



MORNING BRIEFING

March 14, 2019

Getting Energized

See the [collection](#) of the individual charts linked below.

(1) Forecasting oil prices gets slippery when the biggest users and producers shift. (2) As autos use less oil, plastics use more. (3) There's a new king of production. (4) Energy sector's 2019 earnings expected to tumble. (5) Tesla holds its lead in the electric car race. (6) But EV competitors have the pedal to the metal.

Energy: The Rise of Plastics and Fracking. Power players in the energy business gathered in Houston this week to discuss the future of the market, and one thing is clear: Not much is clear. A number of variables could dramatically change how much energy is consumed and how much is produced.

On the demand side are the assumptions that electric vehicles (EVs) will become commonplace and that plastic will continue to grow quickly notwithstanding rising calls to limit its use in containers. On the supply side, there's much uncertainty about the fate of Venezuela, the willingness of OPEC members and Russia to continue cutting oil supplies, the adoption of renewable energy, and the continuation of the US shale boom.

The price of a barrel of Brent crude oil rebounded sharply this year as it became clear that the economy wouldn't fall off a cliff and OPEC and Russia made good on their agreement to reduce oil supply by 1.2mbd. The nearby future price of Brent, at \$66.67 per barrel, is up 32% from its low on December 24 ([Fig. 1](#)).

The jump in the price of oil has helped make the S&P 500 Energy sector's stock price index one of the leaders so far this year. Here's how the S&P 500 sectors' performance derby stands ytd through Tuesday's close: Information Technology (15.3%), Industrials (14.8), Communication Services (14.4), Real Estate (14.3), Energy (13.1), S&P 500 (11.4), Consumer Discretionary (11.1), Financials (9.8), Materials (9.8), Utilities (9.5), Consumer Staples (7.7), and Health Care (5.0) ([Fig. 2](#)).

Below, Jackie lays out some of the variables that may have an outsized impact on oil prices in upcoming years:

(1) *There's a great future in plastics.* That was true in the movie "The Graduate" (1967), and it may be true in coming years as well. The biggest increase in oil demand comes from factories using petrochemicals to make plastics, not cars chugging gasoline. Total world oil demand is expected to increase by 9.6 million barrels per day (mbd) between 2017 and 2030, according to a 2018 [report](#) by the OECD and International Energy Agency (IEA) titled "The Future of Petrochemicals: Towards more sustainable plastics and fertilisers." Most of that increase will come from a 3.2mbd jump in demand for petrochemicals, followed by road freight (2.5mbd), aviation (1.7mbd), and shipping (1.0mbd).

Recognizing the strong demand for plastics, companies are building new plants, typically in locations

that are close to cheap sources of ethane and other petrochemicals. “Led by the United States and China, we have identified more than 50 major projects due to come on-stream through 2024. These are expected to add 2.2 (mbd) in oil consumption over the forecast period, accounting for 30% of global growth,” according to an IEA Oil 2019 [report summary](#). The US already has 40% of the global capacity to produce ethane-based petrochemicals.

(2) *Demand from autos in reverse*. The demand for gasoline is actually expected to drop looking ahead as auto fuel efficiency continues to improve and as some fast-growing markets mature. Global gasoline demand growth has slowed to 1% per year, even though it's 2% in developing countries.

In the US, motor gasoline consumption is forecast to decrease by 26% between 2018 and 2050 as fuel-economy requirements continue to increase ([Fig. 3](#)). “Energy use per passenger-mile of travel in light-duty vehicles declines nearly 40% between 2018 and 2050 as newer, more fuel-efficient vehicles enter the market, including both more efficient conventional gasoline vehicles and highly efficient alternatives such as battery electric vehicles,” according to the US Energy Information Administration's (EIA) [Annual Energy Outlook 2019](#). The organization forecasts cars will get almost 45 miles per gallon in 2050, up from about 27 last year. Light-truck and heavy-duty-truck efficiencies will improve as well.

The improved fuel efficiency owes much to California's Zero-Emission Vehicle regulation, which nine additional states have adopted. When the regulations go into full effect in 2025, projected sales of EVs and hybrids should rise to 8% of total vehicle sales. Meanwhile, US drivers already have been logging in more miles while using less gasoline ([Fig. 4](#)).

(3) *Producers changing*. The vast quantities of oil produced in shale oil fields made the US the world's largest producer of oil last year. The EIA expects the US to produce 12.3mbd in 2019, a 3/12 Reuters [article](#) reported—up from 11.9mbd in November 2018 and 9.3mbd in November 2015, according to a 3/12 EIA [report](#). The next largest producers in November were Russia and Saudi Arabia, both at 11.0mbd ([Fig. 5](#)).

US production has grown so much that by 2020 the EIA expects the country will become a net energy exporter for the first time since 1953, according to its *Annual Energy Outlook 2019*. The US has been exporting coal for many years and was a net natural gas exporter as of 2017. But it won't become a net exporter of petroleum products until next year, as production increases and consumption decreases.

Meanwhile, some large oil producers have seen their output shrink. Venezuela, which was producing 2.50mbd in 2015, only produced 1.32mbd in November, and production is expected to fall under 1.00mbd thanks to recent blackouts ([Fig. 6](#)). Likewise, US sanctions have hurt Iran's production, which fell to 3.45mbd in November from 4.60mbd at year-end 2017. Eight countries with US-granted waivers are allowed to buy Iranian oil despite sanctions, but the waivers expire in May and may not be renewed, a 3/12 Reuters [article](#) stated.

(4) *Tough earnings*. Despite the bounce in the price of Brent oil and the jump in the S&P 500 Energy stock price index, the S&P 500 Energy sector's revenue is expected to improve only slightly in 2019, by 0.2% y/y, while earnings are expected to fall 11.3% ([Fig. 7](#) and [Fig. 8](#)). Analysts' net earnings revisions have been negative over the past three months: -22.8% in February, -20.5 in January, and -9.4% in December ([Fig. 9](#)). Analysts forecast earnings declines this year in the following Energy industries: Integrated Oil & Gas (-13.7%), Oil & Gas Exploration & Production (-17.9), and Oil & Gas Refining & Marketing (-9.7).

Disruptive Tech: Revving Up EV Competition. Tesla captures most of the headlines about US electric cars. Today, it's introducing the Model Y, a compact SUV that will probably be available next

year. Tesla's cars still travel farther on a charged-up battery than other EVs, from 289-335 miles.

But the competition is catching up, according to a February [comparison](#) done by InsideEVs. Some electric cars offering 226-258 miles per charge include Hyundai's Kona Electric, Audi's e-tron, GM's Bolt EV, Kia's Soul EV and e-Niro, Jaguar's I-PACE, and Nissan's LEAF.

So many electric cars are expected to hit the market in the next year or two that Tesla CEO Elon Musk should be looking in the rearview mirror as he hits the accelerator. Here are some of the offerings coming down the pike:

(1) *Volkswagen* plans to produce 22 million EVs in the next 10 years. It will have 70 different models across the company's many brands, including the Audi e-tron, Porsche Taycan, Volkswagen ID, ID. CROZZ, el-born, SKODA Vision E, ID. Buzz, and the ID. VIZZION, according to a 3/12 [electrek article](#).

(2) *Porsche's* Taycan, which is expected to be available later this year, should have a range of more than 250 miles and the ability to recharge up to 80% of its battery in 15 minutes, a 3/8 [electrek article](#) relays. The company plans to produce 40,000 cars annually. It looks beautiful but is pricey, starting at around \$90,000, according to a 12/30 [electrek preview](#).

(3) *Volvo's* electric brand is called "Polestar." Polestar 1 is a plug-in hybrid that's priced around \$150,000 and has been available in China since 2017, explained a 3/8 [article](#) in *Digital Trends*. The Polestar 2 is an electric sedan that will compete with Tesla's Model 3. Due to launch in China next year, the car is expected to have a driving range of 275 miles. The Polestar 3 is an electric SUV slated to hit the market by the end of 2021. Volvo, which is owned by Zhejiang Geely Holding Group, expects the cars will be available in North America late this year or early 2020, noted a 9/20 [article](#) in *Automotive News*.

(4) *Mercedes-Benz* introduced at the Geneva Motor Show the Concept MPV, an electric minivan that's not in production yet. It seats eight and runs for 249 miles on a charge, a 3/5 [Wired article](#) reported. At a fast-charging station, 62 miles of charge can be added in 15 minutes. There aren't any electric minivans on the market yet; however, Chrysler does have a plug-in hybrid Pacifica minivan and plans to produce a battery-powered alternative next year. This year, Mercedes is also expected to introduce the EQC, an electric SUV.

(5) *Audi* has four EVs planned for sale in the US by the end of 2021: the e-tron SUV, a sporty e-tron GT, e-tron sportback, and the Q4 e-tron. The Q4 e-tron will have a range of 280 miles and be 80% charged in around 30 minutes at a fast-charging station.

(6) *BMW* has an electric Mini Cooper slated to launch by the end of 2019. But according to a 3/12 [article](#) in InsideEVs, the electric Mini can only go 120 miles on a charge, and it takes 40 minutes to recharge 80% of the battery. BMW is also expected to upgrade the i3, a sedan already on the market, by increasing its mileage per charge. By next year, the introduction of a compact SUV is anticipated.

(7) *Chinese competitors too.* The Chinese government is using rebates and tax incentives to encourage consumers to buy EVs in hopes of improving the country's smoggy air. This year, China will build 1 million EVs, or half of the EVs built in the world, according to a consultant interviewed on 2/24 by [60 Minutes](#).

Nio, a Chinese company, hopes its ES8 will compete with Tesla cars. Priced at roughly \$60,000, the car travels 220 miles on a charge, and it has a personal assistant on the dashboard that responds to voice commands to adjust the temperature, play music, and the like. Nio delivered 7,980 cars in Q4, but

orders in January and February fell to 1,805 and 811.

“The company pinned the slowdown on accelerated deliveries at the end of 2018 ahead of electric-vehicle-subsidy cuts in China this year, seasonal slowdowns around the Jan. 1 and Lunar New Year holidays, and ‘the current slowdown of macro-economic conditions in China, particularly in the automotive sector,’” a 3/6 *MarketWatch* [article](#) reported.

Or maybe consumers are waiting for the arrival of domestically manufactured Teslas? The company broke ground on Gigafactory 3 in Shanghai with hopes of selling 500,000 cars a year in China, starting with the Model 3, by year-end. By building the cars in China, Tesla can avoid the country’s tariffs on imported vehicles and the cost of transporting cars across the ocean.

The *60 Minutes* report had two additional pieces of information that were disconcerting. First, the roughly 200,000 electric cars in Shanghai have a black box that transmits data about the car—its location, speed, mileage—to the Shanghai Electric Vehicle Data Center. The government uses the data for infrastructure planning, like deciding where to build new charging stations. From here, it looks like these black boxes are one more way the government can keep tabs on its population.

Second, Nio is one of nine Chinese car manufacturers with research and development offices on the West Coast. Nio’s offices are in San Jose, California. Its access to US tech workers, who presumably have worked for US auto manufacturers, raises questions about how much proprietary information these workers have and what they are sharing.

CALENDARS

US. Thurs: Jobless Claims 225k, New Home Sales 620k, Import & Export Prices 0.3%/0.2%, EIA Natural Gas Report. **Fri:** Industrial Production Headline & Manufacturing 0.4%/0.2%, Capacity Utilization 78.5%, Empire State Manufacturing Index 10.0, Job Openings 7.225m, Consumer Sentiment 95.6, Baker-Hughes Rig Count. (Econoday estimates)

Global. Thurs: Germany CPI 0.5%/m/m/1.6%/y/y, China Retail Sales (ytd) 8.1% y/y, China Industrial Production (ytd) 5.5% y/y, China Fixed Assets Ex Rural (ytd) 6.0% y/y. **Fri:** Eurozone Headline & Core CPI 1.5%/1.0% y/y, BOJ Rate Decision. (DailyFX estimates)

STRATEGY INDICATORS

Stock Market Sentiment Indicators ([link](#)): The Bull/Bear Ratio (BBR) fell for the first time in 10 weeks this week, after holding steady last week, slipping to 2.45; it climbed from 0.86—which was the lowest since mid-February 2016—to 2.57 the prior eight weeks. The BBR’s bullish sentiment component edged down to 52.4% this week, following a 23.0ppts jump the prior nine weeks from 29.9% (which was the fewest bulls since February 2016) to a 21-week high of 52.9%. It’s the fourth consecutive reading above 50.0%. Meanwhile, bearish sentiment has been bouncing in a range between 20.4% and 21.5% the past eight weeks, climbing to the top of the range this week, rising to 21.4% from 20.6%. The correction count fell for the sixth week, from 33.6% to 26.2%, the lowest since early October; it was at 41.1% 14 weeks ago (which was the highest percentage since late September 2015). The AAI Ratio fell to 58.3% last week after rising the prior two weeks from 58.3% to 67.5%. Bullish sentiment declined to 37.4% last week after advancing the previous two weeks from 35.1% to 41.6%, while bearish sentiment climbed to 26.8% after falling from 25.4% to 20.0% the previous week.

S&P 500 Earnings, Revenues, Valuation & Margins ([link](#)): Consensus S&P 500 forward revenues edged up 0.6% w/w, and forward earnings rose 0.8%. Forward revenues is now down 0.7% from a

record high in early January, and forward earnings is now 1.8% below its record high in early December. Analysts expect forward revenues growth of 5.4% and forward earnings growth of 6.5%, up from week-earlier readings of 5.3% and 6.0%, respectively. Forward revenues growth is down 0.9ppt from a seven-year high of 6.3% in February 2018, but is up from a 31-month low of 5.0% in mid-February. Forward earnings growth is down 10.4ppts from a six-year high of 16.9% last February, but that's up from a 34-month low of 5.9% in late February. Prior to the passage of the Tax Cuts and Jobs Act (TCJA), forward revenues growth was 5.5% and forward earnings growth was 11.1%. Turning to the annual growth expectations, analysts expect revenues growth to slow from 8.5% in 2018 to 5.2% in 2019 and 5.5% in 2020. They're calling for earnings growth to slow sharply from 23.8% in 2018 to 4.1% in 2019 before improving to 11.5% in 2020. The forward profit margin remained steady w/w at a nine-month low of 12.1%, and is down 0.3ppt from a record high of 12.4% in mid-September. Still, that's up from 11.1% prior to the passage of the TCJA in December and compares to a 24-month low of 10.4% in March 2016. The S&P 500's forward P/E dropped for the first time in 10 weeks, falling to 16.2 from a 21-week high of 16.5. That's up from 14.3 during December, which was the lowest reading since October 2013 and down 23% from the 16-year high of 18.6 at the market's valuation peak in late January. The S&P 500 price-to-sales ratio of 1.96 is down from 1.99 a week earlier and 1.75 during December, which was the lowest since November 2016 and down 19% from a record high of 2.16 in late January.

S&P 500 Sectors Earnings, Revenues, Valuation & Margins ([link](#)): Consensus forward revenues rose w/w for all 11 sectors, and forward earnings was higher for 10 sectors. Real Estate was the only sector to have forward earnings decline w/w. Forward revenues and earnings are at or around record highs for 4/11 sectors: Consumer Discretionary, Health Care, Industrials, and Tech. Energy's forward earnings had about tripled from the 18-year low in April 2016 through early November, but has tumbled 23.9% since then. Forward P/S and P/E ratios are now well below their 2018 highs for all sectors, and had been at multi-year lows during December for five sectors: Energy, Financials, Industrials, Materials, and Tech. Energy's forward P/E of 17.2 is higher than usual due to its earnings deterioration. Due to the TCJA, the profit margin for 2018 was higher y/y for all sectors but Real Estate, but that sector's earnings includes gains from property sales, which typically are infrequent. The forward profit margin was at record highs during 2018 for 8/11 sectors, all but Energy, Health Care, and Real Estate. Since then, it has rolled over for all sectors except Financials and Utilities. The outlook for 2019 shows lower margins are now expected y/y for 6/11 sectors: Communication Services, Consumer Staples, Energy, Health Care, Materials, and Real Estate. During the latest week, the forward profit margin edged down 0.1ppt for Real Estate, but rose 0.1ppt for these three sectors: Industrials, Information Technology, and Materials. However, nine sectors are down from their highs in late 2018. Here's how the sectors rank based on their current forward profit margin forecasts versus their highs during 2018: Information Technology (22.3%, down from 23.0%), Financials (18.9, down from 19.2), Real Estate (15.1, down from 17.0), Communication Services (14.8, down from 15.4), Utilities (12.8, down from 13.0), S&P 500 (12.1, down from 12.4), Materials (10.7, down from 11.6), Health Care (10.5, down from 11.2), Industrials (at a record high of 10.4), Energy (6.7, down from 8.0), Consumer Discretionary (7.5, down from 8.3), and Consumer Staples (7.4, down from 7.7).

US ECONOMIC INDICATORS

Durable Goods Orders & Shipments ([link](#)): Both core capital goods orders and shipments posted solid gains in January, with the latter climbing to a new record high. Nondefense capital goods orders ex aircraft (a proxy for future business investment) rebounded 0.8% after a two-month drop of 2.0%, holding at a very high level—within 1.7% of a new record high. Meanwhile, the comparable shipments measure (used in calculating GDP) did reach a new record high in January, rising for the third time in four months, by 0.8% m/m and 1.4% over the period. Despite January's gain, core capital goods orders contracted 5.4% (saar) during the three months ending January, based on the three-month average,

the third straight decline. The comparable shipments measure accelerated 1.9% (saar) over the same period, slightly above December's pace though down from August's recent peak of 8.4%. Total durable goods orders rose 2.5% during the three months through January after a 4.3% plunge in October. Excluding transportation, orders are stalled at their cyclical high, having inched down 0.1% after a 0.3% gain and a 0.2% loss the previous two months.

Construction Spending ([link](#)): Construction spending in January was boosted by the biggest gain in public construction spending since March 2004, while private nonresidential investment also recorded a solid gain. Total construction spending rebounded 1.3% after a two-month slide of 2.1%, with private (0.2%) and public (4.9) construction investment both in the plus column—the latter jumping to its highest level since September 2010. The advance in public building was widespread, with investment in both state & local (4.9%) and federal (4.2) building projects up sharply during the month. Meanwhile, the increase in private construction was mixed in January, with a 0.8% increase in nonresidential investment more than offsetting another decline in residential investment (-0.3). The latter fell for the sixth straight month, for a total decline of 7.9%, driven by sharp contractions in both single-family (-7.9) and home-improvement (-13.0) spending; multi-family construction jumped 9.6% over the period to a new record high.

GLOBAL ECONOMIC INDICATORS

Eurozone Industrial Production ([link](#)): January output in the Eurozone began 2019 on an up note, after falling three of the final four months of 2018. Industrial production (excluding construction) rebounded 1.4% in January, after sliding 2.8% the prior four months to its lowest level since March 2017. All the main industrial groupings contributed to January's bounce back, led by energy and consumer nondurable goods output—which were the only ones above year-ago levels. Here's a tally: energy (2.4% m/m & 4.0% y/y), consumer nondurable goods (2.0 & 0.7), consumer durable goods (1.1 & -1.2), capital goods (0.9 & -3.0), and intermediate goods (0.2 & -1.8). January data are available for the top four Eurozone economies, with all but Germany in the plus column. German output fell for the fourth time in five months in January, sinking 0.9% m/m and 2.4% over the time span, matching its lowest level since March 2017. Spain recorded the biggest gain, soaring 3.6% after a two-month decline of 3.1%, while Italy rose 1.7% after a four-month drop of 2.8%. Among Eurozone countries for which data are available, Ireland (15.1%) and Slovenia (5.9) recorded the largest increases, while the largest decrease was posted by Latvia (-3.6).

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