



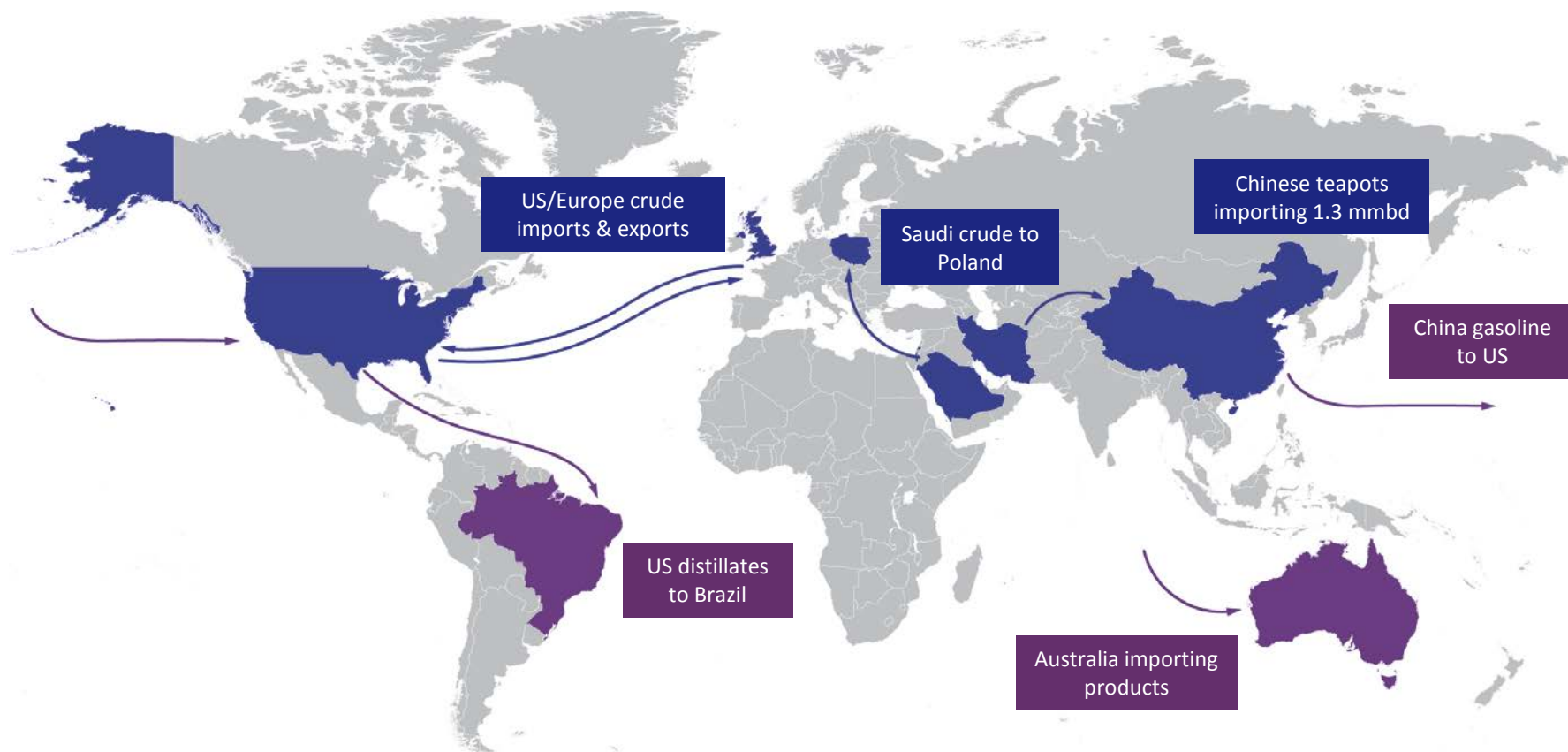
Evolving Global Oil Trade Flows

IEA-IEF-OPEC Joint Meeting

Vienna, March 2018

*ADVANCING
TRADE*

SHIFTING FLOWS: WHAT HAS THIS MEANT IN PRACTICE?

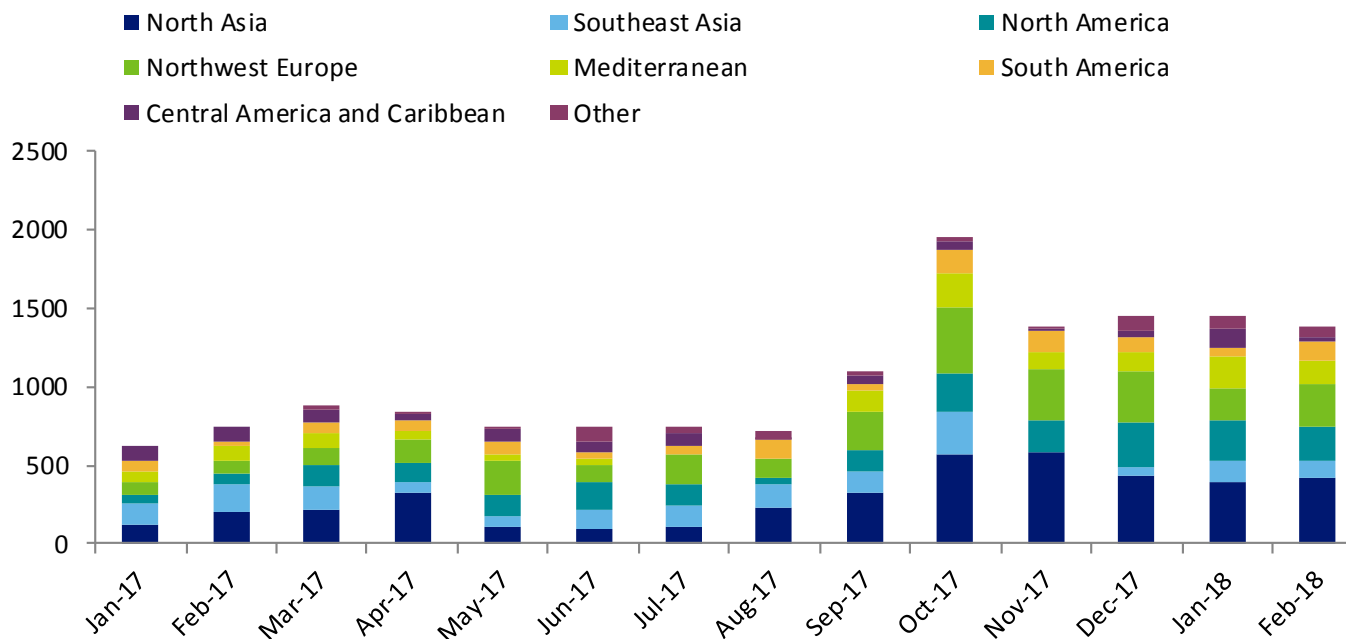


US CRUDE AND CONDENSATE EXPORTS ARE INCREASING TO ALL REGIONS

EXPORTS BY DESTINATION REGION

BY LOAD MONTH

Stated in Thousand Barrels per Day



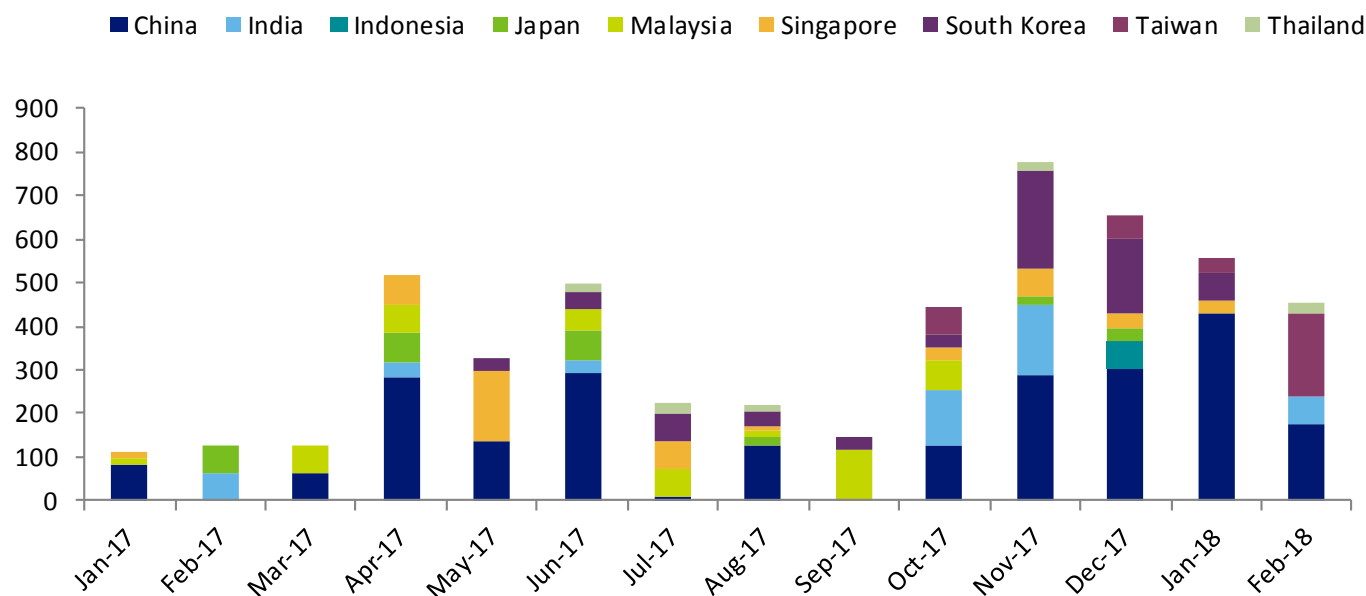
Source: Trafigura Research

MORE ASIAN REFINERS ARE IMPORTING US CRUDE

ASIAN CRUDE AND CONDENSATE IMPORTS FROM THE UNITED STATES BY COUNTRY

BY DISCHARGE MONTH

Stated in Thousand Barrels per Day



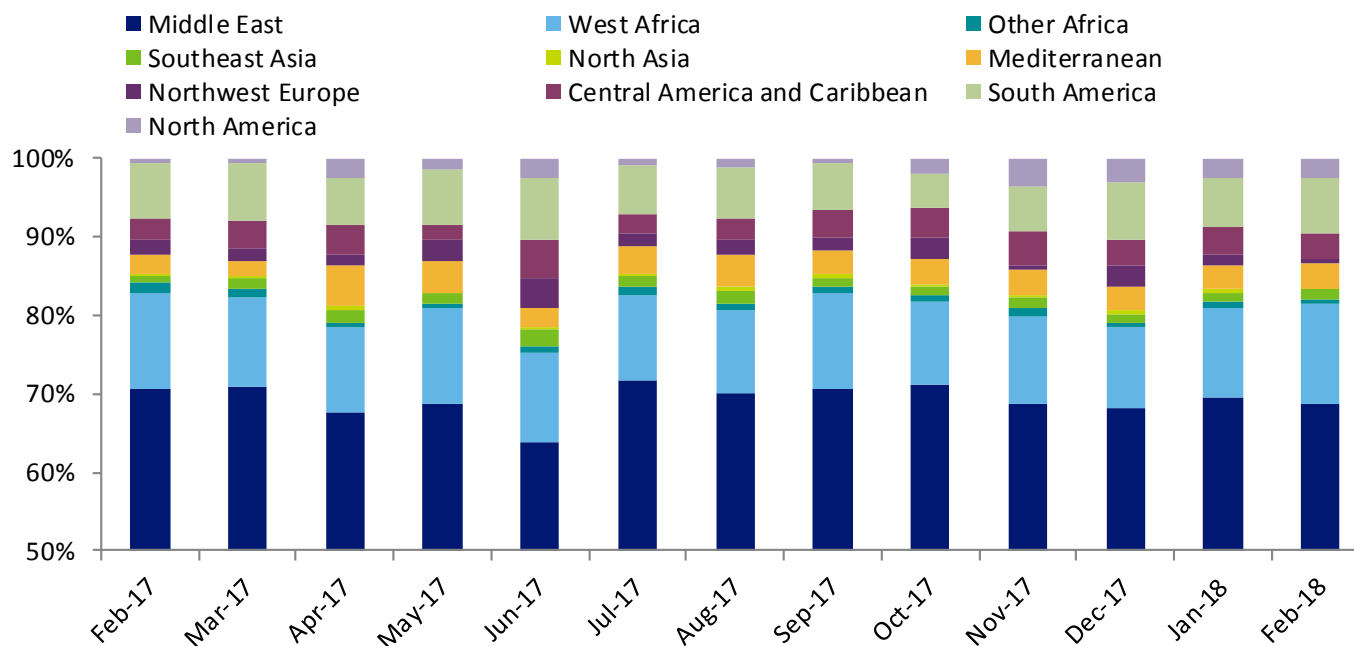
Source: Trafigura Research

EXPORTS FROM OTHER REGIONS ARE ALSO TAKING MARKET SHARE CREATED BY INCREASED ASIAN DEMAND

MARKET SHARE OF ASIAN IMPORTS BY ORIGIN

BY DISCHARGE MONTH

Stated in Thousand Barrels per Day



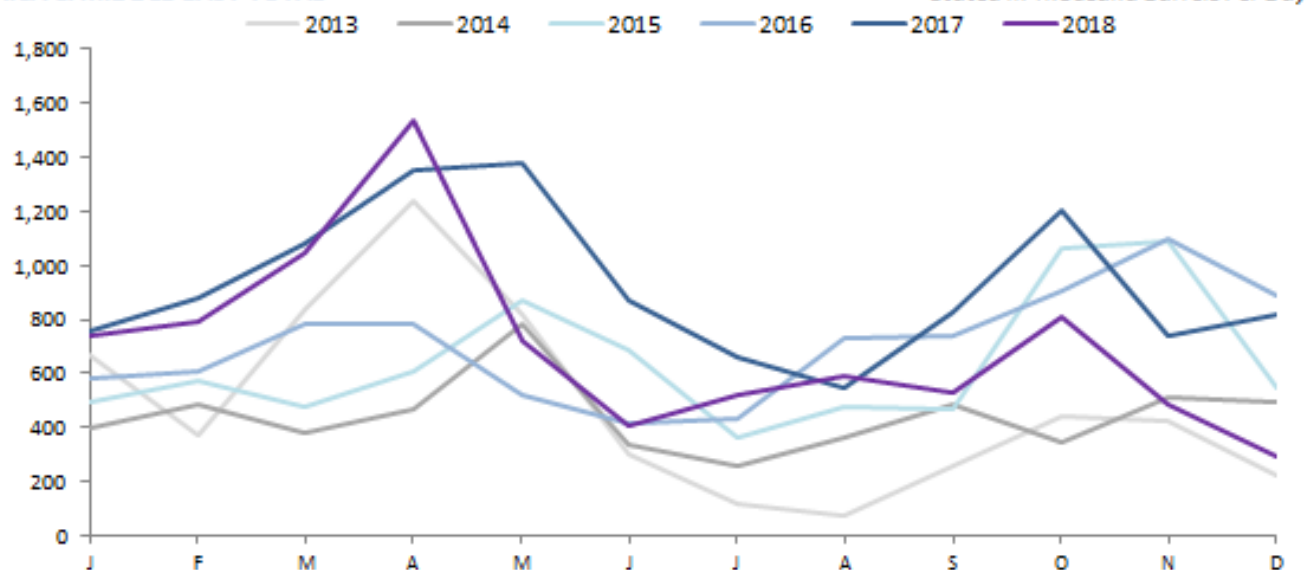
Source: Trafigura Research

THE MIDDLE EAST WILL SEE PEAK TURNAROUNDS IN APRIL; ADDITIONAL EXPORTS WILL HAVE TO COMPETE FOR MARKET SHARE

ATMOSPHERIC DISTILLATION AND CONDENSATE SPLITTER OUTAGES

AFRICA & MIDDLE EAST TOTAL

Stated in Thousand Barrels Per Day



Capacity Offline

Africa & ME Total

KBPD

Feb-18

794

Feb-17

883

Feb-16

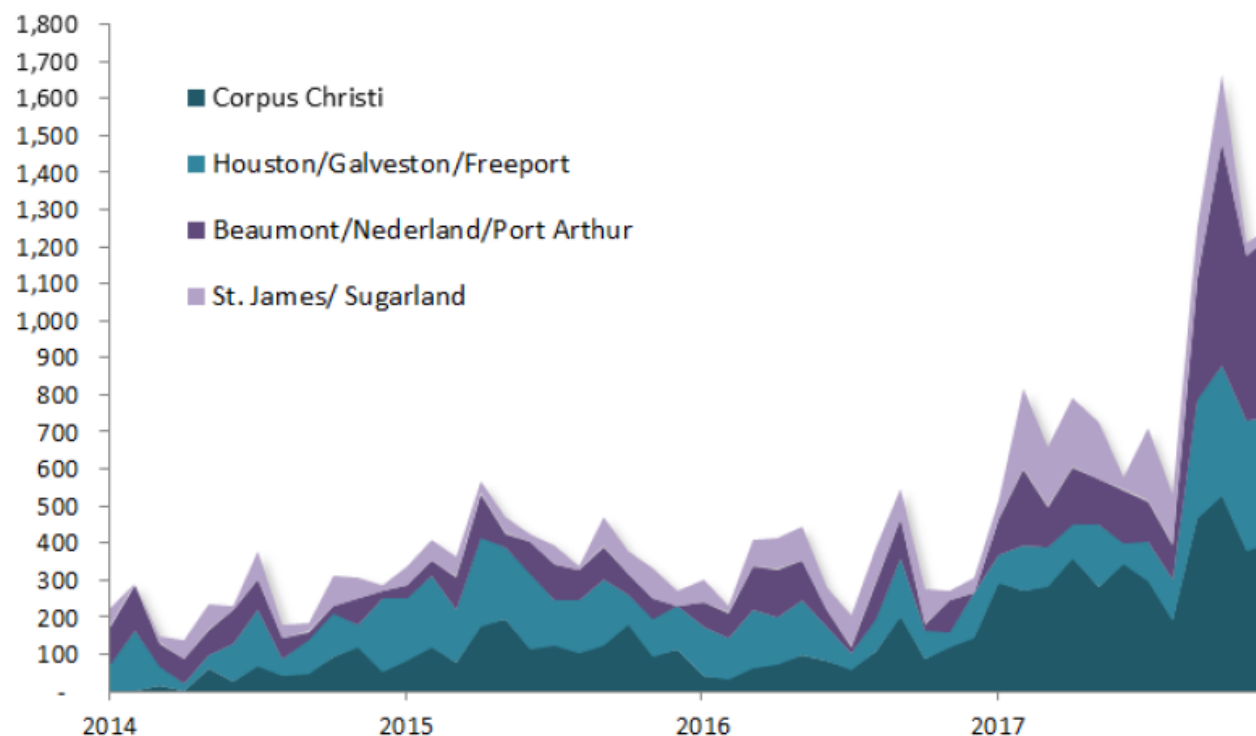
608

Source: DOE, IIR, ENT, Genscape, Bloomberg, Trafigura Research

US IS NOW EXPORTING NEARLY 2 MMBPD FROM VARIOUS PORTS

THE UNITED STATES GULF COAST
EXPORTS FROM KEY PORTS

Stated in kbpd



Source: Customs, Clipper, Lloyds, Trafigura Research

UNITED STATES: PETROLEUM PRODUCT EXPORTS

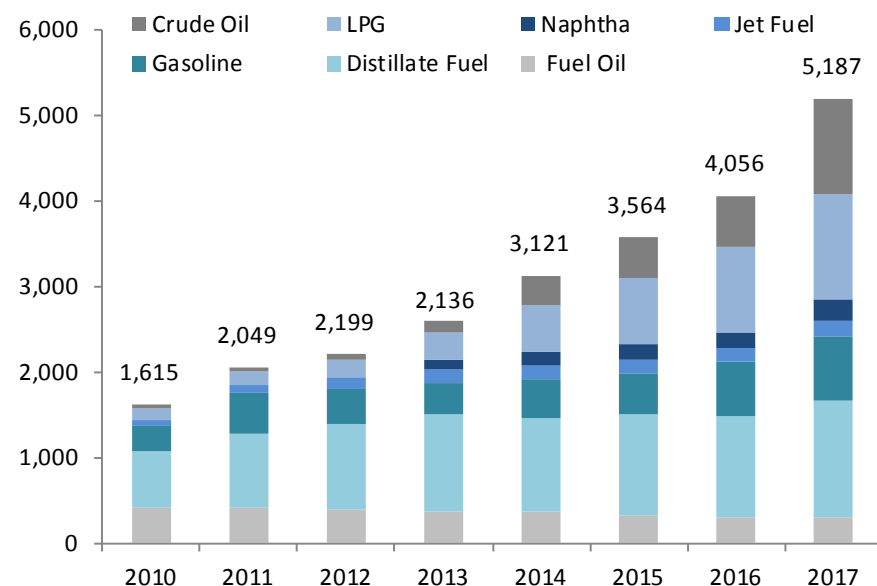
REMARKS

- Total US petroleum exports continued to surge through end-2017, setting a new record high in aggregate and for each of the key individual products (crude oil, LPG, gasoline, distillate fuel, jet fuel)
- The majority of these steams are moving to Latin America (especially Mexico and Brazil), meeting heightened import requirements as local refinery production has collapsed due to operational, financial, and strategic decisions in recent years
- Europe (mainly the Mediterranean) is a large and growing destination for distillates, but competition from is intense the Arab Gulf, Russia, and local refining in that market
- For specific products (LPG / Naphtha), arbitrage to Asia is typically economic and products largely clear into India, South Korea and Japan

TOTAL PETROLEUM EXPORT VOLUMES

TOTAL US

In Thousand Barrels per Day

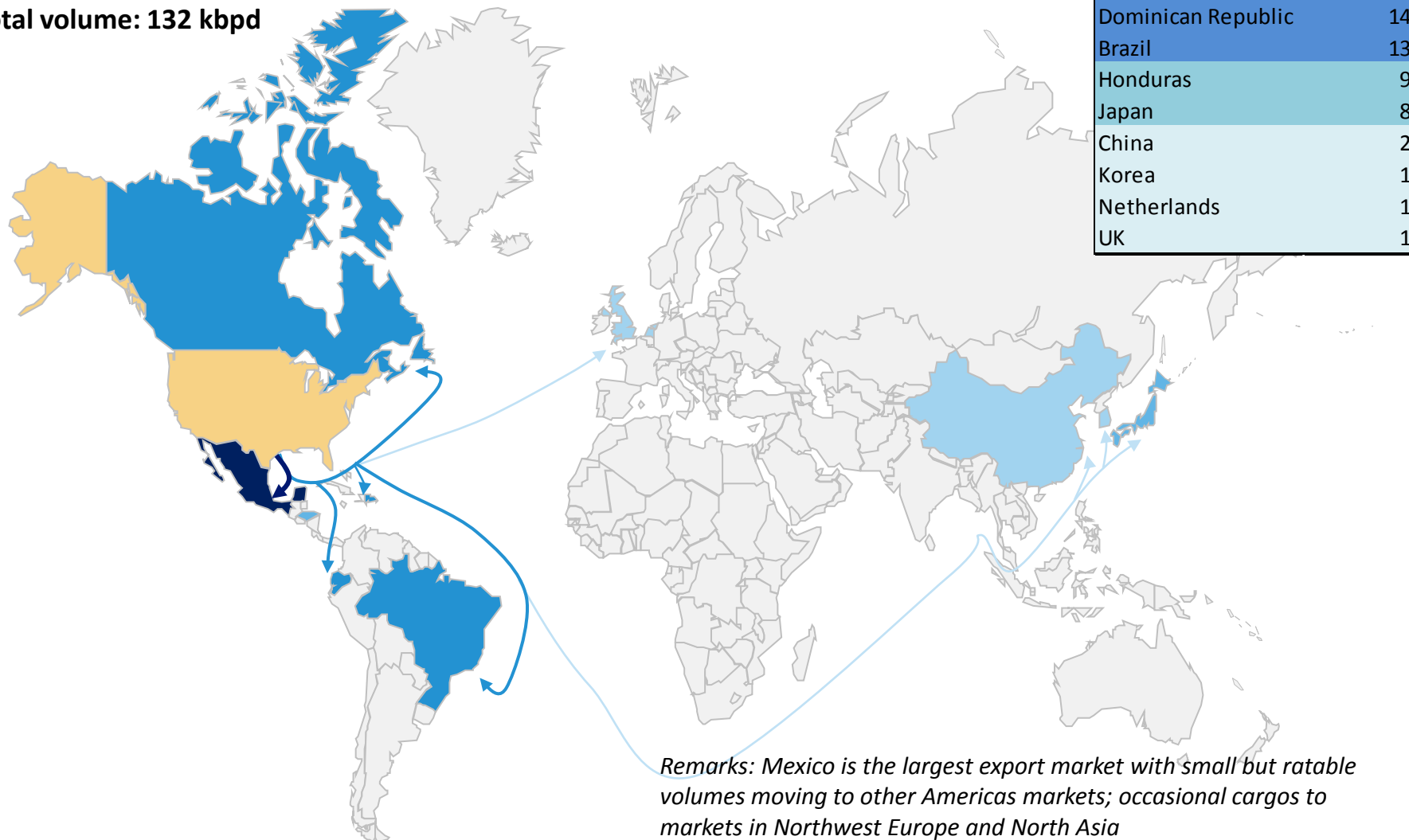


Source: EIA, Trafigura Research

LPG FLOWS TO KEY MARKETS

CALENDAR 2010

Total volume: 132 kbpd



LPG FLOWS TO KEY MARKETS

CALENDAR 2017

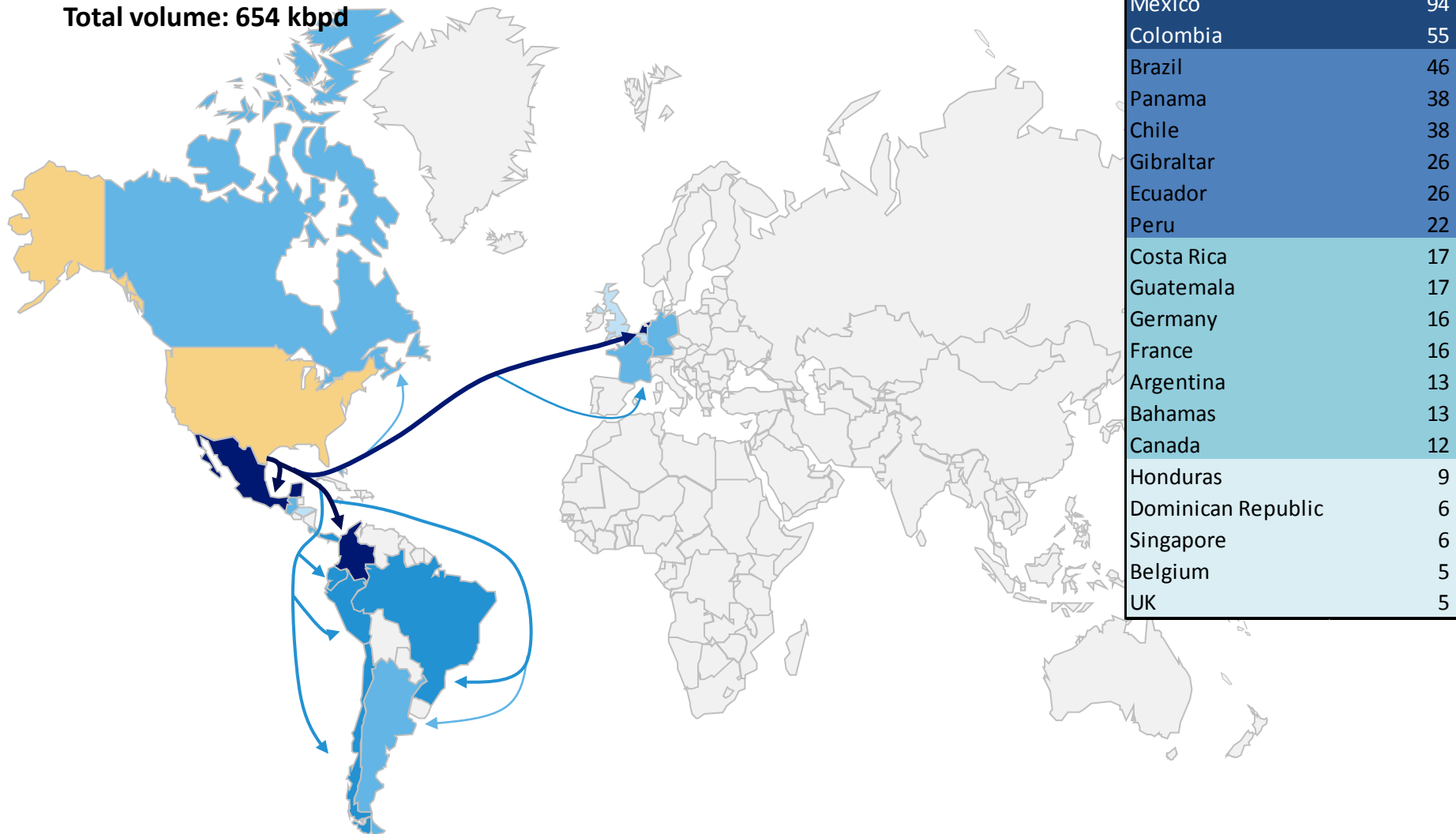
Total volume: 1,207 kbpd



DISTILLATE FLOWS TO KEY MARKETS

CALENDAR 2010

Total volume: 654 kbpd

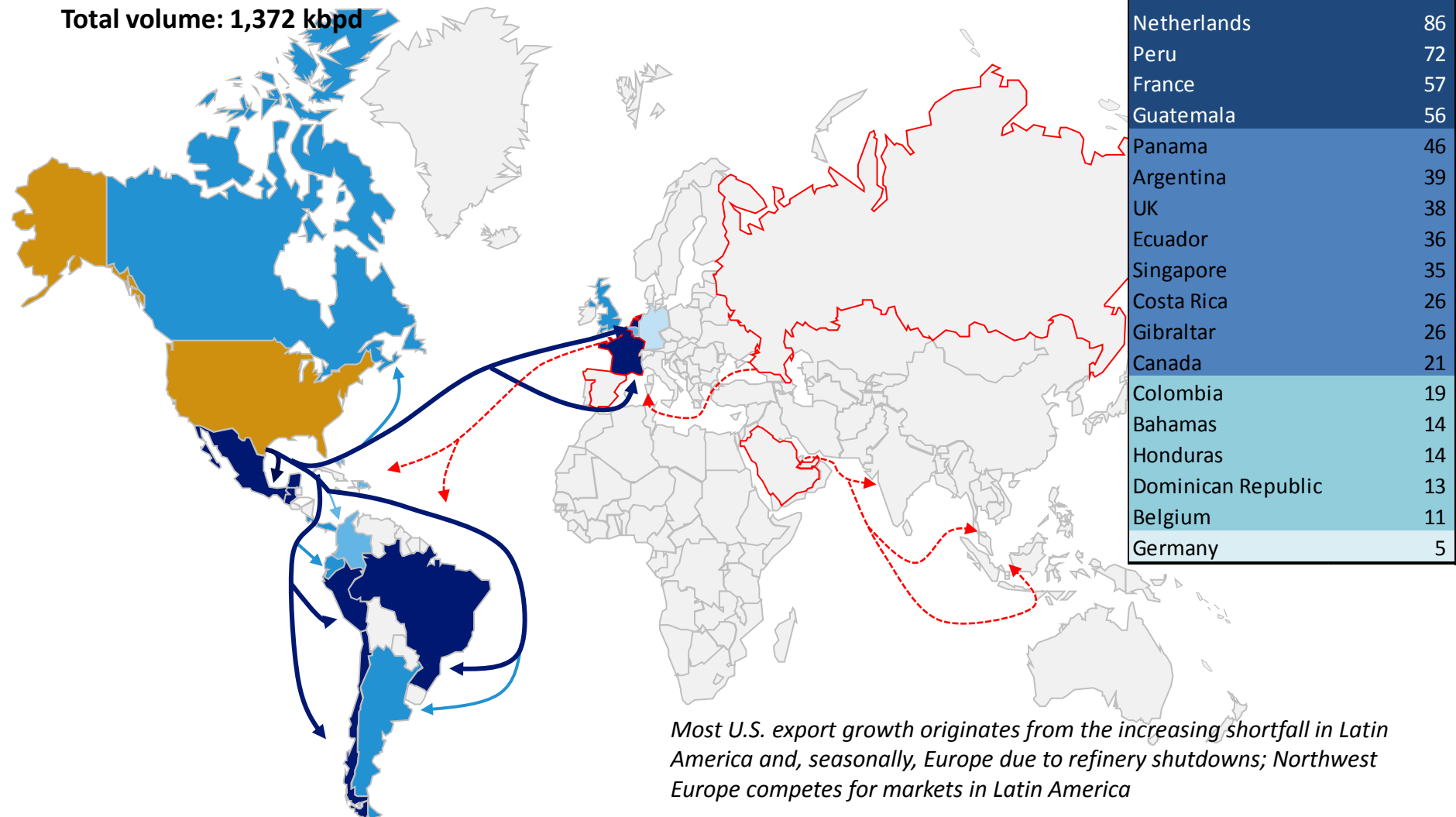


DISTILLATE FLOWS TO KEY MARKETS

CALENDAR 2017

Total volume: 1,372 kbpd

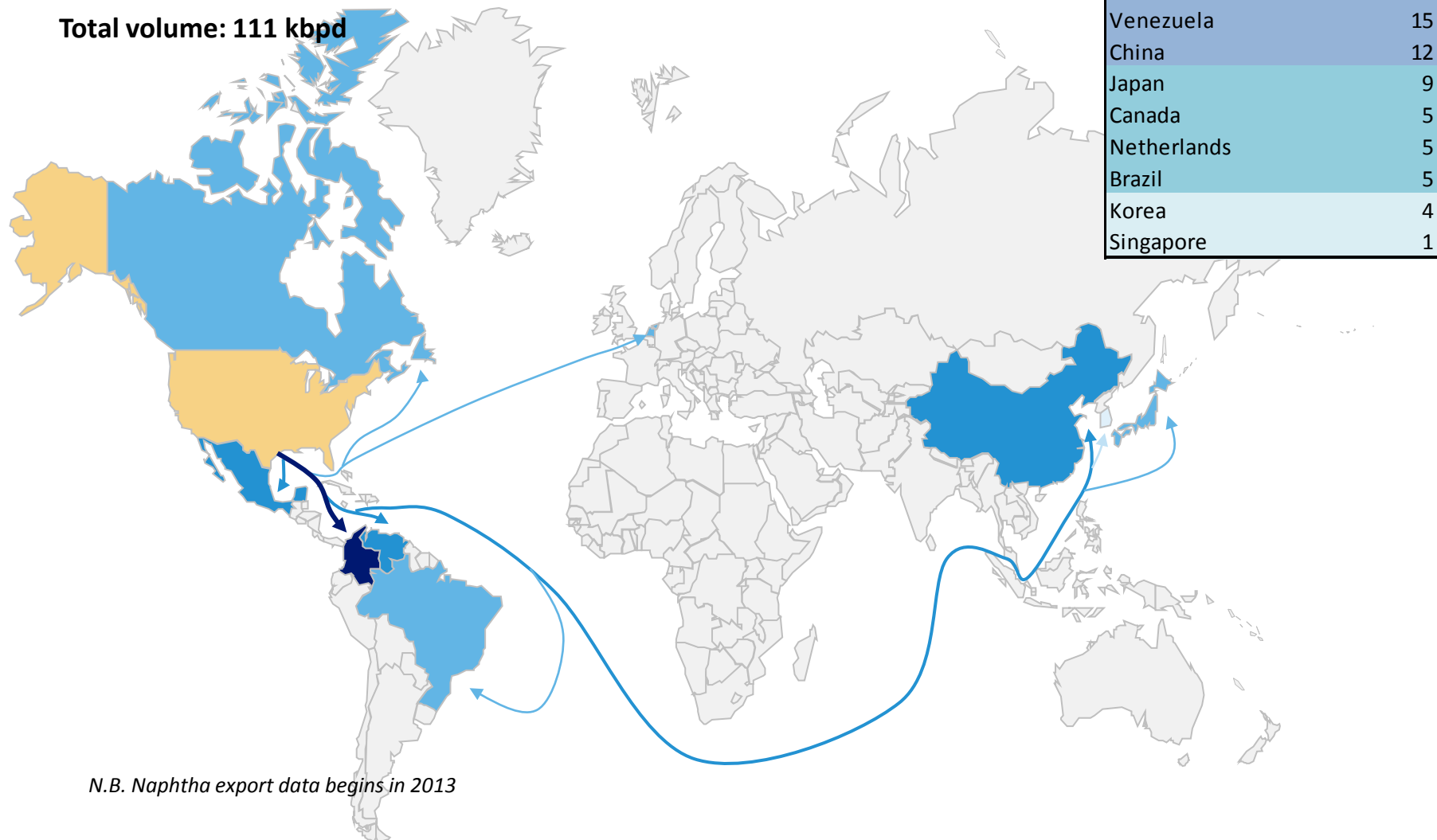
Mexico	246
Brazil	208
Chile	99
Netherlands	86
Peru	72
France	57
Guatemala	56
Panama	46
Argentina	39
UK	38
Ecuador	36
Singapore	35
Costa Rica	26
Gibraltar	26
Canada	21
Colombia	19
Bahamas	14
Honduras	14
Dominican Republic	13
Belgium	11
Germany	5



NAPHTHA FLOWS TO KEY MARKETS

CALENDAR 2013

Total volume: 111 kbpd

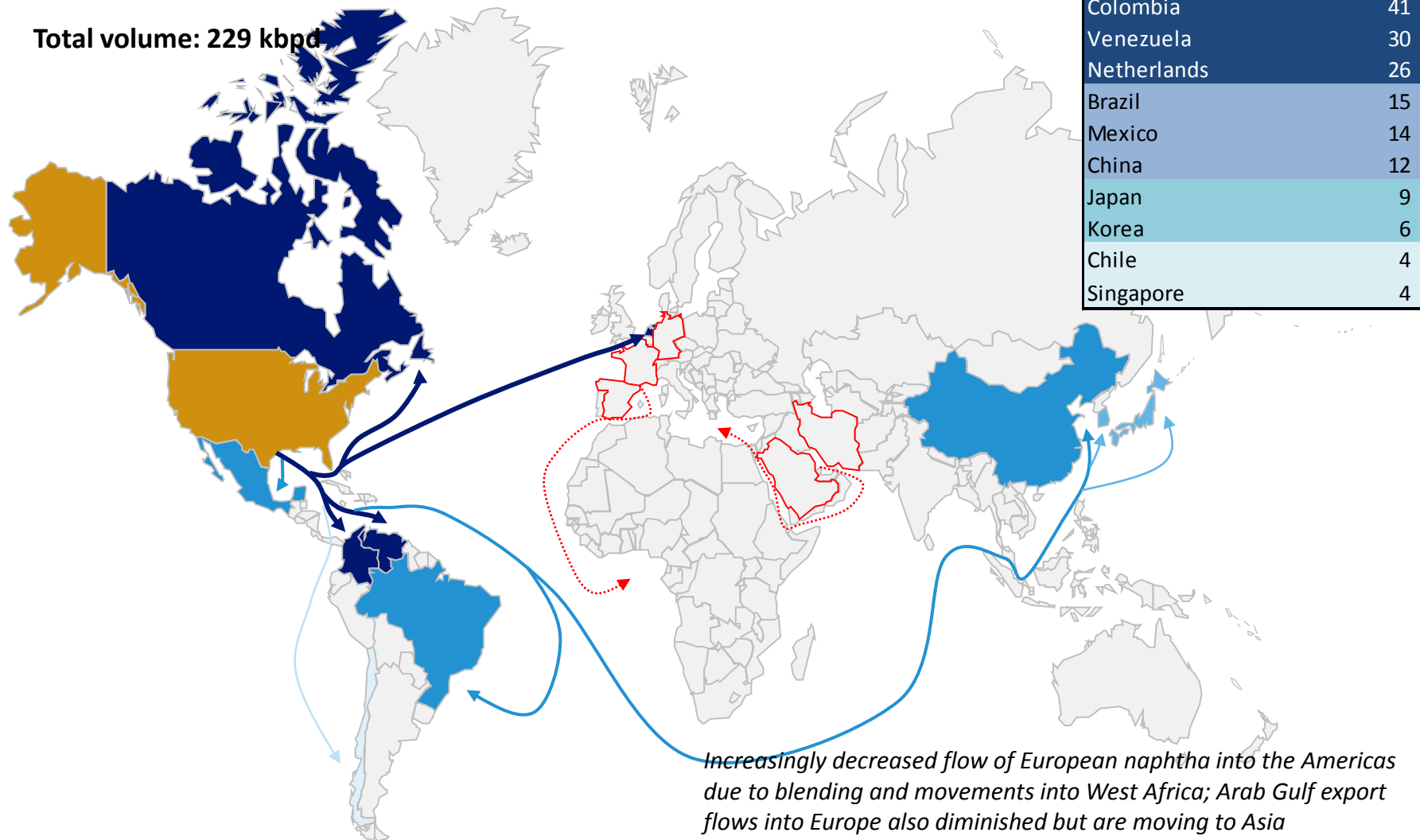


N.B. Naphtha export data begins in 2013

NAPHTHA FLOWS TO KEY MARKETS

CALENDAR 2017

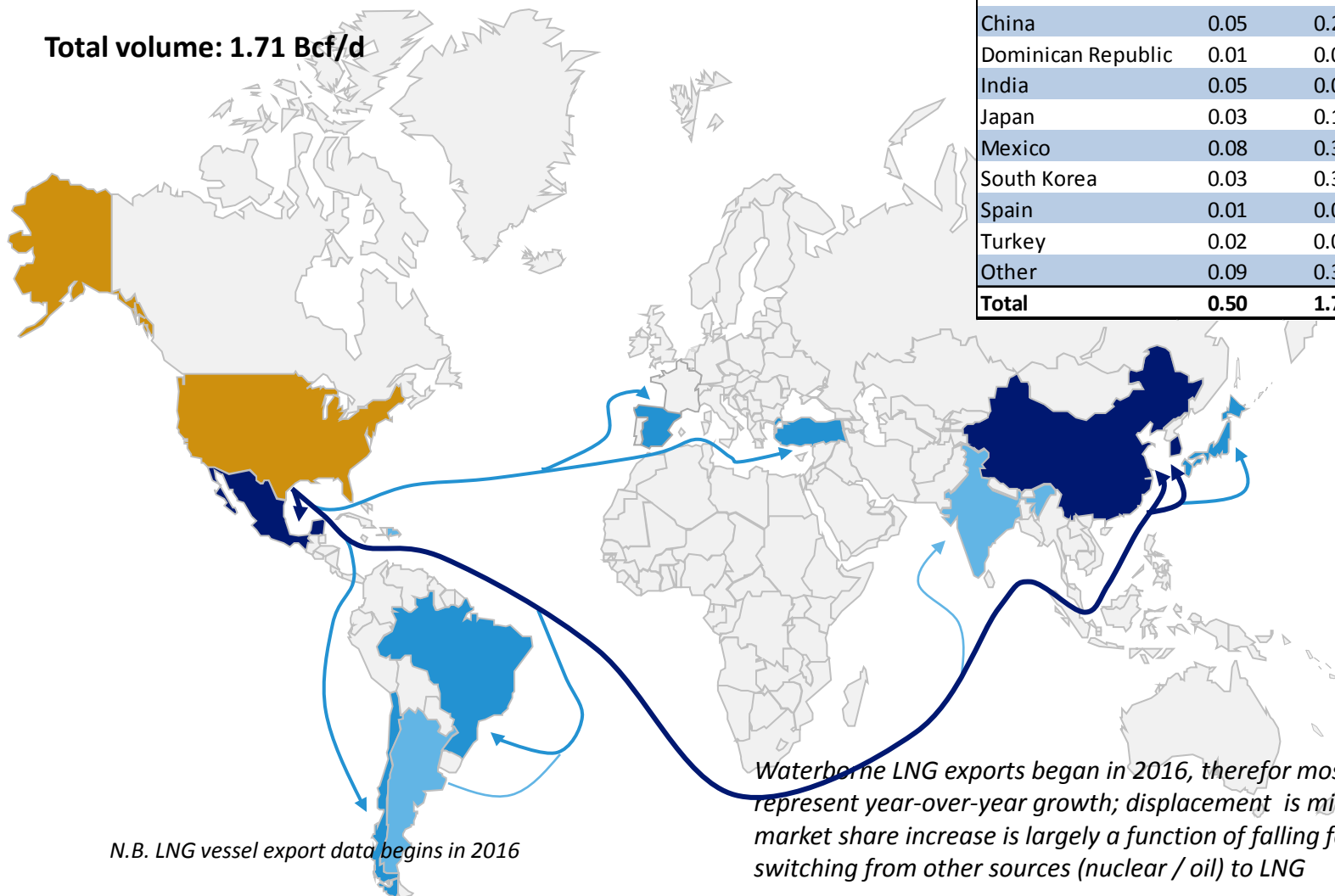
Total volume: 229 kbpd



LNG FLOWS TO KEY MARKETS

CALENDAR 2017

Total volume: 1.71 Bcf/d



US LNG EXPORTS - 2017			
In Bcf/d	2016	2017	% Change
Argentina	0.05	0.04	-2%
Brazil	0.03	0.05	92%
Chile	0.08	0.06	-24%
China	0.05	0.22	364%
Dominican Republic	0.01	0.02	195%
India	0.05	0.05	3%
Japan	0.03	0.11	254%
Mexico	0.08	0.37	398%
South Korea	0.03	0.30	976%
Spain	0.01	0.07	786%
Turkey	0.02	0.06	145%
Other	0.09	0.35	314%
Total	0.50	1.71	239%

Waterborne LNG exports began in 2016, therefore most 2017 volumes represent year-over-year growth; displacement is minimal for now; U.S. market share increase is largely a function of falling foreign supply and switching from other sources (nuclear / oil) to LNG

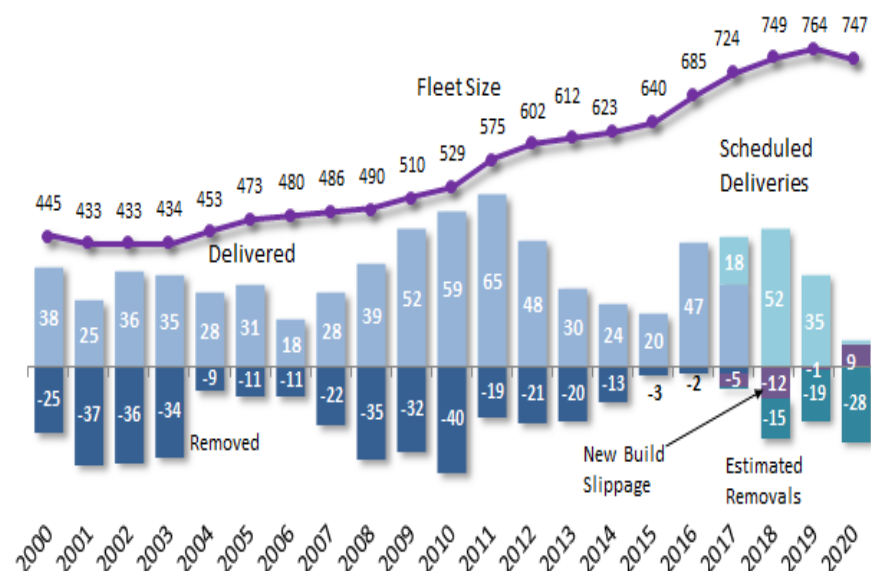
WORLDWIDE SHIPPING FLEET: VLCCS

Steady fleet growth should continue into 2018 to help keep freight costs low

VERY LARGE CRUDE CARRIERS, FLEET SIZE^{1, 2, 3}

GROWTH INTO CALENDAR 2019

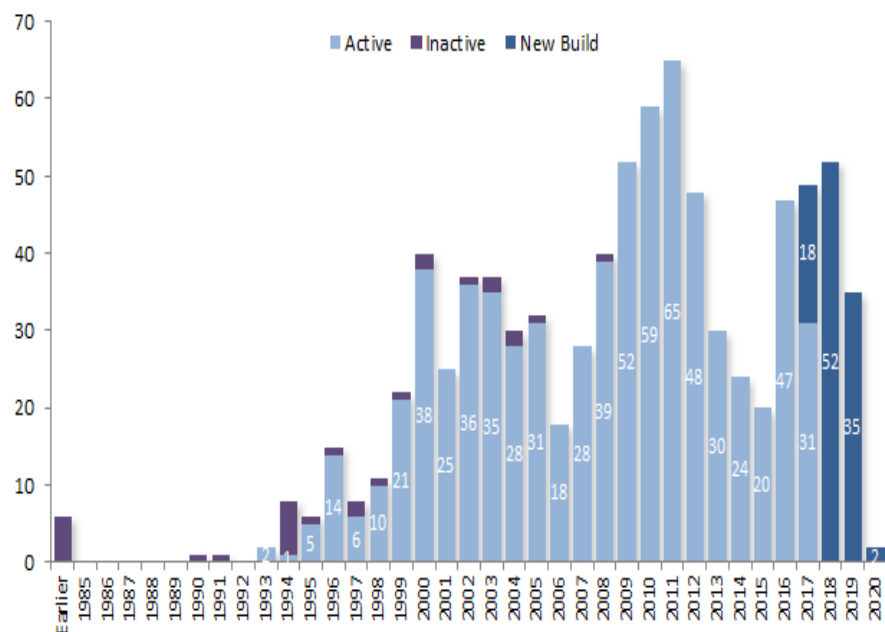
stated in number of vessels



VERY LARGE CRUDE CARRIER FLEET¹

SEGREGATION BY YEAR BUILT

stated in number of vessels



1 Our forecast only includes announced additions at time of publication and no future orders

2 The average age of the VLCC fleet is 9 years old

3 Unverified orders and options are not included in these estimates

Source: ACM Research, Lloyds, Press Releases, Trafigura Research

1 The inactive fleet consists primarily of floating storage, lay-ups, and restricted vessels

Source: ACM Research, Lloyds, Press Releases, Trafigura Research

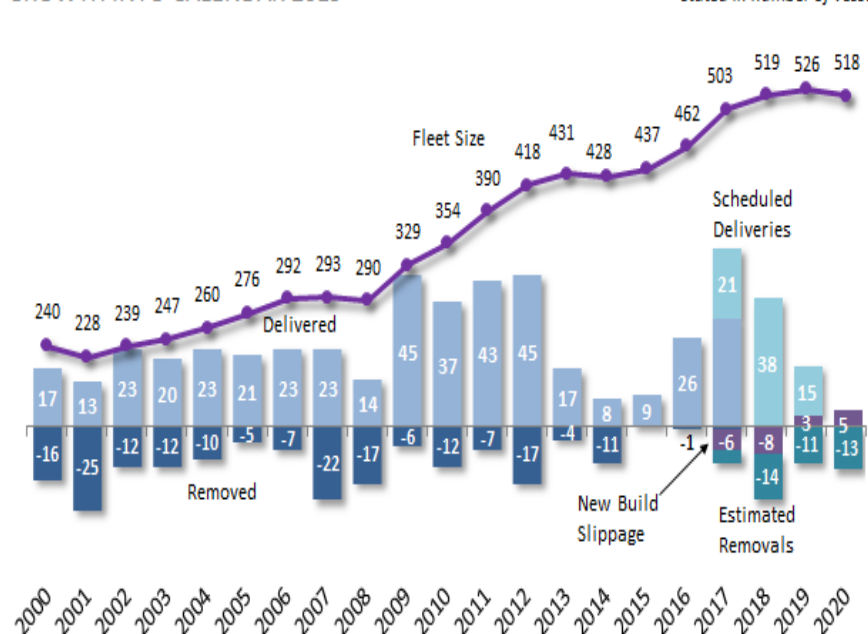
WORLDWIDE SHIPPING FLEET: SUEZMAXES

Suezmax fleet growth should also continue into 2018

SUEZMAX FLEET SIZE ^{1, 2, 3}

GROWTH INTO CALENDAR 2019

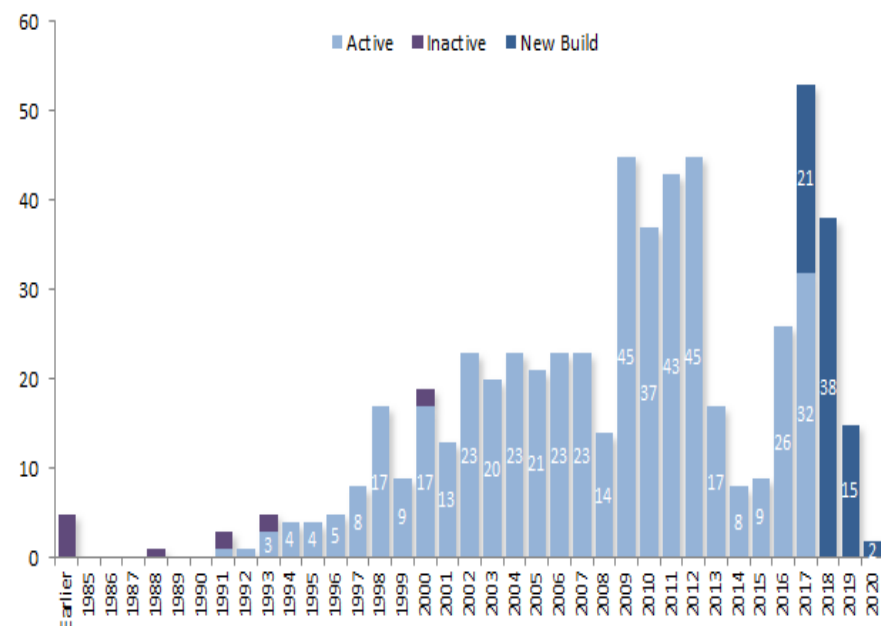
stated in number of vessels



SUEZMAX FLEET ¹

SEGREGATION BY YEAR BUILT

stated in number of vessels



1 Our forecast only includes announced additions at time of publication and no future orders

2 The average age of the Suezmax fleet is 9 years old

3 Unverified orders and options are not included in these estimates

Source: ACM Research, Lloyds, Press Releases, Trafigura Research

1 The inactive fleet consists primarily of floating storage, lay-ups, and restricted vessels

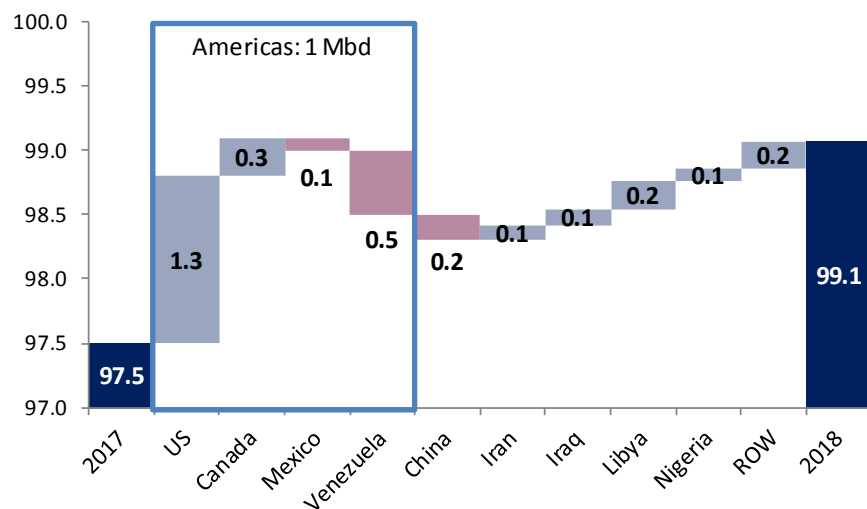
Source: ACM Research, Lloyds, Press Releases, Trafigura Research

MASSIVE US SUPPLY GROWTH WILL BE MET WITH STRONG DEMAND GROWTH GLOBALLY

WORLDWIDE HYDROCARBONS

SUPPLY WATERFALL, 2017 TO 2018 GROWTH

Stated in kbpd

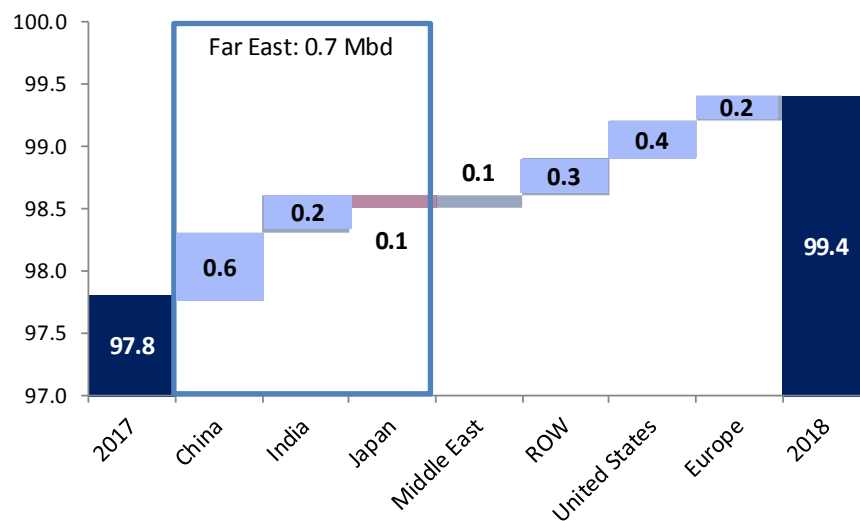


Source: Trafigura Research

WORLDWIDE HYDROCARBONS

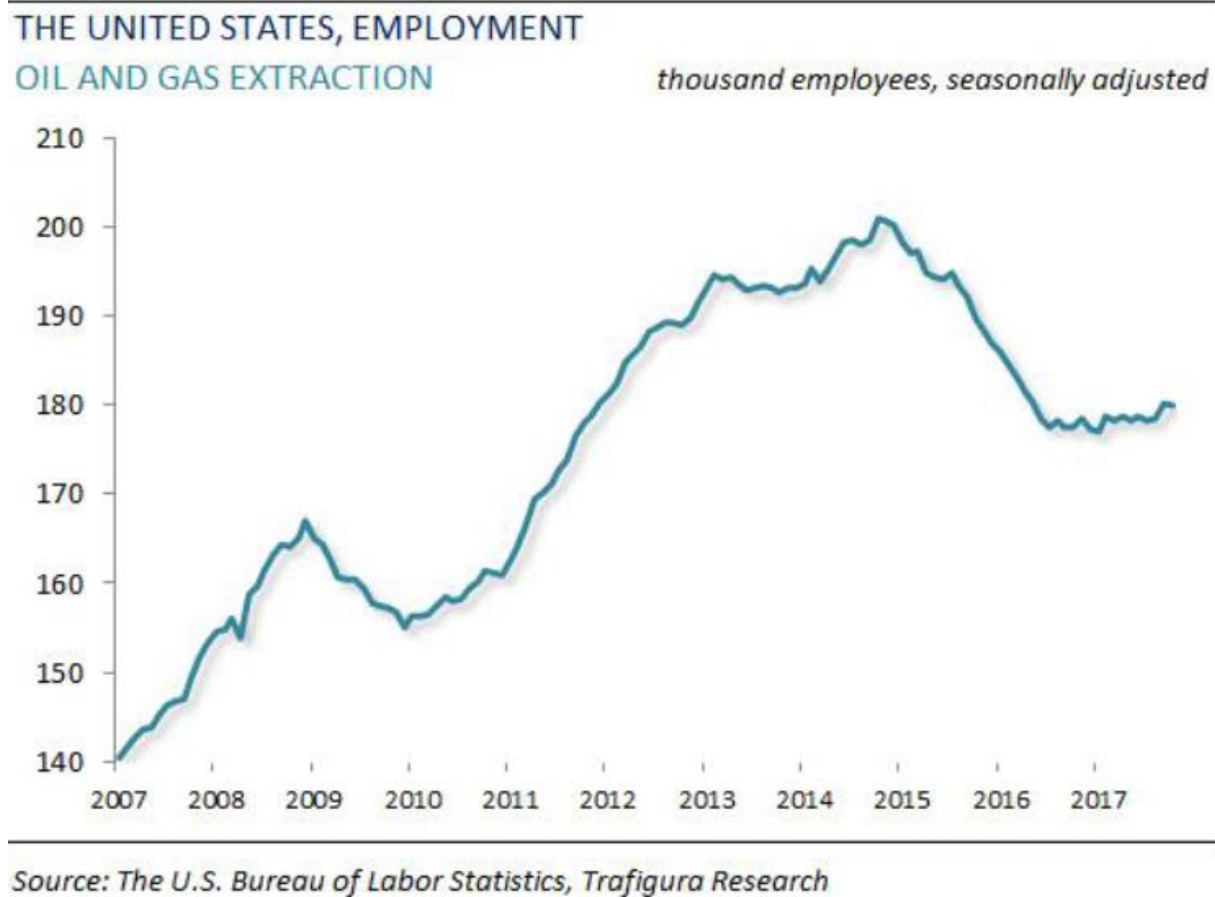
DEMAND WATERFALL, 2017 TO 2018 GROWTH

Stated in kbpd



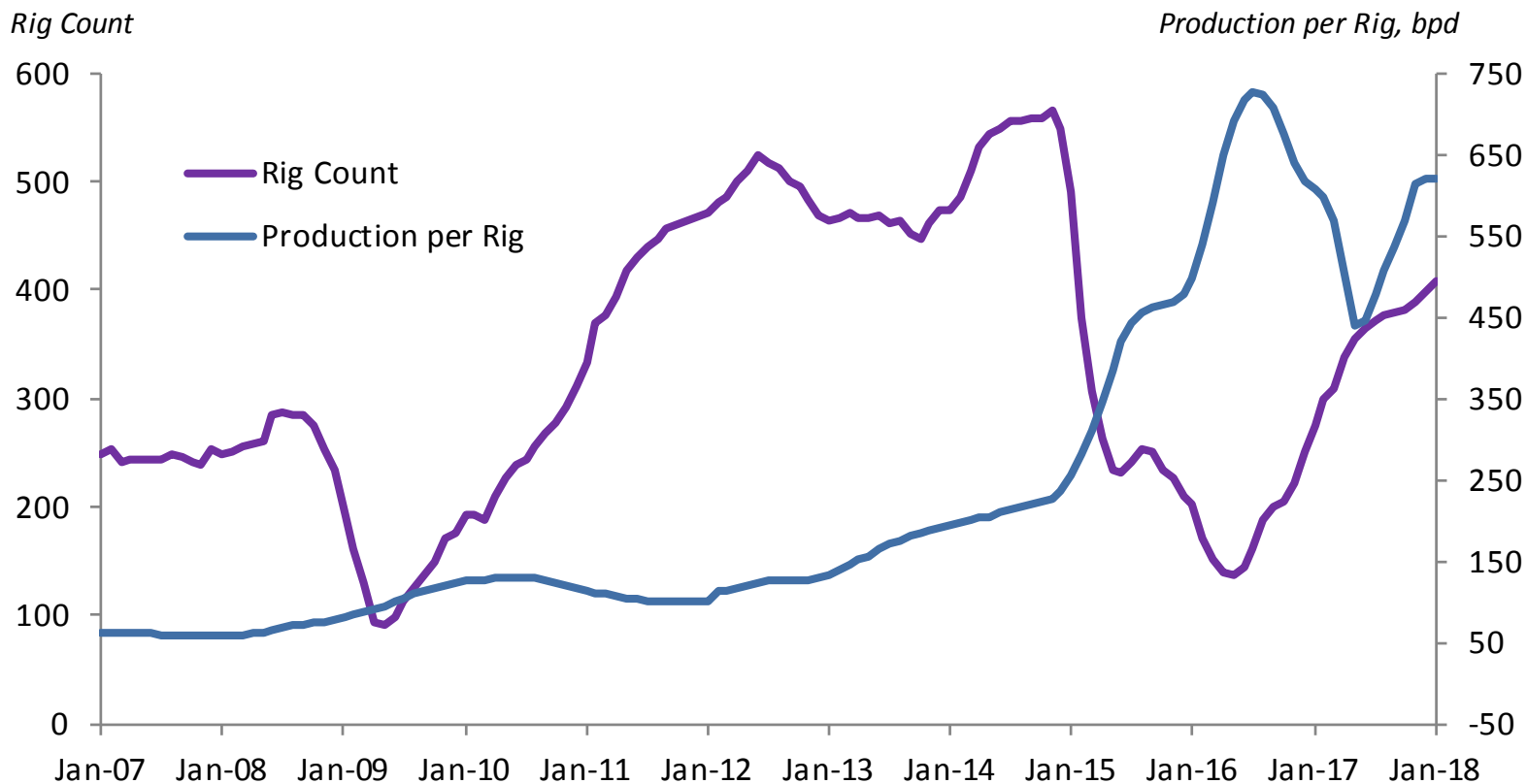
Source: Trafigura Research

US PRODUCTION WILL RISE, BUT THERE ARE LIMITS



US SHALE: PRODUCTIVITY HAS COME UP, BUT RIG COUNT HAS HAD TO 3X

PERMIAN RIG COUNT VS. PRODUCTIVITY



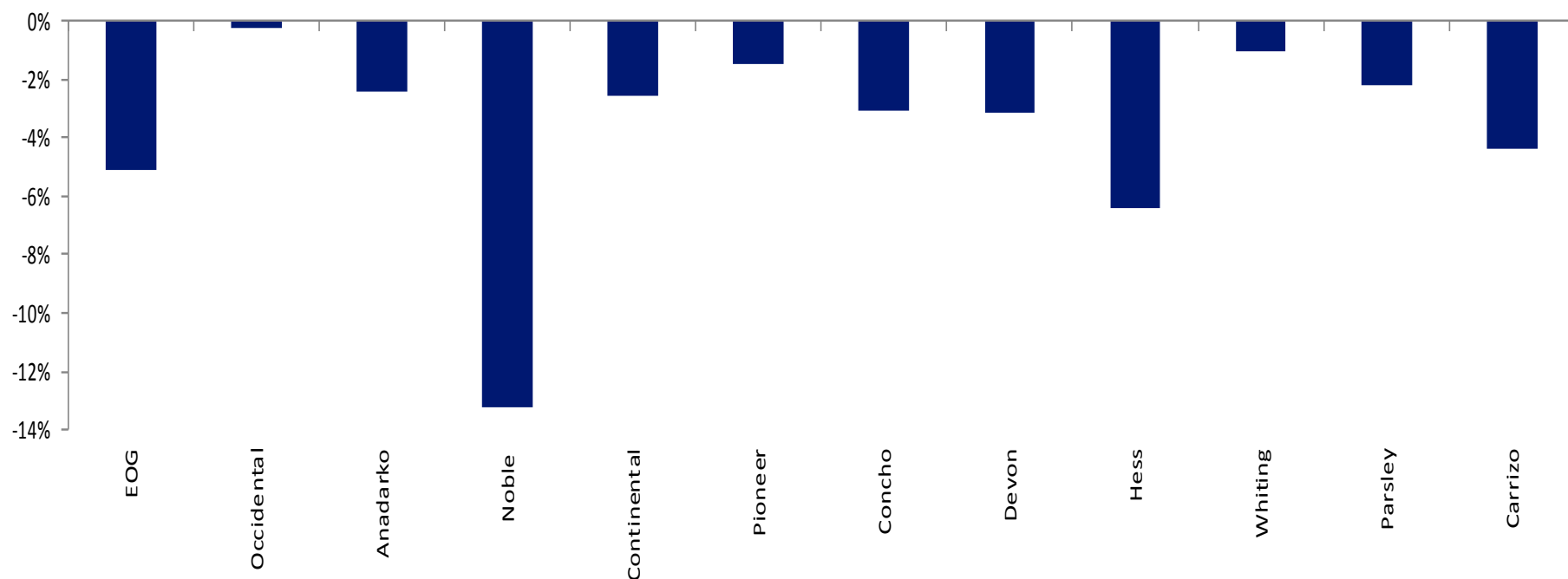
Source: Trafigura Research, DOE

TOP US SHALE PRODUCERS STRUGGLING?

US SHALE PRODUCERS

2018 PRODUCTION VOLUMES VS Consensus EXPECTATION DIFFERENCE AS PERCENTAGE OF PRODUCTION

PERCENTAGE DIFFERENCE TO Consensus

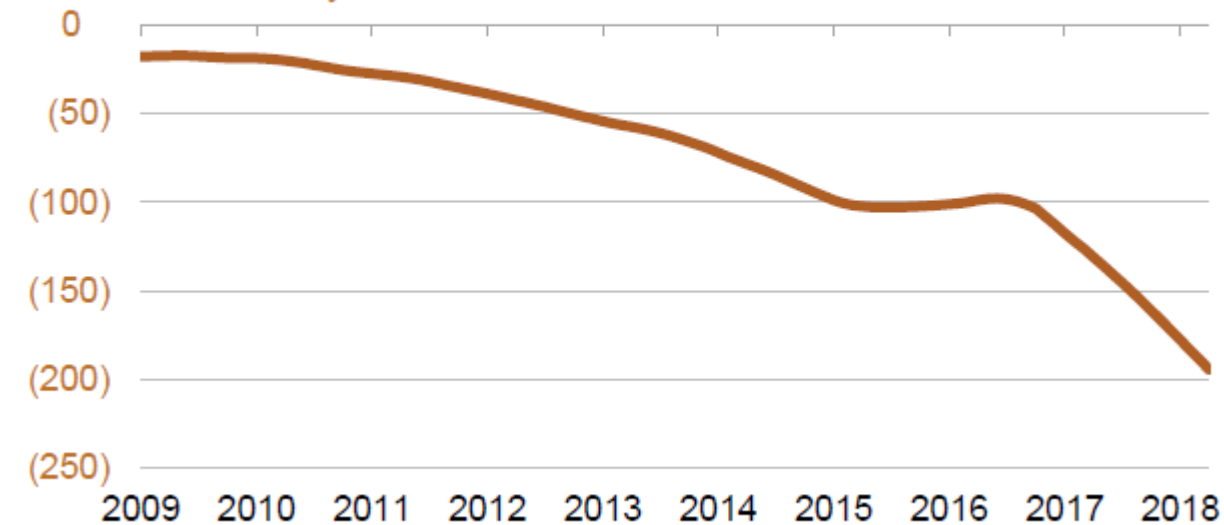


Source: Bloomberg, JP Morgan, CITI, Trafigura Research

THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME...?

Permian Region Legacy oil production change

thousand barrels/day



THANK YOU

Trafigura Group PTE Ltd
10 Collyer Quay #29-00
Ocean Financial Centre
Singapore 049315

Trafigura PTE Ltd
Branch Office Geneva
1, rue de Jargonnant
1207 Geneva
Switzerland



www.trafigura.com/locations

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