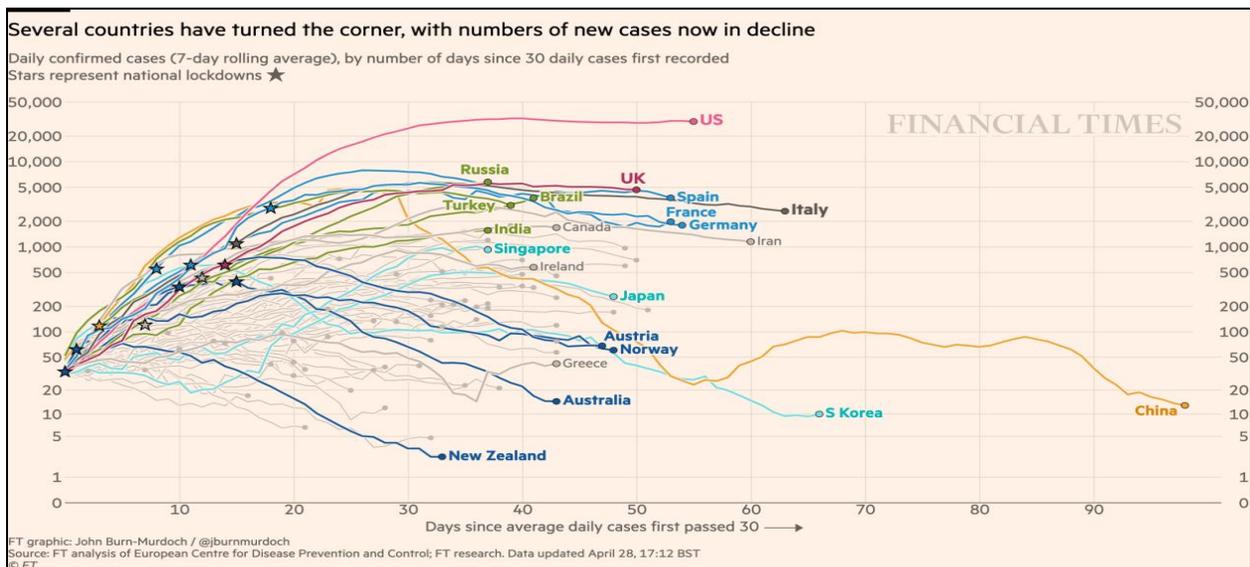


Looking for something to read? See our [Reading List](#); these books, separated by category, are ones we find interesting and insightful. We will be adding to the list over time.

**[Posted: April 30, 2020—9:30 AM EDT]** Global equity markets are mixed this morning. The EuroStoxx 50 is down 0.6% from its last close. In Asia, the MSCI Asia Apex 50 closed up 0.6% from the prior close. Chinese markets were higher, with the Shanghai Composite up 1.3% and the Shenzhen Composite up 1.9%. U.S. equity index futures are signaling a lower open. With 193 companies having reported, the S&P 500 Q1 earnings stand at \$32.60, lower than the \$35.51 forecast for the quarter. The forecast reflects a 10.0% decrease from Q1 2019 earnings. Thus far this quarter, 65.8% of the companies have reported earnings above forecast, while 32.1% have reported earnings below forecast.

Good morning as another month, that feels like a year, comes to a close. Just a reminder—tomorrow is May Day, the international celebration of Labor Day. Most European financial markets will be closed, although Denmark and the U.K. will remain open. The ECB meets today; initial market reaction to the statement was negative as the moves taken appear modest. [Equity futures are mixed](#), and oil continues to recover; our [Weekly Energy Update](#) is available. We update the [COVID-19](#) news. Here are the details:

**COVID-19:** The [number of reported cases](#) is 3,207,248 with 227,971 deaths and 984,161 recoveries. In the U.S., there are 1,040,488 confirmed cases with 60,999 deaths and 124,023 recoveries. Here is the *FT* chart:



Here is [another interesting graphic](#)—it shows the spread of COVID-19 over time. What is shown is that the only parts of the world that have not reported the virus are some islands in the Pacific. According to [rt.live](#), there are only seven states with  $R_0$  higher than one and six are in the Midwest.

*The virus news:*

- Equity markets rose yesterday on reports that Dr. Fauci, the head of the National Institute of Allergy and Infection Diseases, [had positive comments](#) related to [Remdesivir](#), an anti-viral medicine produced by [Gilead Sciences](#) (GILD, 84.09). There are generally two different paths to dealing with COVID-19. The [first is developing a vaccine](#). A vaccine, widely distributed, would establish herd immunity. A [vaccine will be difficult to create](#); making [vaccines has a host of problems](#), one of which is the mutation of viruses into a less virulent form, reducing the incentive to create one. A successful vaccine for any coronavirus has never been developed and research on [coronaviruses suggest that natural immunity doesn't last very long](#). Additionally, if the virus mutates, COVID-19 may [require a new vaccine each year](#), similar to influenza. Despite these hurdles, the efforts to make a vaccine are impressive. There are joint projects with [drug makers and academia](#), and the [U.S. is planning a crash effort to make and distribute a vaccine](#). The other path is to create treatments for those who have the virus. A successful antiviral would mean that catching the bug would likely be less dangerous; this was the path taken for HIV. In addition to [Remdesivir](#), [other drugs are being investigated as well](#). As noted above, [Dr. Fauci's comments](#) were very well received yesterday. However, there are conflicting studies on Remdesivir, [some suggesting](#) the drug isn't all that successful in helping patients. As a result, [having other drugs](#) to combat the virus may be necessary. Having both types might be needed to successfully corral COVID-19, especially if the virus regularly mutates. We do note that despite mixed results for Remdesivir, [the U.S. may greenlight the drug for emergency use](#). Our take? We suspect that Remdesivir has some value, but we may find that it is more effective for certain degrees of infection, or that timing is critical. We note that Tamiflu works best when taken early against influenza; waiting until the symptoms have become obvious tends to reduce its effectiveness. Something similar may emerge with Remdesivir.
- In our daily coverage of COVID-19, we have seen a broad spectrum of reports. At first, the virus looked like a typical respiratory malady. Although it was clearly deadly to some parts of the population (aged, with co-morbidity factors), a large number of those infected appeared to be asymptomatic, or with very mild symptoms. However, as the virus spread around the world, new symptoms emerged. There were cases of blood clotting apparently caused by the disease, and [younger patients were suffering strokes after being infected](#). Patients who appeared mildly ill would have blood oxygen levels so low doctors tended to immediately ventilate. [Renal failure was reported](#). [Certain cancers](#) are now a co-morbidity factor. [Even dermatologists are reporting very odd symptoms](#) from COVID-19. There is also a tendency for patients to be afflicted and appear to recover, only to become suddenly deathly ill. It sort of seems like there is a "[second-week syndrome](#)" with COVID-19. Simply put, whatever we are dealing with is [affecting the human body much more broadly](#) than it looked initially. It is [unclear what we are dealing with here](#). However, one possibility is that the [virus is mutating much more](#)

[rapidly](#) than expected. It is possible that the U.S. is being hit with different strains of the virus. This may account for the wide differences in fatalities. One possibility is that the West Coast was infected by a less virulent Asian strain, while the East Coast was infected by a stronger variant from Europe.

- The CDC now has [offered six symptoms](#) that COVID-19 tends to cause.
- Although the virus continues to surprise, there is a [consensus that children are less at risk](#) from COVID-19. It may be that they are not vectors for transmission either.
- Every government that has faced this disease has taken a number of policy steps to try to cope with the outbreak, while also reducing the impact on the economy as much as possible. Social distancing reduces the spread of the disease and saves capacity in the medical system. However, social distancing cannot exist indefinitely because of the harm done to the economy. Essentially, [policymakers are being asked to manage two conflicting goals](#); keeping people safe and maintaining some semblance of an economy. This puts leaders in a very difficult spot, because either goal could be considered absolute and there will always be a pundit somewhere who can castigate a leader for putting a focus on either.
  - Due to the broad spectrum of responses, there have been a number of natural experiments that we have been tracking. Sweden has been an important test case for COVID-19 social distancing policy. The country has had a “light touch,” putting fairly modest restrictions that are not aggressively enforced. Its death rates are elevated, but not widely different than other nations. A *NYT* [study showed its fatality rates are about 18% above normal](#), which is low relative to other countries.



- The above chart from the *FT* shows Sweden’s death rate compared to other nations. [Here is the entire array](#).
- On the other hand, the disease has been starkly more deadly for the elderly in Sweden; [86% of the 2,194 confirmed deaths have come from those over 70](#). Sweden’s experience seems to suggest that less restrictive measures may not be as risky for the entire population, but may be a problem for the elderly. On the other hand, it is important to draw the right lessons from an analog; [Sweden’s population density](#) is 64 people per square mile, 194 out of 235 nations. The U.S. ranks 177, with 94 people per square mile. The U.S. experience shows that highly populated areas tend to be more at risk. What this may mean for the U.S. is that restrictive measures may be appropriate for urban areas, while less restrictive measures may work in rural and more suburban settings.

- Meanwhile, [India is struggling to reopen](#); workers are reluctant to return to work, fearing another outbreak of the virus. Meanwhile in China, manufacturing is starting to recover but the [consumers of Chinese goods](#), both home and abroad, are slower to restart buying.

### ***The policy news:***

- The Fed met; as expected, [it didn't do anything but clearly indicated that if more was necessary, it would act](#). Here is a [report that compares the changes in the last two statements](#). The statement does show that this was a continuation meeting. Nothing new was revealed, and what is in [place will likely remain so for a while](#). Chair Powell signaled that [fiscal policy should remain expansionary](#). On a side note, it appears the KC FRB will not be able to hold its annual monetary policy meeting in [Jackson Hole](#) this year, for the first time since 1982.
- The ECB is planning on [expanding its balance sheet further, but left rates unchanged](#). [It did ease conditions for banks to borrow](#), which has been characterized as “helicopter money for banks.” For the most part, financial markets were a bit disappointed in the statement. In the press conference, Chair Lagarde appears to be following the Greenspan playbook, which is to answer each question with a long response resulting in fewer questions and the answers are hard to follow. The ECB simply can't move as much in some areas, like yield curve control, compared to the Fed. That lack of power is reflected in Eurozone financial assets.
- What to do about food? President Trump has used the [Defense Production Act](#) to force meatpackers to reopen slaughterhouses, in some cases overruling state regulations. However, it isn't clear if this action will lead to a return of meat processing. It's one thing to open facilities, but it's another [to get workers to return to their jobs](#). COVID-19 have ravaged these facilities where workers process carcasses in close quarters. [Unions representing these workers](#) have criticized the executive action. It is clear that if meat processors don't open soon, shortages will start to develop; chicken will probably be first and beef last. At the same time, these workers have more leverage than one would think. These jobs are very difficult and don't pay all that well. If the workers don't show up, the firms could fire them, but replacing them won't be easy.
  - One of the underlying problems for the food service industry is that there has been a huge shift in demand. [Sales to restaurants have collapsed, while grocery store demand has soared](#). This situation has created a logistical nightmare; the packaging and distribution appropriate for commercial firms is completely wrong for households. Quantities are too large and are not in packaging that households can manage. So far, shortages in grocery stores have mostly been sporadic, but the food service industry doesn't necessarily want to retool itself for households only to see restaurants roar back later this year. So, for now, we are limping along with reports of some food being lost.

### ***The economic news:***

- The [Eurozone economy fell at its fastest pace on record in Q1](#); that record will almost certainly be broken in Q2.
- Chinese PMI data held up rather well in April, although [exporters remain depressed](#).

**The market news:**

- Firms are [increasingly turning to convertibles](#) to raise money (not this [convertible!](#)). Nearly 60% of equity capital raised this month has come from these bonds, which can convert to equity if the stock price recovers. In 2008, we saw a similar pattern.

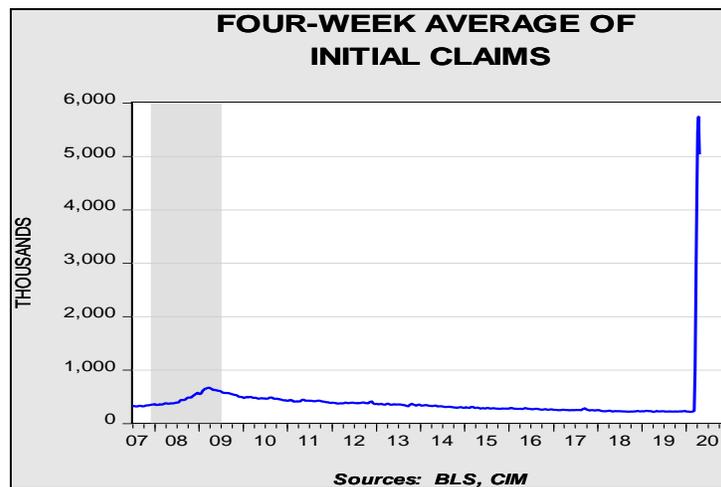
**The foreign policy news:**

- An important indicator has been announced that [China is feeling more confident](#) about having the virus under control. [It has scheduled a date for its National People’s Congress](#) for May 22. It will be held in Beijing, meaning it will be held in person.
- Because of the closure of stores, [some countries are struggling to update their inflation indices](#).
- The battle of the virus narrative between the U.S. and China continues. China has embarked on an [aggressive campaign to hold itself blameless](#) for COVID-19. At the same time, the U.S. is [engaging its intelligence agencies](#) to determine if China, or the WHO, withheld data on the pandemic.

**Brexit:** Although the focus recently has been on COVID-19, [Brexit negotiations have been held](#). The conventional wisdom is that PM Johnson will ask for an extension. However, what we have seen thus far suggests that the U.K. [fully intends to leave at the end of the year](#) and if that intention leads to a [hard break with the EU](#), so be it. Although there hasn’t been much attention paid to Brexit recently, a hard break would likely be taken as negative for U.K. financial assets. A side note: [PM Johnson is a new father](#).

**U.S. Economic Releases**

Initial jobless claims came in at 3.839 million compared to expectations of 3.500 million. The prior report was revised from 4.427 million to 4.442 million.



The chart above shows the four-week moving average for claims. The four-week average fell from 5.736 million to 5.033 million.

In March, personal income fell 2.0% from the prior month compared to expectations of a drop of 1.7%. Personal spending fell 7.5% from the prior month compared to expectations of a drop of

5.1%. Lastly, real personal spending fell 7.3% from the prior month compared to expectations of a drop of 6.2%.

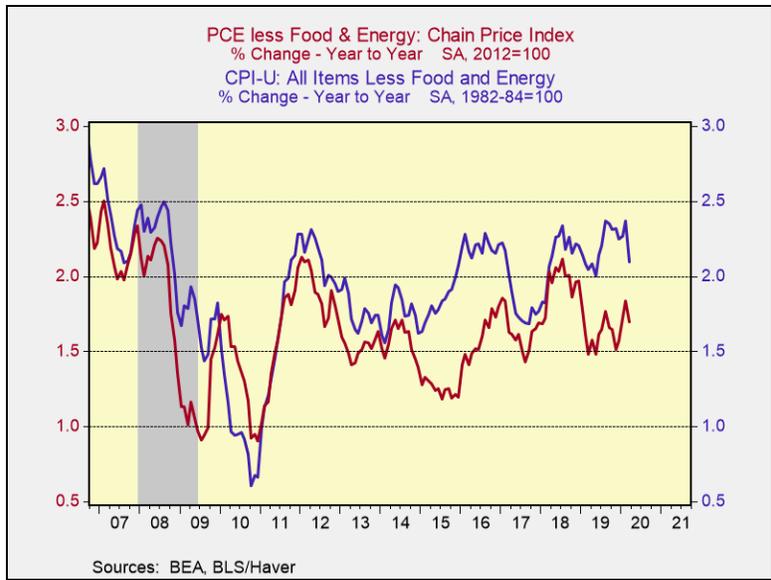


The chart above shows the annual change in personal income and personal income excluding transfer payments. Although personal income growth moderated in March, rising 1.4% from the prior year, it was barely able to remain positive after transfer payments were excluded which showed a rise of just 0.34%. The slowdown income was likely weighed down by the reduction of wages and salary, which fell 0.78% from the prior year.



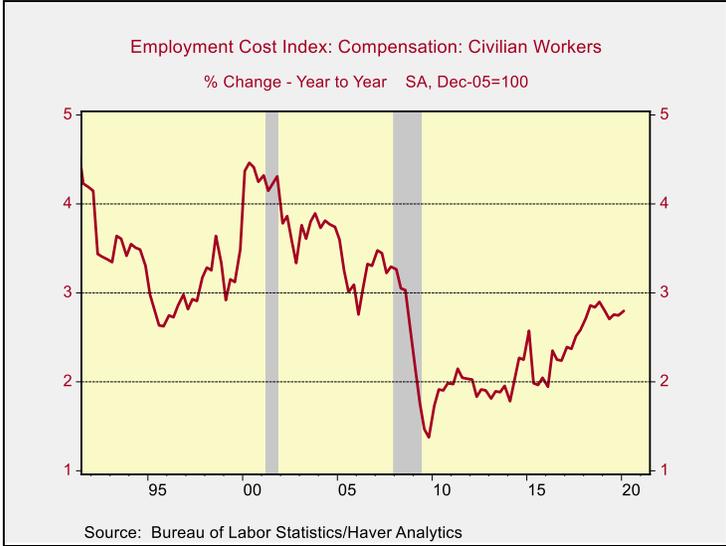
The chart above shows the annual change in wages and salary.

The personal consumption expenditure (PCE) deflator and core PCE deflator for March fell 0.3% and 0.1% from the prior month, respectively.



The chart above shows the annual change in the core PCE and core CPI. While CPI is the inflation number most reported, the PCE is the inflation indicator the Fed prefers. That being said, PCE rose 1.7% from the prior year compared to the CPI rise of 2.1%.

In Q1, the employment cost index rose 0.8% from the prior quarter compared to expectations of a rise of 0.6%



The chart above shows the annual change in the employment cost index (ECI). In March, ECI moderated slightly rising 2.8% from the prior year. This data isn't terribly relevant given the changes to the economy due to COVID-19. Q2 will be much more interesting.

The table below lists the economic releases scheduled for the rest of the day.

Economic Releases						
EDT	Indicator			Expected	Prior	Rating
9:45	MNI Chicago PMI	m/m	Apr	37.7	47.8	**
9:45	Bloomberg Consumer Comfort	w/w	26-Apr		41.4	**
Fed Speakers or Events						
No speakers or events scheduled						

## 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>								
<b>China</b>	Composite PMI	m/m	Apr	53.4	53.0		**	Equity bullish, bond bearish
	Manufacturing PMI	m/m	Apr	50.8	52.0	51.0	**	Equity and bond neutral
	Non-manufacturing PMI	m/m	Apr	53.2	52.3	52.5	**	Equity bullish, bond bearish
	Caixin China PMI Manufacturing	m/m	Apr	49.4	50.1	50.5	**	Equity bearish, bond bullish
<b>Japan</b>	Retail Sales	y/y	Mar	-4.6%	1.7%	-4.7%	**	Equity bearish, bond bullish
	Department Store, Supermarket Sales	y/y	Mar	-10.1%	0.2%	-8.2%	***	Equity bearish, bond bullish
	Industrial Production	y/y	Mar	-5.2%	-5.7%	-7.4%	***	Equity and bond neutral
	Vehicle Production	y/y	Feb	-11.0%	-3.5%		**	Equity bearish, bond bullish
	Housing Starts	y/y	Mar	-7.6%	-12.3%	-15.9%	**	Equity and bond neutral
	Construction Orders	y/y	Mar	-14.3%	0.7%		***	Equity bearish, bond bullish
	Consumer Confidence Index	m/m	Apr	21.6	30.9	27.6	**	Equity and bond neutral
<b>Australia</b>	Import Price Index	q/q	1Q	-1.0%	0.7%	1.0%	**	Equity bullish, bond bearish
	Export Price Index	q/q	1Q	2.7%	-5.2%	3.0%	**	Equity and bond neutral
	Private Sector	y/y	Mar	3.6%	2.8%	2.8%	**	Equity bullish, bond bearish
<b>Europe</b>								
<b>Eurozone</b>	GDP SA	q/q	1Q	-3.8%	0.1%	-3.8%	***	Equity and bond neutral
	CPI Estimate	y/y	Apr	0.4%	0.7%	0.1%	***	Equity bearish, bond bullish
	CPI Core	y/y	Apr	0.9%	1.0%	0.7%	***	Equity bearish, bond bullish
<b>Germany</b>	Retail Sales	m/m	Mar	-5.6%	1.2%	-8.0%	**	Equity and bond neutral
	Unemployment Change (000's)	m/m	Apr	373.0k	1.0k	74.5k	***	Equity and bond neutral
	Unemployment Claims Rate SA	m/m	Apr	5.8%	5.0%	5.2%	***	Equity bearish, bond bullish
<b>France</b>	GDP	q/q	1Q	-5.8%	-0.1%	-4.0%	***	Equity bearish, bond bullish
	CPI EU Harmonized	m/m	Apr	0.1%	0.1%	-0.3%	***	Equity bearish, bond bullish
	CPI	m/m	Apr	0.1%	0.1%	-0.2%	***	Equity bearish, bond bullish
	PPI	m/m	Mar	-1.7%	-0.6%		**	Equity bullish, bond bearish
	Consumer Spending	m/m	Mar	-17.9%	-0.1%	-5.8%	***	Equity bearish, bond bullish
<b>Italy</b>	Unemployment Rate	m/m	Mar	8.4%	9.7%	10.5%	***	Equity and bond neutral
	CPI EU Harmonized	m/m	Apr	0.5%	2.2%	0.1%	***	Equity bearish, bond bullish
	CPI NIC incl. tobacco	m/m	Apr	0.1%	0.1%	-0.3%	***	Equity bearish, bond bullish
	GDP WDA	q/q	1Q	-4.7%	-0.3%	-5.4%	***	Equity and bond neutral
<b>Switzerland</b>	Retail Sales Real	y/y	Mar	-5.6%	0.3%		**	Equity bearish, bond bullish
	KOF Leading Indicator	m/m	Apr	63.5	92.9	63.5	**	Equity and bond neutral
<b>AMERICAS</b>								
<b>Mexico</b>	GDP NSA	y/y	1Q	-1.6%	-0.1%	-1.4%	**	Equity bullish, bond bearish

## 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.

	Today	Prior	Change	Trend
3-mo Libor yield (bps)	76	84	-8	Down
3-mo T-bill yield (bps)	9	10	-1	Neutral
TED spread (bps)	68	74	-6	Up
U.S. Libor/OIS spread (bps)	5	5	0	Up
10-yr T-note (%)	0.61	0.63	-0.02	Neutral
Euribor/OIS spread (bps)	-26	-23	-3	Neutral
EUR/USD 3-mo swap (bps)	-14	-18	4	Down
<b>Currencies</b>	<b>Direction</b>			
dollar	Down			Neutral
euro	Flat			Up
yen	Up			Up
pound	Up			Down
franc	Up			Up
<b>Central Bank Action</b>	<b>Current</b>	<b>Prior</b>	<b>Expected</b>	
FOMC Rate Decision (Upper Bound)	0.250%	0.250%	0.250%	On forecast
FOMC Rate Decision (Lower Bound)	0.000%	0.000%	0.000%	On forecast
Interest Rate on Excess Reserves	0.100%	0.100%	0.100%	On forecast
ECB Main Refinancing Rate	0.000%	0.000%	0.000%	On forecast
ECB Marginal Lending Facility	0.250%	0.250%	0.250%	On forecast
ECB Deposit Facility Rate	-0.500%	-0.500%	-0.500%	On forecast

## 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.

	Price	Prior	Change	Explanation
<b>Energy Markets</b>				
Brent	\$25.11	\$22.54	11.40%	Slowdown in oil production
WTI	\$17.51	\$15.06	16.27%	
Natural Gas	\$1.85	\$1.87	-1.07%	
Crack Spread	\$16.42	\$16.82	-2.39%	
12-mo strip crack	\$10.04	\$10.11	-0.71%	
Ethanol rack	\$1.21	\$1.19	1.26%	
<b>Metals</b>				
Gold	\$1,713.39	\$1,713.41	0.00%	
Silver	\$15.27	\$15.30	-0.19%	
Copper contract	\$237.30	\$237.05	0.11%	
<b>Grains</b>				
Corn contract	\$ 314.25	\$ 314.50	-0.08%	
Wheat contract	\$ 512.25	\$ 516.50	-0.82%	
Soybeans contract	\$ 843.00	\$ 837.50	0.66%	
<b>Shipping</b>				
Baltic Dry Freight	643	655	-12	
<b>DOE inventory report</b>				
	<b>Actual</b>	<b>Expected</b>	<b>Difference</b>	
Crude (mb)	9.0	12.7	-3.7	
Gasoline (mb)	-3.7	2.2	-5.9	
Distillates (mb)	5.1	4.8	0.3	
Refinery run rates (%)	2.00%	1.20%	0.80%	

## Weather

The 6-10 and 8-14 day forecasts currently call for cooler temps for most of the country, with warmer conditions in the Pacific and southwestern regions. Precipitation is expected to move eastward, with dry conditions expected for most of the country toward the end of the forecast period.

## Asset Allocation Weekly

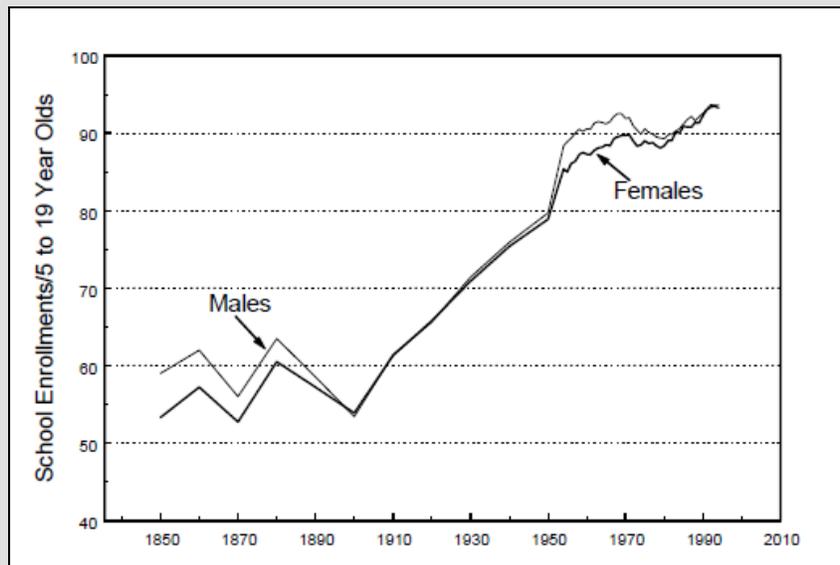
Confluence Investment Management offers various asset allocation products which are managed using “top down,” or macro, analysis. We report asset allocation thoughts on a weekly basis, updating this section every Friday. Note that this report is also offered as a separate document on our [website](#).

April 24, 2020

As the COVID-19 pandemic continues to evolve, we are watching to see how the disease will affect the economy longer term. Of course, projections of this sort are highly probabilistic; factors could and will likely emerge that could render these projections irrelevant. At the same, ignoring potential long-term consequences of the virus could lead to improper decisions, failing to fully appreciate the changes the disease has caused.

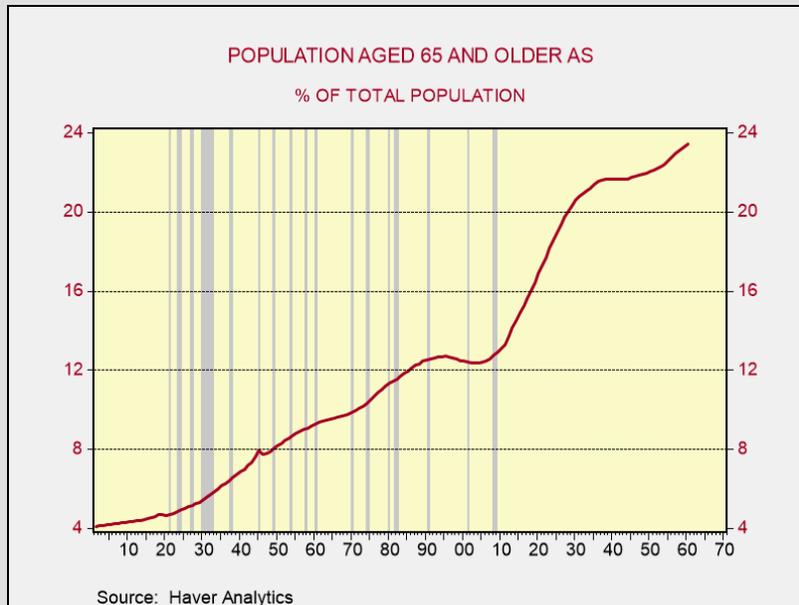
In this week’s report, we will look at demographics. Demographic analysis is important because it is a “deep background” of what affects markets. Demographic change tends to occur slowly but can be rather easily forecast far into the future. Thus, if a variable is sensitive to changes in the population, it can be rather simple to forecast trends well into the future.

The baby boom, encompassing Americans born during 1946-64, has always been the “pig in the snake” for demographers. When this generation reached school age, the number of elementary enrollments jumped. Later, in the mid-1970s, enrollment fell and led to empty school buildings.



(Source: [Goldin, Claudia. "A Brief History of Education in the United States," NBER, Aug. 1999.](#))

The current age range for the baby boom is 56 to 74. In another seven years, this entire generation will reach retirement age. The chart below shows that the population share 65 years and older is set to rise rapidly for the next two decades. Demographers for years have been warning that the mass retirement of this generation would cause problems in the labor market, predicting that employers would be scrambling to fill positions.



That hasn't happened yet for a number of reasons—globalization has allowed firms to tap labor resources abroad, immigration has offset some of the retirement numbers, and baby boomers have continued to work longer.



At the turn of the century, the participation rate<sup>1</sup> was around 12.5%. It has steadily increased to over 20%, although it has recently declined. Essentially, baby boomers, which include nine years of this group, appear to have remained in the labor force. We suspect there are two reasons. First, as life expectancies have increased, wealthier boomers, who are probably healthy, likely wanted to remain working. Second, less affluent boomers probably needed to keep working as long as possible due to the lack of retirement saving.

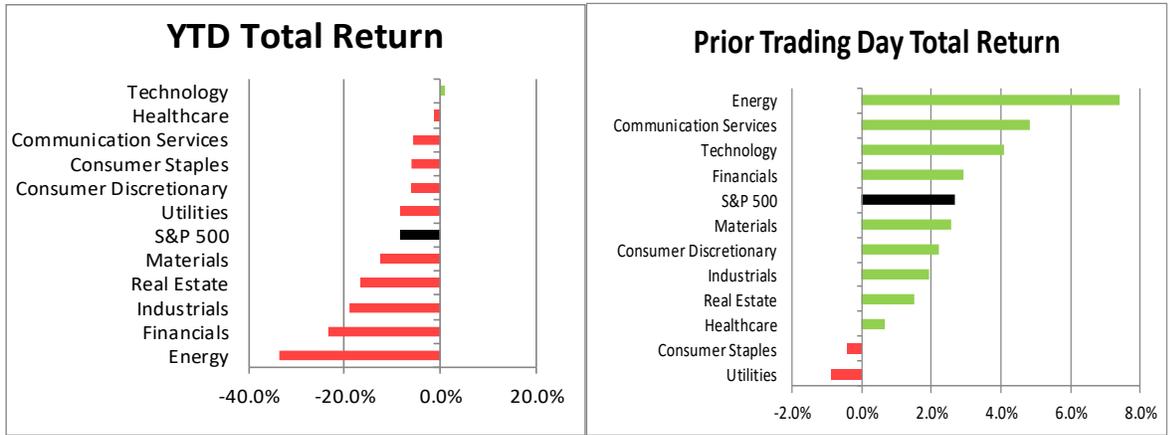
<sup>1</sup> The participation rate is the labor force (employed + unemployed seeking employment)/population eligible to be in the labor force.

COVID-19 could reverse this participation trend. The fatality rate of the virus tends to rise with age. Older workers who have stayed in the labor force may decide that the threat of infection is too high and thus opt to retire. If a broad-spectrum vaccine is developed, this potential trend could be thwarted, but if COVID-19 mutates like influenza and requires an annual vaccination of varying effectiveness, a vaccine might not be enough to prevent older workers from exiting the workforce. A decline in older worker participation would reduce the labor force; if that action occurs along with restrictions on immigration and trade impediments, all tenets of deglobalization, we would expect the labor share of national income to rise.

*Past performance is no guarantee of future results. Information provided in this report is for educational and illustrative purposes only and should not be construed as individualized investment advice or a recommendation. The investment or strategy discussed may not be suitable for all investors. Investors must make their own decisions based on their specific investment objectives and financial circumstances. Opinions expressed are current as of the date shown and are subject to change.*

**Data Section**

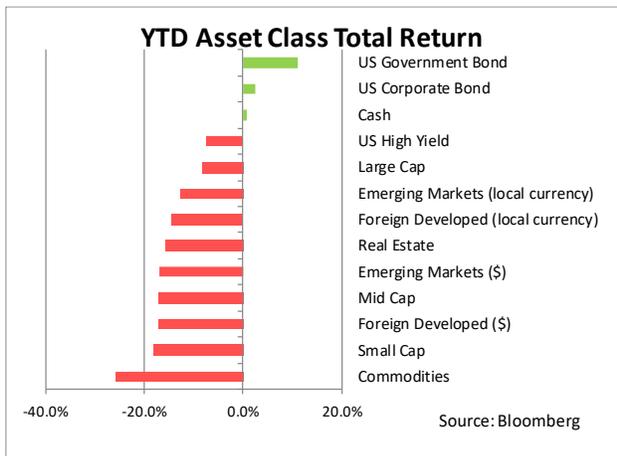
**U.S. Equity Markets – (as of 4/29/2020 close)**



(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 4/29/2020 close)**

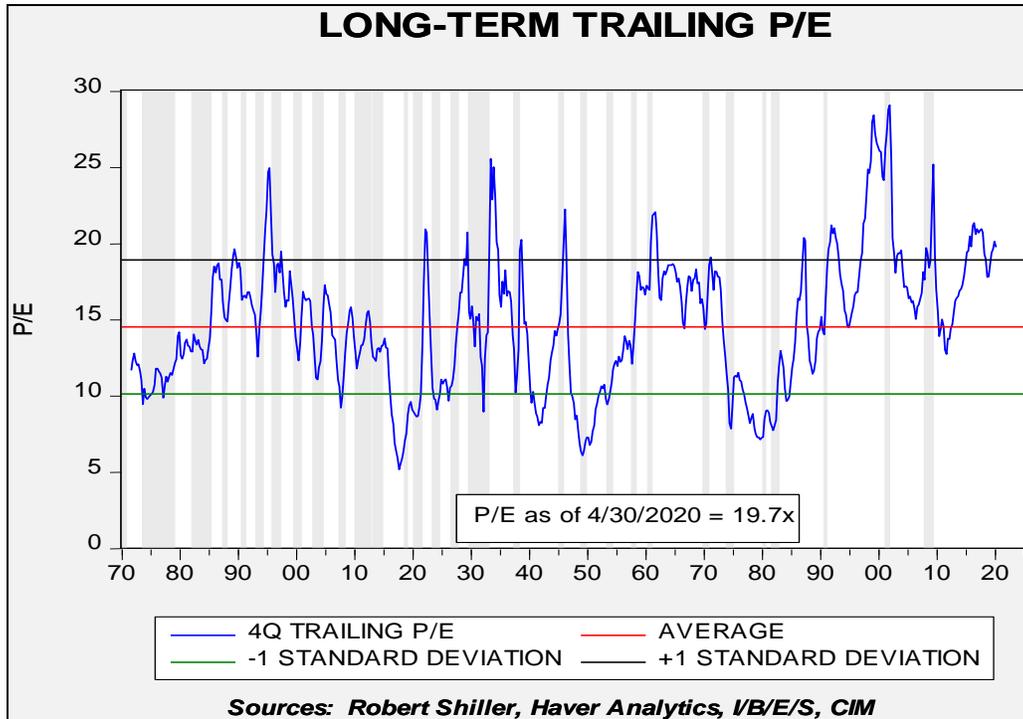


This chart shows the year-to-date returns for various asset classes, updated daily. The asset classes are ranked by total return (including dividends), with green indicating positive and red indicating negative returns from the beginning of the year, as of prior close.

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).

## P/E Update

April 30, 2020



Based on our methodology,<sup>2</sup> the current P/E is 19.7x, up 0.6x from last week. The rise in the P/E was caused by the recovery in the S&P and falling earnings estimates.

*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>2</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). 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.