Confluence
INVESTMENT MANAGEMENT

Daily Comment

By Bill O'Grady and Thomas Wash

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 18, 2019—9:30 AM EDT] Global equity markets are generally lower this morning. The EuroStoxx 50 is up 0.5% from the last close. In Asia, the MSCI Asia Apex 50 was down 0.6% from the prior close. Chinese markets were lower, with the Shanghai composite down 0.4% and the Shenzhen index down 0.6%. U.S. equity index futures are signaling a flat open. With 46 companies having reported, the S&P 500 Q4 earnings stand at $37.31, higher than the $37.29 forecast for the quarter. The forecast reflects a 2.0% decrease from Q1 2018 earnings. Thus far this quarter, 89.1% of the companies reported earnings above forecast, while 10.1% reported earnings below forecast.

U.S. equities are mostly flat, while we are seeing weakness abroad. The Mueller report[1] gets released this morning, so the media will be focusing on that all day. European PMI data was lackluster.[2] In a fascinating development, a Democratic Party stalwart announced he *isn't* running for president.[3] Note that with the markets closed for Good Friday, we will not be publishing a Daily Comment tomorrow but will resume on Monday. Here is what we are watching:

Turkey: A couple items of note. It appears the opposition has taken control of the city of Istanbul[4] even though President Erdogan continues to contest the vote.[5] There are reports that the Turkish central bank has been tapping swap lines to give the impression it has ample reserves.[6] Although the borrowing is a concern, we would note that the TRY has already depreciated substantially[7] and the current account has shown marked improvement.

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[1] https://www.washingtonpost.com/world/national-security/attorney-general-plans-news-conference-to-discuss-mueller-report/2019/04/17/f5ca1cc6-6138-11e9-9ff2-abc984dc9eec_story.html?utm_term=.2e29dadcd463
[2] https://www.markiteconomics.com/Public/Home/PressRelease/5e809b959ac94d7d90cbdb6569dae3e2
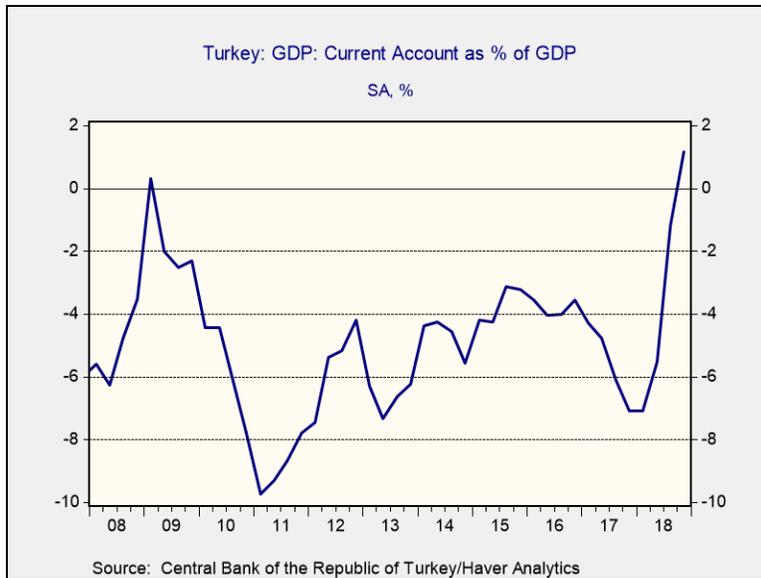[3] https://www.nytimes.com/2019/04/17/us/politics/terry-mcauliffe-president.html
[4] https://worldview.stratfor.com/situation-report/turkey-opposition-candidate-becomes-new-mayor-istanbul?id=87179e919a&e=4d1f592612&uuid=81dc1447-4fc0-4a76-8cce-9e674e520e8e&utm_source=Daily+Brief&utm_campaign=8aa8a570f5-EMAIL_CAMPAIGN_2019_04_18_11_33&utm_medium=email&utm_term=0_87179e919a-8aa8a570f5-53536341&mc_cid=8aa8a570f5&mc_eid=%5bUNIQID%5d (paywall)
[5] https://worldview.stratfor.com/article/turkeys-opposition-wins-one-battle-long-war?id=87179e919a&e=4d1f592612&uuid=b40591cb-2311-498f-9714-7dc8cafc8d12&utm_source=Daily+Brief&utm_campaign=8aa8a570f5-EMAIL_CAMPAIGN_2019_04_18_11_33&utm_medium=email&utm_term=0_87179e919a-8aa8a570f5-53536341&mc_cid=8aa8a570f5&mc_eid=%5bUNIQID%5d
[6] https://www.ft.com/content/9718e75e-611d-11e9-b285-3acd5d43599e
[7] https://www.ft.com/content/0dd381e8-619f-11e9-a27a-fdd51850994c

Turkey: GDP: Current Account as % of GDP
SA, %
Source: Central Bank of the Republic of Turkey/Haver Analytics

We also note that Turkish officials made an unexpected visit to Washington,[8] apparently trying to avoid sanctions tied to its decision to buy Russia's S-400 missile system. The U.S. had approved the sale of F-35 warplanes to Turkey but is suspicious of selling them to Ankara if it also has Russians in the country "helping" deploy the missile system. Such an arrangement would give the Russians the ability to probe for weakness in the F-35's defenses and make the stealth plane vulnerable to the S-400 anti-aircraft missiles.[9] Finally, Turkey is working on new trade procedures to continue commerce with Iran but avoid U.S. sanctions.[10]

China trade talk: Although not confirmed, there are reports that the U.S. and China are planning for an early May trade deal announcement.[11] To some extent, financial markets have already discounted a modest agreement, but a deal that would lift tariffs immediately would likely give stocks a boost.

North Korea: North Korea announced it tested a tactical system.[12] It isn't clear whether the test was artillery or a short-range missile, but it was clearly not a ballistic missile, which would have triggered a strong reaction from Washington. It appears Pyongyang is attempting to get the attention of the U.S. without crossing lines that would escalate tensions. This is not unusual

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[8] https://www.pulse.ng/news/world/turkish-defense-minister-makes-unannounced-visit-to-pentagon/dyjvpp3?utm_source=GPF+-+Paid+Newsletter&utm_campaign=a5572d5e4d-EMAIL_CAMPAIGN_2019_04_17_03_33&utm_medium=email&utm_term=0_72b76c0285-a5572d5e4d-240037177
[9] https://www.al-monitor.com/pulse/originals/2019/04/turkey-looks-trump-congress-ultimatum-s400-f35.html?utm_source=GPF+-+Paid+Newsletter&utm_campaign=a5572d5e4d-EMAIL_CAMPAIGN_2019_04_17_03_33&utm_medium=email&utm_term=0_72b76c0285-a5572d5e4d-240037177
[10] https://www.jpost.com/Middle-East/Turkey-looking-at-new-trade-mechanisms-with-Iran-to-avoid-US-sanctions-587149?utm_source=gpf+-+paid+newsletter&utm_term=0_72b76c0285-a5572d5e4d-240037177
[11] https://finance.yahoo.com/news/u-china-said-plan-more-184126954.html and https://www.wsj.com/articles/u-s-china-set-tentative-timeline-for-next-round-of-trade-talks-11555521885?mod=newsviewer_click
[12] https://www.washingtonpost.com/world/national-security/north-korea-announces-test-oftactical-guided-weapon/2019/04/17/1f27d682-615f-11e9-9412-daf3d2e67c6d_story.html?utm_term=.2c93fb773aa9&wpisrc=nl_todayworld&wpmm=1

behavior for North Korea; it does not want to be ignored.[13] At the same time, this test is likely nothing more than an attempt to gain attention. Meanwhile, North Korea has indicated it would prefer not to have SoS Pompeo involved in future discussions on its nuclear program.[14] This request is an obvious attempt to split the U.S. foreign policy establishment; we doubt President Trump will grant that request but, if he does, a deal favorable to Pyongyang is more likely.

Conservatives rise in Canada: Albertans voted in a landslide to bring back a conservative provincial government.[15] Center-right parties now control five of the 10 provinces and increase the chances that PM Trudeau may be in trouble in October's national elections.[16] Trudeau has been pushing for carbon taxes to combat climate change; Alberta is the home of Canadian tar sands and is thus vulnerable to such measures. In addition, Alberta's energy sector has been under pressure mostly due to the lack of pipeline capacity from the province. Some pipeline projects have been blocked by liberal-leaning provinces. Thus, the conservatives in Alberta were able to blame Trudeau for the economic travails and the tactic was apparently successful. Although Trudeau was never going to poll well in Alberta anyway, the economic message could resonate outside of Alberta and hurt his chances in October.

Indonesia election: Incumbent President Joko Widodo (Jokowi) is the apparent winner in this week's elections in Indonesia.[17] Financial markets have reacted positively to the news.

Fed talk: Apparently, Herman Cain is undeterred, indicating he won't withdraw his name from contention for a Fed governor spot even though Senate opposition is growing.[18] Meanwhile, Stephen Moore is finding that professional politicians rarely forget criticism.[19]

Inflation talk: This week's Asset Allocation Weekly looks at the inflation conundrum—why is inflation staying low despite tight labor markets? The Dallas FRB weighed in on this issue, suggesting the growth of "gig" workers, who work on demand and don't require a commitment from employers, is reducing wage costs, allowing firms to maintain margins and are thus less compelled to push price increases onto consumers. In addition, the expansion of online retailing means that consumers now have a national market to tap, which helps avoid local bottlenecks and monopolies and thus keeps prices low. Although not mentioned in the article, it also reduces price discovery costs.[20] All these are valid points. Another interesting item—after last year's tax cuts, we noticed a flurry of bonuses offered to workers to "share" the benefits of the corporate

[13] https://www.youtube.com/watch?v=7bLnNqY6Yyk
[14] https://www.reuters.com/article/us-northkorea-usa/north-korea-rejects-pompeo-from-nuclear-dialogue-kcna-idUSKCN1RU0NU
[15] https://www.foxnews.com/world/justin-trudeau-liberal-alberta-elections
[16] https://www.washingtonpost.com/world/2019/04/17/conservative-wave-threatens-canadas-trudeau/?utm_term=.b44899a4b509&wpisrc=nl_todayworld&wpmm=1
[17] https://www.bloomberg.com/news/articles/2019-04-17/growing-intolerance-and-clamor-for-jobs-dominate-indonesia-vote
[18] https://www.wsj.com/articles/herman-cain-says-he-wont-withdraw-from-consideration-for-fed-board-11555529563?mod=hp_lead_pos2
[19] https://www.politico.com/story/2019/04/17/moore-cain-fed-1280545
[20] https://www.dallasfed.org/research/economics/2019/0416?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosmarkets&stream=business

tax rate reduction. However, it appears this generosity was "one-off"; bonuses in 2018 have fallen relative to the prior year.[21]

Energy update: Crude oil inventories fell 1.4 mb last week compared to the forecast rise of 2.0 mb.
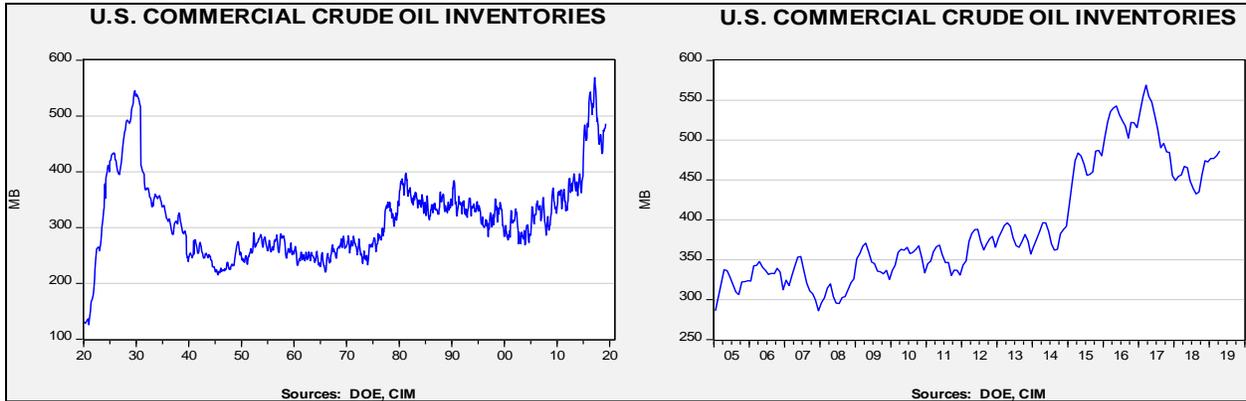
Sources: DOE, CIM

In the details, refining activity rose a mere 0.2%, below expectations. Estimated U.S. production fell slightly by 0.1 mbpd to 12.1 mbpd. Crude oil imports fell 0.6 mbpd, while exports were unchanged.
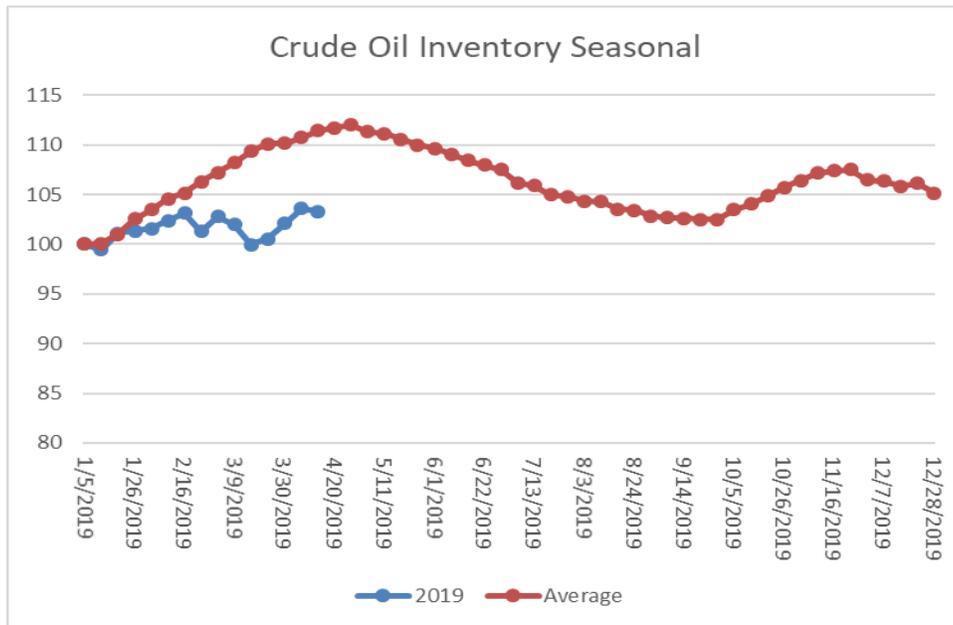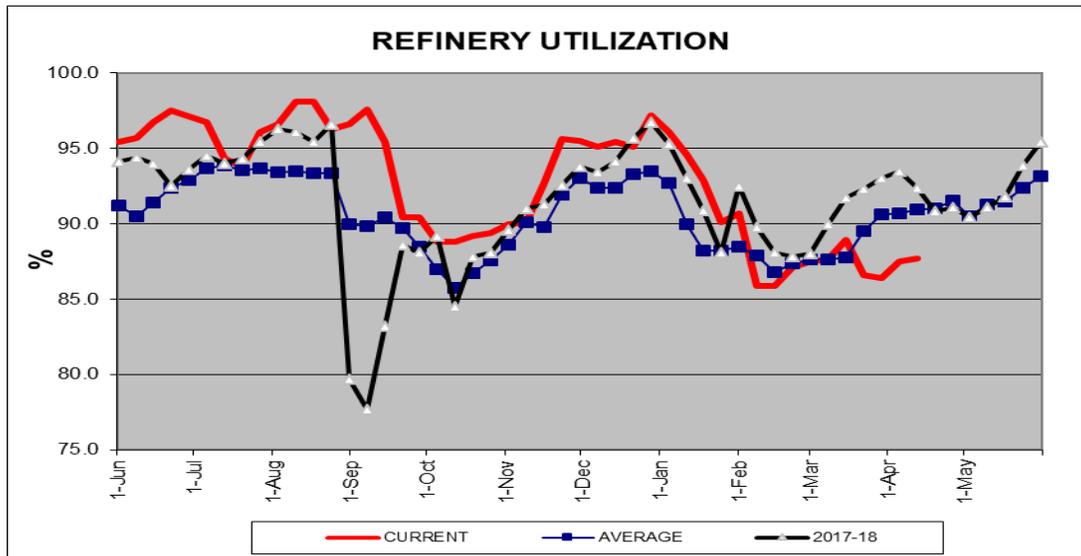

(Sources: DOE, CIM)

This is the seasonal pattern chart for commercial crude oil inventories. We are nearing the end of the spring inventory build season and will probably not achieve average, although the gap has narrowed significantly in recent weeks.
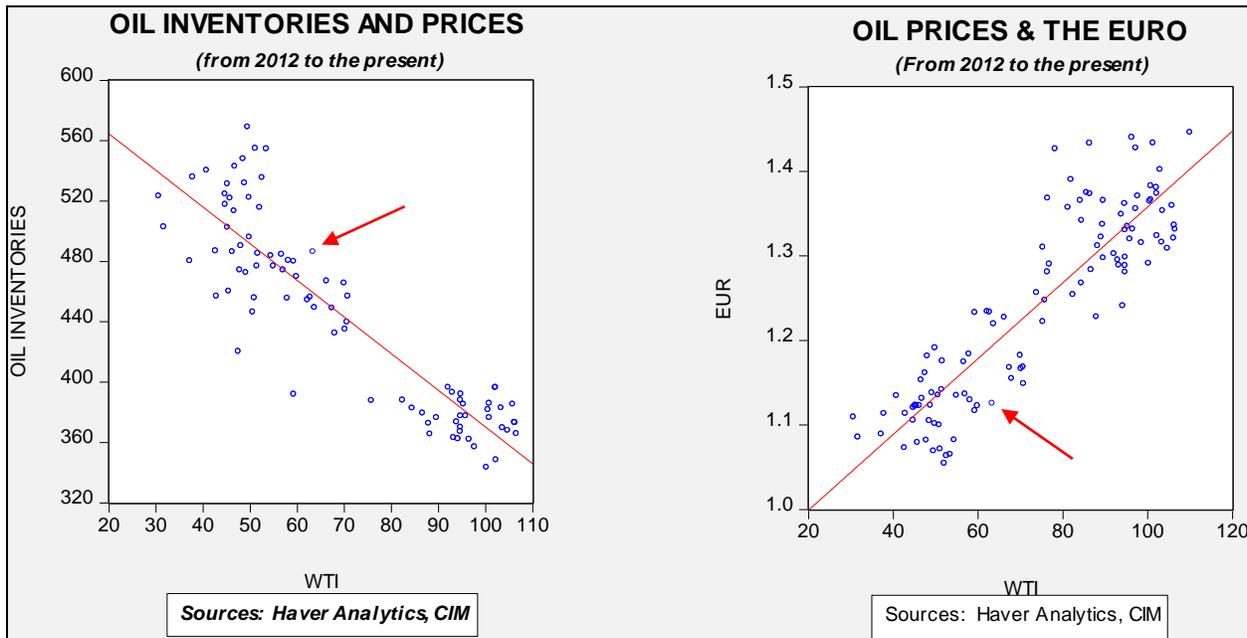
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[21] https://www.axios.com/newsletters/axios-markets-ce8f9025-0bf5-4a2a-aa8d-6937a0d6fa44.html?chunk=2&utm_term=emshare#story2 see #3

Refinery activity is still lagging average.

REFINERY UTILIZATION

(Sources: DOE, CIM)

Usually by this week we are seeing utilization above 90%. With summer approaching, we would look for rising utilization in the coming weeks.


OIL INVENTORIES AND PRICES
(from 2012 to the present)

Sources: Haver Analytics, CIM

OIL PRICES & THE EURO
(From 2012 to the present)

Sources: Haver Analytics, CIM

Based on oil inventories alone, fair value for crude oil is $55.77. Based on the EUR, fair value is $52.40. Using both independent variables, a more complete way of looking at the data, fair value is $52.71. Current prices are running well above fair value. Geopolitical risks are bolstering prices. The unrest in Libya could end up reducing output to zero if the fighting

continues.[22] In Venezuela, the Spanish oil firm Repsol (MCE, EUR, 15.07) has suspended oil swaps with Caracas due to pressure from Washington. Repsol was swapping refined product for crude oil, avoiding dollar payments that would have run afoul of U.S. sanctions. By suspending the arrangement, Venezuela now only has similar deals with Russia and India. The former probably won't be lost but the latter is vulnerable. More product losses will likely lead to further reductions in Venezuelan oil output. Thus, the geopolitical risk is real but the wide spread to fair value does suggest that a good bit of the risk has been discounted.

U.S. Economic Releases

Initial jobless claims came in below expectations at 192k compared to the forecast of 205k. The prior report was revised upward from 196k to 197k.
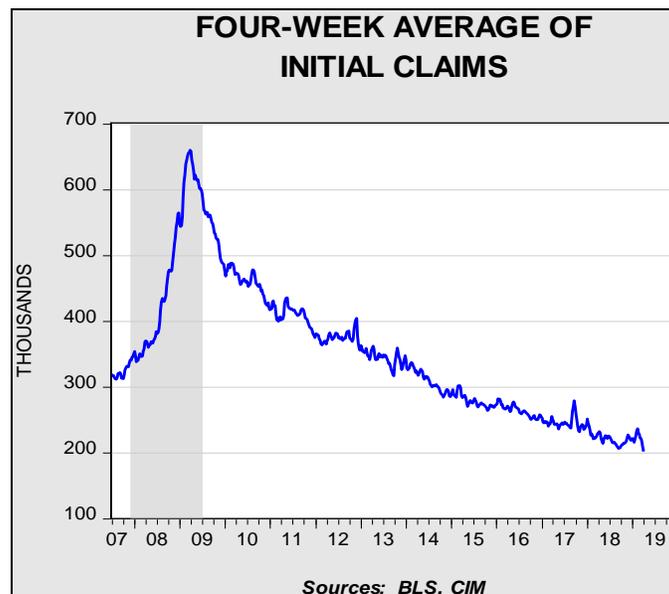
The chart above shows the four-week moving average for initial claims. The four-week moving average fell from 207.25k to 201.25k.

Advance retail sales for March came in above expectations, rising 1.6% from the prior month compared to the forecast rise of 1.0%. Retail sales ex-auto came in above expectations, rising 1.2% from the prior month compared to the forecast gain of 0.7%. The prior month's loss was revised downward from 0.4% to 0.2%. Retail sales ex-auto and gasoline came in above expectations, rising 0.9% from the prior month compared to the forecast rise of 0.4%. The prior month's loss was revised upward from 0.6% to 0.7%. The retail sales control group came in above expectations, rising 1.0% from the prior month compared to the forecast gain of 0.4%. The prior month's gain was revised from 1.1% to 1.7%.

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[22] https://www.wsj.com/articles/libya-fighting-hits-plan-to-revive-oil-gas-industry-11555520941?mod=newsviewer_click

Retail Sales & Food Services Excluding Autos & Gas Stations
% Change - Year to Year   SA, Mil.$
Retail Sales & Food Services
% Change - Year to Year   SA, Mil.$

Source: Census Bureau/Haver Analytics

The chart above shows the year-over-year change in retail sales and core retail sales. Annually, retail sales and core retail sales rose 3.7% and 3.6%, respectively.

The April Philadelphia FRB Business Outlook Index came in below expectations at 8.5 compared to estimates of 11.0. The survey shows a jump in shipments from the prior month.

PHILADELPHIA FED
BUSINESS OUTLOOK INDEX

CURRENT READING = +9.35

Source: Philadelphia FRB, CIM
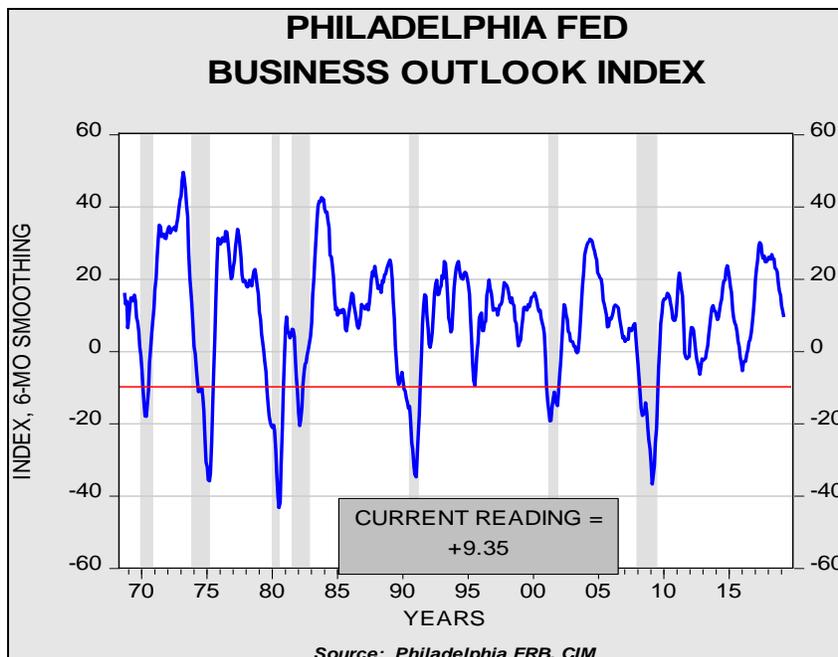
We smooth the data on the above chart with a six-month moving average. The current reading is well above the recession signal of -10. What makes this index important is that it measures business sentiment for the Mid-Atlantic region, where most of the Fed governors work and live,

at least part of the time. No matter how data-sensitive one is, the economic activity that one directly observes will tend to affect one's outlook. Thus, a robust local economy in the Mid-Atlantic region could lead Fed governors to lean hawkish even if the rest of the nation's economy is less robust, and vice versa.

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

Economic Releases					Expected	Prior	Rating
EDT	Indicator						
9:45	Bloomberg Consumer Comfort	m/m	apr			59.8	**
9:45	Bloomberg Economic Expectation	m/m	apr			47.5	***
10:00	Markit Manufacturing PMI	m/m	apr		52.8	52.4	**
10:00	Markit Services PMI	m/m	apr		55.0	55.3	**
10:00	Markit Composite PMI	m/m	apr			54.6	**
10:00	Leading Index	m/m	feb		0.4%	0.2%	**
10:00	Business Inventories	m/m	feb		0.3%	0.8%	**
Fed speakers or events							
EST	Speaker or event		District or position				
12:10	Raphael Bostic Speaks at an Economic Roundtable		President of the Federal Reserve Bank of Atlanta				

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
ASIA-PACIFIC								
China	Foreign Direct Investment	m/m	mar	8.0%	6.6%		**	Equity and bond neutral
Japan	Japan buying foreign bonds	m/m	apr	¥0.591 tn	-¥1.753 tn		*	Equity and bond neutral
	Japan buying foreign stocks	m/m	apr	-¥0.563 tn	¥0.104 tn		*	Equity and bond neutral
	Foreign buying Japan bonds	m/m	apr	¥0.563 tn	¥0.874 tn		*	Equity and bond neutral
	Foreign buying Japan stocks	m/m	apr	¥0.529 tn	¥1.464 tn		*	Equity and bond neutral
	Nikkei Japan PMI Mfg	m/m	apr	49.5	49.2		**	Equity and bond neutral
Australia	CBA Austialia PMI Mfg	m/m	mar	51.0	52.0		**	Equity and bond neutral
	CBA Australia PMI Services	m/m	feb	50.5	49.3		**	Equity bullish, bond bearish
	CBA Australia PMI Composite	m/m	mar	50.6	49.5		**	Equity bullish, bond bearish
	Employment Change	y/y	mar	25.7k	4.6k	15.0k	***	Equity bullish, bond bearish
	Unemployment Rate	m/m	mar	5.0%	4.9%	5.0%	***	Equity and bond neutral
	Full Time Employment Change	m/m	mar	48.3k	-7.3k		**	Equity and bond neutral
	Participation Rate	m/m	mar	65.7%	65.6%	65.6%	**	Equity and bond neutral
	NAB Business Confidence	q/q	1q	-1	1		**	Equity and bond neutral
EUROPE								
Eurozone	Markit Eurozone Manufacturing	m/m	apr	47.8	47.5	48.0	**	Equity and bond bearish
	Markit Eurozone Services	m/m	apr	52.5	53.3	53.1	**	Equity and bond neutral
	Markit Eurozone Composite	m/m	apr	51.3	51.6	51.8	**	Equity and bond neutral
Germany	Markit/BME Germany Manufacturing	y/y	mar	47.8	44.1	45.0	**	Equity bearish, bond bullish
	Markit/BME Germany Services	m/m	feb	55.6	55.4	55.0	**	Equity bullish, bond bearish
	Markit/BME Germany Composite	y/y	mar	52.1	51.4	51.7	**	Equity bullish, bond bearish
	PPI	y/y	mar	-6.8%	2.6%	2.7%	**	Equity and bond bearish
Italy	Industrial Sales	y/y	feb	1.3%	0.6%		**	Equity and bond neutral
	Industrial Orders	y/y	feb	-2.9%	-1.2%		**	Equity and bond bearish
UK	Retail Sales ex Auto Fuel	y/y	mar	6.2%	3.8%	4.0%	**	Equity bullish, bond bearish
	Retail Sales inc Auto Fuel	y/y	mar	6.7%	4.0%	4.5%	**	Equity bullish, bond bearish
Switzerland	Exports Real	m/m	mar	0.1%	1.3%	-0.6%	**	Equity and bond neutral
	Imports Real	m/m	mar	-3.2%	-3.0%	0.8%	**	Equity and bond neutral
Russia	CPI Weekly YTD	y/y	mar	1.9%	1.8%		***	Equity and bond neutral
AMERICAS								
Canada	International Merchandise Trade	m/m	feb	-2.90 bn	-4.25 bn	-3.25 bn	**	Equity and bond neutral
	CPI	y/y	feb	1.9%	1.5%	1.9%	***	Equity and bond neutral

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)	260	259	1	Up
3-mo T-bill yield (bps)	237	238	-1	Neutral
TED spread (bps)	23	20	3	Neutral
U.S. Libor/OIS spread (bps)	242	242	0	Up
10-yr T-note (%)	2.56	2.59	-0.03	Neutral
Euribor/OIS spread (bps)	-31	-31	0	Neutral
EUR/USD 3-mo swap (bps)	17	16	1	Down
Currencies	**Direction**			
dollar	up			Neutral
euro	down			Up
yen	up			Neutral
pound	down			Neutral
franc	down			Neutral

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
Energy Markets				
Brent	$71.78	$71.62	0.22%	
WTI	$63.88	$63.76	0.19%	
Natural Gas	$2.51	$2.52	-0.40%	
Crack Spread	$22.62	$22.53	0.39%	
12-mo strip crack	$18.21	$18.13	0.45%	
Ethanol rack	$1.47	$1.47	-0.01%	
Metals				
Gold	$1,275.22	$1,273.98	0.10%	
Silver	$14.97	$14.99	-0.16%	
Copper contract	$292.45	$297.35	-1.65%	
Grains				
Corn contract	$ 367.00	$ 367.00	0.00%	
Wheat contract	$ 446.50	$ 450.25	-0.83%	
Soybeans contract	$ 894.25	$ 892.50	0.20%	
Shipping				
Baltic Dry Freight	767	749	18	
DOE inventory report				
	Actual	Expected	Difference	
Crude (mb)	-1.4	2.0	-3.4	
Gasoline (mb)	-1.2	-2.6	1.4	
Distillates (mb)	-0.4	-1.0	0.6	
Refinery run rates (%)	0.20%	0.95%	-0.75%	
Natural gas (bcf)		88.0		

Weather

The 6-10 and 8-14 day forecasts show warmer temps for most of the country. Precipitation is expected for most of the country.

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.

April 18, 2019

Why is inflation so low? The persistence of low inflation, despite the long expansion and the decline in unemployment, continues to befuddle policymakers. Standard economic theory suggests there is an inverse relationship between inflation and unemployment. When the unemployment rate is low, firms should be experiencing reduced excess capacity. As capacity is constrained, supply bottlenecks would be expected to develop which would eventually result in inflation.

Although the unemployment/inflation theory makes sense, it doesn't work all that well in real life.
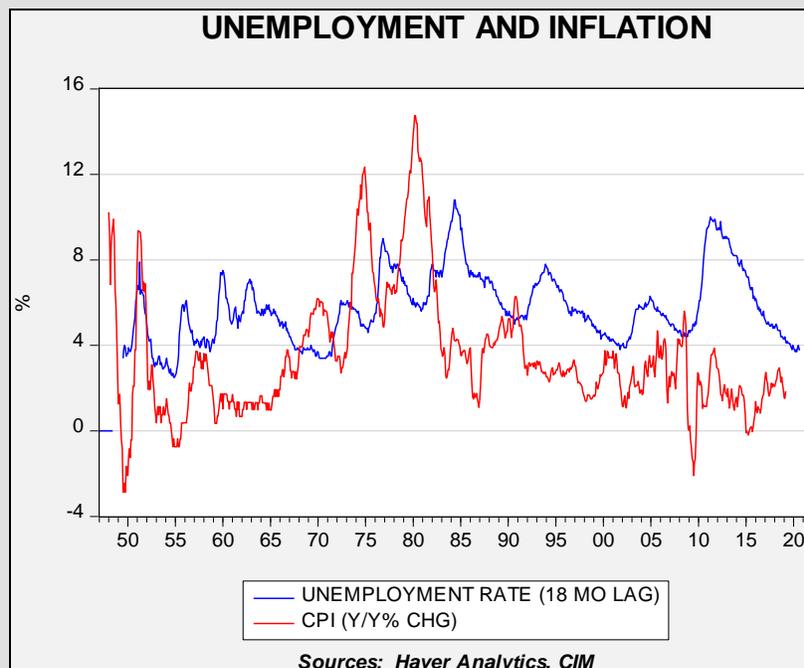
This chart shows the level of unemployment, with an 18-month lag, compared to the yearly change in CPI. In the 1960s, it did appear there was a tradeoff; when unemployment fell, inflation rose 18 months later. However, even during this period, the data relationship was merely directional as sub-4% unemployment led to 6% CPI. In the mid-1970s, 4.5% unemployment led to CPI in excess of 12%. Since the early 1980s, CPI has rarely moved above 4%, and in the current environment sub-4% unemployment has not yet triggered a notable inflation problem.

It turns out inflation is rather complicated. Expectations play a major role; if households and businesses expect rising inflation, they take steps to protect themselves that exacerbate the

inflation impulse. Both sectors will build inventory levels, effectively changing their balance sheet allocation from financial instruments to real goods. This action can lift the demand for goods and can trigger inflation.
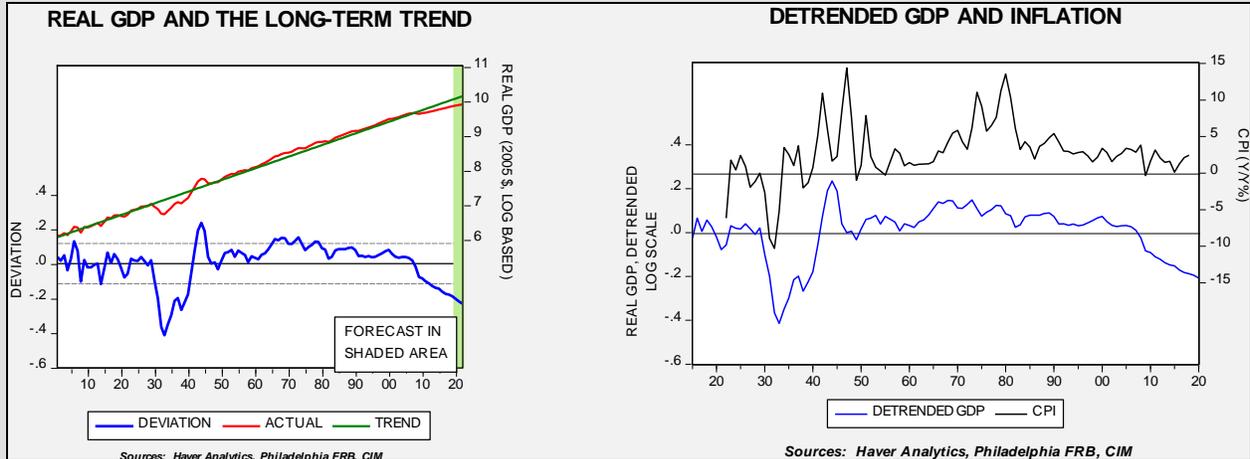
There also appears to be at least two long-term factors that affect inflation. Inequality seems to have an impact.

INEQUALITY AND INFLATION

Top 10% share>42%, CPI Avg. 0.3%
Top 10% share<42%, CPI Avg. 5.3%

TOP 10% SHARE OF INCOME — CPI

Sources: Emmanuel Saez, Haver Analytics, CIM
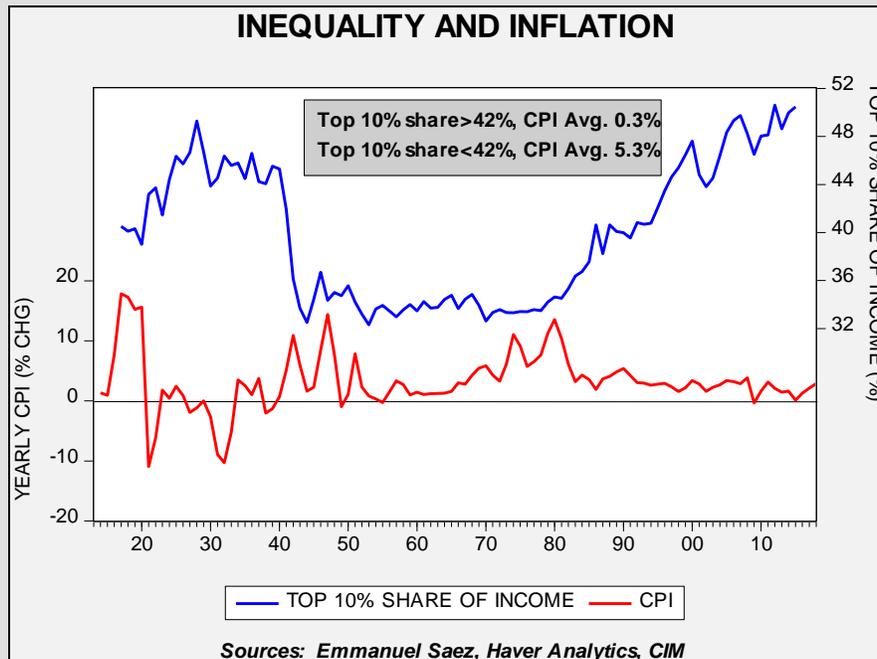
History shows that lower degrees of inequality are correlated with higher levels of inflation. We think there are two factors that cause this outcome. First, policies designed to expand supply, deregulation and globalization, tend to improve the efficiency of the economy at the expense of higher inequality. Outsourcing and automation make production more efficient but also reduce the demand for domestic labor. Simply put, one person's efficiency is another person's pink slip. Second, CPI is designed to measure prices based on an average household's consumption patterns. With rising inequality, lower decile households may have less income to spend on basic items, making it difficult for firms to pass along price increases on such goods. On the other hand, under conditions of inequality, prices on luxury items are likely to be priced higher simply because there is more spending power available.[23]

However, it is likely that the most potent reason inflation has stayed low is because of excess capacity in the economy. Measuring excess capacity is profoundly difficult because it is something of a moving target. A simple way is to regress long-term GDP against trend; the assumption is that the trend is a reasonable proxy for capacity.

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[23] https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/03/household-expenditures-and-income

REAL GDP AND THE LONG-TERM TREND

Sources: Haver Analytics, Philadelphia FRB, CIM

DETRENDED GDP AND INFLATION

Sources: Haver Analytics, Philadelphia FRB, CIM

The chart on the left is real GDP, log-transformed with a time trend regressed through it. The lower line is the deviation from trend. We are currently in a period where GDP is well below trend. The only other period that exhibited such a negative deviation from trend was the Great Depression. The chart on the right shows the GDP deviation line compared to CPI. Note that inflation tends to be low during periods of below-trend GDP. For the overall time frame (1921-2018), CPI averages 2.8%. When GDP is above trend, inflation averages 3.8%; when GDP is below trend, CPI averages 0.4%.

This trend analysis could mean that it may take several years before inflation pressures become notable if policymakers become aggressive with stimulation (i.e., keeping monetary policy accommodative while lifting fiscal policy). It also means the Federal Reserve can probably avoid raising rates for a considerable period.

Data Section

U.S. Equity Markets – (as of 4/17/2019 close)
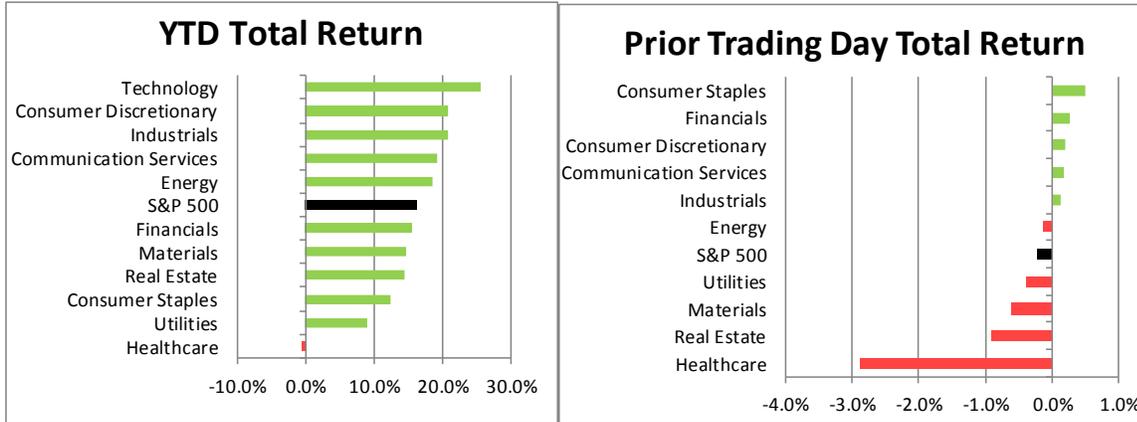
(Source: Bloomberg)

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.

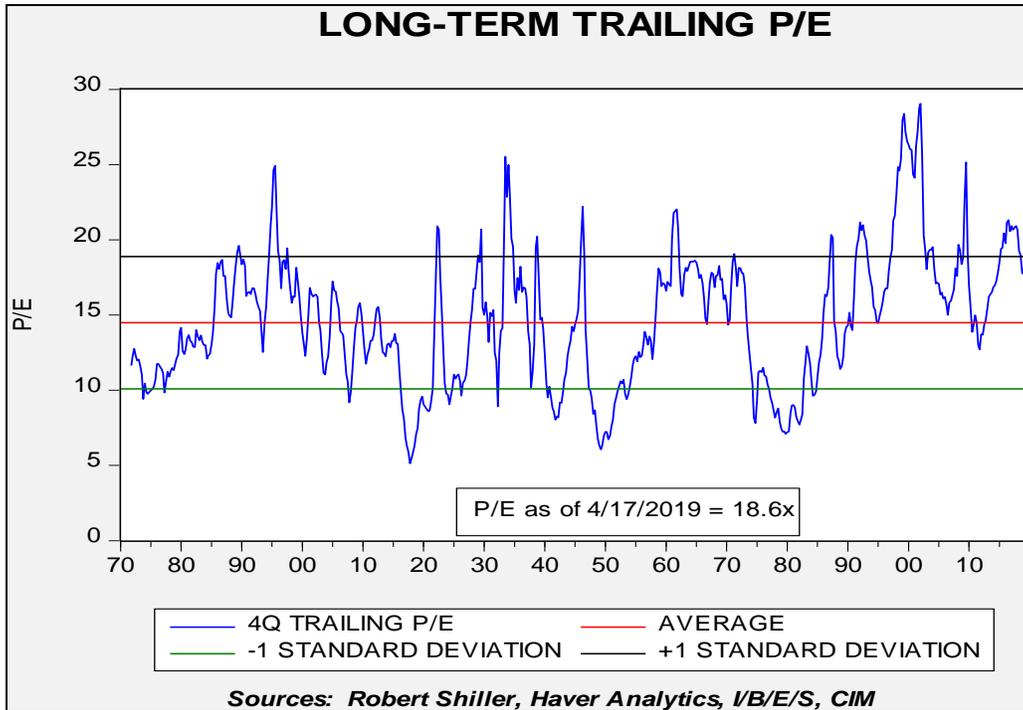**Asset Class Performance** – (as of 4/17/2019 close)
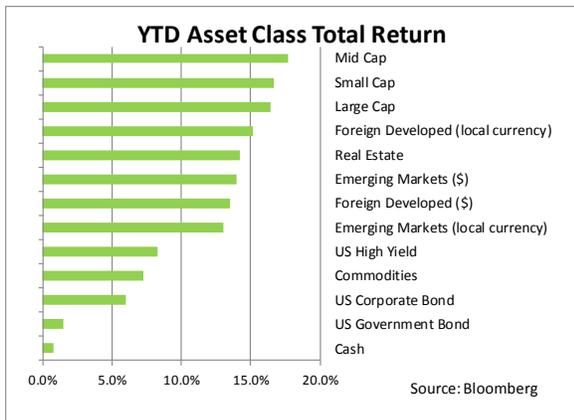
This chart shows the year-to-date returns for various asset classes, updated daily. The asset classes are ranked by total return (including dividends), with green indicating positive and red indicating negative returns from the beginning of the year, as of prior close.

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 18, 2019

LONG-TERM TRAILING P/E

P/E as of 4/17/2019 = 18.6x

4Q TRAILING P/E ——— AVERAGE
-1 STANDARD DEVIATION ——— +1 STANDARD DEVIATION

Sources: Robert Shiller, Haver Analytics, I/B/E/S, CIM

Based on our methodology,[24] the current P/E is 18.6x, unchanged from last week.

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.

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[24] 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 three 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.