ISSN 1948-2388

Washington State Department of Transportation

The Fuel and Vehicle Trends Report

August 30, 2019

This report is a summary of the latest fuel prices and other oil industry key statistics. In addition, this report provides the latest trends in vehicle registrations and transportation tax collections for the state of Washington. It also summarizes articles appearing in popular, business, and technical media referring to fuel price, production and supplies as well as vehicle sales and registration trends. At the end of the report is a listing of all articles summarized, with hyperlinks to internet sources where available. Some hyperlinks may require free registration or paid subscriptions to access. The appearance of articles, products, opinions, and links in this summary does not constitute an endorsement by the Washington State Department of Transportation. Photos and other artwork included in the report are either included with permission or are in the public domain. *The Fuel and Vehicle Trends Report* (ISSN 1948-2388) is compiled by Scott, Smith, Lizbeth Martin-Mahar, Ph. D., and David Ding, Ph. D., Economic Analysis Section, Budget and Financial Analysis Office of the Washington State Department of Transportation. Contact the editors by email at smithsc@wsdot.wa.gov martinli@wsdot.wa.gov or DingDav@wsdot.wa.gov by telephone at (360) 705-7(360) 705-7942 or (360) 705-7502.

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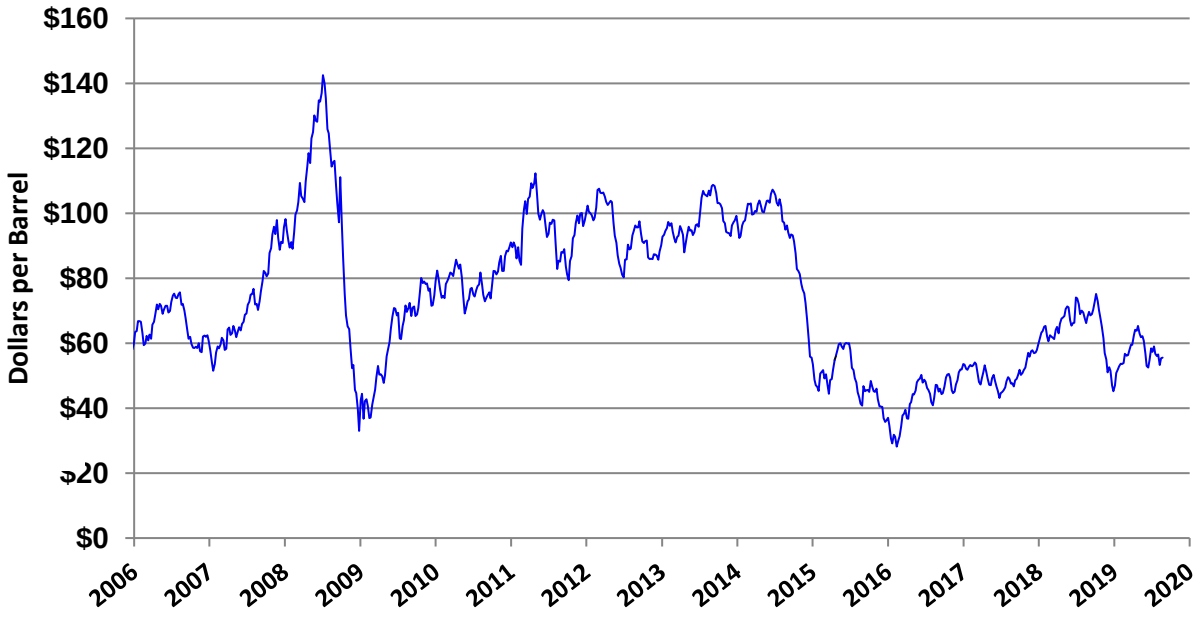
FUEL PRICE TRENDS: Crude, Gasoline and Diesel Markets

Analysis by Scott Smith

National Crude Oil Prices

Oil production from the Permian basin in Texas and New Mexico is the balancing factor which drives U.S. and world prices. Figure 1 shows the recent price history for the U.S. benchmark crude, West Texas Intermediate (WTI) in dollars per barrel (bbl).

Figure 1: Weekly Cushing, Oklahoma WTI Spot Price: January 2006 to August 2019



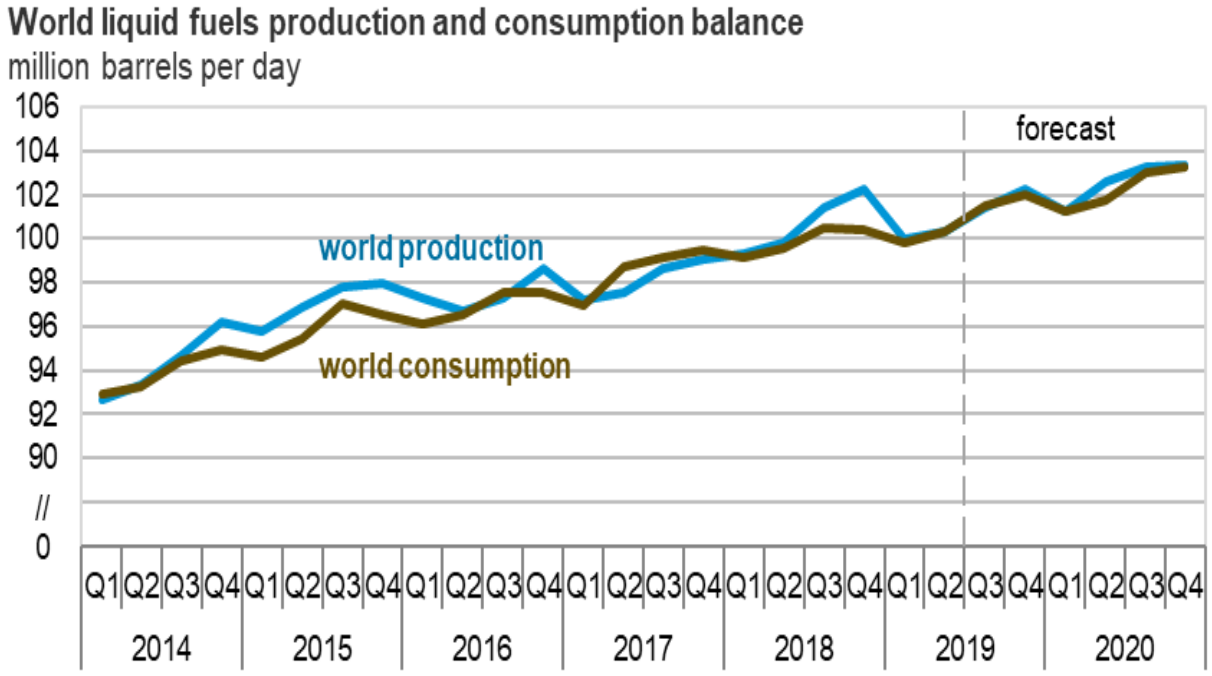
Source: Energy Information Administration

WTI crude spot prices averaged $54.66 per barrel and $57.28 per barrel (bbl) in June and July 2019 respectively. June and July WTI prices are quite a bit lower than the June and July 2018 average prices of $67.77/bbl and $71.736/bbl respectively. As of the first four weeks of August, the latest average monthly WTI spot price for August is $55 per barrel and is returning to the low $50/bbl range reported in in the January *Trends* report. Prices have proven to be resistant to upward pressure in the last three months.

The crude oil price of the world benchmark, Brent, has followed a similar trajectory; spot oil prices have fallen from $71.76/bbl in January to monthly averages in June and July of $64/bbl and falling further in August to a low of $59.57/bbl by the week of August 23. In spite of significant disruption in the Straits of Hormuz (a bottleneck for Persian Gulf supply), summer oil prices have been more affected by signs that world economic growth is decelerating rapidly. China reported disappointing data for July, including a surprise drop in industrial output growth to a more than 17-year low, underlining widening economic cracks as the trade war with the United States intensifies. The global economic slowdown, amplified by tariff conflicts and uncertainty over Brexit, is also hitting European economies. A slump in exports sent Germany's economy into reverse in the second quarter. The euro zone's GDP barely grew in the second quarter of 2019.

As shown in Figure 2, the US Energy Information Administration (EIA) forecasts that world production will fully supply or oversupply the market for the foreseeable future. Note that this is in spite of 2.5 million barrels per day (bbd) of Iranian oil being withheld from the market due to U.S. sanctions and the collapse of Venezuelan production.

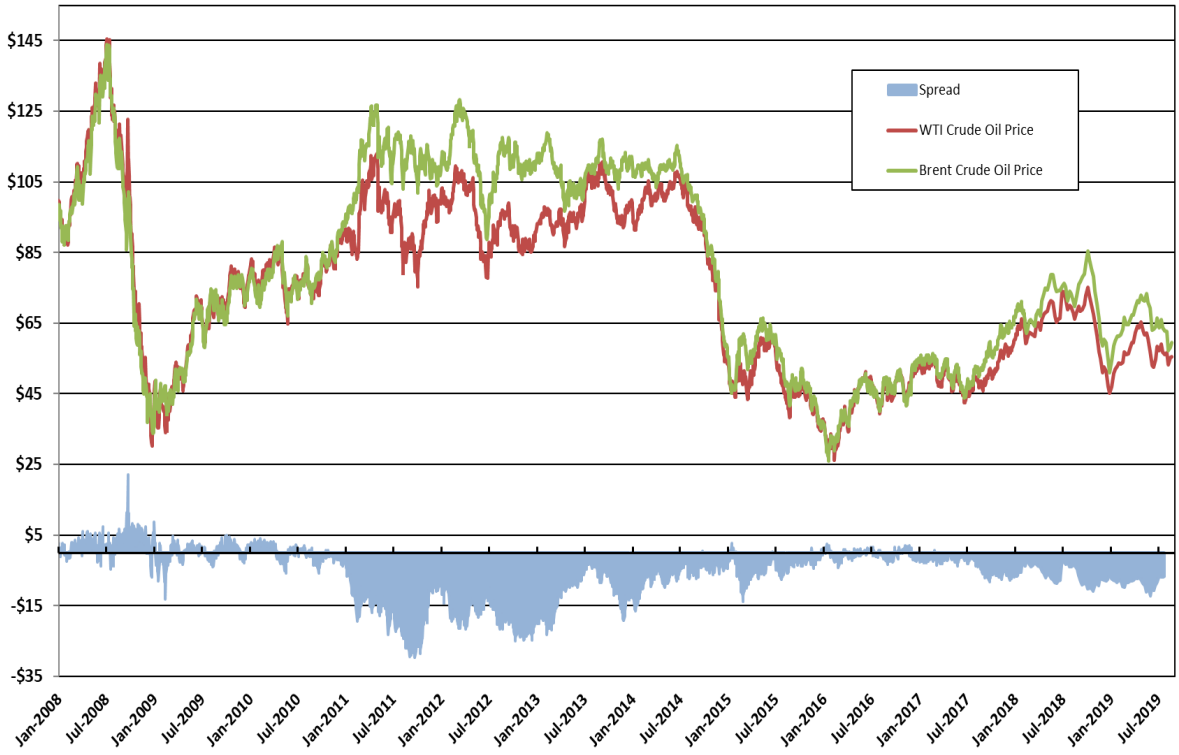
Figure 2:



Source: Energy Information Administration

Figure 3 shows prices and spreads between WTI and the world benchmark, Brent, which is produced in the North Sea. Prior to 2007, U.S. production could not legally be exported and was therefore a separate internal market. The premium to discount pattern shown in Figure 3 coincides with the linking of the U.S. market to the world market and the emergence of U.S. exports of crude oil. The spread between these two commodities can be thought of as a basin and quality differential for WTI compared to Brent. Changes in the WTI –Brent spread reflect the relative ability to transport the products to market and refineries' demand for different qualities of oil.

Figure 3: WTI - Brent Crude Oil Spot Price Spreads: January 2008 to August 2019



Source: Energy Information Administration

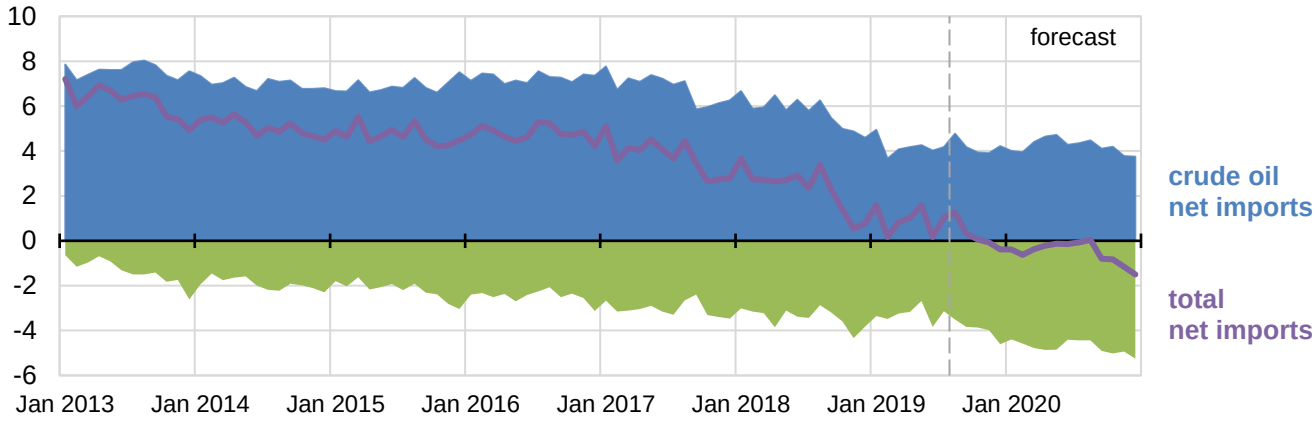
In general, the WTI-Brent price spread in recent months has declined. The spread between WTI and Brent in calendar year 2018 averaged about $6.10/bbl, and due to logistical constraints, the spread at times hit more than $12/bbl. In the first 6 months of calendar year 2019, the WTI Brent spread had grown to average $8.45/bbl. However, since the beginning of June, the WTI – Brent spread has been falling each month with the June average at $9.57 and July at an average of only $6.78 per barrel. In August, the WTI – Brent spread has fallen further to an average of $4.28 per barrel. An explanation for this shift is that in the past, there was not enough pipeline capacity to carry oil from the Permian Basin. As a consequence, the U.S. had shipped more oil via expensive rail transport and the spread increased to reflect transportation costs. However, new pipelines are coming on line to alleviate this bottleneck. The new Cactus II pipeline system transports Permian basin crude to the Corpus Christi oil hub in Texas and has a capacity of 670,000/bbl daily. It is likely to be at full capacity by September. Two other pipelines are expected to be operative by the

fall. EIA forecasts an average Brent-WTI price spread of $5.50/bbl in 2020. This has led to less transportation costs and a diminishing of the WTI-Brent premium.

U.S. Imports/Exports

Figure 4 shows the recent U.S. import /export history and EIA's August 2019 forecast. The August forecast is slightly weaker than the April forecast reported in the last *Trends* report. However both forecasts adhere to the theses that the U.S. will become a true net exporter in 2020. Besides the reduction in consumption, the recent forecast reflects a slightly reduced production forecast. Further, compression of the WTI- Brent spread has the effect of suppressing exports. When the U.S. WTI crude oil price approaches the Brent world price there is less opportunity for arbitrage.

Figure 4: EIA History and Forecasts of U.S. Net Imports of Crude Oil and Liquid Fuels

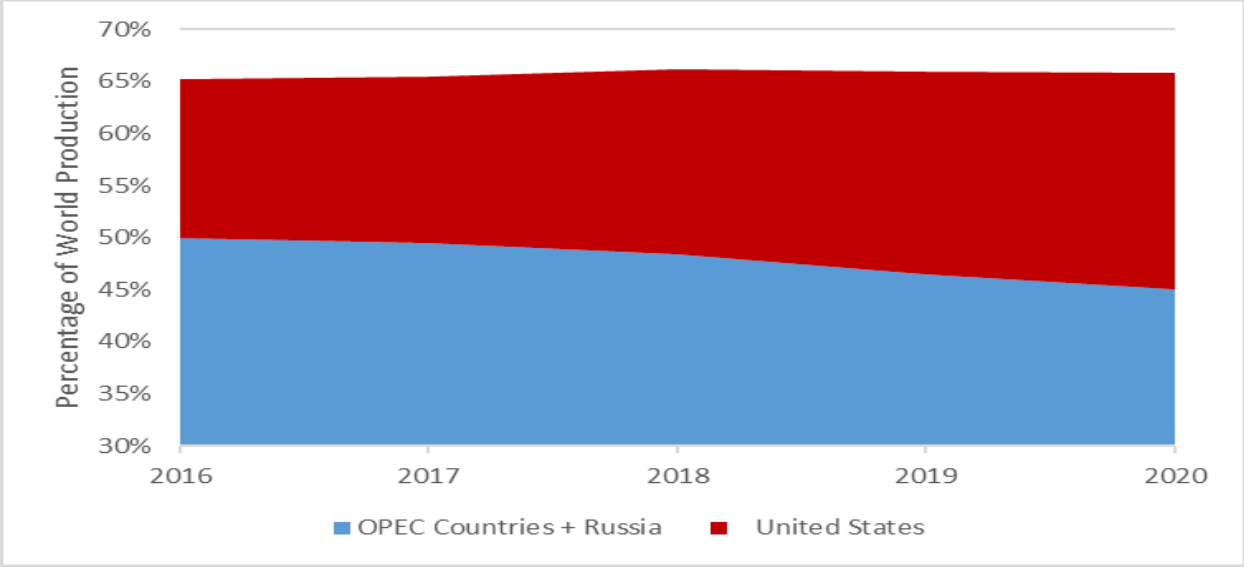


Source: Energy Information Administration

World and US Oil Production

The long run tension in world oil markets can best be described as the competitive interplay between the OPEC+ Russia (known as OPEC+) cartel and shale oil (fracking) producers in the Permian Basin. Figure 5 shows OPEC+ Russia and US production as a share of the world total. Note that this graph excludes other production.

Figure 5: Cartel and U.S. Shares of World Crude and Liquids Production 2010:2018



Source: Energy Information Administration

What is striking about Figure 5 is the gain in U.S. production in barrels per day and market share; it increases by around a third over four years. Further, production is expected increase from 14.8 million barrels per day bbd in 2016 to 21.3 million bbd in 2020. This is due to a technological innovation known as hydraulic fracturing or "fracking.

Hydraulic fracturing is the process of injecting liquid and materials at high pressure to create small fractures within tight shale formations to extract energy from an underground well after the drilling has ended and the rig and derrick are removed from the site. This technology has transformed the productivity of sedimentary basins once considered mature like the Permian Basin. Fracking has allowed U.S. producers to respond efficiently to market manipulations caused by OPEC+. U.S. producers have quickly responded to higher prices and are so capital efficient that the cartel has been unable to bankrupt them by falling prices. In short, every effort by OPEC+ to raise prices has been met with increased U.S. production.

U.S. crude oil production averaged 10.96 million bbd in 2018. EIA forecasts 12.27 million bbd in calendar year 2019 and even higher in 2020 averaging 13.26 million bbd. Compared to the April *Trends* report, this is a reduction in the 2019 forecast and an increase in the 2020 forecast. As Figure 6 shows, the vast majority of the production increase originates from the lower 48 excluding the Gulf of Mexico. Production in the lower 48 states grew by 30 percent from 6.74 million bbd to 8.75 million bbd in 2018.

Figure 6: U.S Crude Oil Production By Source 2017-2020 (million barrels per day)

	2016	2017	2018	2019	2020
Alaska	0.49	0.49	0.48	0.47	0.49
Federal Gulf of Mexico	1.60	1.68	1.76	1.89	2.11
Lower 48 States (excl GOM)	6.74	7.18	8.75	9.90	10.66
Total U.S. production	8.83	9.35	10.99	12.27	13.26

Source: Energy Information Administration

EIA expect production to increase by 8 and 13 percent for 2019 and 2020, respectively. The largest amount of U.S production by far comes from the Permian Basin in West Texas and Eastern New Mexico. The Permian basin produced roughly 3 million bbd in 2018 and currently produces around 4 million bbd as of July 2019. If the Permian basin were an OPEC country, it would rank number 4 behind Saudi Arabia, Iran, and Iraq.

Risks to the EIA Oil Production Forecast

As noted in the April *Trends* report, investment capital for new activity has been substantially financed by private equity partnerships. An individual fracking project's production declines by as much as 15 percent annually so new investments are constantly needed to sustain output. As noted in the Wall Street Journal, the business model for these partnerships, which are largely financed by pension funds, endowments, and high net worth investors, has been to exit their investments by selling to publicly traded companies eager for expansion. Although shale operators have helped push U.S. oil output to a record of more than 12 million barrels a day, consistent shale profits have yet to materialize. From 2014 to 2018, the 43 biggest stand-alone U.S. oil companies lost more than $90 billion. Given the low price environment, market discipline has caused the companies to emphasize cash flow.

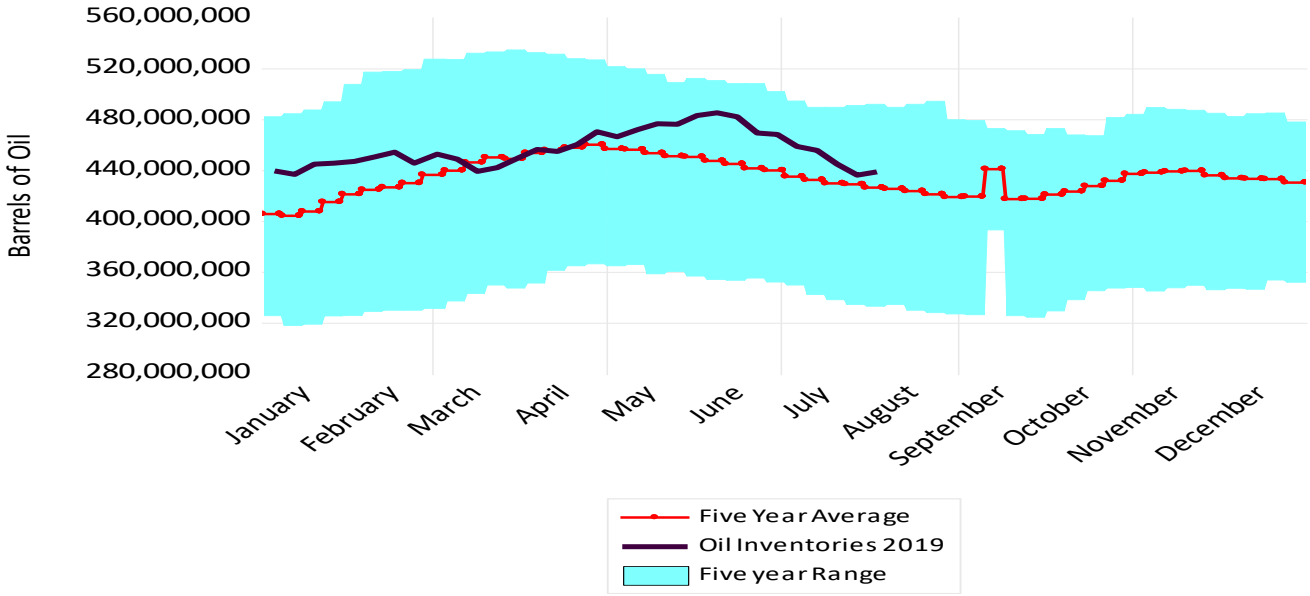
There are also signs that oil leases have been cherry picked and future production increases will be more costly and difficult to achieve. Analysts have noted a noticeable slowing down in year over year Permian well productivity according to OilPrice.com. While productivity increased by as much as 28 percent in the first quarter of 2016 that growth slowed to 10 percent in the first quarter of 2019. Productivity growth trended between negative and the low single digits for most of 2017 and 2018.

US Crude Inventories

Our *Trends* Report uses historical five-year averages for inventories to compare to current inventory levels. Weekly inventories for crude oil, gasoline, and distillate span five years from 2013 to August 2019. Inventories have traditionally been used as a measure of over/ undersupply and includes all of the U.S. crude oil and lease condensate (mixture of heavy hydrocarbons and pentanes) currently held at refineries, within pipelines, and at pipeline terminals. With the exception

of March and part of April, the 2019 weekly inventories were higher than the 5 year average as shown in Figure 7. Weekly U.S. stocks of crude oil were 439.8 million bbl as of the first week in January 2019. The latest August inventories shows little change at 438.9 million bbl. Right now, the inventory levels for crude oil appear to be having little effect on current crude prices.

Figure 7: 2019 Weekly U.S. Ending Inventories of Crude Oil (Excluding Strategic Petroleum Reserve)

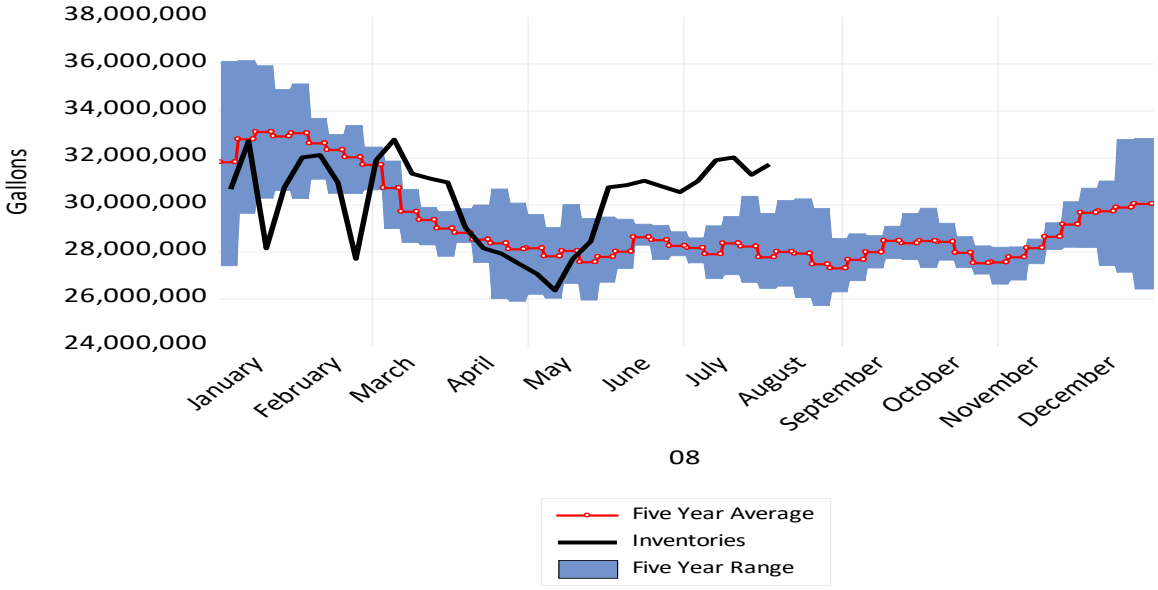


Source: Energy Information Administration

Inventories: The West Coast Oil Market

Figure 7 shows gasoline inventories for the west coast, PADD5. As noted in our last *Trends* report, 2018 year-ending gasoline inventories were well below five year averages. 2019 inventories recovered rapidly until April which is the traditional time for refiners to retool production for summer's low volatility fuels. Since then, inventories have been markedly above the five-year average and range. Weekly west coast (PADD 5) ending stocks of gasoline were 30.7 million bbl as of the first week of January, 2019. The latest August figure is up at 31.7 million bbl for gasoline inventories.

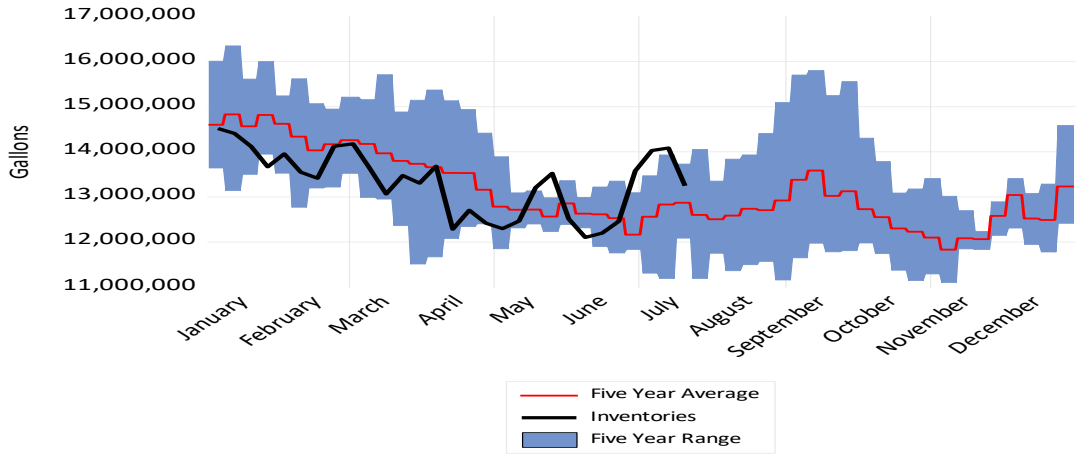
Figure 8: 2019 Weekly Ending Gasoline Inventories (West Coast PADD5)



Source: Energy Information Administration

Figure 9 shows west coast (PADD 5) distillate inventories. Since few west coast structures use home heating oil, the vast majority of this production consists of diesel used as transportation fuels. As of the end of the 2018, distillate inventories tracked lower portion of the 5 year range. That pattern reversed itself by the summer. Weekly west coast ending stocks of distillate fuel oil were 13.4 million bbl as of the first week of 2019. The latest August figure is little changed at 13.2 million bbl.

Figure 9: 2019 Weekly Ending Distillate Inventories (West Coast PADD5)

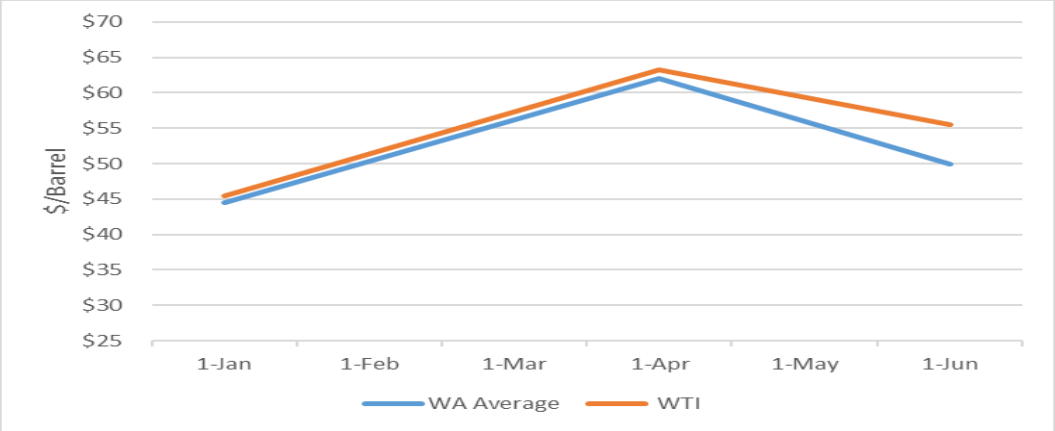


Source: Energy Information Administration

The Washington Oil Market

Washington crude oil prices are a function of where and how the state receives crude oil. The Washington state Department of Ecology tracks the movement of oil across the state for risk management purposes. Economists at WSDOT have combined this oil movement data with price information to estimate a production weighted average cost of oil.

Figure 10: Calculated Composite Washington Crude Oil Average Prices



Unsurprisingly, the trajectory of this composite follows the trend for national prices; it peaked in April and since fallen, but not as much as the price of the WTI benchmark. The spread between the Washington composite and WTI has widened considerably in recent months. The last two *Trends* reports had the composite within 2 percent of the WTI benchmark. The spread has now widened to 13 percent. However we caution that this does not imply that refineries in Washington have a 13 percent price advantage over the "average" U.S. refinery; the composite does not take into account transportation costs. The cause of this spread increase has to do with the substitution of rail shipped Bakken crude for Alaska North Slope oil. The percentage of rail shipped North Dakota oil increased from 27 percent to 37 percent since April. The share for Alaska North Slope oil shipped via tanker decreased by roughly the same amount.

This increase is surprising since new restrictions have been imposed on rail imports. There have been several tanker car explosions of Bakken oil, including one that killed forty-two people in Quebec Province in 2013. In late April, the Washington Legislature, gave final approval to SB 5579 which limited the volatility of the railed shipped crude in our state. The law set a vapor limit of 9 pounds per square inch (psi) for crude unloaded from trains. Failing to meet the standard could result in penalties of up to $2,500 per day per rail tank car. The new law only applies to newly built refineries in Washington and existing refineries in the state that increase the volume of crude they receive by rail by more than 10% from what they received in 2018. National news outlets have reported that the North Dakota Attorney General has threatened suit over SB 5579.

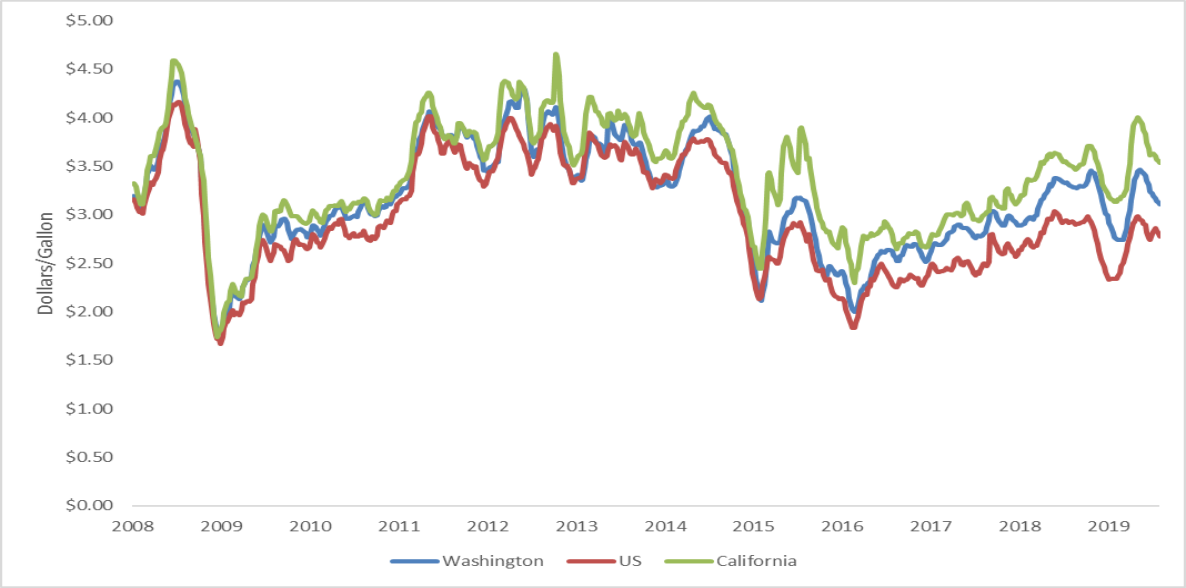
About 150,000 barrels of North Dakota crude, or about one-tenth of the state's daily production, is shipped to Washington refineries. It is not clear whether this increase of Bakken oil market share is permanent or a one-time event. Further, given the lack of information on rail transportation costs, it is not clear what effect a potential shift would have on refiner's acquisition costs.

Washington Retail Gasoline and Diesel Prices

Washington's fuel market is integrated into the California market. Figure 11 shows the history of the monthly ex tax gasoline prices for the Washington, California and the national market since 2010. Both California and Washington follow the inflections in national price trends. This makes sense since the major determinant of the national price trends are mirroring the trends in rising crude oil prices. The movement of national retail gas prices can be explained by world events. In January, gas prices were quite low given past asset market volatility. The recovery in prices, noted in April, was accelerated by the expiration of sanctions waivers granted to importers of oil from Iran, a major OPEC member. The subsequent fall in prices in recent months can be attributed to new concerns about the world economy and demand.

West coast prices are higher than the national average. This is because the majority of crude oil production and especially refining capacity is east of the Rockies. The Washington-U.S. gas price spread has been $0.28 per gallon between January 2010 and December 2018. Recently, the Washington-U.S. price differential has grown from that longer term average. In calendar year 2018, the Washington -U.S. gas price spread rose to $0.49 per gallon but in the first 8 months of 2019, the Washington-U.S. spread declined a little to $0.40 per gallon. The most current August spread is $0.47/gallon.

Figure 11: Retail Gasoline Prices: WA, CA & the U.S. January 2010- August 2019

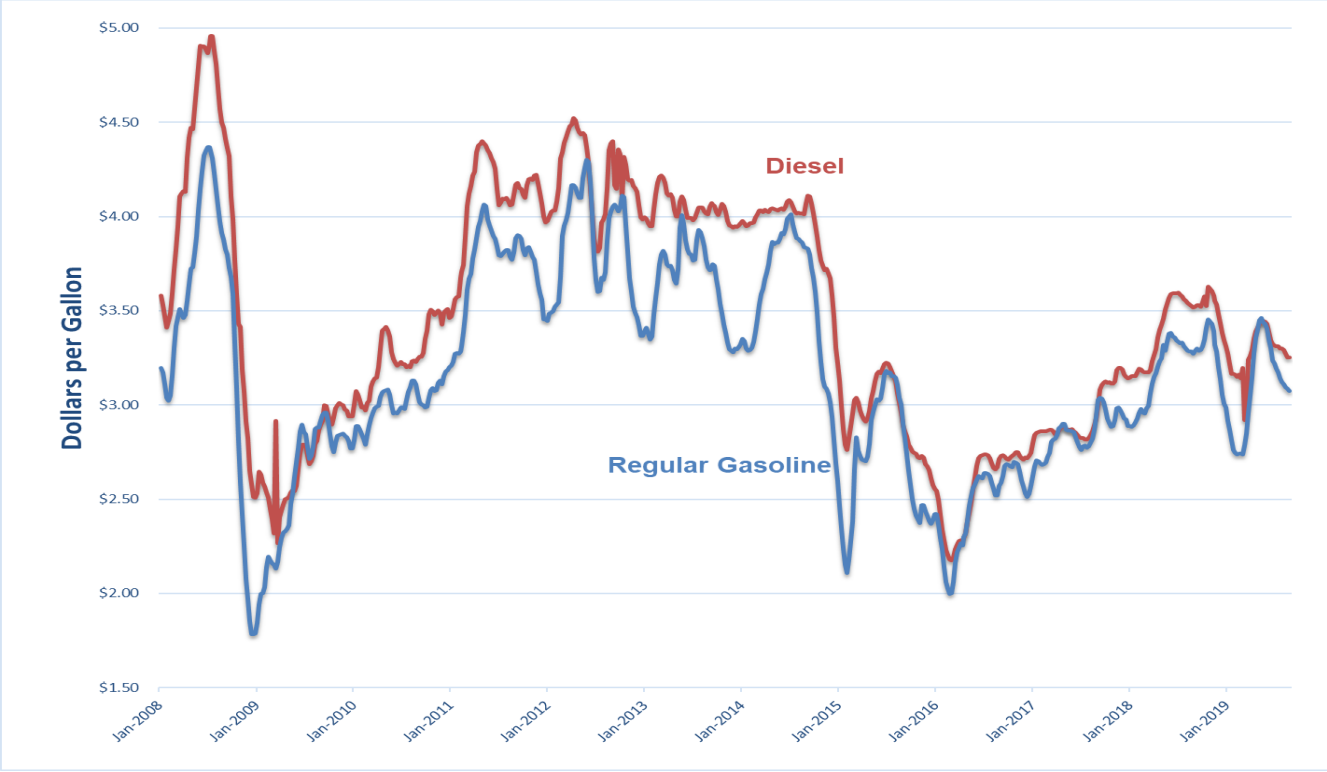


Source: Energy Information Administration

Washington gasoline prices are consistently lower than California prices. The basic reason for this is transportation costs; California has insufficient refining capacity and therefore imports Washington fuel. The average spread between California and Washington gasoline prices between 2010 and 2018 was $0.22 per gallon. Recently, that spread has grown. In 2018, the California and Washington gas price spread increased to $0.28 per gallon. The 2019 year-to-date-average is now up to $0.44 per gallon. There have been no significant outages at West Coast refineries since the rash of shutdowns in April.

Figure 12 shows Washington regular gasoline and diesel prices since January 2006. From the beginning of the current year through August, Washington gasoline and diesel prices have fallen from their high point in December 2018 at $3.08/gallon to much lower prices in February 2019 of $2.74/gallon. In response to refinery outages in California and Iranian sanctions, Washington gas prices rose in both months to an average of $3.25 per gallon in April. Prices peaked at 3.44/gallon in May and then rapidly fell at the end of June with a June average monthly price of $3.32/gallon. July prices averaged $3.17 gallon and the August prices are currently averaging at $3.09/gallon.

Figure 12: Washington Retail Regular Gasoline and Diesel Prices 2006-2019



Source: AAA

Washington diesel prices have followed a slightly different trend from gasoline prices. Between October 2018 and March 2019, Washington diesel prices fell month over month to a low point of $3.08 per gallon by March. Then in April, retail diesel price spiked back up by $0.26 per

gallon in one month to a monthly average of $3.34 per gallon. Diesel prices peaked at $3.45/gallon at the end of May but then started to fall again. In June the monthly average Washington retail diesel price was $3.37 per gallon and in July they averaged $3.31 per gallon and finally in August, Washington retail diesel prices fell further to $3.27 per gallon. Overall, Washington retail diesel prices did not fall by as much as gasoline prices in recent months.

BIODIESEL PRICE PREMIUM TRENDS

Analysis by Lizbeth Martin-Mahar, Ph.D.

Biodiesel Prices: Comparison of Historical and Recent Prices

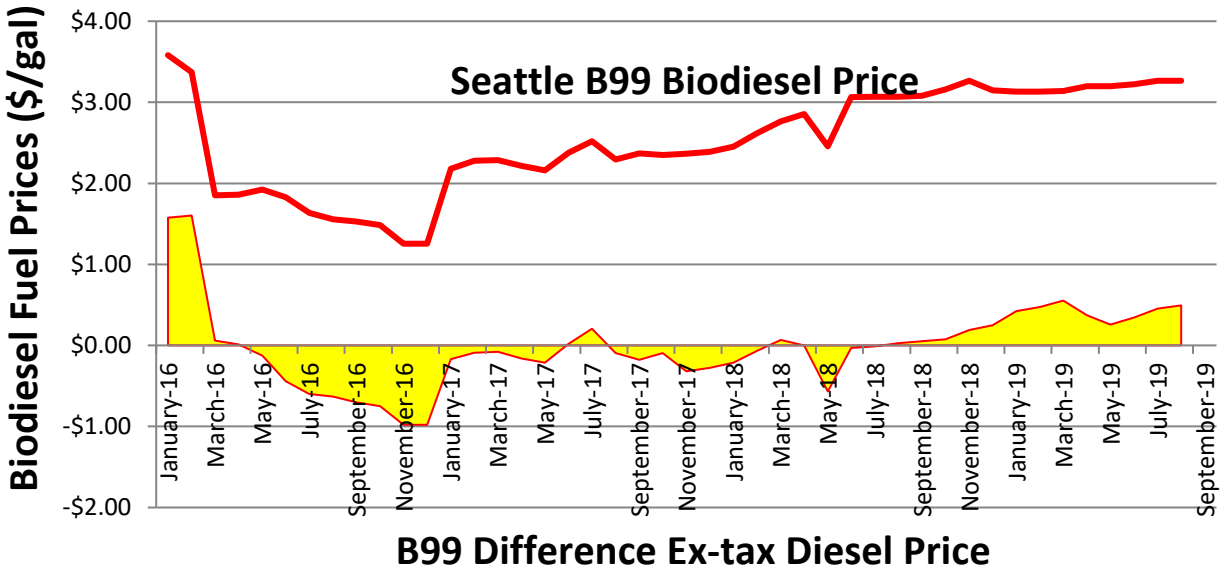
Recent Trends: Washington B99 Biodiesel Prices

Since October 2018, the B99 price in Seattle has had very little change. In October the average price was $3.16 per gallon. It increased slightly in November to $3.26 per gallon but dropped down again in December to $3.15 per gallon. Since January 2019, the B99 price has remained at an average price of $3.13 per gallon. In April, the B99 biodiesel price did increase slightly to $3.20 per gallon. In June the B99 biodiesel price increased to $3.22 per gallon and by July the average B99 monthly price was $3.27 per gallon. There has only been a 7 cent increase since April. Figure 13 shows the B99 price and the price premium since January 2016. This chart reveals a negative trend through calendar year 2016. During calendar year 2017 and 2018, B99 biodiesel prices rose for the most part except for a slight drop in May 2018. Now in calendar year 2019, the B99 price premiums above the regular diesel prices have grown to as high as $0.55 per gallon in March 2019 and then it fell back again. Now by August, the B99 biodiesel premium is back up to $0.49 per gallon.

Recent Trends: Seattle and Portland B5 Biodiesel Prices

Seattle and Portland B5 red dyed biodiesel prices are tracked because the Washington State Ferries new contract for fuel purchases is based on the Portland B5 red dyed biodiesel prices. We have also compared the B5 red dyed biodiesel price with red dyed diesel as well. Figures 14 and 15 reveal that B5 prices in Portland and Seattle are typically pretty close in price. Recently B5 prices in Portland have been slightly higher than Seattle B5 prices and the difference was as high as 3.6% in July but it fell down again to only 2 cents of 1.2%. In June 2019, Portland B5 red dyed biodiesel price was $1.98 per gallon which was a lower price than the prior year. Portland B5 red dyed biodiesel prices rose to $2.13 per gallon in July and it fell back down again to $1.99 per gallon by August. August's Portland B5 red dyed biodiesel price is $0.28 lower than a year ago. The same trends appear for the Seattle B5 red dyed biodiesel prices in recent months. By August, the average Seattle B5 red dyed biodiesel price had dropped to $1.97 per gallon which was $0.31 lower than a year ago, see Figure 14.

Figure 13: Monthly B99 Biodiesel Prices since January 2016



Source: B99, Seattle biodiesel price data - OPIS Fuel Price Survey.

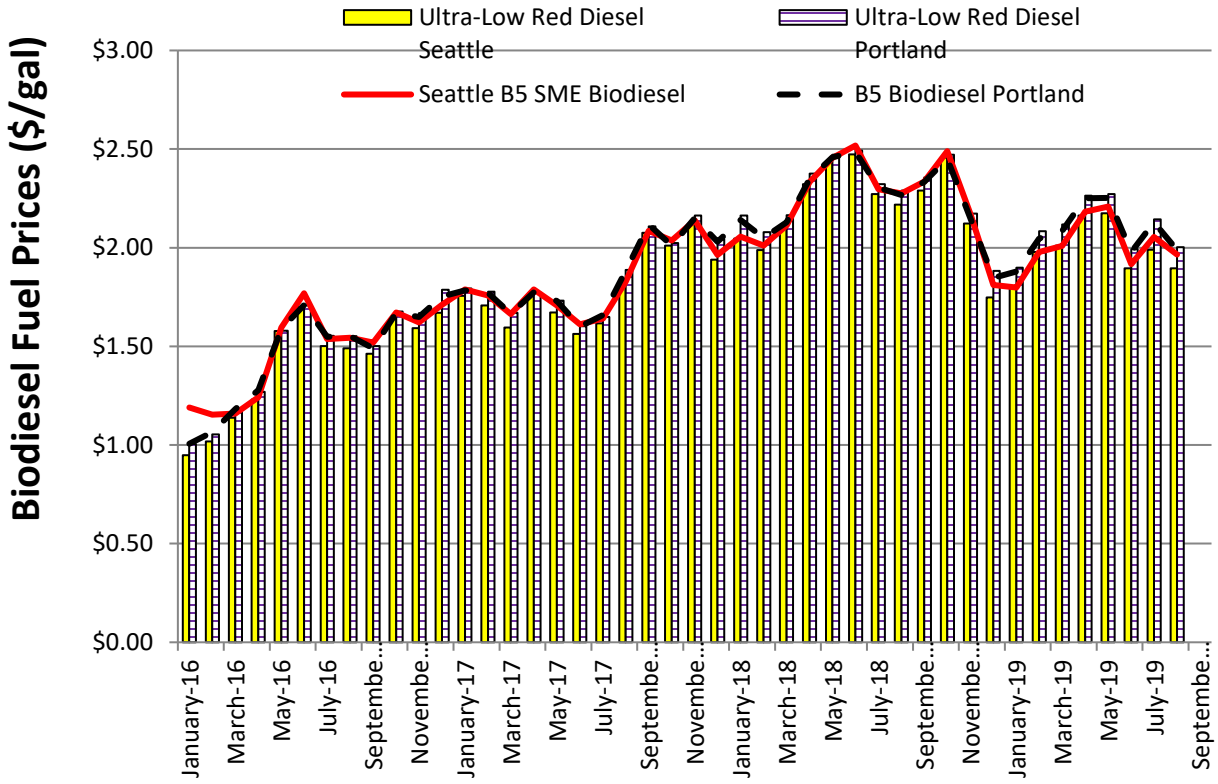
In addition, the changes in the B5 red dyed biodiesel prices can also be seen in the changes in the red dyed diesel prices as well. The difference in red dyed diesel prices in recent months mirrors the difference in biodiesel and diesel trends. In January 2019, the difference between Portland and Seattle dyed diesel was $0.10 or 5% and now 8 months later the difference is still $0.108 or 5.4%. This is the same trend seen in the differences between Portland and Seattle B5 dyed biodiesel prices.

Figure 14: Seattle and Portland OPIS B5 Biodiesel Prices: June - August 2019

	B5 Prices		
Monthly Average Price	**Portland Price ($/gal)**	**Seattle Price ($/gal)**	**% Difference Portland vs Seattle Prices**
June 2018	$2.48	$2.52	-1.3%
June 2019	$1.98	$1.92	3.2%
July 2018	$2.30	$2.30	0.4%
July 2019	$2.13	$2.05	3.6%
August 2018	$2.27	$2.28	-0.4%
August 2019	$1.99	$1.97	1.2%

Source: B5, Seattle and Portland biodiesel price data - OPIS Fuel Price Survey.

Figure 15: Seattle and Portland OPIS Red Dyed Diesel and B5 Biodiesel Prices: Since January 2016



Source: Seattle and Portland red dyed diesel and B5 biodiesel price data - OPIS Fuel Price Survey.

FUEL PRICES AND CRUDE OIL PRICE TRENDS COMPARED TO RECENT FORECASTS: US crude oil prices, Washington retail prices of gasoline and diesel

Analysis by Lizbeth Martin-Mahar, Ph.D.

In this edition of the *Fuel and Vehicle Trends Report*, we have seen West Texas Intermediate (WTI) crude oil prices fall well below our last projections in June 2019. In June, July and August, actual crude oil prices for WTI came in at $55, $57 and back down to $55 per barrel respectively each month. In June 2019, WTI crude oil price averaged $54.7 per barrel which was 8 percent below the 2019 second quarter average forecasted in June. The WTI price increased a little, $2.6 per barrel, in July over the prior month and was 2.9 percent below the third quarter 2019 projection in June. Then in August, WTI crude oil prices decreased back down again to $55 per barrel. This decrease in oil prices was not anticipated in the last forecast so actual WTI prices in August are now 6.5 percent below the third quarter 2019 crude oil price average. See Figure 16 for more detail.

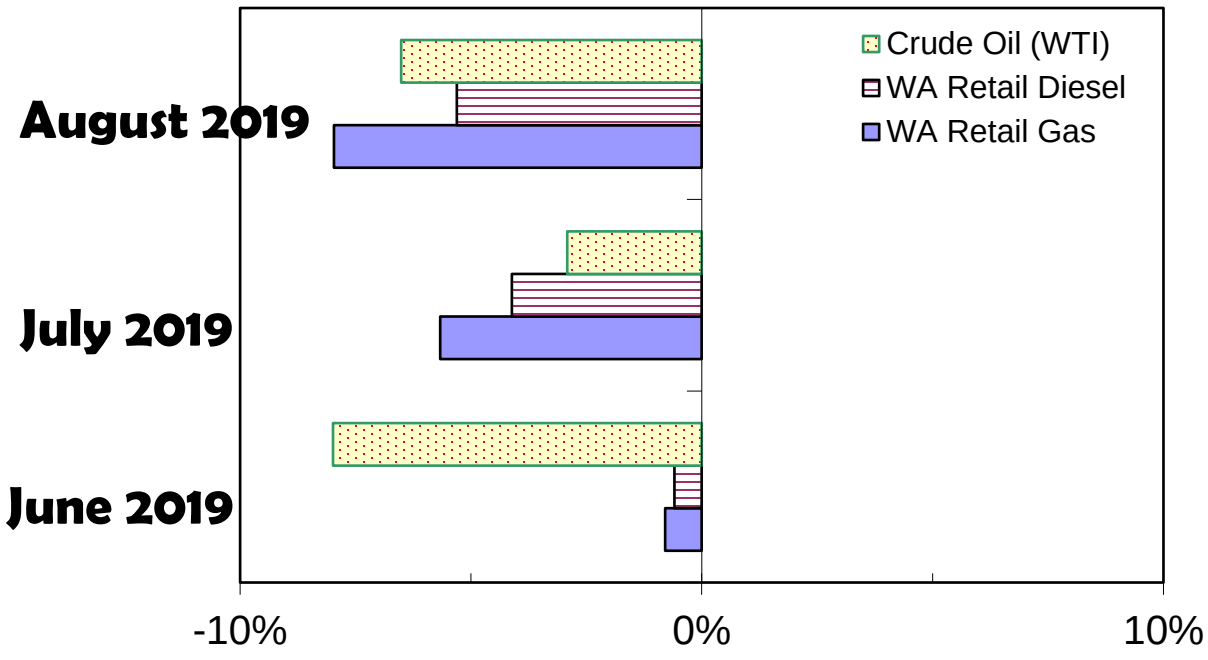
Consistent with the recent trend in WTI crude oil prices going down and remaining at the low level between June and August 2019, Washington retail gasoline prices fell from $3.32 in June to $3.09 per gallon in August. In June, the retail gas prices averaged $3.32 per gallon which was

very close to the 2019 second quarter average projection of $3.35 per gallon. Then in July, the gas average monthly price fell by $0.15 per gallon to $3.17 per gallon which was 5.7% below the June average forecast for the third quarter of 2019. Finally in August, the average monthly gas price fell another $0.08 per gallon again to $3.09 per gallon which was 8% below the projected price for the third quarter of 2019.

The recent trends in retail diesel prices are very similar to the retail gas price trends. In the month of June, retail diesel prices averaged $3.37 per gallon, which was close to forecast by -0.6 percent below the June forecast for second quarter 2019. Then in July, retail diesel prices fell a little month over month to $3.31 per gallon which put the actual diesel price 4.1 percent below the third quarter 2019 June projection. In August 2019, retail diesel prices fell further by $0.04 per gallon to $3.27 per gallon which was 5.3 percent lower than the forecast for the third quarter of 2019 in June.

In the past three months (June through August), we have seen the difference between retail gas and diesel prices grow from $0.05 per gallon to $0.17 per gallon in August. Retail diesel prices did not fall as much as gasoline prices so the price premium per gallon over gasoline prices grew.

Figure 16: Percent Change in June - August 2019 Average Fuel Prices Compared to the June 2019 Price Forecast



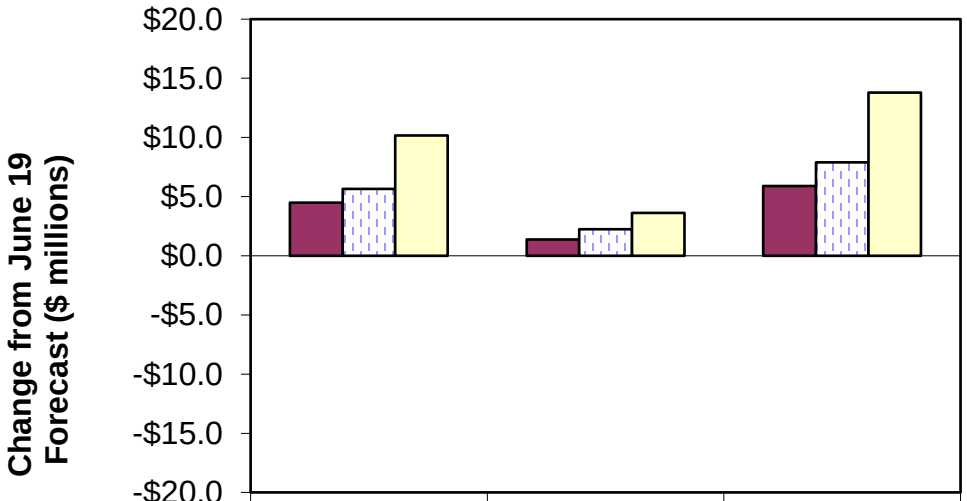
Source: Washington Transportation Revenue Forecast Council June 2019 Forecast, EIA and AAA weekly fuel prices

WA MOTOR VEHICLE FUEL TAX COLLECTION TRENDS COMPARED TO RECENT FORECASTS: Gasoline and Diesel Tax Collections

Analysis by Lizbeth Martin-Mahar, Ph.D.

Since the adoption of the June 2019 forecast, two months of fuel tax collections have been reported. The June fuel tax collection reports from the Department of Licensing have shown more revenue than forecasted in June and July for both months and fuel types. In June, gasoline tax collections came in at $129.32 million which was up from June projections by $4.5 million or 3.6%. Diesel tax collections came in at $36.7 million which was significantly up from the June forecast by $5.66 million or 18%. For all motor fuel, June fuel tax collections came in at $166.07 million, up $10.16 million or 6.5% overall. In July gasoline and diesel tax collections came in closer to the June forecast. Gasoline tax collections came in at $124.5 million which was $1.4 million above the June forecast. Diesel tax collections came in at $32.8 million, above the June forecast by $2.24 million or 7%. All fuel combined in July came in above forecast by $3.63 million or 2.4%. Figure 17 reveals the June and July results. Now for both months combined, gasoline tax collections are $5.89 million or 2.4% above projections. Diesel tax collections, for both months, came in $7.9 million or 12.8% above forecast and all motor fuel tax collections came in $13.79 million or 4.5% above projections.

Figure 17: Motor Vehicle Fuel Tax Collections in June and July 2019 Compared to the June 2019 Revenue Forecast



	June	July	2 months	Percent Change
Gasoline	$4.50	$1.39	$5.89	2.4%
Diesel	$5.66	$2.24	$7.90	12.8%
All Motor Fuel	$10.16	$3.63	$13.79	4.5%

Source: Washington Transportation Revenue Forecast Council June 2019 Forecast and State Treasurer's Office monthly fuel reports

VEHICLE TRENDS

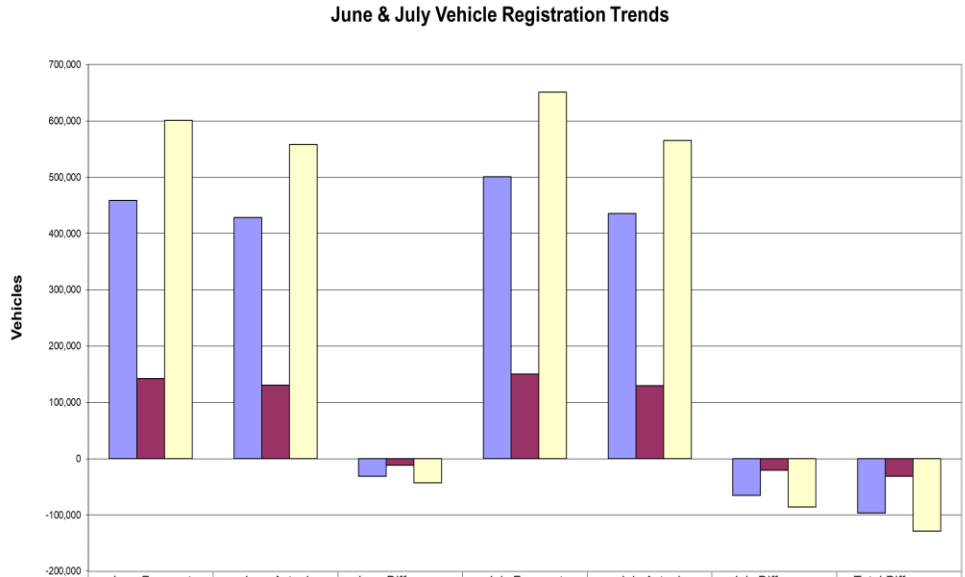
Analysis by David Ding, Ph.D.

For the two month of licensing registrations and revenue data we have received since the June forecast, vehicle registrations were down for both June and July, see Figure 18. Passenger car registrations came in at 428,106 and 435,638 for June and July respectively. These actuals were -6.8 percent, -13.1 percent different from June projections for those months. For the two months combined, passenger car registrations were down 10.1 percent. The lower actual registrations in both months look odd. We are working with DOL to get more tools and resources to help us figure out why the actuals came in lower. Meanwhile, we don't know if these missed registrations will pick up in later months.

Truck registrations have a similar pattern to passenger cars. The truck registrations were reported as 130,409 and 130,055 vehicles for June and July respectively. These latest actual registrations were below the last forecast by 8.1 percent and 13.5 percent in June and July. For the two months combined, truck registrations were down 10.8 percent over the June forecast. Just like car registrations, we will work with DOL to see why the truck registrations droped sharply and if the missed registrations will pick up in the future.

For both passenger cars and trucks combined in June and July, vehicle registrations came in 128,395 vehicles below the June forecast. This was 10.3 percent below the last forecast.

Figure 18: Vehicle registrations, June and July 2019, Forecast vs. Actual.



	June Forecast	June Actual	June Difference	July Forecast	July Actual	July Difference	Total Difference	Total Percent Change
Passenger Cars	459,343	428,106	-31,237	501,137	435,638	-65,499	-96,736	-10.1%
Trucks	141,844	130,409	-11,435	150,279	130,055	-20,224	-31,659	-10.8%
Total	601,187	558,515	-42,672	651,416	565,693	-85,723	-128,395	-10.3%

Source: Washington Transportation Revenue Forecast Council June 2019 Forecast and Department of Licensing Reports 13, June and July 2019.

We also have two months of revenue to discuss in this report (Figure 19). For $30 basic license fees, the revenue came in at $14.6 million in June, $2.4 million short of the $17 million forecasted. In July, the $30 license fee revenue came in at $13.1 million, lower than the forecast by $1.7 million. For both months combined, the passenger vehicle $30 fee revenue came in lower for $4.1 million or -12.9 percent difference from the last forecast. The decreasing $30 basic license revenue echos with the decreasing of passanger car registrations, but the percentage decrease of combined revenue for both months was a little bit different from the registrations percentage decrease for that same period. We don't know why this have happened and have addressed this issue regarding why the trend of the revenue is not in line with the trend of the registration.

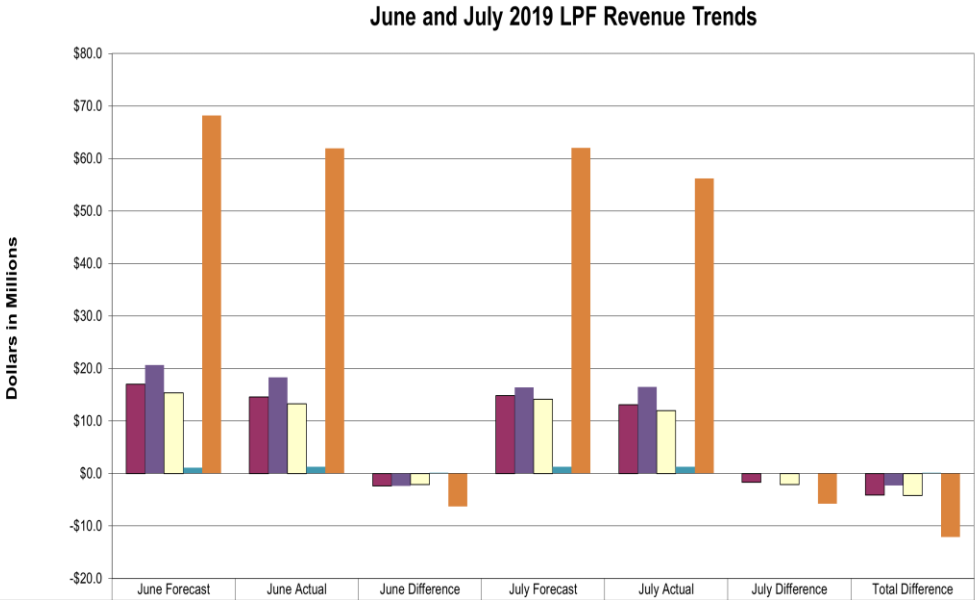
The revenue for truck weight fees came in lower than expected as well. In June, the revenue came in at $18.3 million, $2.4 million short than the forecast. In July, the combined license fee truck revenue collection of $16.4 million was almost right on the target with the forecasted revenue of $16.4 million. For the two months combined, the truck weight fees came in at $2.3 million less or 6.2 percent below the last projection. The 6.2 percentage decrease of combined license fee truck revenue for both months was lower than the change in the truck registrations of 10.8 percentage decrease for that same period. This may be because that there are heavier trucks registered in that period than projected.

Figure 19 also reveals that the revenue from the passenger weight fee came in lower than forecast and the freight project fee collection is above forecast for those two months. The passenger weight fee in June came in at $13.3 million which was $2.1 million below the forecast. In July, the passenger weight fee came in at $12.0 million, which was also $2.1 million less than the forecast. For the two months combined, the passenger weight fee was 14.2% below the forecast, which is higher than the 10.1% decrease in passenger car registrations.

The freight project fee in June came in at $1.3 million which was a little more than the forecast. In July, the actual freight project fee revenue was right on target with projection as $1.3 million. Altogether, the freight project fee was $0.2 million or 6.3 percent more than the last forecast for those months. Freight project fee revenue growth coming in higher than truck registration growth could be the result of heavier trucks registering in those months than projected.

Finally, total License, Permit, and Fee (LPF) revenues came in at $61.9 million in June and $56.2 million in July. In June, total LPF revenue was 2.1 percent or $6.3 million lower than the June forecast. We forecasted $68.2 million for the month of June, but received $61.9 million instead. In July, the total revenue came in at $56.2 million, $5.8 million lower than the forecasted $62 million. This decrease in total LPF revenue was due to not only a decline in $30 license fees and passenger vehicle weight fees but also lower original plates and title fees.

Figure 19: Vehicle revenue, June and July 2019, Forecast vs. Actual.



	June Forecast	June Actual	June Difference	July Forecast	July Actual	July Difference	Total Difference
Basic Fee Vehicles ($30)	$17.0	$14.6	-$2.4	$14.8	$13.1	-$1.7	-$4.1
Vehicles Registering by Weight	$20.7	$18.3	-$2.4	$16.4	$16.5	$0.1	-$2.3
Passenger Weight Fee	$15.4	$13.3	-$2.1	$14.1	$12.0	-$2.1	-$4.2
Freight Project Fee	$1.1	$1.3	$0.2	$1.3	$1.3	$0.0	$0.2
Total LPF (all fees)	$68.2	$61.9	-$6.3	$62.0	$56.2	-$5.8	-$12.1

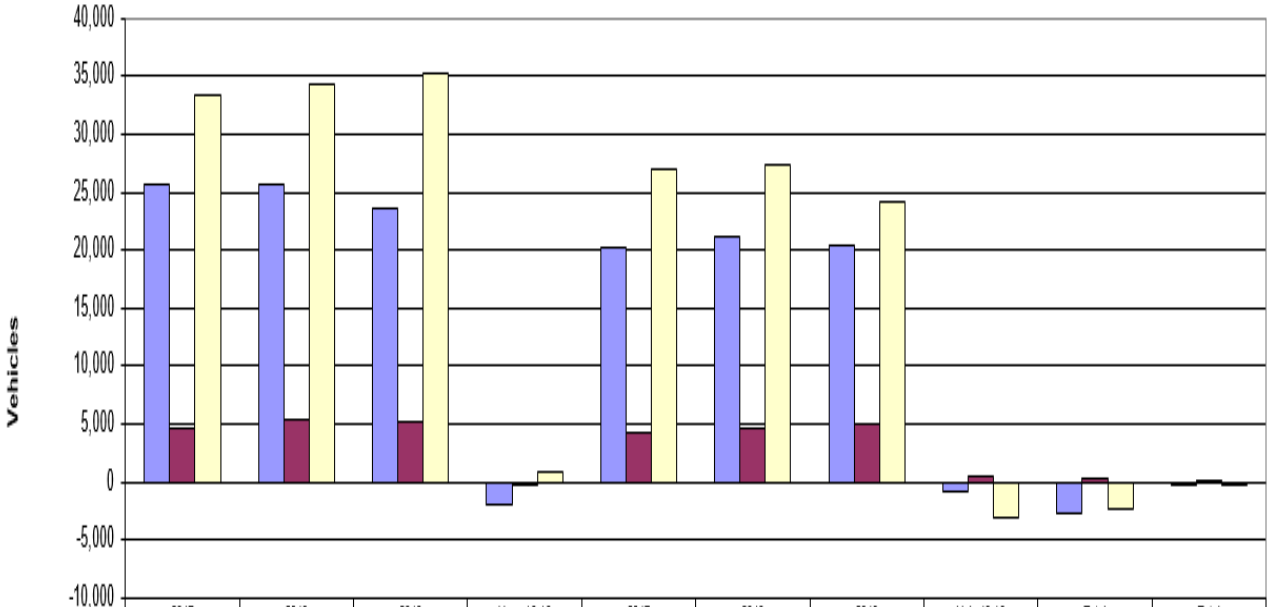
Source: Washington Transportation Revenue Forecast Council June 2019 Forecast and Department of Licensing ARFS Revenue Reports, June and July 2019.

New Car and Truck Registrations from Sales

In this report, it covers new car and truck registrations for June and July 2019, see Figure 20. In June, new car registrations were 1,939 vehicles less than the registrations in the same period a year ago. In July, new car registrations were 828 vehicles below registrations of a year ago. For two months together, total car registrations were down by 2,767 vehicles, which was 5.9 percent below the previous year.

New truck registrations in Washington State showed a decrease during the month of June 2019. The registrations went down by 114 trucks compared with the previous year monthly total, which represents a 2.2 percent decrease over last year. In July, the registrations went up year over year by 432 trucks compared with the previous year, which represents a 9.4 percent increase over last year. For the two months combined, the new truck registrations increased by 318 vehicles, which is 3.2 percent increase from the previous year. This result indicates that the new truck registrations are increasing year over year and may reflect the increased demand Washington residents have for new trucks. Overall, total new vehicle registrations decreased by 2,287 vehicles or 3.7 percent, year over year.

Figure 20: New vehicle registrations Comparisons



	2017 June	2018 June	2019 June	'June 18-19 Difference	2017 July	2018 July	2019 July	'July 18-19 Difference	Total Difference	Total Percent Change
Passenger Cars	25,652	25,599	23,660	-1,939	20,209	21,211	20,383	-828	-2,767	-5.9%
Trucks	4,688	5,286	5,172	-114	4,174	4,578	5,010	432	318	3.2%
Total Vehicles	33,275	34,369	35,178	807	26,963	27,295	24,201	-3,094	-2,287	-3.7%

Source: Department of Licensing Report 14 for various months and years.

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