IMPACT OF COVID-19 ON CRUDE OIL DEMAND SUPPLY MANAGEMENT

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Abstract
Crude oil is a basic wellspring of energy for the world's economy. Other than being one of the most effectively exchanged products, the cost of crude oil is amazingly sensitive to geopolitical and climate occasions. Indeed, the world crude oil showcases investors' expectations of supply and demand. Crude oil costs are exceptionally unstable and profoundly impacted by buyers and investors sentiments. Global events like the mounting danger of the new coronavirus has send shockwaves all through the market. The analysis is being done for the historical price movement of Brent and WTI along with how they reacted to the major event like current pandemic. This paper will give an insight of the impact of Covid-19 on demand and supply equation in Crude oil global market. The impact of Covid-19 is so devastating that, WTI crude future contract settlement reached to a negative price of -$37.63 for the first time in the history of oil market future contract.
Keywords: Crude oil, COVID 19 pandemic, Brent, WTI.

Introduction

Marc Rich, one of the most powerful commodity trader has commented that," at any point lived, once alluded to oil as the blood that courses through the veins of the world. Crude oil is one of the most effectively traded commodities in the world, and its value influences the cost of numerous different items, including gas and gaseous petrol. However, the ripple effect of crude oil costs likewise impacts the cost of stocks, bonds, and monetary standards around the world"
There are many grades in crude oil but the most well-known traded grades are Brent North Sea Crude (regularly known as Brent Crude) and West Texas Intermediate (generally known as

WTI). Brent alludes to oil that is delivered in the Brent oil fields and different locales in the North Sea. Oil contains sulfur, and the level of sulfur in crude oil determines the amount of processing is needed to refine the oil into energy product. "Sweet crude" is a term that alludes to crude oil that has under 1% sulfur. The sulfur substance of both Brent and WTI is well under 1%, making them both "sweet." Both these verities are less thick ("lighter") than large numbers of the crude oils extracted somewhere else. As both verities are thin and contains sulfur less than 1% due to which both the verities are simpler to refine and progressively alluring to petroleum product producers. WTI is the benchmark crude for

North America. The NYMEX (New York Mercantile Exchange) division of the CME (Chicago Mercantile Exchange) records futures contracts of WTI crude oil. Conveyance for WTI crude futures happens in Cushing, Oklahoma. Brent crude oil futures trade on the Intercontinental Exchange (ICE). Since Brent crude is traded globally, the conveyance areas vary by nation. Since these two kinds of oil are utilized as benchmarks, various nations will utilize them in various manners in framing contracts. Asian nations will in general utilize a blend of Brent and WTI benchmark costs to esteem their crude oil.

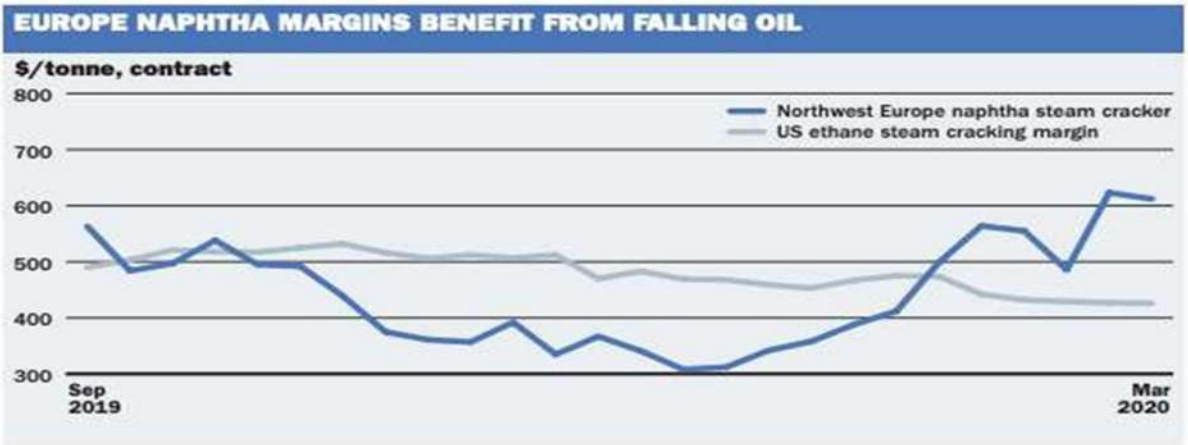
Literature Review

Crude oil started around the 1860s after the effective penetrating of the primary oil well by Colonel Edwin Drake in 1859 at Oil Creek close Titusville in West Pennsylvania. From that point forward, the significance of oil has been on the ascendency (Yergin, 1991).

The world is currently under chaos due to the COVID-19 outbreak. It has affected all walks of life, ranging from health care to food industry. The industry which has perhaps taken the hardest hit is the oil and petroleum industry. (Claudiu Albulescu et al. March 12, 2020) report that international oil prices dropped by more than 20% in a single day. The impact on the economy is so severe that Dow took a hit of 1700 points, and trading was halted minutes after the opening after a steep drop in the S&P 500 triggered a "circuit breaker," crashing oil prices (P. Harlow et al.,2020).

Oil giants Saudi Arabia and Russia are in a supply shock as they attempt to gain market share competing with each other and U.S (P. J. Griekspoor,2020).This is a dangerous situation for the economy because as soon as the social distancing measures are lifted, the world will see a sudden spike in oil prices (P. J. Griekspoor,2020).According to Kansas Independent Oil and Gas Association, the oil industry will be back on its feet in the medium term, but its the short term, that everyone is concerned about (P. J. Griekspoor,2020).Not every petroleum sector is suffering in the short term Covid-19 crisis, take for example, Europe's petrochemical sector which is believed to witness a short term gain solely because of the supply chain disruption from Asia but will take a massive hit in the longer run (Beacham, Will,2020).

Fig. Europe’s Oil price margins



Source: Beacham, Will,2020 (© Images are the intellectual property of the owners)

Reports from The Energy Information Agency (EIA) suggest that, the global importers such as China and EU will reduce demand for oil. Brent and WTI have been reported to fell by 24.59% and 30% to a price of $31.13 and $30 per barrel respectively on March 9th (Kingsly, Kelly and Henri, Kouam,2020). Developing economies will take a hard hit due to this virus in the foreseeable near future, primarily because of the currency crunches and currency fluctuations. A weaker currency shall amount to higher interest payments which is a budget constraint for most of the developing economies, (Professor Kelly Mua Kingsly (Kingsly, Kelly and Henri, Kouam,2020)).

The Organization of Petroleum Exporting Countries (OPEC), speculators and enormous oil organizations as determinants of crude oil prices. Other factors, for example, expanding request driven by monetary and industrial development, geopolitical and financial occasions, net importing oil nations, estimation of the dollar, different wellsprings of energy, climate and cataclysmic events are additionally credited to the evaluating of the crude oil (King et al., 2011). Simultaneously, (Dougher,2015), has called attention to a few different components influencing crude oil price and those are climate; exchange rates and inflation; speculation, hedging and investment; inventories and OPEC production choice. (Deng and Metz 2012) portioned the variables into three constructs, to be specific, political occasions and government decision; economic elements and natural events. Here, political occasions are the mix of fiscal approach activities, OPEC declarations, political unsteadiness and changes in demand. Economic elements have likewise thought about and those are inventory declaration, financial trading, Speculation. The last construct, natural events contains the extraordinary climate occasion that disturbs offshore production and changes in temperature. (Sharma, Singh, Sharma and Gupta, 2012) reports production, natural causes, stock and demand as the components influencing crude oil price. In concurrence with the above components (Jain, 2013), has consolidated one more factor, supply. (Dougher ,2015) recognizes that however there are a few traits affecting crude oil price in the end, it comes down to the demand and supply. Majority of the researcher has taken into account the international crude oil price benchmark such as WTI and Brent. (Gyagri, Amarfio and Marfo, 2017) considered OPEC as one of the main considerations represented crude oil price changes. (Punati and Raju, 2017) had thought of a similar result. After reviewing the existing literature, we conclude that there are various paraments which affects the crude oil prices but during this period of time when more than 180 countries are affected by Covid-19 which has resulted in reduction in demand of crude oil.

Research Question

What is the impact of Covid-19 on demand of the crude oil petroleum and how it has been affected the Crude oil April contract expiry?

Research Methodology

Methodology adopted for the research is based on secondary data. The secondary information has been analyzed and interpreted. Secondary information is often written based on past and put data into historical context. Secondary sources are often more dependable as the information is scientifically collected and analyzed with research purpose.

The researchers have used reputed secondary sources for data collection information with respect to following research topics :

- Historical data of WTI & Brent.
- Major events happened during pandemic.
- Storage Capacity of major countries
- Supply and demand theory

Supply & Demand during Covid-19

Oil is the crown gem of items that is utilized in a huge number of routes in our lives, from plastics to black-top to fuel. The oil business is an economic powerhouse and the movement of oil costs are firmly viewed by investors and traders. Changes in oil costs can send shockwaves all through the worldwide economy. Each development on the production and utilization side of oil is reflected in the cost. Oil isn't a jewel or caviar, extravagance things of restricted utility that a large portion of us can live without. Oil is abundant and in extraordinary demand, making its cost to a great extent an element of market powers. For quite a few years, the Organization of Petroleum Exporting Countries (OPEC) has been the leader on the world's trading floors, with its oil-creating part countries cooperating to decide costs by boosting or diminishing crude oil production. Everything OPEC might do is observed intently by governments, oil companies, speculators, hedgers, investors, traders, policymakers, and consumers. There are numerous factors that influence the cost of oil, yet how about we investigate how one of the most essential economic theories, supply& demand, impacts this valuable product.

The law of supply and demand expresses that if supply goes up, at that point costs will go down. On the off chance that demand goes up, at that point costs will go up. Before, supply interruptions activated by political occasions have caused oil costs to move radically; the Iranian revolution, Iran-Iraq war, Arab oil ban, and Persian Gulf wars have been particularly outstanding. The Asian financial crisis and the worldwide financial crisis of 2007-2008 additionally caused changes. The supply of crude oil is additionally dictated by outer elements, which may incorporate climate examples, exploration and production (E&P) costs, investments, and innovations. For instance, on account of advances in innovation that permit companies to remove oil from rock—purported shale oil—the United States turned into the world's biggest maker of oil in 2018 and a significant wellspring of worldwide oil supplies.

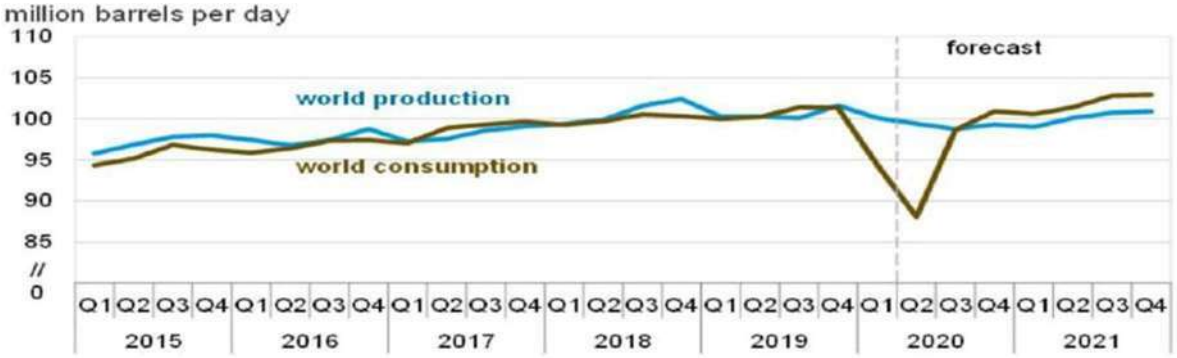
The future oil demand worldwide is heavily relied upon demand reduction in early 2020.The spread of new coronavirus (COVID-19) all over the world resulted in choking travel and more extensive financial action, as indicated by the International Energy Agency's most recent oil market forecast. Demand has reduced for the 1st time since 2008-2009 what was the time when financial crisis happened. During this pandemic almost everything has come to standstill position

As per a few assessments, about 40% of the total populace is as of now encouraged to remain at home to constrain the spread of COVID-19. The shutdown orders have added to noteworthy constrictions in service enterprises—including travel, the travel industry, and restaurants, among others—prompting a quick increment in cutbacks and joblessness. Even though governments of different nations have presented fiscal and monetary responses to pandemic conditions , the impacts of these governmental actions upgrade on oil demand could be negligible given the noteworthy limitations on movement.

The standpoint for worldwide economic growth is profoundly questionable, and the significant level of volatility in the business sectors presents extensive difficulties in estimating oil costs and the degree of worldwide oil utilization in the coming months.

The following figure shows world crude oil production and consumption along with that forecast in also provided for the 2020 remaining quarters and 2021.

Fig: World liquid fuels production and consumption balance



Source: Short- Term Energy outlook, April 2020

It is being observed that from the figure that because of the pandemic , the world consumption of the crude oil has reduced to a great extent for almost one year staring from fourth quarter of 2019 to fourth quarter of 2020 due to lockdown in most of the countries and economic activities are at halt in these countries, but during this period the crude oil production expected to remain almost same level.

Storage and Inventory

The lockdown measures has reduced the demand in the global market but supply is not falling enough to counter it, to which oil storages are continuously filling up with the crude resulting US crude to fell below $0 a barrel this happened first time in history of oil market where seller has to give the buyer money to get rid of the oil. Worldwide oil inventories fall into two fundamental classifications: commercial stockpiles and strategic reserves held for crises. Most investors center around changes in commercial inventories on the grounds that those are generally delicate to shifts in worldwide supply and demand. Oil producers and traders who would prefer not to sell crude at the present low costs can attempt to store it in storage over the world, at that point sell later on. The difficulty presently faced is that demand for extra room is soaring. U.S. commercial stockpiles are ascending at their speediest pace ever in government data returning to 1982. At 532.2 million barrels during the week finished May 1, inventories are before long expected to blow past a record of 535.5 million barrels set in March 2017. The following figure clearly indicates the largest one week increase in US crude oil stockpiles.

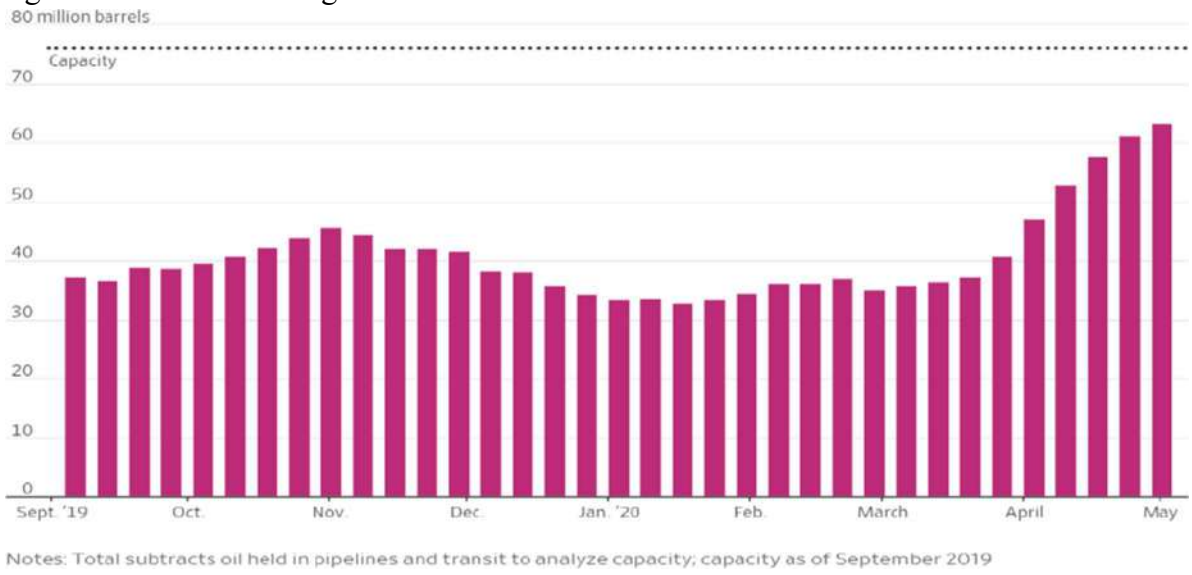
Note: Commercial stockpiles is crude held in pipelines and in transit.

Fig: US Crude Oil Stockpiles

Source: Energy Information Administration

Cushing is one of the main locations for the storage of crude for US locale. The tank ranch has around 76 million barrels of working limit, and in third week of April it was around 53 million barrels were being put away there, as per U.S. Energy Department figures. But when prices are so low and when they won't sell it at such low price which results in booking the storage.

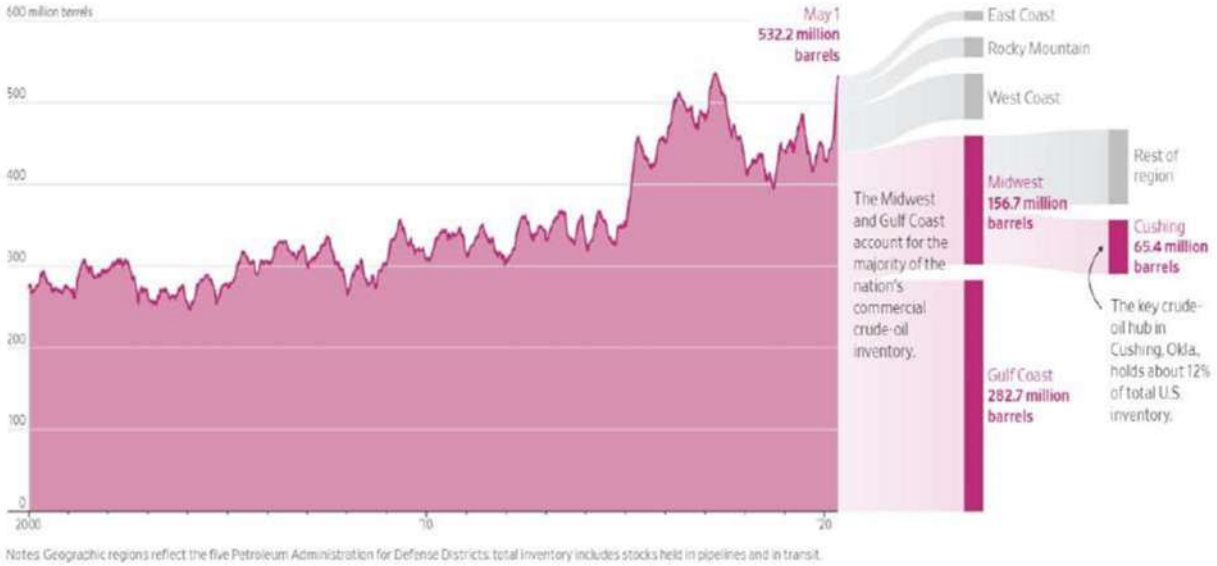
Fig: Oil Stored in Cushing



Source: Energy Information Administration

From the above figure it is seen that oil stored in Cushing has rapidly increased from March 2020. As on 24th April 2020 it is around 61.295 million barrels which use to be at 35.799 million barrels on 6th March 2020. Notwithstanding Cushing, different U.S. storage center points are situated in the Gulf Coast.

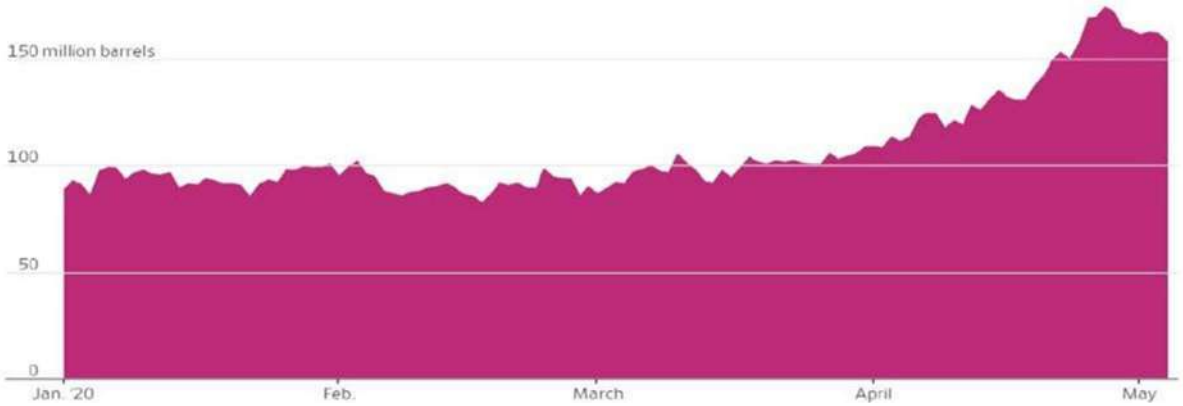
Fig: US Commercial Crude Oil Inventory



Source: Energy Information Administration

There is additionally a lot of oil drifting on sea with no place to go, as indicated by Cargo tracker Kpler. A few boats have even been swarming off the California coast. There is almost 160 million barrels of oil waiting for the buyers. The following figure shows the amount of oil at sea in world floating storage and how it has increased from the month of March,2020.

Fig: Amount of oil at sea in world floating storage



Source: Kpler

Analysis of few weekly reports of Crude

Crude Stock and Price Status for week ending Feb 28,2020

U.S. crude oil processing plant inputs found the middle value of 15.7 million barrels for each day during the week finishing February 28, 2020, which was 312,000 barrels per day less than that of the previous week's average. Refineries worked at 86.9% of their operable limit a week ago. U.S. crude oil imports arrived at the midpoint of 6.2 million barrels per day last week, up by 21,000 barrels per day from the earlier week. In the course of recent weeks, crude oil imports arrived at the midpoint of about 6.5 million barrels for each day. U.S. commercial crude oil inventories (barring those in the

Strategic Petroleum Reserve) expanded by 800 thousand barrels from the earlier week. At 444.1 million barrels, U.S. crude oil inventories are about 4% beneath from the five-year average for this duration the of year.

Table: Import of Crude Oil and Total Product by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	2/28/20	2/21/20	Difference	3/1/19	Percent Change	3/2/18	Percent Change	2/28/20	3/1/19	Percent Change
Net Imports (Incl. SPR)	-1,522	-1,294	-228	639	-338.2	4,184	-136.4	-907	554	-263.9
Imports (Incl. SPR)	8,209	7,903	306	8,911	-7.9	10,587	-22.5	8,229	8,630	-4.6
Exports[1]	9,731	9,197	534	8,272	17.6	6,403	52.0	9,137	8,077	13.1
Crude Oil Net Imports (Incl. SPR)	2,084	2,560	-476	4,198	-50.4	6,505	-68.0	2,909	3,629	-19.9
Commercial[2]	6,238	6,217	21	7,001	-10.9	8,003	-22.1	6,495	6,663	-2.5
East Coast (PADD 1)	431	453	-22	321	34.6	688	-37.3	461	537	-14.2
Midwest (PADD 2)	2,735	2,828	-93	2,770	-1.3	2,766	-1.1	2,919	2,639	10.6
Gulf Coast (PADD 3)	1,717	1,238	479	1,957	-12.3	2,800	-38.7	1,410	1,895	-25.6
Rocky Mountain (PADD 4)	439	371	68	362	21.1	378	16.1	388	327	18.8
West Coast (PADD 5)	915	1,327	-411	1,591	-42.5	1,371	-33.2	1,317	1,265	4.1
Imports by SPR	0	0	0	0	0.0	0	0.0	0	0	0.0
Imports into SPR by Others	0	0	0	0	0.0	0	0.0	0	0	0.0
Exports[3]	4,154	3,657	497	2,803	48.2	1,498	177.3	3,566	3,033	18.2
Total Products Net Imports	-3,606	-3,853	247	-3,559	--	-2,321	--	-3,816	-3,076	--
Imports	1,971	1,687	284	1,910	3.2	2,584	-23.7	1,734	1,968	-11.9
East Coast (PADD 1)	718	583	135	945	-24.0	1,110	-35.6	703	1,021	-31.1
Midwest (PADD 2)	87	72	15	89	-2.2	186	-53.2	102	108	-5.1
Gulf Coast (PADD 3)	797	761	36	482	65.5	873	-8.7	668	525	27.3
Rocky Mountain (PADD 4)	23	19	3	17	33.9	15	51.2	20	18	12.2
West Coast (PADD 5)	346	251	95	377	-8.4	393	-12.0	241	296	-18.8
Motor Gasoline	511	405	106	555	-7.8	608	-15.9	436	476	-8.5
Reformulated	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	133	51	81	11	1,146.4	6	2,281.9	81	46	78.7
Blending Components	379	354	25	544	-30.4	602	-37.2	354	431	-17.7
Fuel Ethanol	0	35	-35	0	0.0	0	0.0	9	0	0.0
Kerosene-Type Jet Fuel	184	43	141	129	43.1	274	-32.8	117	175	-33.1
Distillate Fuel Oil	125	177	-52	246	-48.9	265	-52.6	133	361	-63.2
15 ppm sulfur and Under	123	176	-53	244	-49.5	221	-44.2	131	360	-63.6
> 15 ppm to 500 ppm sulfur	0	0	0	0	0.0	0	0.0	0	0	0.0
> 500 ppm to 2000 ppm sulfur	2	1	1	1	50.0	1	150.0	2	1	63.3
> 2000 ppm sulfur	0	0	0	0	0.0	43	-100.0	0	0	0.0
Residual Fuel Oil	242	202	40	174	38.8	207	16.8	175	160	9.8
Propane/Propylene	122	111	11	153	-20.3	201	-39.3	134	176	-23.7
Other Oils	786	713	73	653	20.4	1,029	-23.6	730	620	17.8
Exports	5,577	5,540	37	5,469	2.0	4,905	13.7	5,550	5,044	10.0

Source: Energy Information Administration

Table: Refiner Input and Utilization by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	2/28/20	2/21/20	Difference	3/1/19	Percent Change	3/2/18	Percent Change	2/28/20	3/1/19	Percent Change
Refiner Inputs and Utilization										
Crude Oil Inputs	15,696	16,008	-312	15,990	-1.8	15,935	-1.5	15,983	15,840	0.9
East Coast (PADD 1)	675	693	-18	816	-17.3	930	-27.4	701	793	-11.7
Midwest (PADD 2)	3,665	3,727	-61	3,518	4.2	3,604	1.7	3,731	3,504	6.5
Gulf Coast (PADD 3)	8,249	8,470	-220	8,607	-4.2	8,387	-1.6	8,494	8,545	-0.6
Rocky Mountain (PADD 4)	601	632	-31	618	-2.8	637	-5.7	622	608	2.3
West Coast (PADD 5)	2,506	2,486	19	2,430	3.1	2,377	5.4	2,435	2,390	1.9
Gross Inputs	16,348	16,524	-176	16,285	0.4	16,283	0.4	16,557	16,114	2.8
East Coast (PADD 1)	690	709	-19	829	-16.8	935	-26.2	732	800	-8.5
Midwest (PADD 2)	3,680	3,762	-81	3,522	4.5	3,604	2.1	3,758	3,505	7.2
Gulf Coast (PADD 3)	8,719	8,795	-76	8,746	-0.3	8,581	1.6	8,896	8,663	2.7
Rocky Mountain (PADD 4)	605	633	-28	621	-2.7	640	-5.5	623	609	2.4
West Coast (PADD 5)	2,654	2,626	28	2,566	3.4	2,524	5.2	2,548	2,538	0.4
Operable Capacity[1]	18,808	18,808	0	18,604	1.1	18,513	1.6	18,808	18,604	1.1
East Coast (PADD 1)	1,224	1,224	0	1,224	0.0	1,182	3.6	1,224	1,224	0.0
Midwest (PADD 2)	4,147	4,147	0	4,094	1.3	4,013	3.3	4,147	4,094	1.3
Gulf Coast (PADD 3)	9,876	9,876	0	9,765	1.1	9,777	1.0	9,876	9,765	1.1
Rocky Mountain (PADD 4)	687	687	0	683	0.5	693	-0.9	687	683	0.5
West Coast (PADD 5)	2,875	2,875	0	2,838	1.3	2,848	1.0	2,875	2,838	1.3
Percent Utilization[2]	86.9	87.9	-0.9	87.5	--	88.0	--	88.0	86.6	--
East Coast (PADD 1)	56.4	57.9	-1.5	67.7	--	79.1	--	59.8	65.4	--
Midwest (PADD 2)	88.7	90.7	-2.0	86.0	--	89.8	--	90.6	85.6	--
Gulf Coast (PADD 3)	88.3	89.1	-0.8	89.6	--	87.8	--	90.1	88.7	--
Rocky Mountain (PADD 4)	88.0	92.1	-4.1	91.0	--	92.3	--	90.8	89.1	--
West Coast (PADD 5)	92.3	91.3	1.0	90.4	--	88.6	--	88.6	89.4	--

Source: Energy Information Administration

Table: Stocks of Crude Oil by PAD District, and Stocks of Petroleum Products, U.S. Totals (Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	2/28/20	2/21/20	Difference	3/1/19	Percent Change	3/2/18[2]	Percent Change[2]
Crude Oil	1,079.1	1,078.3	0.8	1,102.1	-2.1	1,091.4	-1.1
Commercial (Excluding SPR)[3]	444.1	443.3	0.8	452.9	-1.9	425.9	4.3
East Coast (PADD 1)	10.3	10.5	-0.3	11.1	-7.5	12.1	-14.9
Midwest (PADD 2)	124.3	126.8	-2.5	140.0	-11.2	111.4	11.6
Cushing[4]	37.2	39.1	-2.0	47.5	-21.8	28.2	31.9
Gulf Coast (PADD 3)	236.1	232.6	3.5	227.5	3.8	230.9	2.2
Rocky Mountain (PADD 4)	20.5	20.4	0.1	20.8	-1.4	21.3	-3.6
West Coast (PADD 5)	53.0	53.1	-0.1	53.6	-1.0	50.3	5.5
Alaska In-Transit[5]	4.0	4.7	-0.7	5.9	-32.9	3.2	24.4
SPR[6]	635.0	635.0	0.0	649.1	-2.2	665.5	-4.6
Total Motor Gasoline[7]	252.0	256.4	-4.3	250.7	0.5	251.0	0.4
Reformulated	0.1	0.1	0.0	0.0	68.8	0.1	8.0
Conventional	25.9	26.7	-0.8	24.5	5.7	25.1	3.1
Blending Components[7]	226.1	229.7	-3.6	226.2	0.0	225.9	0.1
Fuel Ethanol[7]	25.0	24.7	0.2	24.3	2.9	23.1	7.9
Kerosene-Type Jet Fuel	42.0	43.3	-1.4	42.0	-0.1	42.7	-1.7
Distillate Fuel Oil[7]	134.5	138.5	-4.0	136.0	-1.1	137.4	-2.2
15 ppm sulfur and Under[7]	120.3	125.0	-4.7	120.4	-0.1	119.6	0.6
> 15 ppm to 500 ppm sulfur	4.5	3.8	0.6	4.4	0.9	6.0	-26.2
> 500 ppm sulfur	9.7	9.6	0.1	11.2	-13.1	11.8	-17.5
Residual Fuel Oil	30.6	30.5	0.1	28.0	9.1	32.7	-6.4
Propane/Propylene	70.0	73.6	-3.6	51.4	36.2	41.1	70.2
Other Oils [8]	280.5	280.1	0.4	259.4	8.1	248.6	12.8
Unfinished Oils	98.0	95.3	2.6	89.7	9.3	90.2	8.6
Total Stocks (Including SPR)[4,7]	1,913.6	1,925.4	-11.9	1,893.8	1.0	1,868.0	2.4
Total Stocks (Excluding SPR)[7]	1,278.6	1,290.4	-11.9	1,244.7	2.7	1,202.6	6.3

Source: Energy Information Administration

Crude Stock and Price Status for week ending Mar 20,2020

The WTI crude oil price was around $19.48 per barrel as on March 20, 2020, which is $12.24 below last week's price and $39.39 less than that a year ago. U.S. crude oil refinery inputs found the middle value of 15.8 million barrels per day during the week finishing March 20, 2020 which was 18,000 barrels per day more than the previous week's normal. Refineries operated at 87.3% of their operable limit last week. U.S. crude oil imports found the middle value of 6.1 million barrels per day last week, somewhere near 422,000 thousand barrels per day from the previous week. In the course of recent weeks, crude oil imports found the middle value of about 6.3 million barrels per day, 7.0% less than the same four-week period last year.

U.S. commercial crude oil inventories (excluding those in the Strategic Petroleum Reserve) increased by 1.6 million barrels from the previous week. At 455.4 million barrels, U.S. crude oil inventories are about 3% beneath the five year normal for this time of year.

Table: Import of Crude Oil and Total Product by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	3/20/20	3/13/20	Difference	3/22/19	Percent Change	3/23/18	Percent Change	3/20/20	3/22/19	Percent Change
Net Imports (Incl. SPR)	-1,347	-880	-466	677	-298.9	3,823	-135.2	-1,022	972	-205.1
Imports (Incl. SPR)	8,133	8,967	-834	8,761	-7.2	10,314	-21.2	8,505	8,904	-4.5
Exports[1]	9,479	9,847	-368	8,084	17.3	6,491	46.0	9,527	7,933	20.1
Crude Oil Net Imports (Incl. SPR)	2,267	2,161	106	3,654	-38.0	6,570	-65.5	2,378	3,898	-39.0
Commercial[2]	6,117	6,539	-422	6,540	-6.5	8,148	-24.9	6,326	6,805	-7.0
East Coast (PADD 1)	322	385	-63	712	-54.9	815	-60.5	405	683	-40.8
Midwest (PADD 2)	2,656	3,077	-420	2,850	-6.8	2,670	-0.5	2,907	2,832	2.7
Gulf Coast (PADD 3)	1,615	1,475	140	1,481	9.0	2,702	-40.2	1,568	1,696	-7.5
Rocky Mountain (PADD 4)	344	448	-104	301	14.2	377	-8.7	393	330	19.0
West Coast (PADD 5)	1,180	1,155	25	1,195	-1.3	1,585	-25.6	1,054	1,264	-16.6
Imports by SPR	0	0	0	0	0.0	0	0.0	0	0	0.0
Imports into SPR by Others	0	0	0	0	0.0	0	0.0	0	0	0.0
Exports[3]	3,850	4,378	-528	2,886	33.4	1,578	144.0	3,948	2,907	35.8
Total Products Net Imports	-3,613	-3,041	-572	-2,977	--	-2,747	--	-3,400	-2,926	--
Imports	2,016	2,428	-412	2,221	-9.2	2,166	-6.9	2,178	2,100	3.8
East Coast (PADD 1)	955	956	-1	960	-0.6	1,400	-31.8	948	981	-3.4
Midwest (PADD 2)	107	71	36	159	-32.6	116	-7.5	96	132	-26.8
Gulf Coast (PADD 3)	581	992	-411	672	-13.6	471	23.2	773	545	41.9
Rocky Mountain (PADD 4)	26	22	4	25	0.7	31	-16.0	23	22	8.9
West Coast (PADD 5)	348	388	-41	404	-13.9	148	135.0	337	420	-19.8
Motor Gasoline	834	688	146	688	21.3	685	21.7	686	652	5.2
Reformulated	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	192	109	83	29	556.5	8	2,189.8	142	50	182.0
Blending Components	642	579	63	658	-2.5	677	-5.2	543	602	-9.7
Fuel Ethanol	0	0	0	0	0.0	0	0.0	2	0	0.0
Kerosene-Type Jet Fuel	127	158	-31	209	-39.0	147	-13.5	162	216	-25.1
Distillate Fuel Oil	115	263	-148	195	-40.9	150	-23.0	203	195	4.0
15 ppm sulfur and Under	115	263	-148	192	-40.0	129	-10.5	202	186	9.0
> 15 ppm to 500 ppm sulfur	0	0	0	0	-100.0	0	0.0	0	0	-100.0
> 500 ppm to 2000 ppm sulfur	0	0	0	3	-100.0	21	-100.0	1	9	-94.2
> 2000 ppm sulfur	0	0	0	0	0.0	0	0.0	0	0	0.0
Residual Fuel Oil	160	251	-91	183	-12.3	280	-42.6	194	153	26.4
Propane/Propylene	149	123	27	201	-25.8	172	-13.3	133	183	-27.5
Other Oils	630	945	-316	745	-15.5	732	-14.0	799	700	14.2
Exports	5,629	5,469	160	5,198	8.3	4,913	14.6	5,579	5,026	11.0

Source: Energy Information Administration

Table: Refiner Input and Utilization by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	3/20/20	3/13/20	Difference	3/22/19	Percent Change	3/23/18	Percent Change	3/20/20	3/22/19	Percent Change
Refiner Inputs and Utilization										
Crude Oil Inputs	15,838	15,820	18	15,831	0.0	16,795	-5.7	15,764	16,010	-1.5
East Coast (PADD 1)	663	646	17	943	-29.7	908	-26.9	668	883	-24.4
Midwest (PADD 2)	3,635	3,529	107	3,557	2.2	3,726	-2.4	3,610	3,545	1.8
Gulf Coast (PADD 3)	8,653	8,783	-130	8,354	3.6	8,939	-3.2	8,532	8,559	-0.3
Rocky Mountain (PADD 4)	554	592	-38	602	-7.9	629	-11.9	589	612	-3.8
West Coast (PADD 5)	2,332	2,270	62	2,375	-1.8	2,593	-10.1	2,365	2,409	-1.8
Gross Inputs	16,417	16,243	174	16,114	1.9	17,129	-4.2	16,314	16,306	0.0
East Coast (PADD 1)	710	698	11	955	-25.7	911	-22.1	704	902	-21.9
Midwest (PADD 2)	3,654	3,544	110	3,560	2.6	3,728	-2.0	3,629	3,551	2.2
Gulf Coast (PADD 3)	8,982	9,040	-57	8,492	5.8	9,134	-1.7	8,898	8,691	2.4
Rocky Mountain (PADD 4)	555	594	-38	601	-7.5	625	-11.1	589	613	-3.9
West Coast (PADD 5)	2,515	2,367	148	2,507	0.3	2,732	-7.9	2,494	2,549	-2.2
Operable Capacity[1]	18,808	18,808	0	18,604	1.1	18,550	1.4	18,808	18,604	1.1
East Coast (PADD 1)	1,224	1,224	0	1,224	0.0	1,182	3.6	1,224	1,224	0.0
Midwest (PADD 2)	4,147	4,147	0	4,094	1.3	4,013	3.3	4,147	4,094	1.3
Gulf Coast (PADD 3)	9,876	9,876	0	9,765	1.1	9,815	0.6	9,876	9,765	1.1
Rocky Mountain (PADD 4)	687	687	0	683	0.5	693	-0.9	687	683	0.5
West Coast (PADD 5)	2,875	2,875	0	2,838	1.3	2,848	1.0	2,875	2,838	1.3
Percent Utilization[2]	87.3	86.4	0.9	86.6	--	92.3	--	86.7	87.6	--
East Coast (PADD 1)	58.0	57.1	0.9	78.0	--	77.0	--	57.5	73.7	--
Midwest (PADD 2)	88.1	85.5	2.7	87.0	--	92.9	--	87.5	86.7	--
Gulf Coast (PADD 3)	91.0	91.5	-0.6	87.0	--	93.1	--	90.1	89.0	--
Rocky Mountain (PADD 4)	80.9	86.4	-5.5	88.0	--	90.2	--	85.8	89.8	--
West Coast (PADD 5)	87.5	82.3	5.1	88.3	--	95.9	--	86.7	89.8	--

Source: Energy Information Administration

Table: Stocks of Crude Oil by PAD District, and Stocks of Petroleum Products, U.S. Totals (Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	3/20/20	3/13/20	Difference	3/22/19	Percent Change	3/23/18[2]	Percent Change[2]
Crude Oil	1,090.3	1,088.7	1.6	1,091.4	-0.1	1,095.4	-0.5
Commercial (Excluding SPR)[3]	455.4	453.7	1.6	442.3	3.0	429.9	5.9
East Coast (PADD 1)	11.3	11.1	0.2	14.4	-21.0	13.0	-12.9
Midwest (PADD 2)	129.7	127.4	2.3	138.0	-6.0	115.2	12.6
Cushing[4]	39.3	38.4	0.9	46.9	-16.2	31.2	25.9
Gulf Coast (PADD 3)	241.3	243.9	-2.6	218.1	10.6	227.8	5.9
Rocky Mountain (PADD 4)	21.3	20.6	0.7	21.9	-2.8	22.7	-6.5
West Coast (PADD 5)	51.7	50.7	1.0	50.0	3.5	51.2	1.0
Alaska In-Transit[5]	4.4	4.8	-0.4	5.2	-15.4	3.8	17.7
SPR[6]	635.0	635.0	0.0	649.1	-2.2	665.5	-4.6
Total Motor Gasoline[7]	239.3	240.8	-1.5	238.6	0.3	239.6	-0.1
Reformulated	0.0	0.0	0.0	0.1	-2.0	0.0	2.1
Conventional	20.0	23.7	-3.7	21.4	-6.3	24.5	-18.4
Blending Components[7]	219.2	217.1	2.1	217.2	0.9	215.0	2.0
Fuel Ethanol[7]	24.1	24.6	-0.5	24.4	-1.3	22.8	5.9
Kerosene-Type Jet Fuel	39.6	40.7	-1.1	42.0	-5.8	41.1	-3.8
Distillate Fuel Oil[7]	124.4	125.1	-0.7	130.2	-4.4	129.0	-3.5
15 ppm sulfur and Under[7]	110.3	112.2	-1.9	115.8	-4.7	114.4	-3.6
> 15 ppm to 500 ppm sulfur	4.5	3.7	0.8	3.9	12.9	4.2	5.2
> 500 ppm sulfur	9.7	9.3	0.4	10.5	-7.6	10.3	-6.2
Residual Fuel Oil	34.4	32.7	1.7	30.1	14.3	34.2	0.4
Propane/Propylene	64.9	66.7	-1.8	51.6	25.7	35.6	82.3
Other Oils[8]	283.7	278.9	4.7	262.7	8.0	257.3	10.3
Unfinished Oils	99.6	97.0	2.6	92.0	8.2	96.3	3.4
Total Stocks (Including SPR)[4,7]	1,900.8	1,898.3	2.4	1,871.0	1.6	1,855.0	2.5
Total Stocks (Excluding SPR)[7]	1,265.8	1,263.3	2.4	1,221.9	3.6	1,189.5	6.4

Source: Energy Information Administration

Crude Stock and Price Status for week ending April 24,2020

The WTI crude oil price was around $15.99 per barrel as on April 24, 2020, which is $2.32 below last week's price and $47.30 less than that of year ago. U.S. crude oil refinery inputs arrived at the midpoint of 12.8 million barrels per day during the week finishing April 24, 2020 which was 305,000 barrels per day more than the previous week's normal. Refineries operated at 69.6% of their operable limit last week. U.S. crude oil imports arrived at the midpoint of 5.3 million barrels per day last week, up by 365,000 barrels per day from the previous week. In the course of recent weeks, crude oil imports arrived at the midpoint of about 5.4 million barrels per day, 19.7% less than the same four-week period last year. U.S. commercial crude oil inventories (excluding those in the Strategic Petroleum Reserve) increased by 9.0 million barrels from the previous week. At 527.6 million barrels, U.S. crude oil inventories are about 10% over five year normal for this time of year.

Table: Import of Crude Oil and Total Product by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	4/24/20	4/17/20	Difference	4/26/19	Percent Change	4/27/18	Percent Change	4/24/20	4/26/19	Percent Change
Net Imports (Incl. SPR)	-1,566	-1,582	16	1,901	-182.4	3,621	-143.3	-1,462	1,438	-201.7
Imports (Incl. SPR)	7,110	6,446	664	9,668	-26.5	10,779	-34.0	7,250	9,249	-21.6
Exports[1]	8,676	8,028	648	7,767	11.7	7,158	21.2	8,712	7,815	11.5
Crude Oil Net Imports (Incl. SPR)	2,000	2,047	-47	4,803	-58.4	6,401	-68.8	2,333	4,278	-45.5
Commercial[2]	5,302	4,937	365	7,414	-28.5	8,549	-38.0	5,448	6,789	-19.7
East Coast (PADD 1)	220	246	-27	1,074	-79.5	824	-73.3	270	801	-66.3
Midwest (PADD 2)	2,513	2,618	-104	2,851	-11.8	3,091	-18.7	2,578	2,834	-9.0
Gulf Coast (PADD 3)	1,726	970	756	2,133	-19.1	2,840	-39.2	1,525	1,897	-19.6
Rocky Mountain (PADD 4)	344	376	-33	317	8.5	310	10.9	358	347	3.3
West Coast (PADD 5)	500	727	-227	1,040	-51.9	1,485	-66.3	717	910	-21.2
Imports by SPR	0	0	0	0	0.0	0	0.0	0	0	0.0
Imports into SPR by Others	0	0	0	0	0.0	0	0.0	0	0	0.0
Exports[3]	3,302	2,890	412	2,611	26.5	2,148	53.7	3,115	2,511	24.1
Total Products Net Imports	-3,567	-3,629	63	-2,902	--	-2,780	--	-3,795	-2,840	--
Imports	1,807	1,509	299	2,254	-19.8	2,230	-18.9	1,802	2,464	-26.9
East Coast (PADD 1)	565	745	-180	836	-32.5	893	-36.7	704	1,030	-31.6
Midwest (PADD 2)	49	106	-57	102	-51.7	98	-49.6	74	119	-37.8
Gulf Coast (PADD 3)	839	382	457	796	5.4	608	37.9	695	822	-15.4
Rocky Mountain (PADD 4)	20	13	7	31	-35.7	8	147.4	19	21	-7.3
West Coast (PADD 5)	335	263	72	488	-31.5	622	-46.2	309	473	-34.5
Motor Gasoline	228	368	-140	770	-70.4	923	-75.3	373	845	-55.9
Reformulated	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	101	102	0	81	25.9	10	927.0	80	118	-32.5
Blending Components	127	267	-140	689	-81.6	913	-86.1	293	727	-59.7
Fuel Ethanol	0	0	0	0	0.0	0	0.0	0	0	0.0
Kerosene-Type Jet Fuel	167	153	14	159	4.9	205	-18.8	152	214	-29.1
Distillate Fuel Oil	235	106	130	63	276.0	76	210.5	210	136	54.3
15 ppm sulfur and Under	235	106	130	60	291.4	69	243.5	210	133	58.0
> 15 ppm to 500 ppm sulfur	0	0	0	0	0.0	0	0.0	0	1	-100.0
> 500 ppm to 2000 ppm sulfur	0	0	0	0	-100.0	7	-100.0	0	1	-100.0
> 2000 ppm sulfur	0	0	0	2	-100.0	0	0.0	0	1	-100.0
Residual Fuel Oil	122	118	4	57	113.5	61	100.6	184	194	-5.3
Propane/Propylene	77	130	-52	114	-32.0	127	-39.3	101	137	-26.2
Other Oils	978	635	343	1,092	-10.4	838	16.8	783	938	-16.6
Exports	5,374	5,138	236	5,156	4.2	5,010	7.3	5,597	5,304	5.5

Source: Energy Information Administration

Table: Refiner Input and Utilization by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	4/24/20	4/17/20	Difference	4/26/19	Percent Change	4/27/18	Percent Change	4/24/20	4/26/19	Percent Change
Refiner Inputs and Utilization										
Crude Oil Inputs	12,761	12,456	305	16,446	-22.4	16,561	-22.9	12,879	16,302	-21.0
East Coast (PADD 1)	502	533	-30	1,106	-54.6	1,144	-56.1	510	1,026	-50.3
Midwest (PADD 2)	3,011	2,717	294	3,551	-15.2	3,916	-23.1	2,879	3,687	-21.9
Gulf Coast (PADD 3)	7,183	7,111	72	8,912	-19.4	8,681	-17.3	7,314	8,796	-16.8
Rocky Mountain (PADD 4)	441	443	-2	600	-26.4	581	-24.1	450	578	-22.1
West Coast (PADD 5)	1,624	1,652	-28	2,277	-28.7	2,239	-27.5	1,726	2,214	-22.1
Gross Inputs	13,207	12,825	383	16,741	-21.1	16,912	-21.9	13,340	16,626	-19.8
East Coast (PADD 1)	572	536	35	1,132	-49.5	1,158	-50.6	540	1,044	-48.3
Midwest (PADD 2)	3,021	2,727	294	3,555	-15.0	3,913	-22.8	2,891	3,691	-21.7
Gulf Coast (PADD 3)	7,455	7,364	91	9,036	-17.5	8,874	-16.0	7,622	8,951	-14.9
Rocky Mountain (PADD 4)	447	449	-2	598	-25.3	566	-21.1	457	577	-20.8
West Coast (PADD 5)	1,713	1,748	-35	2,419	-29.2	2,401	-28.6	1,830	2,363	-22.5
Operable Capacity[1]	18,974	18,974	0	18,762	1.1	18,567	2.2	18,932	18,762	0.9
East Coast (PADD 1)	1,224	1,224	0	1,224	0.0	1,224	0.0	1,224	1,224	0.0
Midwest (PADD 2)	4,196	4,196	0	4,141	1.3	4,071	3.1	4,184	4,141	1.0
Gulf Coast (PADD 3)	9,983	9,983	0	9,835	1.5	9,752	2.4	9,956	9,835	1.2
Rocky Mountain (PADD 4)	696	696	0	687	1.3	683	1.9	694	687	1.0
West Coast (PADD 5)	2,875	2,875	0	2,875	0.0	2,838	1.3	2,875	2,875	0.0
Percent Utilization[2]	69.6	67.6	2.0	89.2	--	91.1	--	70.5	88.6	--
East Coast (PADD 1)	46.7	43.8	2.9	92.5	--	94.6	--	44.1	85.3	--
Midwest (PADD 2)	72.0	65.0	7.0	85.9	--	96.1	--	69.1	89.1	--
Gulf Coast (PADD 3)	74.7	73.8	0.9	91.9	--	91.0	--	76.6	91.0	--
Rocky Mountain (PADD 4)	64.2	64.6	-0.3	87.0	--	82.9	--	65.9	84.0	--
West Coast (PADD 5)	59.6	60.8	-1.2	84.2	--	84.6	--	63.7	82.2	--

Source: Energy Information Administration

Table: Stocks of Crude Oil by PAD District, and Stocks of Petroleum Products, U.S. Totals (Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	4/24/20	4/17/20	Difference	4/26/19	Percent Change	4/27/18[2]	Percent Change[2]
Crude Oil	1,163.7	1,153.6	10.1	1,119.2	4.0	1,100.2	5.8
Commercial (Excluding SPR)[3]	527.6	518.6	9.0	470.6	12.1	436.0	21.0
East Coast (PADD 1)	11.1	11.6	-0.4	14.4	-22.7	14.8	-24.8
Midwest (PADD 2)	155.6	152.2	3.3	135.6	14.8	123.1	26.4
Cushing[4]	63.4	59.7	3.6	45.2	40.3	35.8	77.1
Gulf Coast (PADD 3)	280.4	273.2	7.1	244.6	14.6	222.6	25.9
Rocky Mountain (PADD 4)	24.4	24.6	-0.3	24.0	1.7	22.5	8.1
West Coast (PADD 5)	56.2	57.0	-0.7	52.0	8.0	52.9	6.2
Alaska In-Transit[5]	5.9	3.9	2.0	4.2	42.2	5.2	14.4
SPR[6]	636.1	635.0	1.2	648.6	-1.9	664.3	-4.2
Total Motor Gasoline[7]	259.6	263.2	-3.7	226.7	14.5	238.0	9.1
Reformulated	0.0	0.1	0.0	0.1	-9.8	0.0	9.5
Conventional	24.5	24.0	0.5	21.3	15.0	23.7	3.2
Blending Components[7]	235.1	239.2	-4.2	205.4	14.4	214.2	9.7
Fuel Ethanol[7]	26.3	27.7	-1.4	22.7	16.0	22.1	18.9
Kerosene-Type Jet Fuel	39.7	40.8	-1.1	40.9	-3.0	39.8	-0.1
Distillate Fuel Oil[7]	142.0	136.9	5.1	125.7	12.9	118.8	19.5
15 ppm sulfur and Under[7]	128.7	123.2	5.5	110.7	16.3	104.7	22.9
> 15 ppm to 500 ppm sulfur	4.5	4.0	0.4	4.3	4.9	4.7	-4.1
> 500 ppm sulfur	8.8	9.7	-0.9	10.8	-18.7	9.5	-7.2
Residual Fuel Oil	35.3	35.7	-0.4	29.8	18.4	32.9	7.4
Propane/Propylene[8]	56.8	57.4	-0.6	53.3	6.7	33.6	69.2
Other Oils[9]	290.1	286.7	3.4	281.9	2.9	263.8	10.0
Unfinished Oils	93.3	92.5	0.8	95.7	-2.5	91.6	1.8
Total Stocks (Including SPR)[4,7,8]	2,013.6	2,002.1	11.6	1,900.2	6.0	1,849.2	8.9
Total Stocks (Excluding SPR)[7,8]	1,377.5	1,367.1	10.4	1,251.7	10.1	1,185.0	16.3

Source: Energy Information Administration

Crude Stock and Price Status for week ending May 1,2020

The WTI crude oil price was around $19.72 per barrel as on May 1, 2020, which is $3.73 above last week's price but $42.26 less than a year ago. U.S. crude oil refinery inputs arrived at the midpoint of 13.0 million barrels per day during the week closure May 1, 2020 which was 216,000 barrels per day more than the previous week's normal. Refineries operated at 70.5% of their operable limit last week. U.S. crude oil imports found the middle value of 5.7 million barrels per day last week, up by 410,000 barrels per day from the previous week. In the course of recent weeks, crude oil imports arrived at the midpoint of about 5.4 million barrels per day, 20.6% less than the same four-week period last year. U.S. commercial crude oil inventories (excluding those in the Strategic Petroleum Reserve) increased by 4.6 million barrels from the previous week. At 532.2 million barrels, U.S. crude oil inventories are about 12% over the five year normal for this time of year.

Table: Import of Crude Oil and Total Product by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	5/1/20	4/24/20	Difference	5/3/19	Percent Change	5/4/18	Percent Change	5/1/20	5/3/19	Percent Change
Net Imports (Incl. SPR)	-398	-1,566	1,168	1,679	-123.7	3,163	-112.6	-1,457	1,585	-191.9
Imports (Incl. SPR)	7,476	7,110	366	9,227	-19.0	9,855	-24.1	7,134	9,396	-24.1
Exports[1]	7,874	8,676	-802	7,548	4.3	6,692	17.7	8,590	7,815	9.9
Crude Oil Net Imports (Incl. SPR)	2,166	2,000	166	4,371	-50.4	5,446	-60.2	2,115	4,308	-50.9
Commercial[2]	5,712	5,302	410	6,693	-14.7	7,323	-22.0	5,408	6,812	-20.6
East Coast (PADD 1)	486	220	266	529	-8.2	1,036	-53.1	339	794	-57.4
Midwest (PADD 2)	2,578	2,513	65	2,851	-9.6	2,890	-10.8	2,570	2,829	-9.2
Gulf Coast (PADD 3)	1,474	1,726	-252	1,765	-16.5	2,097	-29.7	1,398	1,802	-22.4
Rocky Mountain (PADD 4)	300	344	-44	417	-28.1	304	-1.4	337	372	-9.5
West Coast (PADD 5)	875	500	375	1,131	-22.6	996	-12.1	765	1,014	-24.6
Imports by SPR	0	0	0	0	0.0	0	0.0	0	0	0.0
Imports into SPR by Others	0	0	0	0	0.0	0	0.0	0	0	0.0
Exports[3]	3,546	3,302	244	2,322	52.7	1,877	88.9	3,294	2,504	31.5
Total Products Net Imports	-2,565	-3,567	1,002	-2,692	--	-2,283	--	-3,571	-2,723	--
Imports	1,763	1,807	-44	2,534	-30.4	2,532	-30.4	1,726	2,588	-33.3
East Coast (PADD 1)	837	565	272	1,148	-27.1	1,251	-33.1	728	1,049	-30.7
Midwest (PADD 2)	120	49	70	117	1.9	102	17.7	84	110	-23.3
Gulf Coast (PADD 3)	610	839	-229	649	-6.0	902	-32.4	625	851	-26.6
Rocky Mountain (PADD 4)	25	20	5	16	53.9	7	252.6	21	20	6.7
West Coast (PADD 5)	172	335	-163	603	-71.5	270	-36.3	267	557	-52.0
Motor Gasoline	368	228	139	1,114	-67.0	803	-54.2	341	945	-63.9
Reformulated	0	0	0	0	0.0	0	0.0	0	0	0.0
Conventional	195	101	94	161	21.8	101	93.8	116	133	-12.6
Blending Components	172	127	45	954	-82.0	702	-75.5	226	812	-72.2
Fuel Ethanol	0	0	0	0	0.0	0	0.0	0	0	0.0
Kerosene-Type Jet Fuel	192	167	25	105	83.0	74	158.4	151	198	-24.0
Distillate Fuel Oil	336	235	101	111	201.9	128	162.5	247	139	77.9
15 ppm sulfur and Under	336	235	101	89	277.5	70	379.2	247	131	88.4
> 15 ppm to 500 ppm sulfur	0	0	0	0	0.0	0	0.0	0	1	-100.0
> 500 ppm to 2000 ppm sulfur	0	0	0	20	-100.0	58	-100.0	0	6	-100.0
> 2000 ppm sulfur	0	0	0	2	-100.0	0	0.0	0	2	-100.0
Residual Fuel Oil	214	122	92	22	877.4	369	-42.0	187	145	28.8
Propane/Propylene	162	77	85	115	41.1	138	17.6	116	124	-6.4
Other Oils	493	978	-486	1,067	-53.8	1,020	-51.7	683	1,037	-34.1
Exports	4,328	5,374	-1,046	5,226	-17.2	4,815	-10.1	5,297	5,312	-0.3

Source: Energy Information Administration

Table: Refiner Input and Utilization by PAD District (Thousand Barrel per Day)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago		Four-Week Averages		
	5/1/20	4/24/20	Difference	5/3/19	Percent Change	5/4/18	Percent Change	5/1/20	5/3/19	Percent Change
Refiner Inputs and Utilization										
Crude Oil Inputs	12,976	12,761	216	16,405	-20.9	16,486	-21.3	12,714	16,378	-22.4
East Coast (PADD 1)	595	502	92	1,023	-41.9	1,153	-48.4	521	1,039	-49.9
Midwest (PADD 2)	3,076	3,011	65	3,634	-15.4	3,864	-20.4	2,882	3,703	-22.2
Gulf Coast (PADD 3)	7,231	7,183	48	8,894	-18.7	8,597	-15.9	7,207	8,839	-18.5
Rocky Mountain (PADD 4)	454	441	12	573	-20.8	567	-20.0	441	578	-23.7
West Coast (PADD 5)	1,622	1,624	-2	2,282	-28.9	2,305	-29.7	1,663	2,220	-25.1
Gross Inputs	13,382	13,207	175	16,687	-19.8	16,792	-20.3	13,132	16,696	-21.3
East Coast (PADD 1)	620	572	48	1,027	-39.6	1,161	-46.6	553	1,056	-47.6
Midwest (PADD 2)	3,085	3,021	65	3,629	-15.0	3,864	-20.2	2,893	3,703	-21.9
Gulf Coast (PADD 3)	7,496	7,455	41	9,060	-17.3	8,745	-14.3	7,473	9,004	-17.0
Rocky Mountain (PADD 4)	468	447	21	572	-18.2	557	-15.9	451	577	-21.7
West Coast (PADD 5)	1,713	1,713	0	2,399	-28.6	2,465	-30.5	1,762	2,357	-25.2
Operable Capacity[1]	18,974	18,974	0	18,762	1.1	18,567	2.2	18,974	18,762	1.1
East Coast (PADD 1)	1,224	1,224	0	1,224	0.0	1,224	0.0	1,224	1,224	0.0
Midwest (PADD 2)	4,196	4,196	0	4,141	1.3	4,071	3.1	4,196	4,141	1.3
Gulf Coast (PADD 3)	9,983	9,983	0	9,835	1.5	9,752	2.4	9,983	9,835	1.5
Rocky Mountain (PADD 4)	696	696	0	687	1.3	683	1.9	696	687	1.3
West Coast (PADD 5)	2,875	2,875	0	2,875	0.0	2,838	1.3	2,875	2,875	0.0
Percent Utilization[2]	70.5	69.6	0.9	88.9	--	90.4	--	69.2	89.0	--
East Coast (PADD 1)	50.7	46.7	4.0	83.9	--	94.9	--	45.2	86.3	--
Midwest (PADD 2)	73.5	72.0	1.5	87.6	--	94.9	--	69.0	89.4	--
Gulf Coast (PADD 3)	75.1	74.7	0.4	92.1	--	89.7	--	74.9	91.5	--
Rocky Mountain (PADD 4)	67.3	64.2	3.1	83.3	--	81.5	--	64.8	83.9	--
West Coast (PADD 5)	59.6	59.6	0.0	83.5	--	86.9	--	61.3	82.0	--

Source: Energy Information Administration

Table: Stocks of Crude Oil by PAD District, and Stocks of Petroleum Products, U.S. Totals (Million Barrels)

Product / Region	Current Week	Last Week		Year Ago		2 Years Ago	
	5/1/20	4/24/20	Difference	5/3/19	Percent Change	5/4/18[2]	Percent Change[2]
Crude Oil	1,170.1	1,163.7	6.3	1,114.3	5.0	1,097.3	6.6
Commercial (Excluding SPR)[3]	532.2	527.6	4.6	466.6	14.1	433.8	22.7
East Coast (PADD 1)	12.1	11.1	0.9	13.1	-7.7	14.7	-17.9
Midwest (PADD 2)	156.7	155.6	1.1	137.2	14.2	124.6	25.8
Cushing[4]	65.4	63.4	2.1	46.0	42.3	37.2	76.1
Gulf Coast (PADD 3)	282.7	280.4	2.3	239.8	17.9	220.1	28.4
Rocky Mountain (PADD 4)	24.7	24.4	0.4	23.9	3.4	23.1	7.0
West Coast (PADD 5)	56.1	56.2	-0.1	52.5	6.7	51.3	9.3
Alaska In-Transit[5]	3.8	5.9	-2.1	3.3	14.3	3.9	-3.8
SPR[6]	637.8	636.1	1.7	647.7	-1.5	663.6	-3.9
Total Motor Gasoline[7]	256.4	259.6	-3.2	226.1	13.4	235.8	8.7
Reformulated	0.0	0.0	0.0	0.0	16.7	0.0	40.0
Conventional	22.4	24.5	-2.1	20.8	7.8	21.8	3.0
Blending Components[7]	234.0	235.1	-1.1	205.3	13.9	214.0	9.3
Fuel Ethanol[7]	25.6	26.3	-0.7	22.5	14.0	22.0	16.6
Kerosene-Type Jet Fuel	39.7	39.7	0.0	39.7	0.1	40.8	-2.5
Distillate Fuel Oil[7]	151.5	142.0	9.5	125.6	20.6	115.0	31.7
15 ppm sulfur and Under[7]	137.7	128.7	8.9	110.3	24.8	101.9	35.1
> 15 ppm to 500 ppm sulfur	4.4	4.5	0.0	4.3	4.6	3.8	15.6
> 500 ppm sulfur	9.4	8.8	0.6	11.1	-15.1	9.3	1.3
Residual Fuel Oil	37.2	35.3	1.9	28.0	33.1	32.9	13.0
Propane/Propylene[8]	59.4	56.8	2.5	54.2	9.6	35.7	66.1
Other Oils[9]	293.4	290.1	3.2	287.2	2.1	267.3	9.8
Unfinished Oils	91.9	93.3	-1.3	98.5	-6.6	93.5	-1.6
Total Stocks (Including SPR)[4,7,8]	2,033.3	2,013.6	19.6	1,897.6	7.2	1,846.8	10.1
Total Stocks (Excluding SPR)[7,8]	1,395.4	1,377.5	17.9	1,249.9	11.6	1,183.2	17.9

Source: Energy Information Administration

Pandemic Impact on April Crude Oil Expiry

The U.S. benchmark oil-futures contract settled at a negative price of -$37.63 at the first time. The cost of a barrel of West Texas Intermediate crude to be delivered in May, which was shut at $18.27 a barrel on Friday,17th April 2020, settled at negative $37.63 on Monday 20th April. That viably implies that seller must pay the buyers to take barrels from their hand. Yet, the fall was increasingly serious for the front-month May contract, which made history by diving into negative domain in afternoon, a first in market data going back to 1983. In the most effectively traded U.S. futures contract, crude for June delivery lost 18% on Monday twentieth April to close at around $20.43, while oil due to be conveyed to the main U.S. exchanging center point Oklahoma in November finished at around $31.66. At the end of March there were around 109 million barrels of oil stowed adrift, as indicated by Kpler. By Friday 17th April it was up to 141 million barrels. The Covid-19 had a really negative impact on the demand of the crude oil which has resulted in negative sentiments not just in crude oil market but in stock market as well. The pandemic has resulted in negative settlement of April futures contract for the May delivery which has occurred for the first time.

Other Major events happened during pandemic Saudi Arabia and Russia- Oil Price War 2020

Worldwide oil demand was down 2.5 million barrels per day in the first quarter of 2020, with China representing 1.8 million barrels of that drop, as per International Energy Agency. The IEA cut its oil-demand estimates, saying worldwide demand will fall this year for the first time since 2009. The office minimized its demand forecast for 2020 to a compression of 90,000 barrels per day from a gauge of 825,000 barrels per day of growth last month. On 8th March 2020, the Saudi energy ministry revealed

to Aramco officials that as opposed to cutting production, they should siphon more oil and lower the cost. Saudi Arabia spread the news all through the market. Oil costs recorded their greatest one-day crash since the first Gulf War in 1991 on 9th March 2020; Monday, tumbling as traders wager that a conflict between oil mammoths Saudi Arabia and Russia could flood a world previously tottered by the coronavirus flare-up with an overabundance of crude.

On 10 March, Saudi Arabia reported that it would increase its production from 9.7 million barrels for each day to 12.3 million, while Russia wanted to expand oil production by 300,000 barrels for every day. At that point, Aramco's transient oil creation limit was around 12 million bpd (continued at 10.5 million bpd), and the firm has been told to expand this to 13 million. As demand kept on falling significantly, oil costs went down further, arriving at a 17-year low on 18 March where Brent was valued at $24.72 a barrel and WTI at $20.48 a barrel. Oil costs stayed depressed till the end of March.

Oil deal

Oil costs are down 40% since early March, when Saudi Arabia and Russia neglected to concede to a crisis intend to address the supply excess. After the disagreement, Saudi Arabia set out on a forceful price war trying to snatch piece of the pie from Russia, a key rival. U.S. has additionally cautioned it would fight back if Saudi Arabia didn't turn off the spigots. On April 4, Mr. Trump took steps to impose tariffs on crude imports on the off chance that he needs to secure U.S. energy laborers from an oil flood from producers such as Saudi Arabia. President Trump has been pursuing a strategic triumph, and he got one this end of the week (12th April 2020) when he expedited an deal between the Organization of the Petroleum Exporting Countries (OPEC) and Russia to restrict their production that may likewise constrain the bloodbath in the U.S. shale patch.

OPEC and Russia have consented to reduce their production by 9.7 million barrels per day— about 10% of worldwide output—in May and June in the midst of a lofty falloff in demand due to the coronavirus that is required to surpass 20% of last year's consumption. As per agreement, 23 countries to retain a 9.7 million barrels per day of oil from worldwide markets. The arrangement, intended to address a mounting oil overabundance coming about because of the pandemic's disintegration of demand, tries to retain a record measure of rough from business sectors—over 13% of world production. The U.S., Canada, Brazil and the other Group of 20 driving economies that aren't a part of the OPEC coalition will keep down 4 to 5 million barrels every day, OPEC said in a draft public statement.

Post Pandemic Crude oil future Globally

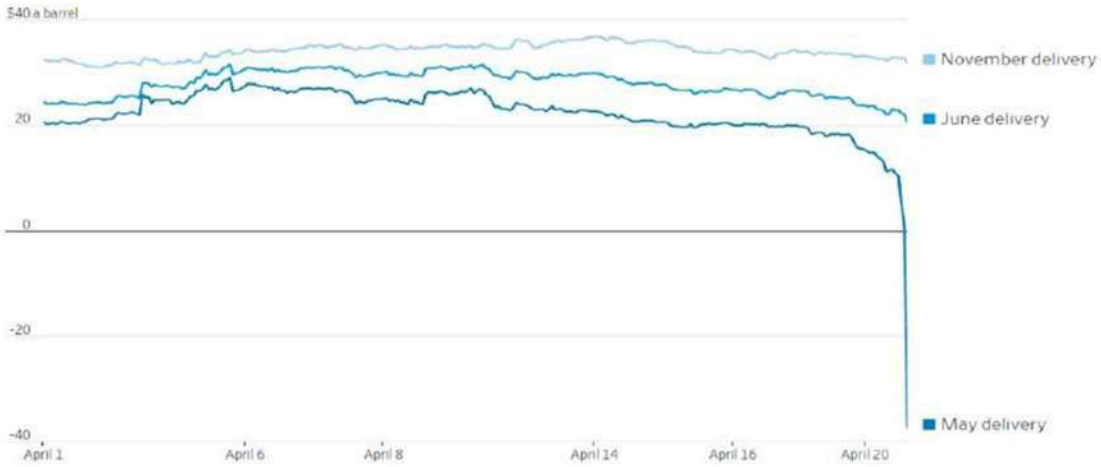
Corona virus started approximately in the month of December 2019 which has resulted in less demand of crude and figure below shows how it has impacted the crude prices of both WTI and Brent from December to April 2020.

Gene McGillian, analyst at Tradition Energy said, "Until we see some kind of alleviation of that, you have to wonder what is in store."

Post pandemic global crude oil supply and demand

Factset estimated that us Crude oil supply will reach to its normalcy by November 2020with marginal increase in demand in June delivery over May 2020. Similar demand supply trend is expected in global market and it will reach to normalcy in November and latest by December 2020.

Figure: US Crude oil futures, by contract.



Source: Factset, April 21, 2020 12:49 am ET

Henry Kissinger former US external affairs minister warns that many existing domestic and international institutions that have helped govern the past decades will not survive the Covid- 19 crisis. The possible post pentametric scenario in crude oil producers Globally

1. OPEC strengthen itself after realization of the mistakes committed by its prominent members during pentametric
2. Disintegration of OPEC+ due to the precipitous drop in oil demand and increase in supply which will create panic among producers everywhere.
3. Formation three new cooperatives first lead by the world's largest crude produces USA with its aligning countries the second lead by communism with its aligning countries
4. Formation of need based flexible alliances between different countries at different point of time with limited scope and time frame
5. Entirely new cooperatives with new members which will result in innovative modes of cooperation and coordination.
6. The formation major oil buying countries cooperative and it will control the oil production and oil prices directly or indirectly as per the demand at the spur of time.

Conclusion

Even though the Covdd 19 has hit the world in Dec 19 when it started spreading but impact of which on crude started in March 20, when lockdown was imposed by many countries. Which restricted nation

economic activities leading to reduction crude demand. The reduction in demand of crude oil resulted in WTI fall below 2001 levels, the ripple effect of oversupply of crude oil has impacted the cost of stocks, bonds, and monetary standards around the world.

The theory of the law of demand revolves around reduction supply results in hike in price but Covid 19 has changed the equations beyond the understandings of the Contemporary economists. It was observed that because of so much lower price of crude oil, the producers and traders preferred to store the crude giving rise to increase in inventories in wells as well as on the sea.

The critical analysis of the weekly reports from February to April clearly indicates that demand has reduced to a large extent and the events like oil production war between Russia and Saudi Arab Emeritus has worsened price level of crude oil price level.

The collective net effect resulted in historical mark in oil industry when price reached to such low mark the sellers will have to pay the buyers to take barrels from the stock yard.

Even though Crude oil is a basic wellspring of energy for the world's economy, but it is amazingly sensitive to geopolitical and climatic occasions.

In spite the challenges and problems posed by this volatile and uncertain scenario, the crude oil industry will find a way to settle down itself in quick time with minimum hassles to the buyers.

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