Weekly Fundamental Market Report January 29- February 2, 2018

Market Update

PRODUCTS	1/29/18	1/30/18	1/31/18	2/1/18	2/2/18
WTI Crude Oil	65.56	64.5	64.73	65.8	65.45
Brent Crude Oil	69.46	69.02	69.05	69.08	68.58
Natural Gas	3.63	3.2	2.99	2.86	2.85

- **CME Group**

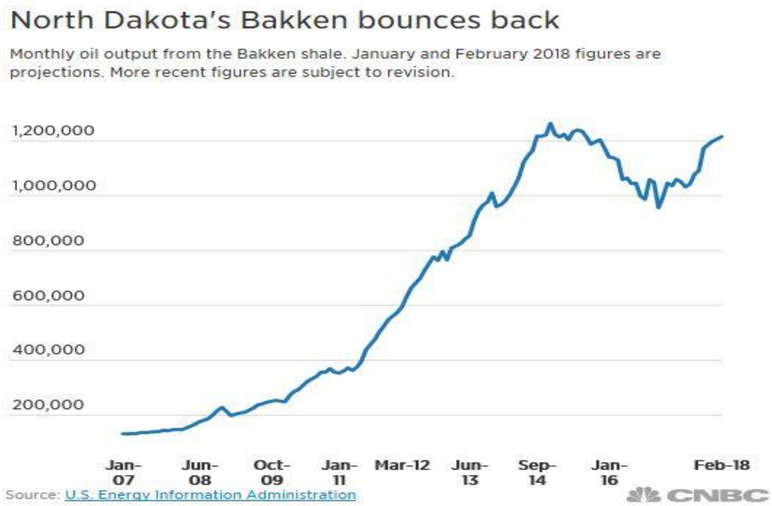
Headlines

Local North Dakota

- **North Dakota Oil Output on Track to Hit New Record in 2018.** **Nasdaq**
  - As per North Dakota's oil regulator, the state's daily crude output rose 0.9% in November after climbing 6.9% in the previous month. The North Dakota Department of Mineral Resources' ("DMR") latest data said that oil production in November averaged 1,194,920 barrels a day, up 11,110 barrels a day from October. Reflecting a healthy increase, the newest numbers confirm the resurgence in volumes extracted from North Dakota, centered on the Bakken Shale formation. As daily output consolidated above 1 million barrels for the tenth month in a row, the state's total number of producing wells numbered 14,324 at the end of November, a new all-time high. Interestingly, natural gas output was up 1.4% in November to 2,095,342 thousand cubic feet per day - another record - as operators scrambled to the core areas of the Bakken where wells tend to produce more gas along with crude. Some 54 drilling rigs were active in the state in November. The all-time low of 27 was set in May 2016, while a year ago, North Dakota had just 37 rigs operating. A closely watched yardstick of North Dakota oil industry's strength, the year-over-year improvement in the number of units searching for oil and gas in the region indicates essentially steady drilling activities and production. However, the rig count is still down considerably from the peak of May 2012 when North Dakota had 218 units drilling. More rigs in operation and stable production not only confirms the positive developments for the state of North Dakota, but also points to the rising flood of U.S. shale-driven production. Now at a financial equilibrium, the shale firms are putting more rigs and employees back to work. Throughout the downturn, producers (in North Dakota and particularly the Permian Basin in Texas) worked tirelessly to cut costs down to a bare minimum and look for innovative ways to churn out more oil from rock. And they managed to do just that by improving drilling techniques. With these efforts, many upstream companies have repositioned themselves to adapt to the new $50-$60 oil reality and even thrive at those prices. In other words, while OPEC's moves to trim output and rebalance the demand-supply situation has stabilized the market to a large extent, in the process it has incentivized shale drillers to churn out more. The U.S. West Texas Intermediate (WTI) benchmark hit a more than three-year high of $65.61 recently. Also, we are confident that improving fundamentals have probably put a floor under crude prices for the time being. While we do not rule out chances for short-term pullbacks on oversupply concerns and a stronger U.S. dollar, we remain extremely confident of a bull run in the near future. In this context, the improvement in North Dakota's November production bode well for the region. With oil prices likely to head higher, the monthly output in the second-largest oil producing state after Texas is expected to stay above the psychologically important one million barrel a day mark for the time being. Apart from the strength in crude prices, there is another factor that might speed up Bakken output growth - the 1,100-mile-long Dakota Access Pipeline. Making good on his campaign promises to rev up infrastructure spending, President Trump ignored bitter opposition from environmental activists and signed executive order to smooth the way for Energy Transfer Partners' ETP $3.7 billion Dakota Access Pipeline just a few days into his new Administration. As a result, disregarding the censure from environmental groups and the Standing Rock Sioux Tribe, the sponsor brought the controversial conduit online in early June. With the project's arrival, operators have scrambled to use the Dakota Access Pipeline to send a major portion of their product to market. In fact, around 78% of oil shipments out of North Dakota are now being carried by pipelines, with the costly railroad share dropping from over 24% in the early part of 2017 to less than 10%. Market players believe that the pipeline has helped in bettering the region's drilling economics by lowering transportation costs for operators. Set to carry about 520,000 barrels of oil daily, or more than 50% of North Dakota's output, the commencement of the Dakota

Access Pipeline has bridged the gap between Bakken players and producers in other U.S. oil producing areas like the Permian Basin. The geographically constrained Bakken Shale's crude has now better access to Gulf and East Coast refineries and also reaches international markets. As expected, the pipeline, where energy majors like Phillips 66 PSX, Enbridge Inc. ENB and Marathon Petroleum Corporation MPC have invested, has helped to improve the region's drilling economics by lowering transportation costs for operators and benefit the state financially. Products from companies like Continental Resources, Inc. CLR, and Hess Corporation HES were among the first to reach the international markets (China and Netherlands), with the help of Dakota Access. Overall, rebounding oil prices, together with the start of the Dakota Access Pipeline, are expected to support further increase in Bakken output by providing the companies a chance to push their produce outward at a lower cost. With the latest monthly production attaining highest levels since July 2015, Lynn Helms - the director of DMR - feels that a conducive oil pricing environment is likely push the state's output beyond the all-time high of 1,227,483 barrels/day sometime in the first half of 2018.

- **North Dakota's Bakken shale oil fields are stronger than ever, says billionaire drilling pioneer Harold Hamm. CNBC**
  - U.S. shale drilling pioneer Harold Hamm fired back on Wednesday at critics who say the North Dakota oil fields where he made his name — and minted a fortune — have already seen their best days. Some industry watchers say wells are running dry too quickly, producing too much gas and yielding too little oil in the Bakken, North Dakota's premier shale oil region. "Its demise was overexaggerated," Hamm told CNBC's "Squawk on the Street" on Wednesday. "The Bakken is back stronger than ever." Bakken oil production has nearly rebounded to output levels prior to the 2014 collapse in oil prices. The amount of oil produced per rig deployed by Bakken drillers is also rising. Shale oil drillers, who use advanced technology to wring oil and gas from rock formations, improved their efficiency throughout the United States during the downturn. "The technology's worked better there than it has anywhere else. We're still in the third inning of the Bakken development," said Hamm, chairman and CEO of Oklahoma City-based driller Continental Resources. Shale wells typically produce a burst of oil in their first year of production, but their output drops off quickly and then slowly tapers off. "Sure, these wells fall off the first year, but let me tell you, they level out and make a lot of oil," Hamm said. "1.1 million barrels per well isn't bad in the Bakken, so those are great ultimate recovery numbers." Among the critics of shale drillers is Jim Chanos, the closely followed short-seller who called the demise of disgraced power giant Enron. Last fall, his top investing idea at CNBC and Institutional Investor's Delivering Alpha Conference was betting that shares of shale oil drillers will eventually collapse. Chanos specifically called out Continental Resources, in part because of its growing output of natural gas, which drums up less cash than crude oil. Overall, Chanos thinks shale drillers need to spend too much to replace depleted wells, saying capital spending consumes almost all of their earnings and leaves little cash to service their debt. Shares of Continental Resources are up 60 percent to about $55 since Chanos made his call. Some shale drillers started looking beyond the Bakken during the oil price slump of the last few years, turning to regions with lower-cost production. However, some private equity players are now picking up assets in shale fields that have fallen out of favor, including the Bakken, according to Houston-based oil and gas advisory firm PLS. Deal making in the Bakken ticked up from $1.9 billion in 2016 to $2.6 billion last year, largely fueled by a single deal. Bruin E&P Partners, backed by private equity firm Arclight Capital Partners, spent $1.4 billion in July to acquire Bakken assets from Halcon Resources. The purchase was one of the top 10 biggest upstream U.S. oil and gas deals of 2017, according to PLS.



Domestic U.S.

- **Oil eases on strong dollar, supported by OPEC cuts, rising demand. Reuters**
    - Oil prices eased on Friday as the dollar surged due strong U.S. jobs and wage numbers, although energy markets were still supported by strong compliance with output cuts by OPEC and rising global demand in 2018. Brent LCOc1 futures, the global benchmark, were down by $1 at $68.65 a barrel by 1442 GMT. U.S. West Texas Intermediate (WTI) crude CLc1 was down 55 cents at $65.25 a barrel. Oil prices fell as the dollar in which it is priced soared. DXY, after U.S. jobs growth surged in January and wages rose further, recording their largest annual gain in more than 8-1/2 years. But crude still has support in the mid-term because of output cuts by the biggest producers and strong demand. "The OPEC/non-OPEC production and U.S. tight oil have justifiably been a focus this year. Yet demand has quietly underpinned the tightening of the market over the past year," Jon Rigby from UBS said in a note. Global oil demand rose by 1.6 million bpd, or about 1.5 percent, last year and UBS said it should grow by another 1.3 million this year or even more after the International Monetary Fund raised its global economic growth forecast. UBS said that in each of the 10 individual years since 1980 when GDP grew by more than 4 percent, oil consumption growth exceeded 1.5 percent in seven of them: "This implies upside risk to our current 2018 demand growth forecast". On the supply front, production by the Organization of the Petroleum Exporting Countries rose in January from an eight-month low, as higher output from Nigeria and Saudi Arabia offset a further decline in Venezuela. "It underscores the commitment of the cartel, and their Russian partners, to keep a floor under the oil price," said Greg McKenna, chief market strategist at futures brokerage AxiTrader. Russia data also showed strong compliance with output cuts in January. Good compliance is drawing investors' focus away from the rise in U.S. production. U.S. output surpassed 10 million bpd in November for the first time since 1970, the Energy Information Administration said this week.

- **Oil could struggle to top $70 as U.S. output offsets OPEC cuts: Reuters poll. Reuters**
    - Oil prices are unlikely to advance much higher than $70 a barrel in 2018, with the market caught between the opposing forces of OPEC-led production cuts and surging U.S. output, a Reuters poll showed on Wednesday. The survey of 34 economists and analysts forecast that Brent crude will average $62.37 a barrel in 2018, up from the $59.88 forecast in the previous monthly poll. "Steady demand growth, a clear commitment to supply restraint by key OPEC producer Saudi Arabia and persistent geopolitical risks will all help to keep a floor under oil prices," said Cailin Birch, an analyst at the Economist Intelligence Unit. "However, we expect strong production growth from the U.S., as well as some opportunistic selling by both OPEC and non-OPEC members later in the year, to prevent prices from rising much higher than $70 per barrel on average." Brent crude is on track for a fifth straight monthly gain, having averaged about $69 so far in January, but analysts said the rally is unlikely last beyond the first quarter. They said U.S. production, which has risen more than 17 percent since mid-2016, could top 10 million bpd -- a level surpassed only by Saudi Arabia and Russia. Rahul Prithiani, director at CRISIL Research, expects oil prices to range between $62 and $67 a barrel in 2018, citing rising U.S. oil output. Meanwhile, the world's biggest oil consuming region, Asia, has recently started to import U.S. crude and could show increased appetite to draw more shipments east, analysts said. The higher production has paved the way for a widening gap between U.S. crude prices (WTI) and both the Brent and Dubai benchmarks, making it is cheaper for Asian countries to import U.S. crude despite high freight costs. "As long as WTI continues to trail other regional crude benchmarks, U.S. oil should continue to find its way towards Asia," said Giorgos Beleris, analyst at Thomson Reuters Oil Research and Forecasts. U.S. light crude is forecast to average $58.11 a barrel in 2018, up from the $55.78 predicted in the December poll. The contract has averaged about $63.63 thus far in 2018. Alongside the growth in U.S. oil output, the $65-plus price environment is encouraging other non-OPEC exporters, such as Brazil and Canada, to ramp up production through new projects. Analysts said it was too early to predict whether OPEC would make changes to the duration of the pact to cut output by 1.8 million barrels per day, which is due to expire at the end of this year. "The output-cut agreement is unlikely to be extended beyond 2018 in its present form as the market will rebalance this year," said Abhishek Kumar, senior energy analyst at Interfax Energy's Global Gas Analytics in London. "Nevertheless, calls to formulate an exit strategy from the deal will gather pace. This, in turn, could see a gradual withdrawal from the agreement in 2019." The poll forecast Brent crude to average $61.62 in the fourth quarter and $61.29 in 2019.

Oil and Gas Analysis

- **Rotary Rig Count Summary**

Location	Date	Week	+/-	Week Ago	+/-	Year Ago
United States	26-Jan-18	947	11	936	235	712
	2-Feb-18	946	-1	947	217	729
North Dakota	26-Jan-18	44	0	44	8	36
	2-Feb-18	45	1	44	9	36
Canada	26-Jan-18	338	13	325	-7	345
	2-Feb-18	342	4	338	-1	343
International	Dec-17	954	12	942	25	929

  - **Baker Hughes**

- **WTI & Bakken Spot Price**

January 2018 Daily Spot Prices					
	Mon	Tue	Wed	Thu	Fri
Bakken (FH)					
2018 January-1 to January-5	-	53.07	53.07	56.63	56.63
2018 January-8 to January-12	56.19	56.19	57.67	57.67	58.16
2018 January-15 to January-19	-	58.02	58.02	58.02	58.02
2018 January-22 to January-26	57.79	58.08	58.34	58.34	58.44
2018 January-29 to February-2	58.44	58.39	58.39	58.33	60.5
WTI					
2018 January-1 to January-5	-	60.37	61.61	61.98	61.49
2018 January-8 to January-12	61.73	62.92	63.6	63.81	64.22
2018 January-15 to January-19	-	63.82	63.92	63.96	63.38
2018 January-22 to January-26	63.66	64.45	65.69	65.62	66.27
2018 January-29 to February-2	65.71				
Differentials					
2018 January-1 to January-5	-	7.3	8.54	5.35	4.86
2018 January-8 to January-12	5.54	6.73	5.93	6.14	6.2
2018 January-15 to January-19	-	5.8	5.9	5.94	5.36
2018 January-22 to January-26	5.87	6.37	7.35	7.28	7.83
2018 January-29 to February-2	7.27				

  - **Flint Hills Resource**
  - **EIA**

- **Weekly Petroleum Status Report**

Stocks (Million Barrels)			
	Four Weeks Ending		
	1/26/2018	1/19/2018	1/27/2017
Crude Oil (Excluding SPR)	418.4	411.6	494.8
Motor Gasoline	242.1	244.0	257.1
Distillate Fuel Oil	137.9	139.8	170.7
All Other Oils	406.8	407.6	424.9
Crude Oil in SPR	664.7	664.5	695.1
Total	1,869.8	1,867.5	2,042.5

Products Supplied (Thousand Barrels per Day)			
	Four Weeks Ending		
	1/26/2018	1/19/2018	1/27/2017
Motor Gasoline	8,806	8,707	8,222
Distillate Fuel Oil	4,178	3,957	3,687
All Other Products	7,788	7,843	7,405
Total	20,772	20,508	19,314

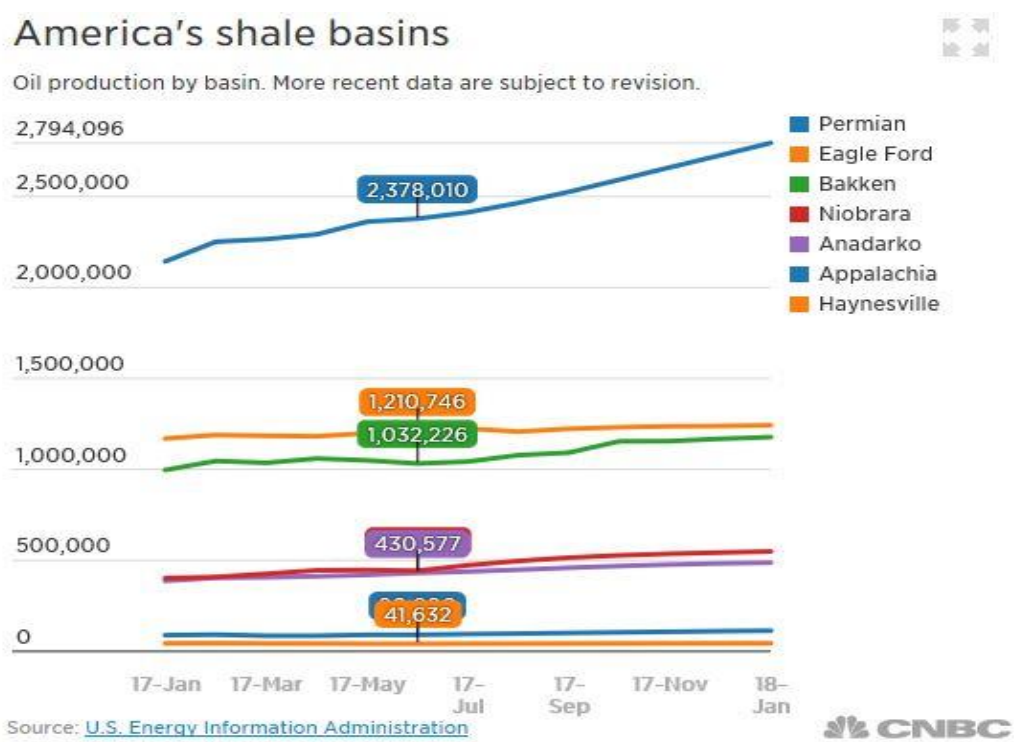
Refinery Activity (Thousand Barrels per Day)			
	Four Weeks Ending		
	1/26/2018	1/19/2018	1/27/2017
Crude Oil Input to Refineries	16,674	17,072	16,392
Refinery Capacity Utilization	91.8	94	90.2
Motor Gasoline Production	9,540	9,569	9,136
Distillate Fuel Oil Production	4,952	5,196	4,822

Net Imports (Thousand Barrels per Day)			
	Four Weeks Ending		
	1/26/2018	1/19/2018	1/27/2017
Crude Oil	6,660	6,616	7,738
Petroleum Products	-2,835	-2,966	-2,668
Total	3,825	3,650	5,070

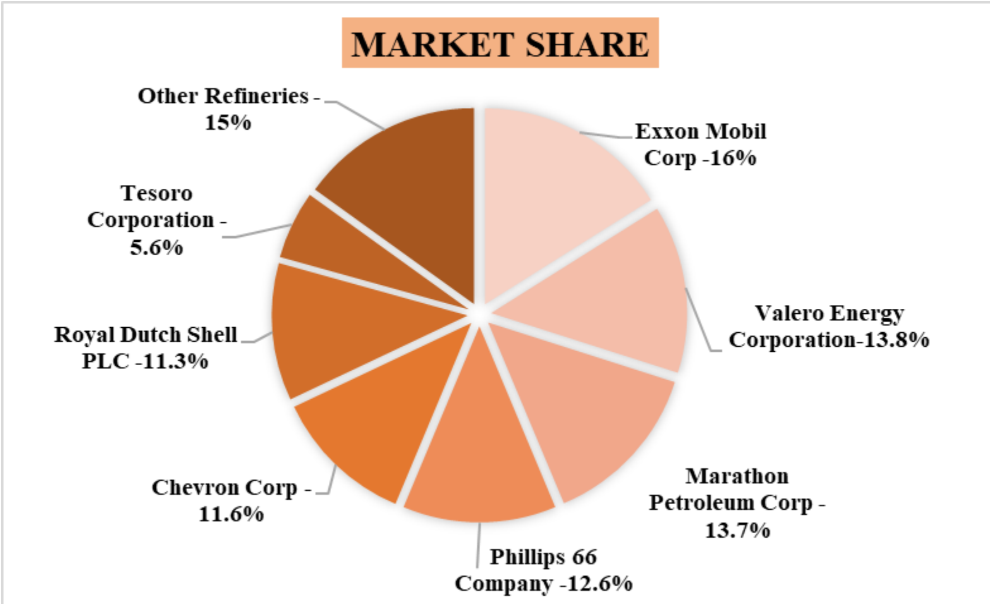
- **EIA**

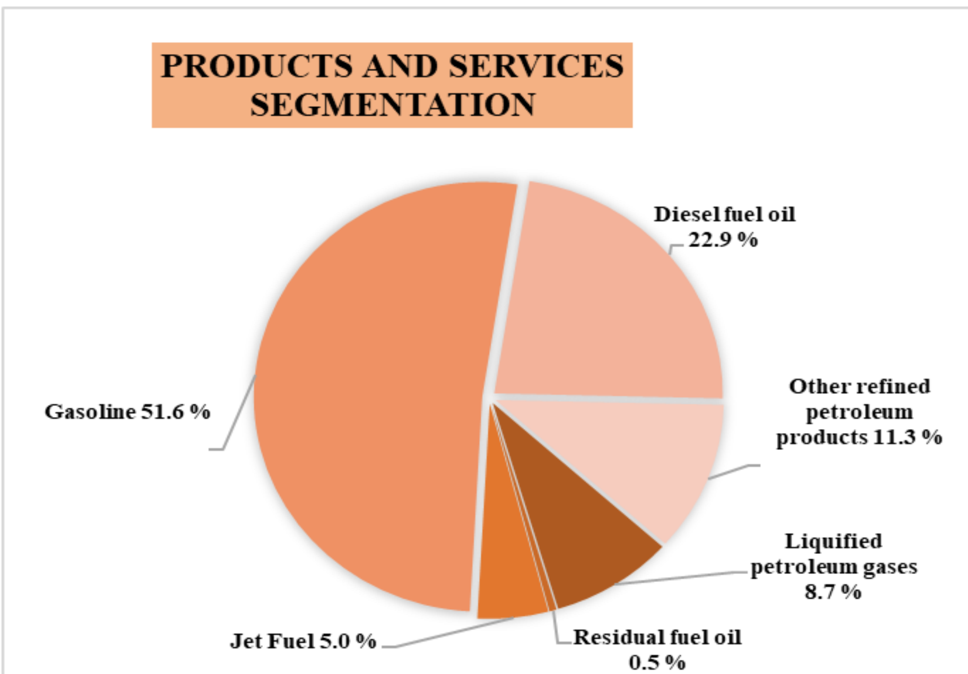
- **US Oil Production**

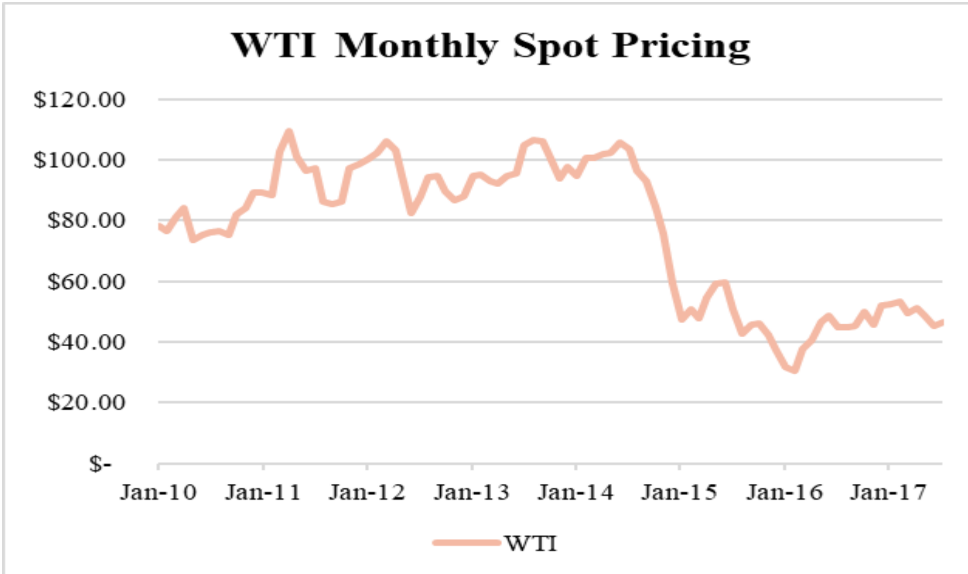
- **Americas Shale Basins**



- US Petroleum Refining at a Glance







- EIA

o Key External Drivers

- **World price of crude oil**
  - http://markets.businessinsider.com/commodities/oil-price?type=wti
- **Demand from gasoline and petroleum bulk stations**
  - https://www.reuters.com/article/us-usa-natgas-kemp/u-s-natural-gas-prices-rise-as-winter-stocks-look-tight-kemp-idUSKCN1BU1RK
- **GDP of mainland China**
  - https://tradingeconomics.com/china/gdp
- **Trade-weighted index**
  - https://www.investing.com/news/economy-news/top-5-things-to-know-in-the-market-on-friday-541066
- **Total vehicle miles**
  - https://www.advisorperspectives.com/dshort/updates/2017/08/31/vehicle-miles-traveled-another-look-at-our-evolving-behavior