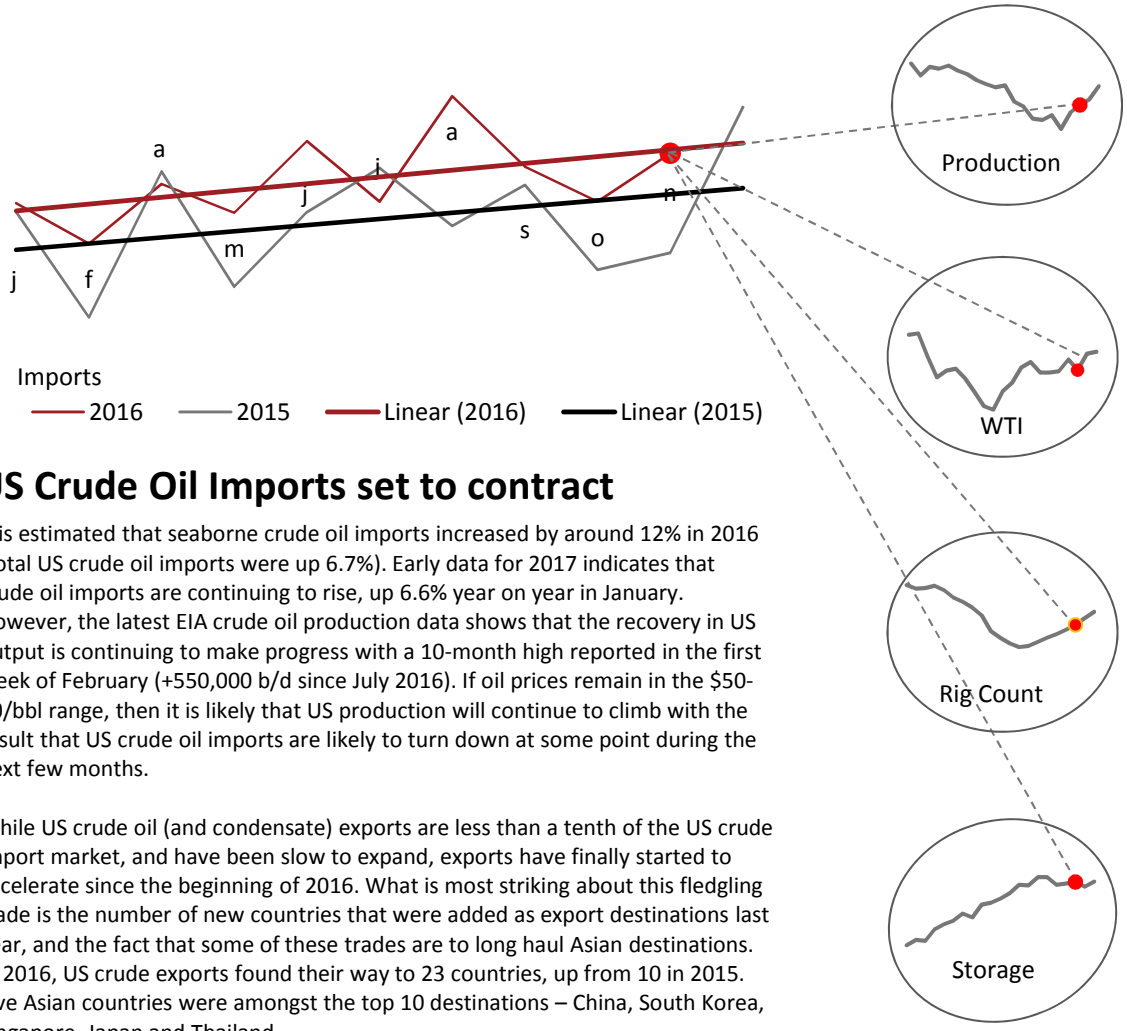
Weber US Crude Oil Trade Report

Q4 2016

In this quarter's Charles R Weber US crude oil trade report we provide readers with the latest developments in the US crude oil trade, based on trade data up to November 2016. This includes identifying the fastest growing trades by country and import district.



US Crude Oil Imports set to contract

It is estimated that seaborne crude oil imports increased by around 12% in 2016 (total US crude oil imports were up 6.7%). Early data for 2017 indicates that crude oil imports are continuing to rise, up 6.6% year on year in January. However, the latest EIA crude oil production data shows that the recovery in US output is continuing to make progress with a 10-month high reported in the first week of February (+550,000 b/d since July 2016). If oil prices remain in the $50-60/bbl range, then it is likely that US production will continue to climb with the result that US crude oil imports are likely to turn down at some point during the next few months.

While US crude oil (and condensate) exports are less than a tenth of the US crude import market, and have been slow to expand, exports have finally started to accelerate since the beginning of 2016. What is most striking about this fledgling trade is the number of new countries that were added as export destinations last year, and the fact that some of these trades are to long haul Asian destinations. In 2016, US crude exports found their way to 23 countries, up from 10 in 2015. Five Asian countries were amongst the top 10 destinations – China, South Korea, Singapore, Japan and Thailand.

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Production peaked in April '15 at 9.6Mnbd. Thereafter, it has been in decline, falling by 1Mnbd to 8.4Mnbd in July'16. However, it picked up in 2H16 reaching 8.9Mnbd in early February 2017. Further growth is expected over the next few months.
Oil Prices hit bottom in Feb '16 at just over USD30Bbl. At that time, fears of a supply glut were most pronounced because of OPEC's failure to agree an output freeze. However, production outages during 2016 coupled with OPEC's decision to cut production by 1.2Mnbd from 1 Jan have allowed prices to consolidate in a band between USD50-60 bbl.
Rig numbers started to fall sharply from Dec'14, which is around 6 months before peak production. The rig count started to recover from May'16, which presaged a recovery in output from Aug'16. Rig levels continue to rise, but are still just 35% of their peak in Sept'14.

Storage (combined crude and product storage) has been falling since Aug'16, while crude oil stocks peaked in Apr'16. The decline in stocks has been another important factor in underpinning oil prices in the last few months. It provides encouragement to both domestic producers and exporters to the US. However, stocks are still too close to historic highs for comfort.

2040	World oil consumption to grow by 11 Mnbd 2015-40, but collectively US, Europe & Japan see demand drop by 10.9 Mnbd). *IEA WEO Nov'16 (new policies scenario).*
2020	China +1.6 Mnbd 2015-20 and India +1.1Mnbd to be the main drivers of world oil demand growth (+3,4Mnbd). *IEA WEO - Nov'16 (new policies scenario)*
2017	OPEC hits lower quotas in Jan. This brings forward the date for market rebalancing and allows oil prices to hold station in the range USD50-60 bbl. US production continues to recover.
2016	In Oct'16, OPEC agrees an output cut - thus ending the battle for market share - its hand forced by high stocks and more resilient non-OPEC production than expected e.g. US +0.5Mnbd 2H16

The changing profile of US crude oil imports

Figures '000 tonnes

Exporter	2016Ytd	2015	e2016	% Chg
Canada	137206	150504	149679	-1%
Saudi Arabia	50578	53989	55175	2%
Venezuela	34644	39647	37793	-5%
Mexico	26951	34777	29401	-15%
Colombia	20676	19188	22556	18%
Iraq	18571	11575	20260	75%
Ecuador	11194	11570	12212	6%
Kuwait	10015	10659	10925	2%
Nigeria	9794	3197	10684	234%
Angola	7661	6310	8358	32%
Brazil	6881	9733	7507	-23%
Other	18902	14180	20620	45%
Total	353073	365328	385171	5%

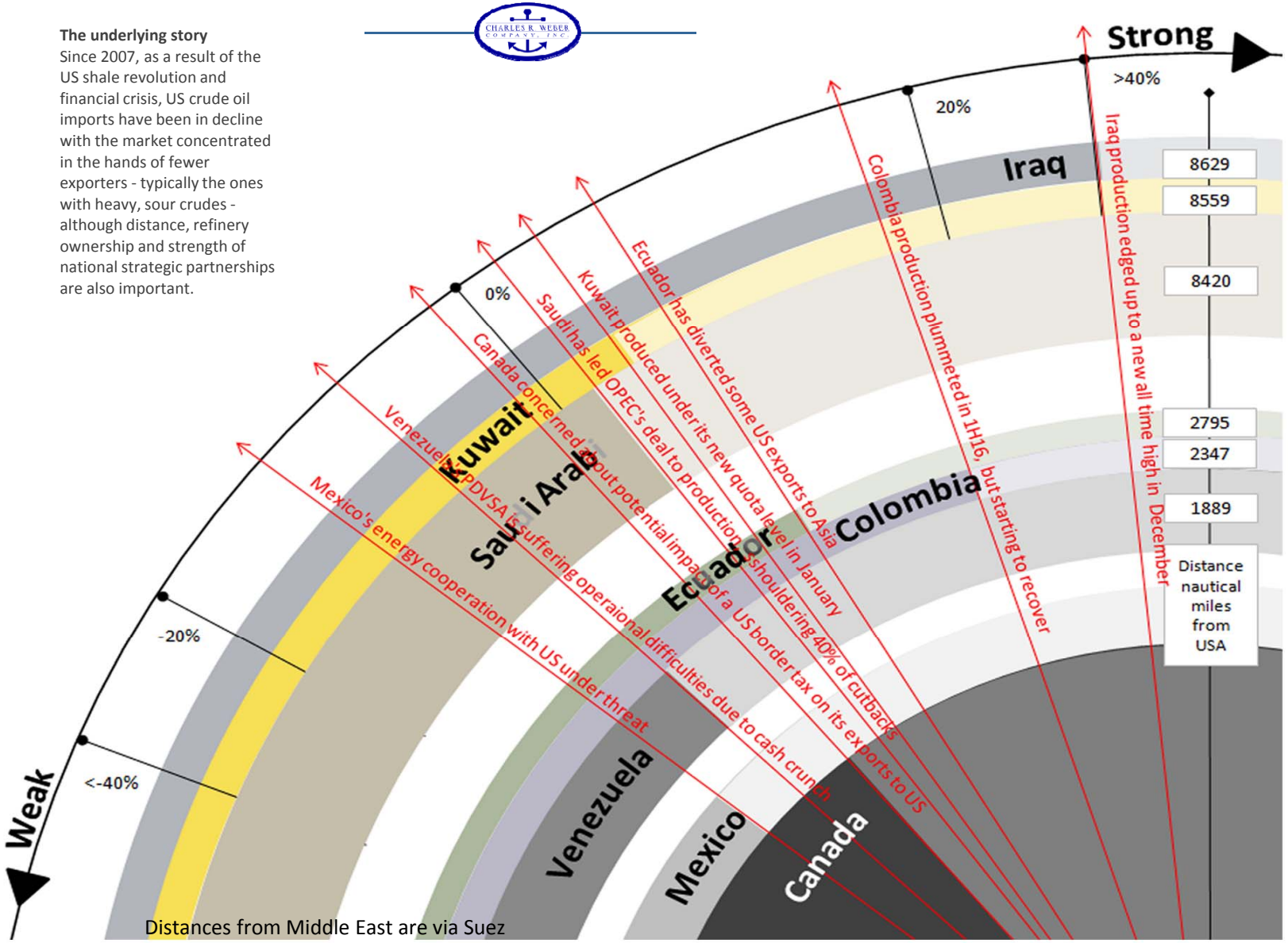
Infographic elemets
Not just a pretty picture, there are three dimensions of data displayed in this "rev counter".

1 Performance 2016 compared with 2015 YTD for each exporter is shown by the distance the coloured band moves around the "rev counter". Also see table.

2 Size of exports to US in 2016 - is shown in the width of each band e.g Canada is the largest exporter, while Saudi is the second largest.

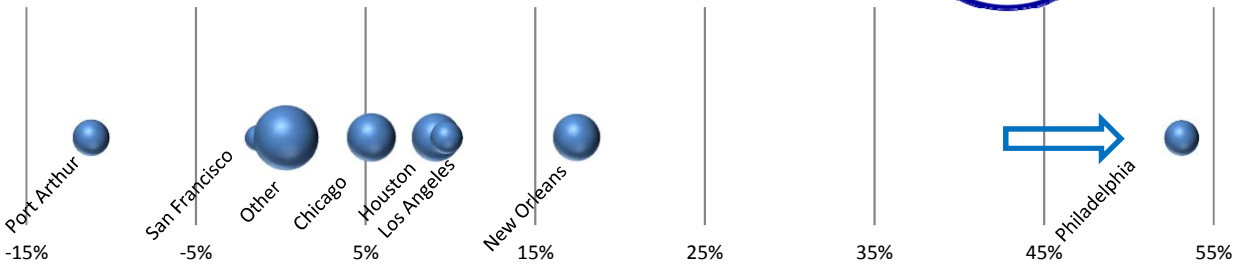
3 The average haul of each trade is shown by the distance from the centre of the dial.

The underlying story
Since 2007, as a result of the US shale revolution and financial crisis, US crude oil imports have been in decline with the market concentrated in the hands of fewer exporters - typically the ones with heavy, sour crudes - although distance, refinery ownership and strength of national strategic partnerships are also important.



US crude oil imports by district & country

Q4 2016



The chart (left) shows the relative size of the main import districts and the best performing Jan-Aug 2015 v Jan-Nov 2016. It shows Philadelphia was the best, while Port Arthur was the worst.

This map provides a detailed insight into US crude oil imports by linking countries that export crude oil to the US with their preferred entry districts.

For example: Saudi is the 2nd largest exporter to the US. Its main entry point is via LOOP (New Orleans), but it is represented in each of the top 6 entry points.

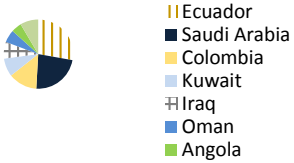
By contrast, Ecuador's exports to the US are more targeted. It is the third largest exporter to the USWC. However, there are signs that it is increasingly targeting the USGulf with exports into the US via New Orleans now starting to show up.

Orange dots indicate notional loci for US import and export zones. The most important import zones have an associated pie chart.

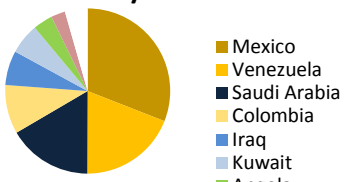
Seattle
Pembina
Great Falls
Duluth
Minneapolis
Ogdensburg
St Albans
Buffalo
Boston
Detroit
Chicago
Cleveland
New York
Philadelphia
Baltimore
Washington
St Louis
San Francisco
Los Angeles
Dallas
Savannah
Port Arthur
Mobile
Houston/Galveston
New Orleans
Tampa
Laredo
Miami

San Francisco

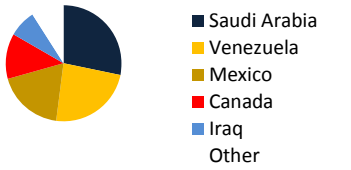
Los Angeles



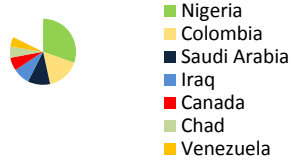
Houston/Galveston



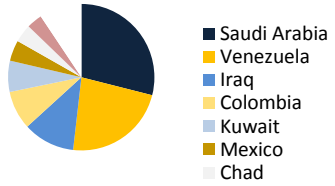
Port Arthur



Philadelphia



New Orleans



Source USITC

Prospects for US shale revolution

Q4 2016

Infographic - this infographic provides a high level view of the US oil production industry in the context of global supply and demand.

The primary image is a stacked bar chart showing US liquids production (crude oil + NGLs) in 2007, 2017 (short term forecast), and 2025 (long term forecast).

It shows the sharp growth in US production - although it should be noted that most of the growth comes by 2020.

The pie chart shows how important US production growth is in 2025 in terms of meeting expected demand growth

Natural Gas Liquids (NGLs): A group of hydrocarbons including ethane, propane, normal butane, isobutane and natural gasoline. Generally include natural gas plant liquids and all liquefied refinery gases except olefins. The group is sometimes called "Y-grade".

Source for data is US Energy Information Agency (EIA) Short Term Energy Outlook Feb 2017 and Annual Energy Outlook 2017

Forecast for world liquids production growth is BP Energy Outlook 2035, published February 2017.

2007

NGLs production 1.7Mnbd

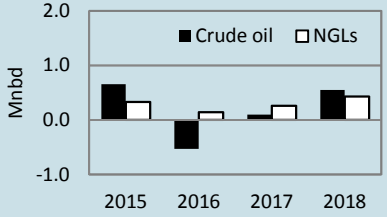
Crude production 5.1Mnbd

2017

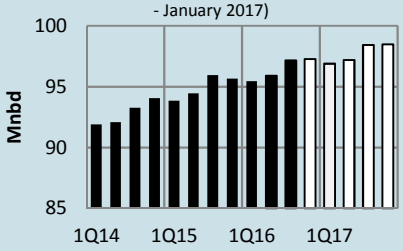
NGLs production 3.7Mnbd, +0.3Mnbd Yoy

Crude production 9.0Mnbd, +0.1Mnbd Yoy

Production change
(EIA - STEO Feb 2017)



World crude oil demand forecast (IEA - January 2017)



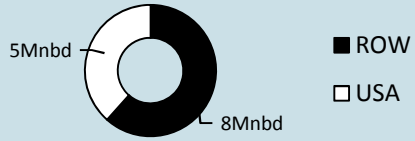
2025

NGLs production 4.3Mnbd

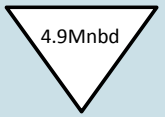
Forecast for combined US crude oil and NGLs production in 2025 is 14.7Mnbd
IEA WEO Nov'16 news policies scenario p136

Crude production 10.4Mnbd

US share of world liquids production growth 2015-2025



US liquids demand set to fall 4.9Mnbd 2015-2040
IEA WEO Nov'16 news policies scenario p115



US crude oil imports by country

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US crude oil imports by country (continued)

Q4 2016