates a concerning development, yellow indicates an emerging trend that we are following closely for possible complications, and green indicates neutral conditions. We will add a paragraph below if any development merits further explanation.

Country	Indicator			Current	Prior	Expected	Rating	Market Impact
<b>ASIA-PACIFIC</b>								
Japan	Machine tool orders	y/y	Mar F	-15.2%	-15.2%	--	**	Equity and bond neutral
	Jibun Bank Manufacturing PMI	m/m	Apr P	49.5	49.2	--	***	Equity bullish, bond bearish
	Jibun Bank Services PMI	m/m	Apr P	54.9	55.0	--	**	Equity bearish, bond bullish
	Jibun bank Composite PMI	m/m	Apr P	52.5	52.9	--	*	Equity bearish, bond bullish
	National CPI	y/y	Mar	3.2%	3.3%	3.2%	***	Equity and bond neutral
	National CPI Ex-Fresh Food	y/y	Mar	3.1%	3.1%	3.0%	**	Equity bearish, bond bearish
	National CPI Ex-Fresh Food & Energy	y/y	Mar	3.8%	3.5%	3.6%	*	Equity bearish, bond bearish
South Korea	PPI	y/y	Mar	3.3%	4.8%		**	Equity and bond neutral
<b>EUROPE</b>								
Eurozone	S&P Global Manufacturing PMI	m/m	Apr P	45.5	47.3	48.0	***	Equity bearish, bond bullish
	S&P Global Composite PMI	m/m	Apr P	54.4	53.7	53.7	*	Equity bullish, bond bearish
	S&P Global Services PMI	m/m	Apr P	56.6	55.0	54.5	**	Equity bullish, bond bearish
Germany	S&P/BME Manufacturing PMI	m/m	Apr P	44.0	44.7	45.7	***	Equity bearish, bond bullish
	S&P Global Services PMI	m/m	Apr P	55.7	53.7	53.4	**	Equity bullish, bond bearish
	S&P Global Composite PMI	m/m	Apr P	53.9	52.6	52.9	**	Equity bullish, bond bearish
France	S&P Global Manufacturing PMI	m/m	Apr P	45.5	47.3	47.8	***	Equity bearish, bond bullish
	S&P Global Services PMI	m/m	Apr P	56.3	53.9	53.5	**	Equity bullish, bond bearish
	S&P Global Composite PMI	m/m	Apr P	53.8	52.7	52.9	**	Equity bullish, bond bearish
UK	Retail Sales	y/y	Mar	-3.1%	-3.3%	-3.1%	***	Equity and bond neutral
	Retail Sales Ex-Auto Fuel	y/y	Mar	-3.2%	-3.0%	-3.1%	**	Equity and bond neutral
	S&P Global/CIPS Manufacturing PMI	m/m	Apr P	46.6	47.9	48.4	***	Equity bearish, bond bullish
	S&P Global/CIPS Services PMI	m/m	Apr P	54.9	52.9	52.8	**	Equity bullish, bond bearish
	S&P Global/CIPS Composite PMI	m/m	Apr P	53.9	52.2	52.2	**	Equity bullish, bond bearish
Switzerland	M3 Money Supply	y/y	Mar	-0.8%	0.2%		**	Equity and bond neutral
Russia	Money Supply, Narrow Definition	w/w	14-Apr	17.20t	17.00t		*	Equity and bond neutral
<b>AMERICAS</b>								
Canada	Retail Sales	m/m	Feb	-0.2%	1.6%	-0.6%	**	Equity bullish, bond bearish
	Retail Sales Ex-Autos	m/m	Feb	-0.7%	0.9%	0.0%	**	Equity bearish, bond bullish

## Financial Markets

The table below highlights some of the indicators that we follow on a daily basis. Again, the color coding is similar to the foreign news description above. We will add a paragraph below if a certain move merits further explanation.

Fixed Income	Today	Prior	Change	Trend
3-mo Libor yield (bps)	526	525	1	Up
3-mo T-bill yield (bps)	493	495	-2	Up
TED spread (bps)	33	31	2	widening
U.S. Sibor/OIS spread (bps)	506	506	0	Up
U.S. Libor/OIS spread (bps)	508	508	0	Up
10-yr T-note (%)	3.53	3.53	0.00	Flat
Euribor/OIS spread (bps)	321	321	0	Up
Currencies	Direction			
Dollar	Flat			Down
Euro	Up			Up
Yen	Up			Down
Pound	Down			Up
Franc	Flat			Up

## Commodity Markets

The commodity section below shows some of the commodity prices and their change from the prior trading day, with commentary on the cause of the change highlighted in the last column.

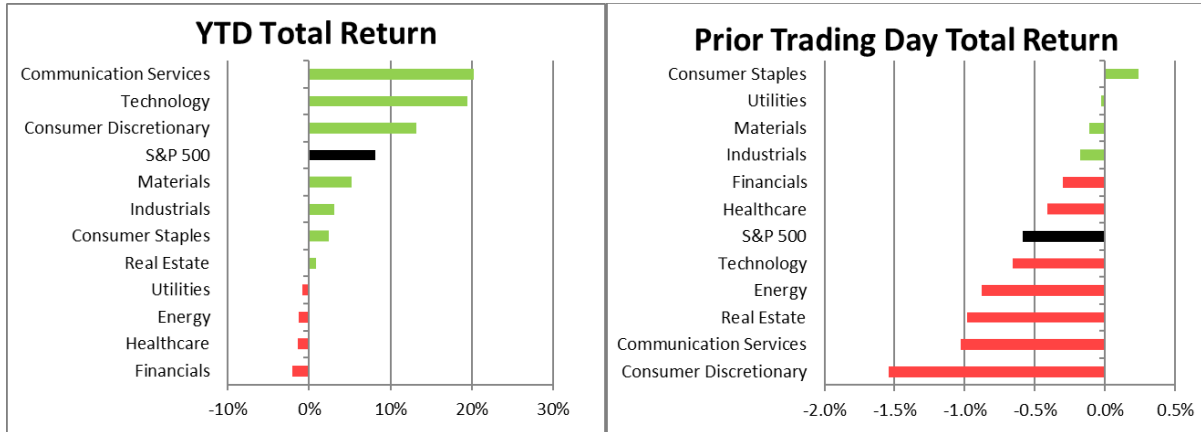
DOE Inventory Report	Price	Prior	Change	Explanation
<b>Energy Markets</b>				
Brent	\$81.57	\$81.10	0.58%	
WTI	\$77.85	\$77.37	0.62%	
Natural Gas	\$2.24	\$2.25	-0.49%	
Crack Spread	\$29.48	\$30.25	-2.54%	
12-mo strip crack	\$25.04	\$25.19	-0.60%	
Ethanol rack	\$2.52	\$2.53	-0.29%	
<b>Metals</b>				
Gold	\$1,987.05	\$2,004.80	-0.89%	
Silver	\$25.20	\$25.29	-0.35%	
Copper contract	\$401.15	\$403.25	-0.52%	
<b>Grains</b>				
Corn contract	\$622.50	\$626.00	-0.56%	
Wheat contract	\$682.25	\$680.00	0.33%	
Soybeans contract	\$1,456.75	\$1,468.50	-0.80%	
<b>Shipping</b>				
Baltic Dry Freight	1,432	1,372	60	
<b>DOE Inventory Report</b>				
	Actual	Expected	Difference	
Crude (mb)	-4.6	-0.9	-3.7	
Gasoline (mb)	1.3	-2.0	3.3	
Distillates (mb)	-0.4	-1.2	0.8	
Refinery run rates (%)	1.7%	-0.30%	2.0%	
Natural gas (bcf)	75	70	5	

## **Weather**

The 6-10 and 8-14 day forecasts currently call for warmer-than-normal temperatures in the Pacific Northwest, with cooler-than-normal temperatures in the Great Plains, Midwest and Mississippi Valley regions. The forecasts are calling for wetter-than-normal conditions in the South and along the East Coast, with dry conditions in the Pacific Northwest and northern Great Plains.

**Data Section**

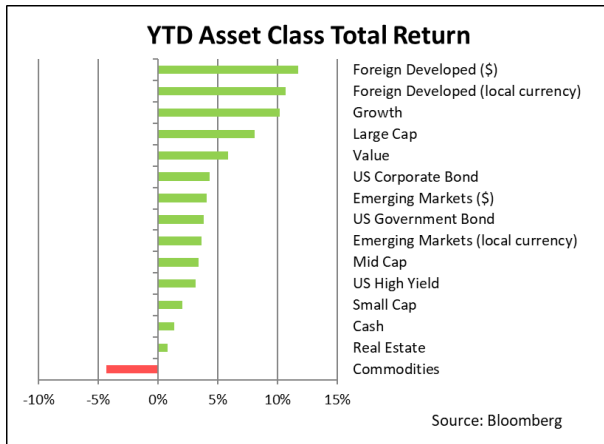
**U.S. Equity Markets – (as of 4/20/2023 close)**



(Source: Bloomberg)

These S&P 500 and sector return charts are designed to provide the reader with an easy overview of the year-to-date and prior trading day total return. Sectors are ranked by total return; green indicating positive and red indicating negative return, along with the overall S&P 500 in black. These charts represent the new sectors following the 2018 sector reconfiguration.

**Asset Class Performance – (as of 4/20/2023 close)**



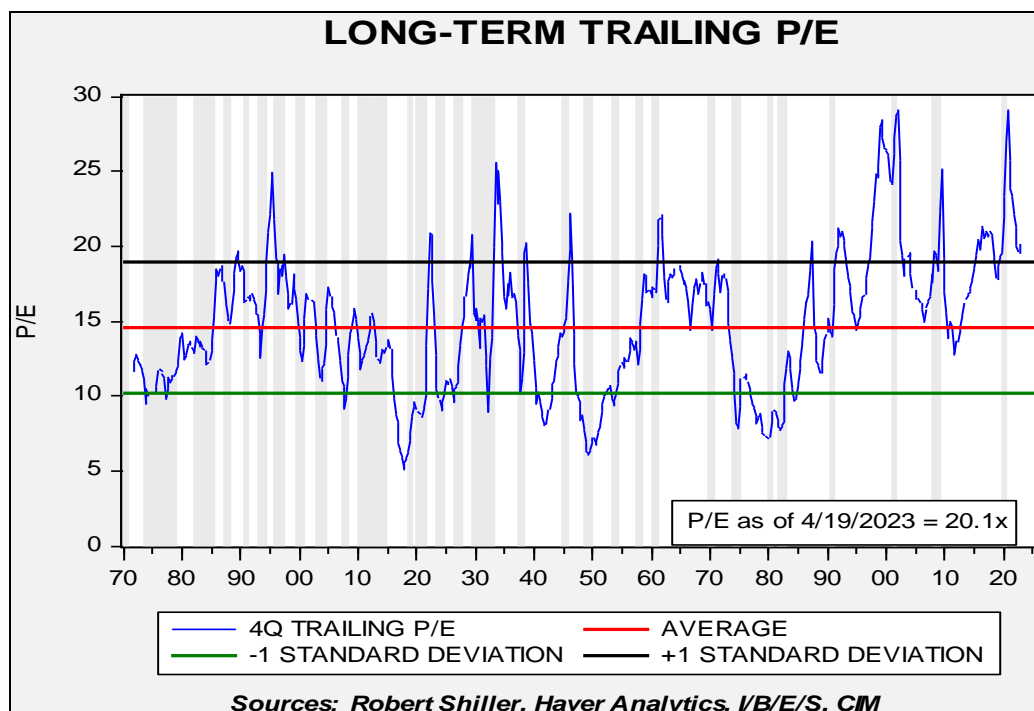
This chart shows the year-to-date returns for various asset classes, updated daily. The asset classes are ranked by total return (including dividends), with green indicating positive and red indicating negative returns from the beginning of the year, as of prior close.

Asset classes are defined as follows: Large Cap (S&P 500 Index), Mid Cap (S&P 400 Index), Small Cap (Russell 2000 Index), Foreign Developed (MSCI EAFE (USD and local currency) Index), Real Estate (FTSE NAREIT Index), Emerging Markets (MSCI Emerging Markets (USD and local currency) Index), Cash (iShares Short Treasury Bond ETF), U.S. Corporate Bond (iShares iBoxx \$ Investment Grade Corporate Bond ETF), U.S. Government Bond (iShares 7-10 Year Treasury Bond ETF), U.S. High Yield (iShares iBoxx \$ High Yield Corporate Bond ETF), Commodities (Bloomberg total return Commodity Index), Value (S&P 500 Value), Growth (S&P 500 Growth).



## P/E Update

April 20, 2023



Based on our methodology,<sup>1</sup> the current P/E is 20.1x, up 0.1x from last week. Rising index values mostly accounted for the modest uptick.

*This report was prepared by Confluence Investment Management LLC and reflects the current opinion of the authors. It is based upon sources and data believed to be accurate and reliable. Opinions and forward-looking statements expressed are subject to change. This is not a solicitation or an offer to buy or sell any security.*

<sup>1</sup> This chart offers a running snapshot of the S&P 500 P/E in a long-term historical context. We are using a specific measurement process, similar to *Value Line*, which combines earnings estimates and actual data. We use an adjusted operating earnings number going back to 1870 (we adjust as-reported earnings to operating earnings through a regression process until 1988), and actual operating earnings after 1988. For the current quarter, we use the I/B/E/S estimates which are updated regularly throughout the quarter; currently, the four-quarter earnings sum includes two actual quarters (Q3 and Q4) and two estimates (Q1 and Q2). We take the S&P average for the quarter and divide by the rolling four-quarter sum of earnings to calculate the P/E. This methodology isn't perfect (it will tend to inflate the P/E on a trailing basis and deflate it on a forward basis), but it will also smooth the data and avoid P/E volatility caused by unusual market activity (through the average price process). Why this process? Given the constraints of the long-term data series, this is the best way to create a long-term dataset for P/E ratios.