Meridian Energy Group Inc.

Weekly Fundamental Market Report October 23-27, 2017

Market Update

PRODUCTS	10/23/17	10/24/17	10/25/17	10/26/17	10/27/17
WTI Crude Oil	51.90	52.47	52.18	52.64	53.90
Brent Crude Oil	57.37	58.33	58.44	59.30	60.44
Natural Gas	2.99	2.97	2.92	2.89	2.75

- **CME Group**

Headlines

Local North Dakota

- **Less oil moving by rail from the Bakken.** **Prairie Public News**
  - As the number of barrels of Bakken crude oil shipped by pipeline increases, the number of rail loading facilities in western North Dakota has dropped. "During the height of the crude by rail activity in North Dakota, we had north of 20 rail loading facilities scattered throughout North Dakota," said North Dakota Pipeline Authority director Justin Kringstad. "now it's consolidated to around 12 facilities that are still loading crude oil, primarily on trains headed to the west coast, and some to the east coast." Kringstad said the facilities that remain are acting more like "transportation hubs" for crude. "Not only are they providing crude by rail service, they're also providing storage," Kringstad said. "They're providing access to various pipelines. Barrels are delivered there by gathering systems or by truck." Kringstad said there's a reason most of the oil delivered by rail is going to the west coast – and it isn't oil exports. "The refineries in the Pacific Northwest are light, sweet, crude oil refineries that do well with a Bakken barrel," Kringstad said. "So, they have been attracted to the Bakken barrel and the way it runs in those facilities." Kringstad said the opening of the Dakota Access Pipeline has been a big reason oil shipment by rail have decreased. Kringstad also said getting natural gas liquids to market will be a growing problem. Those "NGLs" are products like propane and butane. Kringstad said as the production of natural gas from Bakken wells grows, it's squeezing the available infrastructure. "The current NGL structure is at its capacity," Kringstad said. "Now the industry is looking at solutions to address the future growth of natural gas liquids." And Kringstad said industry has options. "Is there a way to use those liquids for value-added propositions within the state?" Kringstad said. "Are there new pipelines that need to be constructed, or can existing pipelines be repurposed or expanded? All options are on the table." Kringstad also said with the growth in natural gas production, there will be a need for companies to build new natural gas processing plants – as the current plants are nearing capacity.
- **Marathon Oil gets permission to flare natural gas from 21 wells.** **Prairie Public News**
  - North Dakota's Industrial Commission has given Marathon Oil permission to flare natural gas from 21 oil wells in Dunn County. The wells are close to the Bear Creek natural gas processing plant. But state Mineral Resources director Lynn Helms said the 21 are older wells, and they produce hydrogen sulfide. "The Bear Creek plant is not designed to process hydrogen sulfide," Helms told the Commission. "It's designed to process sweet Bakken gas. "Helms said if the wells are going to continue to safely produce crude, the gas needs to be flared. "That's so that the hydrogen sulfide is burned, and doesn't represent a public health and safety hazard," Helms said. Helms said Marathon has looked at sulfur recovery at the well site, but that's not economic. And he said One OK is considering adding sulfur recovery to the Bear Creek plant. Helms said the order allowing flaring is only good for one year. "What we're saying is, we'll give you a year," Helms said. "We want to talk to you again, see if the economics have improved or make the H2S problem go away. I didn't feel we should give an open-ended flaring authorization. "Helms said three gas plants in North Dakota do have sulfur recovery.

Domestic U.S.

- **U.S. Midwest oil refiners boost output, cut region's dependence on Gulf Coast.** Reuters
    - U.S. refineries from Ohio to Minnesota are capitalizing on access to cheap crude from Western Canada and North Dakota oilfields, helping their region break a historic dependence on fuel from the Gulf Coast while redrawing oil trade maps. Since the early 2000s, crude and fuel flows from the Gulf Coast into the U.S. heartland have been cut in half, as crude coming from Canada and North Dakota has pushed U.S. Midwest refining activity to record levels. In 2016, Midwest refining capacity rose to 3.9 million barrels per day (bpd) of crude, the highest annual volume on record. Midwest refiners such as Marathon Petroleum Corp, Phillips 66, BP PLC and Husky Energy have invested billions of dollars on new units capable of turning sludgy crude from Canada into gasoline and diesel. Investments in the Dakota Access Pipeline and other avenues have helped bring in shale oil from North Dakota. "Ten years ago, we were 1 million barrels per day short on products, with the Gulf Coast supplying the product. Today, the midcontinent is flush with products," Marathon Petroleum Chief Executive Gary Heminger said in a recent Reuters interview at the company's Findlay, Ohio, headquarters. Yet analysts warned that weakening U.S. gasoline demand will make it challenging for Midwest refiners to sell their growing output. The Midwest is land-locked, making it hard to get products to new markets, especially as rival refiners defend their turf. Philadelphia area refiners are currently fighting efforts to reverse a pipeline, so Midwest companies can move fuel to western Pennsylvania. For years, Gulf refiners with access to cheaper crudes could underprice their Midwest rivals in Chicago, Indianapolis and other cities in the region. Traders made easy money sending gasoline north in the summer. Now, Midwest plants can compete more effectively thanks to booming production in western Canada and North Dakota of crude that routinely sells at a discount against the U.S. benchmark price. "The Midwest is well positioned to supply its region and parts of southern Canada, and will even have excess supplies to send to the East Coast. It's in a good spot," said Mark Routt, chief economist at KBC Advanced Technologies. At the turn of the century, the Midwest received 3.4 million bpd of crude and refined products from the Gulf. In 2016, that figure was halved. Chicago gasoline peaked at a premium of 14 cents a gallon versus the future contract this summer, much less than the summer premiums of nearly 40 cents in 2014 and 2015. "The trade was as slow as I've ever seen it," said one scheduler who sends barrels along the line. Hurricane Harvey knocked out half of the Gulf's capacity, while Midwest refiners processed a record 4.06 million barrels per day (bpd) of crude oil in late August and early September, 12 percent more than the 2016 average. The Rockies, which includes Bakken oil fields, sent 550,000 bpd to the Midwest last year. That is triple the volumes seen in 2010 before Dakota Access opened. Phillips 66 and Marathon Petroleum are minority partners in the line, which opened in 2017 and can pump as much as 525,000 bpd. Canada has sent an average of 2.1 million bpd of crude through June of this year, more than triple the rate from two decades ago, according to EIA data. Midwest refiners invested billions of dollars to handle the heavier Canadian crude. For instance, Marathon and BP spent over $6 billion to install new coking units to handle the heaviest parts of the Canadian oil. Marathon's 144,000 bpd Detroit refinery nearly tripled its usage of Canadian crude last year, hitting a record high of 137,400 bpd, EIA data showed. BP's 430,000 bpd Whiting, Indiana, refinery can now process up to 85 percent heavy crude, up from 20 percent before the upgrades. But analysts predict that ebbing U.S. gasoline demand will eventually force Midwestern refiners to find other markets, including exports. To facilitate this, some pipelines that used to carry product to the Midwest have already been reversed. But Philadelphia-area refiners are pressuring state regulators to reject reversal of a pipeline that would bring Midwest fuel to the Pittsburgh area. The owners of the 1.2 million bpd Capline Pipeline, the nation's largest crude pipeline by volume, will soon gauge shipper interest in reversing that line, which currently runs from Louisiana to Illinois. The line is owned by Marathon, BP and Plains All American, and the group said reversal would not come until 2022. Shippers abandoned the line in recent years due to the waning financial incentive to move barrels north. But BP, which has an ownership interest in the pipeline, has slowed the reversal over concerns that it could erode the discount on Canadian oil enjoyed by its Whiting refinery. BP did not respond to questions about that pipeline. Analysts expect regional market-share battles to intensify. The Midwest will go from being short roughly 500,000 bpd of gasoline this year to a surplus of roughly 200,000 bpd by 2030, according to Wood Mackenzie refinery analyst Andrew Shepard. A gasoline supply glut would pressure prices and weaken profit margins for refiners, Shepard said. Eventually, Midwest refiners will have to close plants if they cannot access new markets. "The Midwest must gain increased access to the East Coast market," Shepard said.

Global

- **One million barrels of Bakken crude headed to China.** North American Shale
  - Continental Resources announced last week that it will sell about 1 million barrels of light sweet crude from western North Dakota for export to China next month. The oil will be delivered to Atlantic Trading and Marketing Inc. (ATMI), which intends to export the oil to China. Daily sales transactions of 33,500 barrels per day in November will take place in Cushing, Oklahoma. ATMI then plans to transport the oil for loading on tankers at Texas ports. "This is a historic day for Continental and begins a new chapter in our long-term strategy to establish multiple international markets for American light sweet oil," said Harold Hamm, Continental's chairman and CEO. "This new normal was created by the American shale energy revolution and the lifting of the 1977 crude oil export ban. We expect to see many similar industry transactions in coming months and years." Hamm and others in the oil and gas industry led efforts to lift the U.S. crude export ban. In December 2015, the ban was ended, enabling foreign sales to be transacted without a license. According to Continental, oil exports have grown steadily in the past two years, primarily to foreign refineries configured specifically to process light sweet crude oil. Noting that Continental continues to develop additional international markets for its light sweet oil, Hamm said, "We recognized back in 2015, when we were working to lift the export ban, that American light sweet oil would be a good fit for these refineries, especially in Europe and Asia. "The current $6 discount to Brent should not exist, given the consistency and high quality of WTI, as well as relative shipping costs," he continued. "Stabilized U.S. production and increasing industry sales of American crude to international markets will drive down U.S. inventories, correcting much of the recent disparity between Brent and WTI prices. Modern modes of transport in the crude oil sector today eliminate price disparities between markets and allow free markets to work." Based in Oklahoma City, Continental is a top-15 independent oil producer in the U.S. It's the largest leasehold in the Bakken shale play of North Dakota and Montana. The company also has significant positions in Oklahoma, including its SCOOP Woodford, SCOOP Springer and SCOOP Sycamore discoveries and the STACK plays.

- **Saudi determined to end oil glut, sees smooth exit for OPEC pact.** Reuters
  - The world's top oil exporter Saudi Arabia is determined to reduce inventories further through an OPEC-led deal to cut crude output and raised the prospect of prolonged restraint once the pact ends to prevent a buildup in excess supplies. Saudi Energy Minister Khalid al-Falih, speaking during an investment conference in Riyadh, said on Tuesday the focus remained on reducing the level of oil stocks in OECD industrialized countries to their five-year average. The Organization of the Petroleum Exporting Countries, plus Russia and nine other producers, have cut oil output by about 1.8 million barrels per day (bpd) since January. The pact runs to March 2018, but they are considering extending it. "We are very flexible, we are keeping our options open. We are determined to do whatever it takes to bring global inventories down to the normal level which we say is the five-year average," Falih told Reuters. The market has been concerned that, once the supply cut deal comes to an end, producers will ramp up supplies again, causing prices to fall. But Falih raised the prospect of continued output restraint to prevent this. "When we get closer to that (five-year average) we will decide how we smoothly exit the current arrangement, maybe go to a different arrangement to keep supply and demand closely balanced so we don't have a return to higher inventories." The oil price LCOc1 has recovered from below $30 a barrel at the start of 2016 to trade above $57 on Tuesday, and rose after Falih's comments. Oil remains, however, at half its price in mid-2014. Reuters reported last week, citing OPEC sources, that producers were leaning towards extending the deal for nine months, although any decision could be postponed until early next year depending on the market. Falih did not comment on an extension but said the cuts had reduced the supply overhang in storage by half. "We have reduced the inventories by over 180 million barrels and we still have about 160 million barrels according to numbers I have seen last," he told Reuters. "The intent is to keep our hands on the wheel between now and until we get to a balanced market and beyond, we are not going to do anything that is going to disrupt the path we are on," he added. Falih said oil investment had returned after the OPEC-led pact began at the start of the year and helped by a global economic recovery. The minister said there was consensus to continue the cuts until targets were reached to balance the market but said shocks to the market by reducing more than needed should be avoided.

Oil and Gas Analysis

- ## Rotary Rig Count Summary

Location	Date	Week	+/-	Week Ago	+/-	Year Ago
United States	20-Oct-17	913	-15	928	360	553
	27-Oct-17	909	-4	913	352	557
North Dakota	20-Oct-17	51	0	51	21	30
	27-Oct-17	49	-2	51	14	35
Canada	20-Oct-17	202	-10	212	59	143
	27-Oct-17	191	-11	202	38	153
International	Sep-17	931	-21	952	-3	934

- **Baker Hughes**

- ## WTI & Bakken Spot Price

October 2017 Daily Spot Prices					
	Mon	Tue	Wed	Thu	Fri
Bakken (FH)					
2017 October-2 to October-6	44.06	45.04	45.04	44.59	45.24
2017 October-9 to October-13	43.98	44.17	45.23	45.4	44.92
2017 October-16 to October-20	45.53	45.66	45.66	45.46	45.56
2017 October-23 to October-27	45.45	45.56	45.51	45.45	45.81
WTI					
2017 October-2 to October-6	50.59	50.44	50	50.79	49.34
2017 October-9 to October-13	49.58	50.93	51.3	50.61	51.43
2017 October-16 to October-20	51.86	51.87	52.05	51.29	51.63
2017 October-23 to October-27	51.91				
Differentials					
2017 October-2 to October-6	6.53	5.4	4.96	6.2	4.1
2017 October-9 to October-13	5.6	6.76	7.13	5.21	6.51
2017 October-16 to October-20	6.33	6.21	6.39	5.83	6.07
2017 October-23 to October-27	6.46				

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

Weekly Petroleum Status Report

Stocks (Million Barrels)			
	Four Weeks Ending		
	10/20/2017	10/13/2017	10/21/2016
Crude Oil (Excluding SPR)	457.3	465.5	468.2
Motor Gasoline	216.9	222.3	22.0
Distillate Fuel Oil	129.2	134.5	152.4
All Other Oils	468.4	470.8	485.1
Crude Oil in SPR	671.4	671.7	695.1
Total	1,943.2	1,955.8	2,062.8

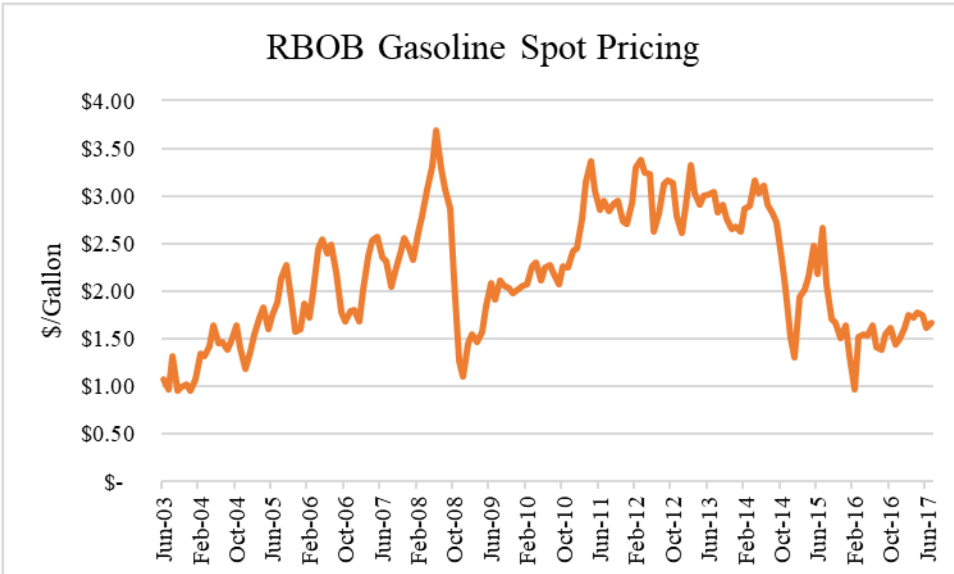
Products Supplied (Thousand Barrels per Day)			
	Four Weeks Ending		
	10/20/2017	10/13/2017	10/21/2016
Motor Gasoline	9,293	9,345	9,143
Distillate Fuel Oil	3,808	3,720	4,074
All Other Products	6,544	6,854	7,154
Total	19,646	19,918	20,370

Refinery Activity (Thousand Barrels per Day)			
	Four Weeks Ending		
	10/20/2017	10/13/2017	10/21/2016
Crude Oil Input to Refineries	15,938	15,975	15,627
Refinery Capacity Utilization	87.4	87.6	86.1
Motor Gasoline Production	9,890	9,870	9,815
Distillate Fuel Oil Production	4,868	4,829	4,586

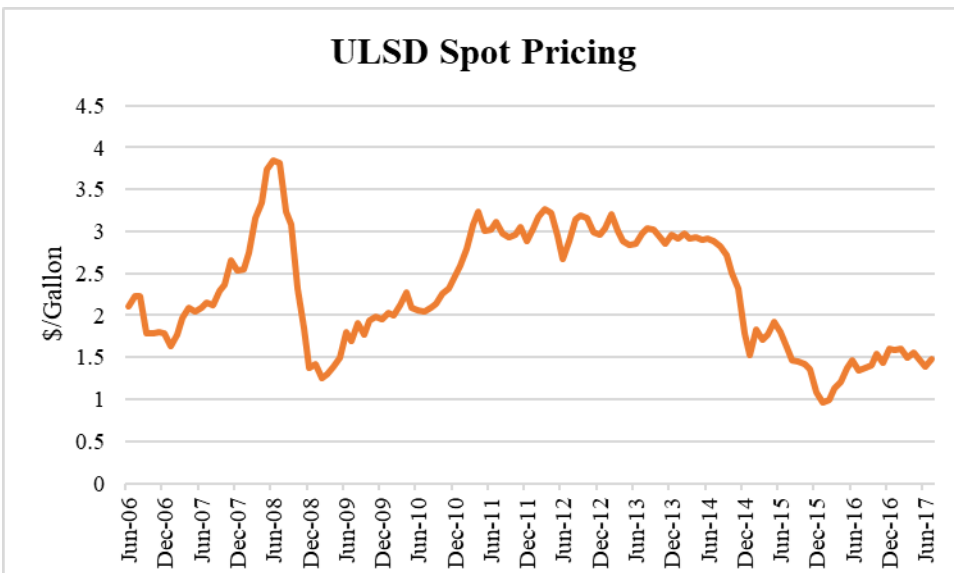
Net Imports (Thousand Barrels per Day)			
	Four Weeks Ending		
	10/20/2017	10/13/2017	10/21/2016
Crude Oil	5,865	5,800	6,930
Petroleum Products	-2,957	-2,366	-2,034
Total	2,908	3,434	4,896

- **EIA**

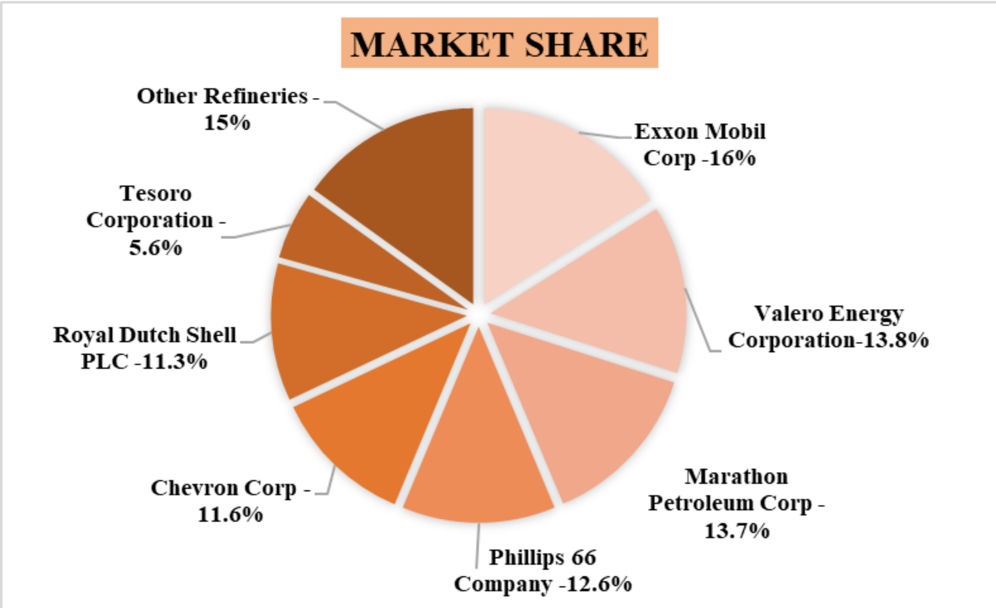
- **RBOB Gasoline**

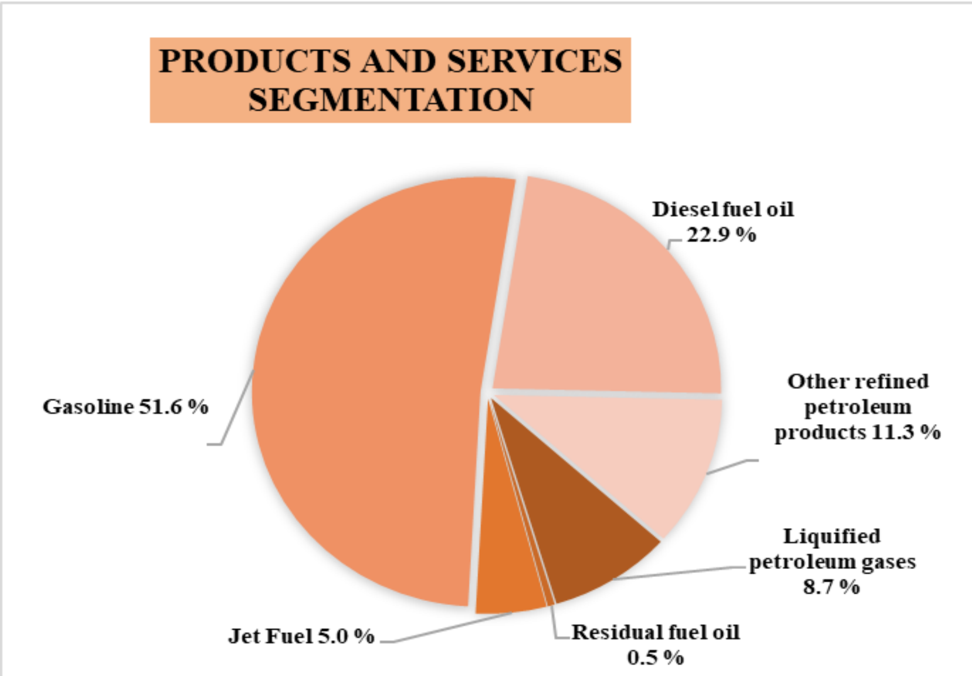


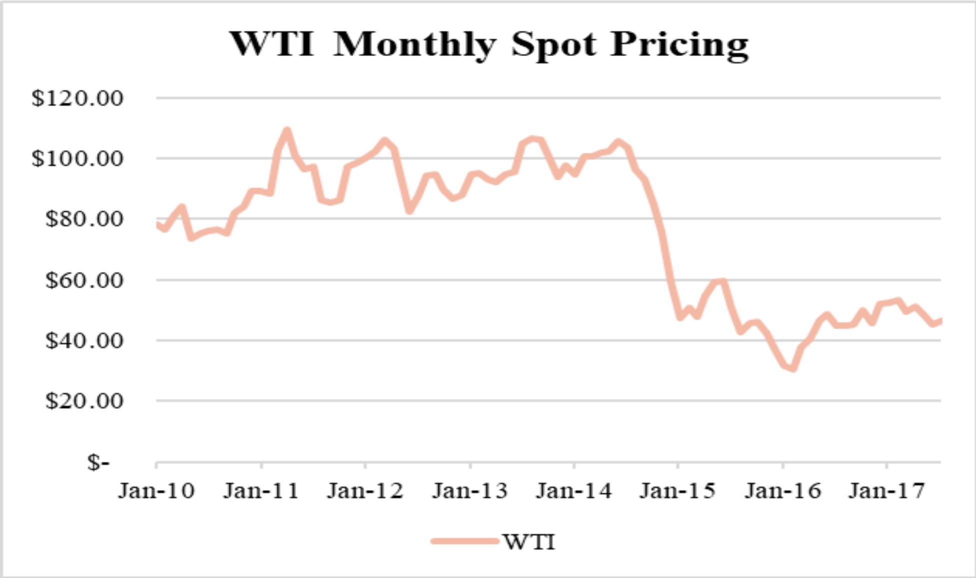
- **Ultra-Low Sulfur Diesel**



- 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