

Organization of the Petroleum Exporting Countries

2018

OPEC

Annual Statistical Bulletin



1965 – 2018
53rd edition

Team for the preparation of the OPEC Annual Statistical Bulletin

Director, Research Division
Ayed S. Al-Qahtani

Project Leader
Head, Data Services Department
Adedapo Odulaja

Coordinator, Statistics Team
Hossein Hassani

Statistics Team
Pantelis Christodoulides, Klaus Stöger, Mouhamad Moudassir,
Mohammad Sattar, Ryszard Pospiech, Mihni Mihnev

Coordinator, IT Development Team
Mohamed Mekerba

IT Development Team
Vedran Hrgovic, Zairul Arifin

Editorial Team
Head, Public Relations and Information Department
Hasan Hafidh

Editor
Alvino-Mario Fantini, Mathew Quinn

Coordinator, Design and Production
Carola Bayer

Senior Production Assistant
Diana Lavnick

Graphic Designer
Tara Starnegg

Online Annual Statistical Bulletin 2018:



asb.opec.org

Order a USB stick with the data of the Annual Statistical Bulletin 2018 here:

prid@opec.org

Download now: Smart App for OPEC Annual Statistical Bulletin



iOS



Android

Questions on data

Data queries: dataqueries@opec.org.

Advertising

The OPEC Annual Statistical Bulletin now accepts advertising.
For details, please contact the Head, PR and Information Department at the following address:

Organization of the Petroleum Exporting Countries
Helferstorferstrasse 17, A-1010 Vienna, Austria
Tel: +43 1 211 12/0
Fax: +43 1 216 43 20
Advertising: prid@opec.org
Website: www.opec.org

Photographs

Page 5: Courtesy OPEC. Pages 7, 13, 23, 35, 53, 77, 87, 99, 109: Shutterstock.

Foreword	5
Key messages	6

Tables	Page
Section 1: Summary	7
Table 1.1 OPEC Members' facts and figures	8
Table 1.2 OPEC Members' crude oil production allocations	9
Section 2: Macro-economics	13
Feature Box: OPEC MCs' historical population trends	15
Table 2.1 OPEC Members' population	16
Table 2.2 OPEC Members' GDP at current market prices	17
Table 2.3 OPEC Members' real GDP growth rates PPP based weights	18
Table 2.4 OPEC Members' values of exports	19
Table 2.5 OPEC Members' values of petroleum exports	20
Table 2.6 OPEC Members' values of imports	21
Table 2.7 Current account balances in OPEC Members	22
Section 3: Oil data: upstream	23
Feature Box: Recent developments in oil supply	25
Table 3.1 World proven crude oil reserves by country	26
Table 3.2 Active rigs by country	27
Table 3.3 Wells completed in OPEC Members	29
Table 3.4 Producing wells in OPEC Members	30
Table 3.5 Daily and cumulative crude oil production in OPEC Members	31
Table 3.6 World crude oil production by country	32
Table 3.7 Non-OPEC oil supply and OPEC NGLs	33
Section 4: Oil data: downstream	35
Feature Box: Downstream indicators continue to improve, as the global oil market gradually rebalances	37
Table 4.1 Refinery capacity in OPEC Members by company and location	38
Table 4.2 Charge refinery capacity in OPEC Members	40
Table 4.3 World refinery capacity by country	40
Table 4.4 World refinery throughput by country	42
Table 4.5 Output of petroleum products in OPEC Members	43
Table 4.6 World output of petroleum products by country	45
Table 4.7 Oil demand by main petroleum product in OPEC Members	46
Table 4.8 World oil demand by country	48
Table 4.9 World oil demand by main petroleum product and region	50
Section 5: Oil trade	53
Feature Box: The development of Middle East's crude oil exports to China	55
Table 5.1 OPEC Members' crude oil exports by destination	56
Table 5.2 OPEC Members' petroleum products exports by destination	58
Table 5.3 World crude oil exports by country	60
Table 5.4 World exports of petroleum products by country	63
Table 5.5 World exports of petroleum products by main petroleum product and region	65
Table 5.6 World exports of crude oil and petroleum products by country	67
Table 5.7 World imports of crude oil by country	69
Table 5.8 World imports of petroleum products by country	71
Table 5.9 World imports of petroleum products by main petroleum product and region	72
Table 5.10 World imports of crude oil and petroleum products by country	74

Section 6: Oil transportation	77
Feature Box: Comparison of West African freight rates towards East and West	79
Table 6.1 World tanker fleet by year of build and categories	80
Table 6.2 World LPG carrier fleet by size	80
Table 6.3 World combined carrier fleet by size	82
Table 6.4 Average spot freight rates by vessel category	82
Table 6.5 Dirty tanker spot freight rates	84
Table 6.6 Clean tanker spot freight rates	85
Section 7: Oil prices	87
Feature Box: The effect of Asian refining capacity improvements on crude quality spreads	89
Table 7.1 OPEC Reference Basket (ORB) and corresponding components spot prices	90
Table 7.2 Selected spot crude oil prices	91
Table 7.3 ICE Brent, NYMEX WTI and DME Oman annual average of the 1 st , 6 th and 12 th forward months	94
Table 7.4 OPEC Reference Basket in nominal and real terms	94
Table 7.5 Annual average of premium factors for selected OPEC Reference Basket components	95
Table 7.6 Spot prices of petroleum products in major markets	96
Table 7.7 Retail prices of petroleum products in OPEC Members	97
Table 7.8 Crack spread in major markets	98
Section 8: Taxes on oil	99
Feature Box: A glimpse at US gasoline taxation scheme	101
Table 8.1 Composite barrel and its components in major OECD oil consuming countries	102
Table 8.2 Tax to CIF crude oil price ratio in major OECD oil consuming countries	103
Table 8.3 Euro Big 4 household energy prices	103
Section 9: Natural gas data	109
Feature Box: Historical trends in natural gas liquids and natural gas production	111
Table 9.1 World proven natural gas reserves by country	112
Table 9.2 Yearly and cumulative marketed natural gas production in OPEC Members	114
Table 9.3 World marketed production of natural gas by country	115
Table 9.4 World natural gas exports by country	117
Table 9.5 World natural gas imports by country	118
Table 9.6 World natural gas demand by country	120
Table 9.7 World LNG carrier fleet by size	122
Graphs	Page
Section 2: Macro-economics	13
Feature Box: OPEC MCs' historical population trends	15
Graph 1 OPEC MCs' share of total world population	15
Graph 2 Total and OPEC MCs' population growth	15
Graph 2.1 OPEC Members' population	16
Graph 2.2 Population as a share of total OPEC	16
Graph 2.3 OPEC Members' GDP at current market prices	17
Graph 2.4 GDP at current market prices as a share of total OPEC	17
Graph 2.5 Real GDP growth rates PPP based weights for total OPEC	18
Graph 2.6 Real GDP growth rates for OPEC Members	18
Graph 2.7 OPEC Members' values of exports	19
Graph 2.8 Values of exports as a share of total OPEC	19
Graph 2.9 OPEC Members' values of petroleum exports	20
Graph 2.10 Values of petroleum exports as a share of total OPEC	20
Graph 2.11 OPEC Members' values of imports	21
Graph 2.12 Values of imports as a share of total OPEC	21
Graph 2.13 Current account balances in total OPEC	22
Graph 2.14 Current account balances in OPEC Members	22

Section 3: Oil data: upstream	23
Feature Box: Recent developments in oil supply	25
Graph 1 Canada crude oil production vs non-crude oil supply	25
Graph 2 US crude oil production vs non-crude oil supply	25
Graph 3.1 World proven crude oil reserves	28
Graph 3.2 OPEC Members' proven crude oil reserves	28
Graph 3.3 World crude oil production	28
Graph 3.4 OPEC Members' crude oil production	28
Graph 3.5 Non-OPEC oil supply and OPEC NGLs	29
Section 4: Oil data: downstream	35
Feature Box: Downstream indicators continue to improve, as the global oil market gradually rebalances	37
Graph 1 Y-o-y refinery intake growth	37
Graph 2 Y-o-y refinery capacity additions	37
Graph 4.1 World refinery capacity	49
Graph 4.2 World output of petroleum products	49
Graph 4.3 OPEC output of petroleum products	49
Graph 4.4 World oil demand	52
Graph 4.5 OPEC Members' oil demand	52
Graph 4.6 World oil demand by main petroleum product	52
Section 5: Oil trade	53
Feature Box: The development of Middle East's crude oil exports to China	55
Graph 1 Chinese oil demand and crude imports	55
Graph 2 Chinese crude imports from the Middle East	55
Graph 5.1 World crude oil exports by region	61
Graph 5.2 OPEC Members' crude oil exports	61
Graph 5.3 World trade of crude oil	62
Graph 5.4 OPEC Members' petroleum products exports by destination	64
Graph 5.5 Percentage share of OPEC Members' crude oil exports by regions	68
Graph 5.6 OPEC Members' exports of crude and petroleum products	68
Graph 5.7 OPEC Members' exports of petroleum products	68
Graph 5.8 OPEC Members' crude oil exports by destination	70
Graph 5.9 OPEC Members' flows of crude and refined oil	76
Section 6: Oil transportation	77
Feature Box: Comparison of West African freight rates towards East and West	79
Graph 1 Freight rates from West Africa by destination	79
Graph 2 Empirical densities obtained via normal kernel estimation of differences between US PADD3 and Far East Asia freight rates	79
Graph 6.1 World tanker fleet by year of build and categories	81
Graph 6.2 World tanker fleet by year of build and categories	81
Graph 6.3 Average spot freight rates by vessel category	83
Graph 6.4 Dirty tanker spot freight rates	84
Graph 6.5 Dirty tanker spot freight costs	84
Graph 6.6 Clean tanker spot freight rates	85
Graph 6.7 Clean tanker spot freight costs	85
Section 7: Oil prices	87
Feature Box: Average yearly 12 month moving correlation between Cushing stock levels and Brent-WTI spread	89
Graph 1 Conversion capacity growth and crude quality spread	89
Graph 7.1 OPEC Reference Basket	90
Graph 7.2 Differentials of selected spot crude oil prices to OPEC Reference Basket (1)	92
Graph 7.3 Differentials of selected spot crude oil prices to OPEC Reference Basket (2)	92
Graph 7.4 Differentials of selected spot crude oil prices to OPEC Reference Basket (3)	93
Graph 7.5 Differentials of selected spot crude oil prices to OPEC Reference Basket (4)	93
Graph 7.6 OPEC Reference Basket in nominal and real terms	94
Graph 7.7 Spot petroleum product prices — US Gulf	96
Graph 7.8 Spot petroleum product prices — Singapore	96
Graph 7.9 Spot petroleum product prices — Rotterdam	96

Section 8: Taxes on oil	99
Feature Box: A glimpse at US gasoline taxation scheme	101
Graph 1 Federal excise tax on gasoline	101
Graph 2 Local taxation	101
Graph 8.1 Composite barrel and its components	103
Graph 8.2 Composite barrel and its components in percentage	104
Graph 8.3 Tax versus CIF crude oil price for major OECD oil consuming countries — USA	106
Graph 8.4 Tax versus CIF crude oil price for major OECD oil consuming countries — Canada	106
Graph 8.5 Tax versus CIF crude oil price for major OECD oil consuming countries — Japan	106
Graph 8.6 Tax versus CIF crude oil price for major OECD oil consuming countries — France	106
Graph 8.7 Tax versus CIF crude oil price for major OECD oil consuming countries — Germany	106
Graph 8.8 Tax versus CIF crude oil price for major OECD oil consuming countries — Italy	106
Graph 8.9 Tax versus CIF crude oil price for major OECD oil consuming countries — UK	106
Graph 8.10 Tax versus CIF crude oil price for major OECD oil consuming countries — G7	106
Graph 8.11 Tax versus CIF crude oil price for major OECD oil consuming countries — OECD	106
Graph 8.12 Tax to CIF crude oil price ratio for major OECD oil consuming countries — USA	107
Graph 8.13 Tax to CIF crude oil price ratio for major OECD oil consuming countries — Canada	107
Graph 8.14 Tax to CIF crude oil price ratio for major OECD oil consuming countries — Japan	107
Graph 8.15 Tax to CIF crude oil price ratio for major OECD oil consuming countries — France	107
Graph 8.16 Tax to CIF crude oil price ratio for major OECD oil consuming countries — Germany	107
Graph 8.17 Tax to CIF crude oil price ratio for major OECD oil consuming countries — Italy	107
Graph 8.18 Tax to CIF crude oil price ratio for major OECD oil consuming countries — UK	107
Graph 8.19 Tax to CIF crude oil price ratio for major OECD oil consuming countries — G7	107
Graph 8.20 Tax to CIF crude oil price ratio for major OECD oil consuming countries — OECD	107
Graph 8.21 Euro Big 4 household energy prices	108
Graph 8.22 Euro Big 4 share of tax in household energy prices	108
Section 9: Natural gas data	109
Feature Box: Historical trends in natural gas liquids and natural gas production	111
Graph 1 Total world natural gas and NGLs production	111
Graph 2 Ratio of total world NGLs to natural gas production	111
Graph 3 OPEC natural gas and NGLs production	111
Graph 4 OPEC natural gas and NGLs	111
Graph 9.1 World proven natural gas reserves	113
Graph 9.2 OPEC Members' proven natural gas reserves	113
Graph 9.3 World marketed production of natural gas	113
Graph 9.4 OPEC Members' marketed production of natural gas	113
Graph 9.5 World natural gas exports	119
Graph 9.6 World natural gas imports	119
General notes	123
Definitions	124
Country groupings	125
Economic organizations	126
Abbreviations	126
Selected oil companies	127
Major sources	127
Conversion factors	128
Map	Major OPEC flows of crude and refined oil
	inside back cover

Disclaimer

The data contained in the OPEC Annual Statistical Bulletin (the 'ASB') is historical and obtained directly from OPEC Member Countries and third parties listed in the publication.

Whilst reasonable efforts have been made to ensure the accuracy of the ASB's content, the OPEC Secretariat makes no warranties or representations as to its accuracy, relevance or comprehensiveness, and assumes no liability or responsibility for any inaccuracy, error or omission, or for any loss or damage arising in connection with or attributable to any action or decision taken as a result of using or relying on the information in the ASB. The ASB is not intended as a benchmark or input data to a benchmark. Definition of terms, as well as names and boundaries on any maps, shall not be regarded as authoritative.

The information contained in the ASB, unless copyrighted by a third party, may be used and/or reproduced for research, educational and other non-commercial purposes without the OPEC Secretariat's prior written permission provided that OPEC is fully acknowledged as the copyright holder. Written permission from the OPEC Secretariat is required for any commercial use.



Mohammad Sanusi Barkindo, OPEC Secretary General

It is an honour to introduce the 53rd edition of the Annual Statistical Bulletin (ASB). First published in 1965, the ASB, one of OPEC's flagship publications, has experienced tremendous improvement over the years in both content and quality, along with growing popularity.

Over the decades, the ASB has been a useful reference tool for analysts and academics, policymakers and industry specialists. It is an important source of information that benefits a variety of oil industry stakeholders, and makes available important and useful data about the global oil and gas industry worldwide.

In publishing the ASB, OPEC continues to strive to ensure greater data transparency. This has long been one of OPEC's key objectives. The increased dissemination of information about the oil and gas industry and its many stakeholders enables the Organization to fulfil its commitment to contribute to market stability through the enhanced sharing of data.

In this spirit, the ASB provides key statistical data for all of OPEC's 14 Member Countries — Algeria, Angola, Ecuador, Equatorial Guinea, Gabon, Islamic Republic of Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela. In addition to providing information about other non-OPEC oil producing countries, it also brings together data on exports, imports, production, refineries and shipping.

As in previous years, the 2018 edition of the ASB is available in various formats. These include a print edition, a PDF version and an interactive online version, which includes historical time-series data going back to 1960. In addition, there is a SmartApp version which is freely available for iOS and Android devices.

The ASB is the product of numerous months of hard and labour-intensive work involving analysts, researchers and statisticians, both at the OPEC Secretariat and our Member Countries. It is through such collaborative efforts that the Organization continues to ensure the sharing of data. Because of this achievement, I would like to express my appreciation to the staff at the OPEC Secretariat — and all the colleagues and other officials in our Member Countries — for their continuous hard work to make this publication possible.

A handwritten signature in black ink, appearing to read 'S. Barkindo', written in a cursive style.

Mohammad Sanusi Barkindo
Secretary General



The OPEC Annual Statistical Bulletin (ASB) provides detailed and comprehensive time-series data on many different aspects of the global petroleum industry, including production, demand, imports and exports, as well as exploration and transportation activities.

The publication contains key statistical data on oil and natural gas activities in each of OPEC's 14 Member Countries: Algeria, Angola, Ecuador, Equatorial Guinea, Gabon, the Islamic Republic of Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela. Additionally, it provides valuable industry data for various countries with detailed classifications, mainly by geographical region, and covers the major economic areas around the world.

This year's 2018 ASB, which comprises data up to the end of 2017, includes the following important highlights:

► In 2017, world crude oil production declined by 701,000 b/d, or 0.9 per cent, as compared to 2016, to reach 74.69m b/d marking the first yearly decline since 2009. OPEC crude oil production fell year-on-year by 926,000 b/d, or 2.8 per cent, while crude production in non-OPEC countries registered gains. The biggest increases were for the United States with 498,000 b/d, or 5.6 per cent, and Libya with 427,000 b/d or 109.5 per cent, while the largest declines for Saudi Arabia with 501,000 b/d, or 4.8 per cent, and Venezuela with 338,000 b/d or 14.2 per cent. In 2017, the top three crude oil producing countries were Russia (10.35m b/d), Saudi Arabia (9.96m b/d) and the United States (9.36m b/d).

► World oil demand averaged 97.20m b/d in 2017, up by 1.7 per cent y-o-y, with the largest increases taking place in Asia and Pacific region (particularly China and India), Europe and North America. The 2017 oil demand in Africa and the Middle East grew by around 100,000 b/d, as compared to 2016, while oil demand declined in Latin America for the third year in a row. Total OECD oil demand grew solidly for the third consecutive year in 2017, while oil demand in OPEC Member Countries returned to modest growth after declining during 2016. Distillates and gasoline account for around 55.6 per cent of 2017 total world oil demand and are on increasing trends. The share of residual fuel oil requirements out of total oil demand in 2017 amounts roughly to 7.2 per cent.

► Total exports of crude oil from OPEC Member Countries averaged 24.86m b/d in 2017 declining by 406,000 b/d, or 1.6 per cent, as compared to 2016. As in previous years, the bulk of crude oil from Member Countries was exported to the Asia and Pacific region, in the amount of 15.56m b/d or 62.6 per cent. Significant volumes of crude oil were also exported to Europe, which increased its imports from OPEC Member Countries from 4.40m b/d in 2016 to 4.64m b/d in 2017. North America imported 3.21m b/d of crude oil from Member Countries, which was 82,000 b/d, or 2.5 per cent, less compared to 2016 volumes. OPEC Member Country exports of petroleum products averaged 5.07m b/d during 2017, down by 216,000 b/d, or 4.1 per cent, compared to 2016. Their imports of petroleum products stood at 1.98m b/d in 2017, roughly 105,000 b/d, or 5.1 per cent, lower than in 2016.

► Total world proven crude oil reserves stood at 1,483bn b at the end of 2017, decreasing slightly by 0.4 per cent from the level of 1,489bn b reached at the end of the previous year. Total proven crude oil reserves in Member Countries decreased by 0.3 per cent to 1,214bn b at the end of 2017 but slightly increased their share of total world crude oil reserves, from 81.8 per cent in 2016 to 81.9 per cent in 2017. In 2017, total world proven natural gas reserves rose by 0.2 per cent to approximately 199.4 trillion standard cu m. This increase in natural gas reserves came mainly on the back of new discoveries in the Asia and Pacific region. Proven natural gas reserves in Member Countries stood at 95.95tr standard cu m, unchanged from the level of the previous year.

► World refinery capacity expanded by 104,000 b/cd to stand at 96.93m b/cd during 2017, mainly supported by additions in the Asia and Pacific region, particularly China and India. 2017 refinery capacity in the OECD declined by 171,000 b/cd, mainly due to closures in Europe and Japan. Global refinery throughput ramped up by 1.6 per cent to reach 83.7m b/d in 2017, with the largest gains in the Asia and Pacific region and North America.

► The OPEC Reference Basket averaged \$52.43/b in 2017, up from \$40.76/b in 2016. The yearly increase valued at \$11.67/b, or 28.6 per cent, compared to 2016. The 2017 volatility stood at \$5.00/b, or 9.5 per cent, relative to the yearly average.



SECTION 1

Summary

Table 1.1
OPEC Members' facts and figures, 2017

	Algeria	Angola	Ecuador	Equatorial Guinea	Gabon	IR Iran	Iraq	Kuwait	Libya	Nigeria	Qatar Saudi Arabia	United Arab Emirates	Venezuela	OPEC
Population <i>million inhabitants</i>	41.72	28.36	16.78	1.27	1.93	81.16	38.96	4.49	6.47	197.70	2.69	32.55	31.44	495.50
Land area <i>1,000 sq km</i>	2,382	1,248	284	28	268	1,648	438	18	1,760	924	12	2,150	84	12,158
GDP per capita \$	4,173	4,380	5,989	8,460	7,894	5,508	4,908	26,775	6,769	1,881	62,196	21,007	37,794	6,220
GDP at market prices <i>million \$</i>	174,099	124,209	100,472	10,725	15,206	447,048	191,216	120,351	43,774	371,886	167,146	683,827	377,435	254,627 3,082,021
GDP growth <i>real PPP %</i>	3.0	1.4	2.2	-3.0	2.5	6.5	1.8	-0.4	55.0	0.8	1.6	-0.7	2	-8.0 2.4
Value of exports <i>million \$</i>	39,312	34,471	21,559	5,659	5,477	110,764	63,314	55,338	18,379	46,680	84,906	231,485	313,504	32,075 1,062,923
Value of imports <i>million \$</i>	50,949	15,280	21,866	3,109	2,823	123,935	51,325	30,999	11,357	44,216	62,022	131,650	273,663	13,364 836,558
Current account balance <i>million \$</i>	-11,900	-6,501	-260	-1,092	-699	16,063	15,744	4,684	439	7,924	6,408	11,519	27,491	6,578 76,397
Value of petroleum exports <i>million \$</i>	22,353	31,550	6,914	4,689	3,695	52,728	59,730	50,683	15,014	38,607	35,496	159,742	65,641	31,449 578,292
Proven crude oil reserves <i>million barrels</i>	12,200	8,384	8,273	1,100	2,000	155,600	147,223	101,500	48,363	37,453	25,244	266,260	97,800	302,809 1,214,209
Natural gas reserves <i>billion cu m</i>	4,504	422	11	145	26	33,810	3,744	1,784	1,505	5,627	23,861	8,715	6,091	5,707 95,951
Crude oil production <i>1,000 b/d</i>	1,058.7	1,632.2	531.3	128.6	210.1	3,867.3	4,468.7	2,704.2	817.3	1,535.6	600.0	9,959.2	2,966.5	2,034.8 32,514.6
Natural gas marketed production <i>million cu m</i>	94,778.5	3,111.0	462.6	9,600.0	407.0	238,003.0	10,650.3	17,101.7	14,309.3	45,434.1	163,598.6	115,000.2	54,085.7	29,792.8 796,334.7
Refinery capacity <i>1,000 b/cd</i>	651	80	188	nap	24	1,901	640	762	380.0	446	433	2,886	1,124	1,891 11,406.1
Refinery throughput <i>1,000 b/d</i>	648	55	166	nap	20	1,747	534	711	87	82	368	2,858	1,067	1,048 9,391.5
Output of petroleum products <i>1,000 b/d</i>	629	55	208	nap	22	1,782	486	716	126	82	699	2,874	1,050	726 9,455.1
Oil demand <i>1,000 b/d</i>	421.5	115.5	240.9	6.5	25.8	1,818.9	794.0	371.2	208.2	425.9	339.0	3,242.4	789.3	502.6 9,301.5
Crude oil exports <i>1,000 b/d</i>	632.6	1,576.7	385.4	128.2	188.4	2,125.0	3,802.0	2,010.0	792.1	1,811.1	466.0	6,988.3	2,378.7	1,596.4 24,860.9
Exports of petroleum products <i>1,000 b/d</i>	569.7	17.2	42.3	-	12.3	992.5	20.1	428.0	23.5	19.3	639.4	1,438.2	653.7	211.7 5,067.8
Imports of petroleum products <i>1,000 b/d</i>	74.5	70.6	134.2	6.2	6.2	96.0	115.6	0.5	130.9	391.7	20.5	486.8	277.5	164.7 1,975.8
Natural gas exports <i>million cu m</i>	53,890.6	517.3	-	9,556.0	-	12,927.5	-	-	4,470.1	32,511.2	128,645.3	-	12,109.0	- 254,626.9

Notes: Land area figures as per official websites.

Table 1.2
OPEC Members' crude oil production allocations

(1,000 b/d)

	Apr 82– Mar 83	Apr 83– Oct 84	Nov 84– Aug 86	Sep 86– Oct 86	Nov 86	Dec 86	Jan 87– Jun 87	Jul 87– Dec 87	Jan 88– Dec 88	Jan 89– Jun 89
	1/	2/	3/	4/	5/	6/	7/	8/	9/	10/
Algeria	650	725	663	663	669	669	635	667	667	695
Ecuador	200	200	183	183	221	221	210	221	221	230
Gabon	150	150	137	137	160	160	152	159	159	166
IR Iran	1,200	2,400	2,300	2,300	2,317	2,317	2,255	2,369	2,369	2,640
Iraq	1,200	1,200	1,200	1,200	—	—	1,466	1,540	—	2,640
Kuwait	800	1,050	900	900	921	999	948	996	996	1,037
Libya	750	1,100	990	990	999	999	948	996	996	1,037
Nigeria	1,300	1,300	1,300	1,300	1,304	1,304	1,238	1,301	1,301	1,355
Qatar	300	300	280	280	300	300	285	299	299	312
Saudi Arabia	7,150	5,000	4,353	4,353	4,353	4,353	4,133	4,343	4,343	4,524
United Arab Emirates	1,000	1,100	950	950	950	950	902	948	948	988
Venezuela	1,500	1,675	1,555	1,555	1,574	1,574	1,495	1,571	1,571	1,636
OPEC	16,200	16,200	14,811	14,811			14,667	15,410		17,260
OPEC excl Iraq					13,768	13,846			13,870	

	Jul 89– Sep 89	Oct 89– Dec 89	Jan 90– Jul 90	Aug 90	Apr 91– Sep 91	Oct 91– Jan 92	Feb 92– Sep 92	Oct 92– Dec 92	Jan 93– Feb 93	Mar 93– Sep 93
	11/	12/	13/	14/	15/	16/	17/	18/	19/	20/
Algeria	733	771	827	827	827	nd	760	nd	764	732
Ecuador	242	254	273	273	273	nd	273	nd	—	—
Gabon	175	184	197	197	285	nd	273	nd	293	281
IR Iran	2,783	2,926	3,140	3,140	3,217	nd	3,184	nd	3,490	3,340
Iraq	2,783	2,926	3,140	3,140	—	nd	505	nd	500	400
Kuwait	1,093	1,149	1,500	1,500	—	nd	812	nd	1,500	1,600
Libya	1,093	1,149	1,233	1,233	1,425	nd	1,395	nd	1,409	1,350
Nigeria	1,428	1,501	1,611	1,611	1,840	nd	1,751	nd	1,857	1,780
Qatar	329	346	371	371	399	nd	377	nd	380	364
Saudi Arabia	4,769	5,014	5,380	5,380	8,034	nd	7,887	nd	8,395	8,000
United Arab Emirates	1,041	1,094	1,095	1,500	2,320	nd	2,244	nd	2,260	2,161
Venezuela	1,724	1,812	1,945	1,945	2,235	nd	2,147	nd	2,360	2,257
OPEC	18,193	19,126	20,712	21,117	20,855¹	23,650[*]	21,608	24,200[*]	23,208	22,265

Notes: Totals may not add up due to independent rounding. Angola joined OPEC in January 2007; Ecuador suspended its membership from December 1992 to October 2007. Gabon terminated its membership in January 1995, but rejoined the Organization in July 2016.

1. OPEC excluding Kuwait and Iraq. — No production level allocated.
2. OPEC excluding IR Iran and Iraq. * Includes Indonesia.
3. OPEC excluding Libya and Nigeria.

Agreed at the:

- 1/ 63rd (Extraordinary) Meeting of the OPEC Conference, March 19–20, 1982.
- 2/ 67th (Extraordinary) Meeting of the OPEC Conference, March 14, 1983. No production level allocated to Saudi Arabia which acted as the swing producer. Venezuela: 1.7m b/d including condensates. Nigeria: At the 70th Meeting of the OPEC Conference, July 10–11, 1984, a temporary production rise to 1.4m b/d and 1.45m b/d in August 1984 and September 1984, respectively, was decided.
- 3/ 71st (Extraordinary) Meeting of the OPEC Conference, October 29–31, 1984. Retained at the 75th (Extraordinary) Meeting of the OPEC Conference, October 4, 1985.
- 4/ 78th Meeting of the OPEC Conference, June 25–30, 1986, and July 28–August 5, 1986, with the exception of Iraq.
- 5/ 79th (Extraordinary) Meeting of the OPEC Conference, October 6–22, 1986, with the exception of Iraq.
- 6/ 79th (Extraordinary) Meeting of the OPEC Conference, October 6–22, 1986, with the exception of Iraq.
- 7/ 80th Meeting of the OPEC Conference, December 11–20, 1986.
- 8/ 81st Meeting of the OPEC Conference, June 25–27, 1987.
- 9/ 82nd Meeting of the OPEC Conference, December 9–14, 1987, with the exception of Iraq. Extended at the 83rd Meeting of the OPEC Conference, June 11–14, 1988, with the exception of Iraq.
- 10/ 84th Meeting of the OPEC Conference, November 21–28, 1988.
- 11/ 85th Meeting of the OPEC Conference, June 5–7, 1989.
- 12/ 3rd Meeting of the Eight-Minister Monitoring Committee, September 23–27, 1989.
- 13/ 86th Meeting of the OPEC Conference, November 25–28, 1989.
- 14/ 87th Meeting of the OPEC Conference, July 26–27, 1990. September 2000–March 2001: Oil Ministers' informal consultations and 1st Ministerial Monitoring Committee, August 26–29, 1990 (interim course of action: OPEC shall consequently increase production in accordance with need). Retained August 1990 agreement at the 88th Meeting of the OPEC Conference, December 12–13, 1990.
- 15/ 3rd Meeting of the Ministerial Monitoring Committee, March 11–12, 1991. Reservations were made by Algeria and IR Iran as to the total OPEC production level. Reiterated without reservations at the 89th Meeting of the OPEC Conference, June 4, 1991.
- 16/ 4th Meeting of the Ministerial Monitoring Committee, September 24–25, 1991. Retained at the 90th Meeting of the Conference, November 26–27, 1991.
- 17/ 6th Meeting of the Ministerial Monitoring Committee, February 12–15, 1992. Reservations were made by IR Iran as to the total OPEC production level and by Saudi Arabia as to their allocated production level. Rollover (inclusive of reservations) at the 91st Meeting of the OPEC Conference, May 21–22, 1992. The Conference also decided to allow any additional production from Kuwait.
- 18/ 9th Meeting of the Ministerial Monitoring Committee, September 16–17, 1992. Reaffirmed to allow for any additional production from Kuwait.
- 19/ 92nd Meeting of the OPEC Conference, November 25–27, 1992, with full support of Member Countries, except Iraq and the allowance of additional volumes to Kuwait as they become available during the 1Q93.
- 20/ 10th Meeting of the Ministerial Monitoring Committee, February 13–16, 1993 with full support of Member Countries, except Iraq. Rollover of this agreement at the 93rd Meeting of the OPEC Conference, June 8–10, 1993, with full support of Member Countries, except Iraq and Kuwait.

Table 1.2
OPEC Members' crude oil production allocations

(1,000 b/d)

	Oct 93– Jun 96	Jul 96– Dec 97	Jan 98– Mar 98	Apr 98– Jun 98	Jul 98– Mar 99	Apr 99– Mar 00	Apr 00– Jun 00	Jul 00– Sep 00	Oct 1, 00– Oct 30, 00	Oct 31, 00– Jan 01	Feb 01– Mar 01
	21/ 750	22/ 750	23/ 909	24/ 50	25/ 788	26/ 731	27/ 788	28/ 811	29/ 837	30/ 853	31/ 805
Algeria	287	—	—	—	—	—	—	—	—	—	—
Gabon	3,600	3,600	3,942	140	3,318	3,359	—	3,727	3,844	3,917	3,698
IR Iran	400	1,200	1,314	—	—	—	—	—	—	—	—
Iraq	2,000	2,000	2,190	125	1,980	1,836	1,980	2,037	2,101	2,141	2,021
Kuwait	1,390	1,390	1,522	80	1,323	1,227	1,323	1,361	1,404	1,431	1,350
Libya	1,865	1,865	2,042	125	2,033	1,885	2,033	2,091	2,157	2,198	2,075
Nigeria	378	378	414	30	640	593	640	658	679	692	653
Qatar	8,000	8,000	8,761	300	8,023	7,438	8,023	8,253	8,512	8,674	8,189
Saudi Arabia	2,161	2,161	2,366	125	2,157	2,000	2,157	2,219	2,289	2,333	2,201
United Arab Emirates	2,359	2,359	2,583	200	2,845	2,720	2,845	2,926	3,019	3,077	2,902
Venezuela	23,190	23,703	26,044								
OPEC											
OPEC excl Iraq				1,175	23,107	21,789	19,789²	24,083	24,841	25,315	23,894
Target				24,432							

	Apr 01– Aug 01	Sep 01– Dec 01	Jan 02– Dec 02	Jan 03	Feb 03– May 03	Jun 03– Oct 03	Nov 03– Mar 04	Apr 04– Jun 04	Jul 04	Aug 04– Oct 04	Nov 1, 04– Mar 16, 05
	32/ 773	33/ 741	34/ 693	35/ 735	36/ 782	37/ 811	38/ 782	39/ 750	40/ 814	41/ 830	42/ 862
Algeria	3,552	3,406	3,186	3,377	3,597	3,729	3,597	3,450	3,744	3,817	3,964
IR Iran	—	—	—	—	—	—	—	—	—	—	—
Iraq	1,941	1,861	1,741	1,845	1,966	2,038	1,966	1,886	2,046	2,087	2,167
Kuwait	1,296	1,242	1,162	1,232	1,312	1,360	1,312	1,258	1,365	1,392	1,446
Libya	1,993	1,911	1,787	1,894	2,018	2,092	2,018	1,936	2,101	2,142	2,224
Nigeria	627	601	562	596	635	658	635	609	661	674	700
Qatar	7,865	7,541	7,053	7,476	7,963	8,256	7,963	7,638	8,288	8,450	8,775
Saudi Arabia	2,113	2,025	1,894	2,007	2,138	2,217	2,138	2,051	2,225	2,269	2,356
United Arab Emirates	2,786	2,670	2,497	2,647	2,819	2,923	2,819	2,704	2,934	2,992	3,107
Venezuela	22,946	21,998	20,575	21,809	23,230	24,083	23,230	22,282	24,178	24,653	25,601
OPEC excl Iraq											

- 21/ 94th (Extraordinary) Meeting of the OPEC Conference, September 25–29, 1993, with full support of Member Countries, except Iraq. Maintained at the 12th Meeting of the Ministerial Monitoring Committee, March 25–26, 1994, with full support of Member Countries, except Iraq. Maintained at the 97th, 98th and 99th Meeting of the OPEC Conference, November 21–22, 1994, June 19–20, 1995, and November 21–22, 1995, respectively.
- 22/ 100th Meeting of the OPEC Conference, June 5–7, 1996. The remaining volume of 1.2m b/d is to be supplied by Iraq. Rollover of the agreement at the 101st and the 102nd Meeting of the OPEC Conference, November 27–28, 1996, and June 25–26, 1997, respectively.
- 23/ 103rd Meeting of the OPEC Conference, November 26–December 1, 1997. The remaining volume of 1,314,080 b/d is to be supplied by Iraq.
- 24/ 104th Meeting (Extraordinary) of the OPEC Conference, March 30, 1998. Data reflects temporary production cuts from OPEC excluding Iraq production in February 1998 as reported by selected secondary sources. Iraq is not called upon to participate in this agreement.
- 25/ 105th Meeting of the OPEC Conference, June 24, 1998. Iraq is not called upon to participate in this agreement.
- 26/ 107th Meeting of the OPEC Conference, March 23, 1999. Reaffirmed strong commitment to the agreement at the 108th Meeting of the OPEC Conference, September 22, 1999. Iraq is not called upon to participate in this agreement.
- 27/ 109th Meeting of the OPEC Conference, March 27–29, 2000. Agreement of OPEC Member Countries excluding IR Iran and Iraq.
- 28/ 110th (Extraordinary) Meeting of the OPEC Conference, June 21, 2000. Iraq is not called upon to participate in this agreement.
- 29/ 111th Meeting of the OPEC Conference, September 10–11, 2000. Iraq is not called upon to participate in this agreement.
- 30/ 111th Meeting of the OPEC Conference, September 10–11, 2000; including additional 500,000 b/d (price band mechanism) as announced by the OPEC President on October 30, 2000, and effective from October 31, 2000. Iraq is not called upon to participate in this agreement.
- 31/ 113th (Extraordinary) Meeting of the OPEC Conference, January 17, 2001. Iraq is not called upon to participate in this agreement.
- 32/ 114th Meeting of the OPEC Conference, March 16–17, 2001. Retained at the 115th (Extraordinary) and 116th (Extraordinary) Meeting of the OPEC Conference, June 5 and July 3, 2001, respectively. Iraq is not called upon to participate in this agreement.
- 33/ OPEC Conference, July 25, 2001. Retained at the 117th Meeting of the OPEC Conference, September 26–27, 2001. Iraq is not called upon to participate in this agreement.
- 34/ Announced during the 118th (Extraordinary) Meeting of the OPEC Conference, November 14, 2001, and confirmed its implementation during the Consultative Meeting of the OPEC Conference in Cairo, December 28, 2001. Retained at the 119th (Extraordinary), 120th (Extraordinary) and 121st Meeting of the OPEC Conference, March 15, June 26 and September 19, 2002, respectively. Iraq is not called upon to participate in this agreement.
- 35/ 122th (Extraordinary) Meeting of the OPEC Conference, December 12, 2002. Iraq is not called upon to participate in this agreement.
- 36/ 123rd (Extraordinary) Meeting of the OPEC Conference, January 12, 2003. Retained at the 124th Meeting of the OPEC Conference, March 11, 2003. Iraq is not called upon to participate in this agreement.
- 37/ Consultative Meeting of the OPEC Conference, April 24, 2003. Retained at the 125th (Extraordinary) and 126th (Extraordinary) Meeting of the OPEC Conference, June 11 and July 31, 2003, respectively. Iraq is not called upon to participate in this agreement.
- 38/ 127th Meeting of the OPEC Conference, September 24, 2003. Retained at the 128th (Extraordinary) and 129th (Extraordinary) Meeting of the OPEC Conference, December 4, 2003, and February 10, 2004, respectively. Iraq is not called upon to participate in this agreement.
- 39/ 129th (Extraordinary) Meeting of the OPEC Conference, February 10, 2004. Reconfirmed at the 130th Meeting of the OPEC Conference, March 31, 2004. Iraq is not called upon to participate in this agreement.
- 40/ 131st (Extraordinary) Meeting of the OPEC Conference, June 3, 2004. Iraq is not called upon to participate in this agreement.
- 41/ 131st (Extraordinary) Meeting of the OPEC Conference, June 3, 2004. Iraq is not called upon to participate in this agreement.
- 42/ 132nd Meeting of the OPEC Conference, September 15, 2004. Iraq is not called upon to participate in this agreement. During the 133rd (Extraordinary) Meeting of the OPEC Conference, December 10, 2004, Member Countries agreed to collectively reduce the over-production by 1m b/d from their current actual output, effective January 1, 2005. Agreement of 132nd Meeting is retained at the 134th (Extraordinary) Meeting of the OPEC Conference, January 30, 2005.

Table 1.2
OPEC Members' crude oil production allocations

(1,000 b/d)

	Mar 17, 05– Jun 30, 05	Jul 05– Oct 06	Nov 06– Jan 07	Feb 07– Oct 07	Nov 07– Dec 07	Jan 08– Sep 08	Oct 08	Nov 08– Dec 08	Jan 09– Dec 11	Jan 12– Dec 15	Jan 17– May 17	Jun 17–
	43/	44/	45/	46/	47/	48/	49/	50/	51/	52/	53/	54/
Algeria	878	894	59	25	nd	nd	nd	71	nd	nd	1,039	1,039
Angola	—	—	—	—	—	nd	nd	99	nd	nd	1,673	1,673
Ecuador	—	—	—	—	—	nd	nd	27	nd	nd	522	522
Equatorial Guinea	—	—	—	—	—	—	—	—	—	—	—	178
Gabon	—	—	—	—	—	—	—	—	—	—	193	193
IR Iran	4,037	4,110	176	73	nd	nd	nd	199	nd	nd	3,797	3,797
Iraq	—	—	—	—	—	—	—	—	—	nd	4,351	4,351
Kuwait	2,207	2,247	100	42	nd	nd	nd	132	nd	nd	2,707	2,707
Libya	1,473	1,500	72	30	nd	nd	nd	89	nd	nd	—	—
Nigeria	2,265	2,306	100	42	nd	nd	nd	113	nd	nd	—	—
Qatar	713	726	35	15	nd	nd	nd	43	nd	nd	618	618
Saudi Arabia	8,937	9,099	380	158	nd	nd	nd	466	nd	nd	10,058	10,058
United Arab Emirates	2,400	2,444	101	42	nd	nd	nd	134	nd	nd	2,874	2,874
Venezuela	3,165	3,223	138	57	nd	nd	nd	129	nd	nd	1,972	1,972
OPEC											29,804³	29,982³
OPEC excl Iraq	26,075	26,549						1,500				
OPEC excl Angola, Ecuador and Iraq			1,161	484	500*							
Target OPEC excl Angola, Ecuador and Iraq			26,300*	25,800*	27,253*							
Target OPEC excl Iraq						29,673*	28,808	27,308	24,845			
Target OPEC										30,000	32,500*	

43/ 135th Meeting of the OPEC Conference, March 16, 2005. Iraq is not called upon to participate in this agreement. The President of the Conference is authorized, after consultation with fellow Heads of Delegation, to announce an additional 500,000 b/d increase until its next Meeting, if prices remain at current high levels or continue to further rise.

44/ 136th (Extraordinary) Meeting of the OPEC Conference, June 15, 2005. Iraq is not called upon to participate in this agreement. The President of the Conference is authorized, after consultation with fellow Heads of Delegation, to announce an additional 500,000 b/d increase until its next Meeting, if prices remain at current high levels or continue to further rise. The 137th OPEC Conference, September 20, 2005, agreed to make available to the market the spare capacity of 2m b/d, should it be called for, for a period of three months, starting October 1, 2005. The 138th (December 12, 2005), the 139th (Extraordinary, January 31, 2006), the 140th (March 8, 2006) and the 141st (Extraordinary, June 1, 2006) Conference retained the OPEC production level as agreed on June 15, 2005.

45/ Consultative Meeting of the OPEC Conference, October 19–20, 2006. Data reflects interim production cuts from OPEC excluding Iraq production in September 2006. Iraq is not called upon to participate in this agreement.

46/ 143rd (Extraordinary) Meeting of the OPEC Conference, December 14, 2006. Data reflects a further production cut to the decision taken in Doha, October 19–20, 2006. Iraq is not called upon to participate in this agreement.

47/ 145th Meeting of the OPEC Conference, September 11, 2007. Angola and Iraq are not called upon to participate in this agreement. Data reflect production increase of 500,000 b/d for OPEC (excluding Angola and Iraq) to achieve 27.253m b/d.

48/ 146th (Extraordinary) Meeting of the OPEC Conference, December 5, 2007. Iraq is not called upon to participate in the agreement.

49/ 149th Meeting of the OPEC Conference, September 9–10, 2008: The Conference agreed to abide to September 2007 production allocations (adjusted to include new Members Angola and Ecuador and excluding Indonesia and Iraq), totalling to 28.8m b/d.

50/ 150th (Extraordinary) Meeting of the OPEC Conference, October 24, 2008: Data reflects a production cut of 1.5m b/d to achieve 27.31m b/d. Iraq and Indonesia are not called upon to participate in the agreement.

51/ The 151th (Extraordinary) Meeting of the Conference, December 17, 2008, agreed to reduce OPEC excluding Iraq production by total of 4.2m b/d from September levels of the actual production based on secondary sources. Iraq is not called upon to participate in the agreement.

52/ The 160th Meeting of the Conference, December 14, 2011, decided to maintain the total OPEC production level of 30.0m b/d. This agreement was maintained at the 161st (June 14, 2012), the 162nd (December 12, 2012), the 163rd (May 31, 2013), the 164th (December 4, 2013), the 165th (June 11, 2014), the 166th (November 27, 2014) and — for the last time — at the 167th (June 5, 2015) Meeting of the Conference.

53/ The 171st Meeting of the Conference, November 30, 2016, decided to reduce its production by around 1.2m b/d to bring its ceiling to 32.5m b/d, effective of January 1, 2017. Agreed crude oil production levels were allocated, with the exception of Libya and Nigeria.

54/ The 172nd Meeting of the Conference, May 25, 2017, decided to extend its production adjustments for a further period of nine months. Furthermore, the Conference approved Equatorial Guinea's admission to the Organization with immediate effect (the table is adjusted accordingly). The 173rd Meeting of the Conference, November 30, 2017, amended the adjustment to take effect for the whole year 2018.

Visit our website

www.opec.org





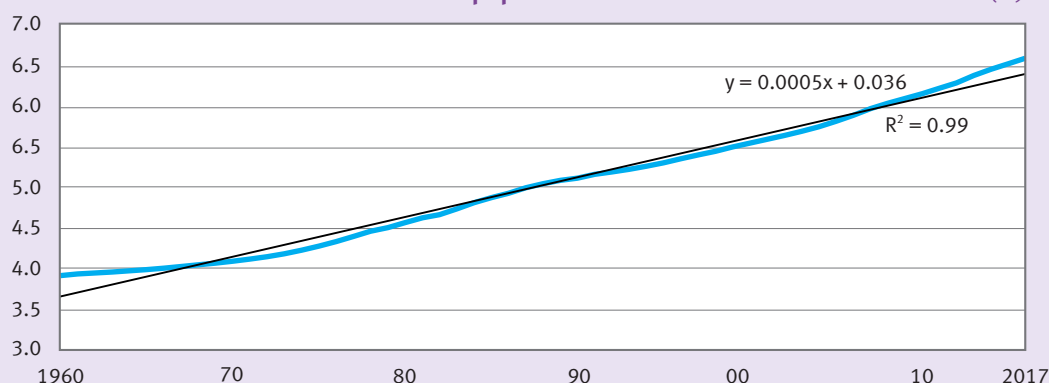
SECTION 2

Macro-economics

OPEC MCs' historical population trends

The population of OPEC Member Countries (MCs) stood at 495 million at the end of 2017, representing approximately 6.6 per cent of total world population. This increased almost 168 per cent as compared to 1960, with an average yearly increase of 5.5 per cent. The evolution of the share was almost linear throughout the period (**Graph 1**). The high coefficient of determination ($R^2 = 0.99$) of the calculated simple linear regression empirically supports the linear development of this share. For 2017, among OPEC MCs, the highest population growth in percentage terms took place in Equatorial Guinea (3.8 per cent) followed by Angola (3.1 per cent) and Iraq (2.8 per cent).

Graph 1:
OPEC Members' share of total world population (%)



In percentage terms, OPEC MCs' population increased substantially higher than the total world population throughout the period 1960–2017. As illustrated in **Graph 2**, the growth in OPEC MCs' population evolved from an average of 2.4 per cent in the 1970s to reach 3.1 per cent in the 1990s, and 2.3 per cent in the last decade. During the same period, the growth in world population followed a declining trend, dropping from an average of 2.0 per cent during the 1970s to 1.2 per cent in 2017.

Graph 2:
Total and OPEC Members' population growth (ten years moving average) (%)

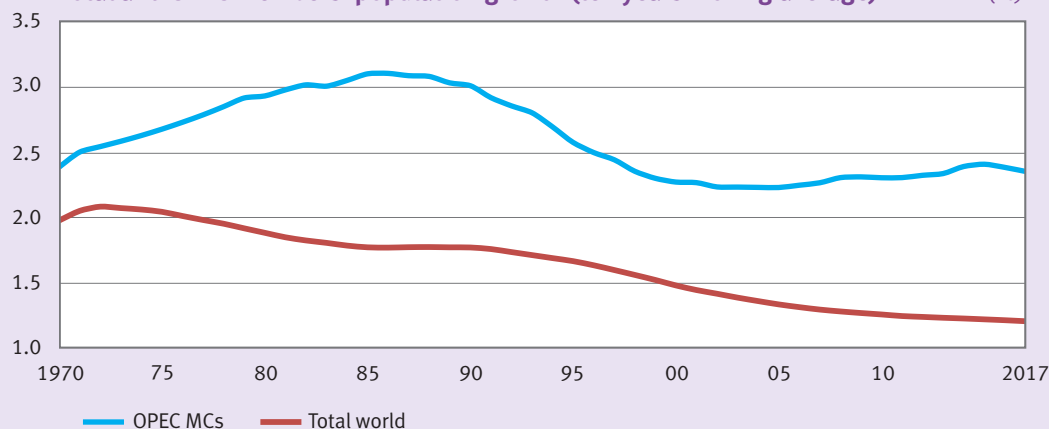


Table 2.1

OPEC Members' population

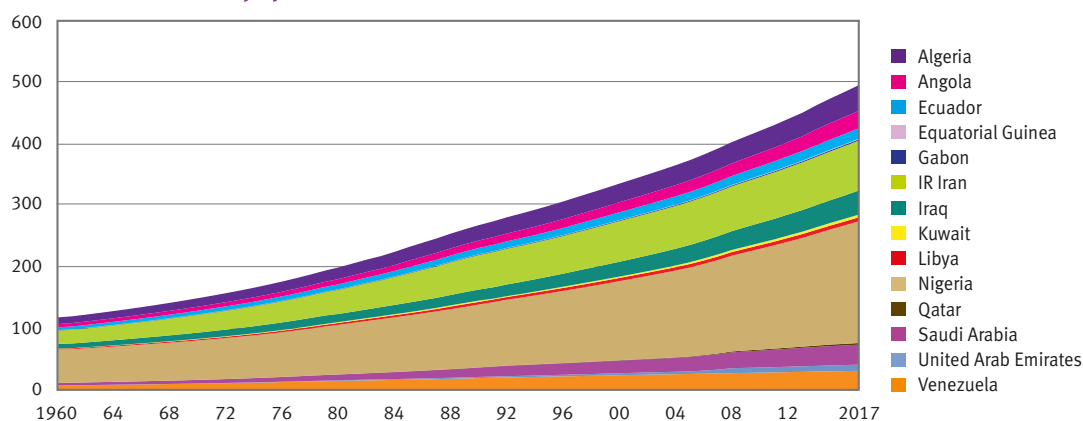
(million inhabitants)

	2013	2014	2015	2016	2017	change 17/16
Algeria	38.297	39.114	39.963	40.836	41.720	0.884
Angola	23.673	25.789	26.682	27.504	28.360	0.856
Ecuador	15.775	16.027	16.279	16.529	16.777	0.248
Equatorial Guinea	1.084	1.129	1.175	1.221	1.268	0.046
Gabon	1.803	1.829	1.855	1.881	1.926	0.045
IR Iran	77.435	78.411	79.360	80.277	81.162	0.885
Iraq	35.096	36.005	36.934	37.884	38.956	1.072
Kuwait	3.965	4.092	4.239	4.411	4.495	0.084
Libya	6.266	6.259	6.322	6.385	6.466	0.081
Nigeria	176.630	181.887	187.146	192.414	197.697	5.283
Qatar	2.004	2.216	2.434	2.618	2.687	0.069
Saudi Arabia	29.994	30.770	31.521	31.788	32.552	0.765
United Arab Emirates	9.031	9.302	9.581	9.856	9.987	0.131
Venezuela	29.786	30.206	30.620	31.033	31.442	0.409
OPEC	450.838	463.037	474.111	484.637	495.496	10.859

Graph 2.1

OPEC Members' population

(million inhabitants)



Graph 2.2

Population as a share of total OPEC, 2017

(%)

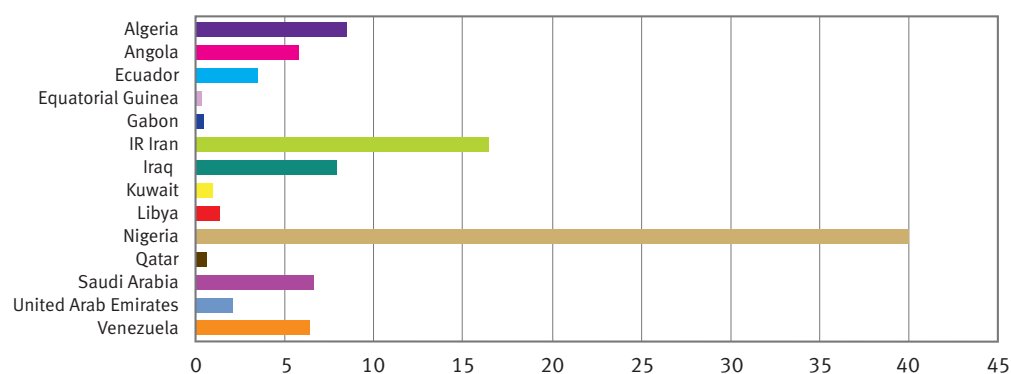
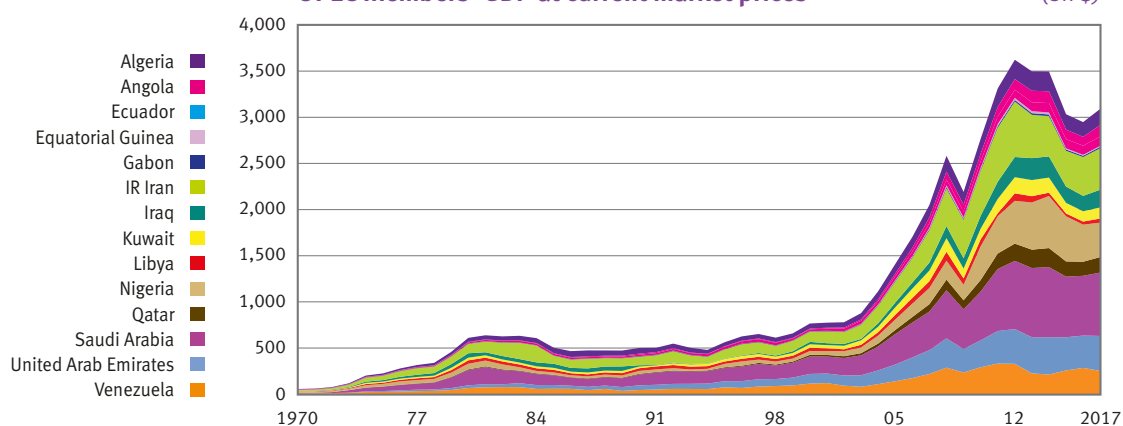


Table 2.2

OPEC Members' GDP at current market prices*(m \$)*

	2013	2014	2015	2016	2017
Algeria	209,722	213,947	166,250	159,017	174,099
Angola	124,913	126,730	102,621	95,337	124,209
Ecuador	95,130	101,726	99,290	98,614	100,472
Equatorial Guinea	21,943	21,462	12,162	10,178	10,725
Gabon	17,596	18,209	14,385	14,020	15,206
IR Iran	467,415	434,475	385,874	418,977	447,048
Iraq	236,438	228,491	176,046	166,274	191,216
Kuwait	174,179	162,695	114,606	110,873	120,351
Libya	67,864	36,143	30,063	33,308	43,774
Nigeria	509,134	561,603	487,093	400,365	371,886
Qatar	198,183	205,660	164,190	152,034	167,146
Saudi Arabia	746,647	756,350	654,270	644,936	683,827
United Arab Emirates	390,427	403,198	357,949	348,743	377,435
Venezuela	228,017	215,296	260,089	287,274	254,627
OPEC	3,487,608	3,485,985	3,024,888	2,939,950	3,082,021

Graph 2.3

OPEC Members' GDP at current market prices*(bn \$)*

Graph 2.4

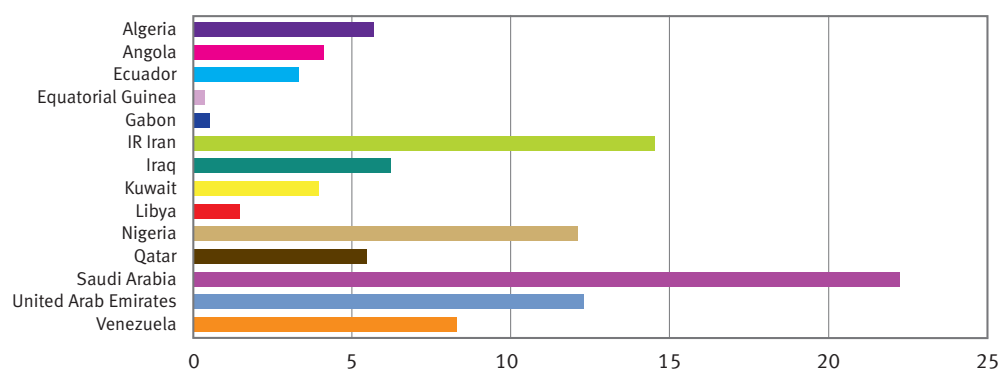
GDP at current market prices as a share of total OPEC, 2017*(%)*

Table 2.3

OPEC Members' real GDP growth rates PPP based weights

(%)

	2013	2014	2015	2016	2017
Algeria	2.8	3.8	3.8	3.3	3.0
Angola	6.8	4.8	3.0	1.1	1.4
Ecuador	4.9	3.8	0.1	-1.6	2.2
Equatorial Guinea	-4.1	-0.5	-7.4	-6.0	-3.0
Gabon	5.6	4.3	4.0	2.1	2.5
IR Iran	-1.9	4.3	0.4	9.7	6.5
Iraq	7.6	-0.4	-2.4	7.0	1.8
Kuwait	1.1	0.5	1.8	2.0	-0.4
Libya	-13.6	-24.0	-6.4	-4.0	55.0
Nigeria	5.4	6.3	2.7	-1.6	0.8
Qatar	4.4	4.0	3.6	2.2	1.6
Saudi Arabia	2.7	3.6	3.5	1.7	-0.7
United Arab Emirates	4.6	3.1	4.0	3.0	2.0
Venezuela	1.3	-3.9	-6.2	-16.5	-8.0
OPEC	2.0	2.2	1.3	2.0	2.4

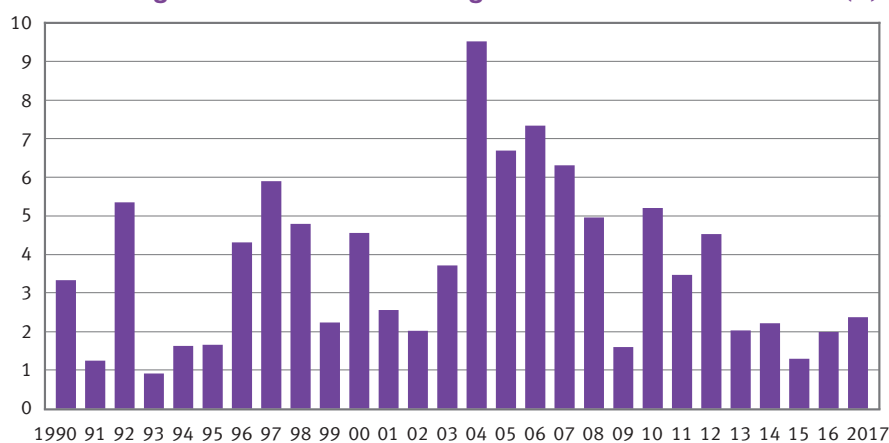
Notes:

Aggregates were compiled on the basis of 2011 GDP weights using 2011 purchasing power parities (PPP).

Graph 2.5

Real GDP growth rates PPP based weights for total OPEC

(%)



Graph 2.6

Real GDP growth rates for OPEC Members

(%)

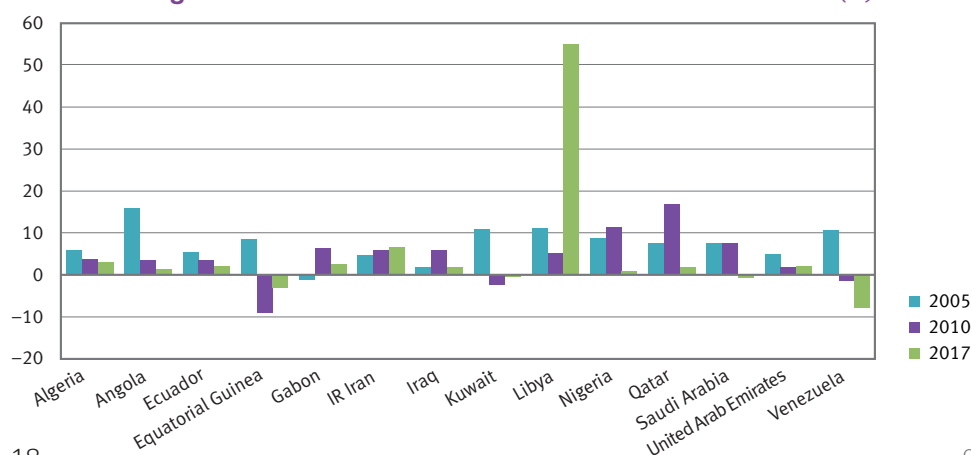


Table 2.4
OPEC Members' values of exports

(m \$)

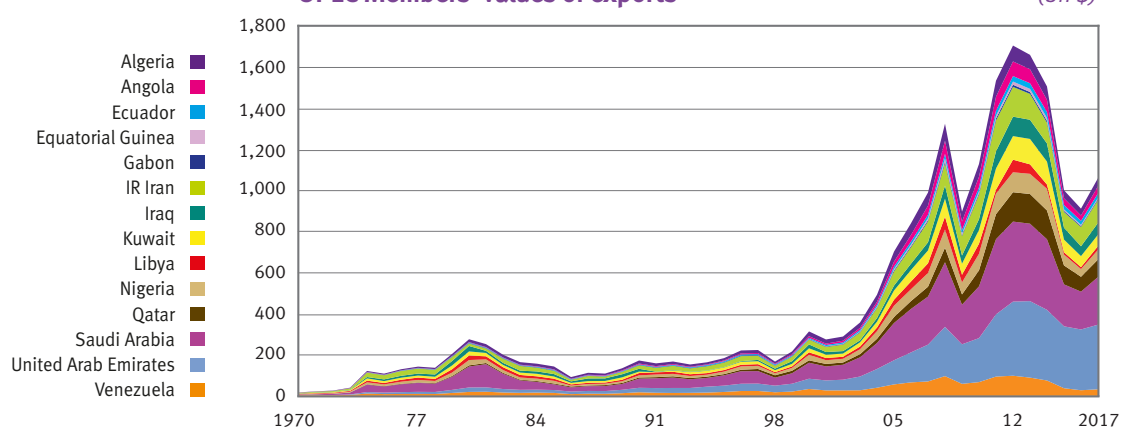
	2013	2014	2015	2016	2017
Algeria	69,649	64,659	38,549	33,398	39,312
Angola	68,247	59,170	33,181	25,935	34,471
Ecuador	27,244	28,536	21,107	19,407	21,559
Equatorial Guinea	15,393	14,364	7,068	5,680	5,659
Gabon	8,950	9,158	5,607	4,519	5,477
IR Iran	125,650	100,541	76,185	93,868	110,764
Iraq	93,066	88,112	57,577	47,642	63,314
Kuwait	123,389	111,455	61,579	53,489	55,338
Libya	46,018	20,826	11,392	9,446	18,379
Nigeria	97,818	104,803	52,525	37,301	46,680
Qatar	144,115	139,845	92,038	72,199	84,906
Saudi Arabia	375,901	342,457	203,537	183,608	231,485
United Arab Emirates	371,173	343,017	300,436	294,991	313,504
Venezuela	88,753	74,714	37,253	27,414	32,075
OPEC	1,655,365	1,501,657	998,033	908,896	1,062,923

Notes:

All figures fob.

Graph 2.7
OPEC Members' values of exports

(bn \$)



Graph 2.8
Values of exports as a share of total OPEC, 2017

(%)

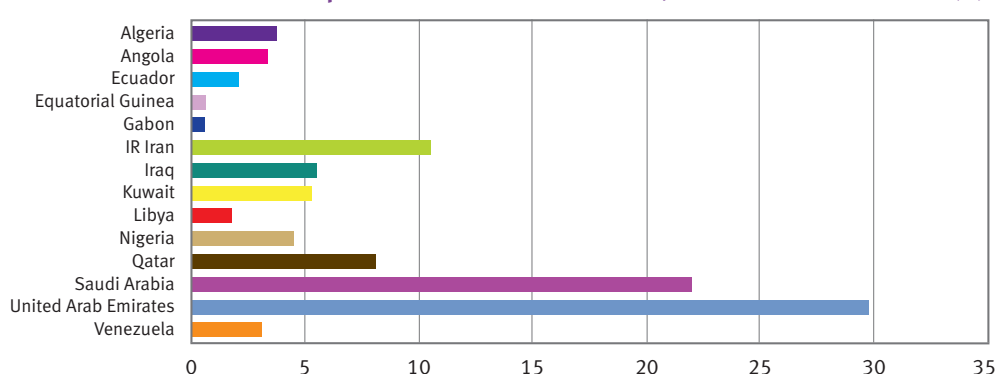


Table 2.5

OPEC Members' values of petroleum exports

(m \$)

	2013	2014	2015	2016	2017
Algeria	44,462	40,628	21,742	18,643	22,353
Angola	65,965	56,614	31,509	25,691	31,550
Ecuador	14,107	13,276	6,660	5,459	6,914
Equatorial Guinea	12,119	11,058	5,911	4,352	4,689
Gabon	7,691	6,912	3,740	3,128	3,695
IR Iran	61,923	53,652	27,308	41,123	52,728
Iraq	89,403	84,303	49,211	43,684	59,730
Kuwait	107,543	94,324	48,444	41,461	50,683
Libya	44,445	20,357	10,973	9,313	15,014
Nigeria	90,546	78,053	41,818	27,788	38,607
Qatar	62,519	56,912	28,513	22,958	35,496
Saudi Arabia	321,888	284,558	152,910	136,194	159,742
United Arab Emirates	85,640	88,855	53,836	45,559	65,641
Venezuela	88,753	74,714	37,236	26,473	31,449
OPEC	1,097,004	964,215	519,811	451,826	578,292

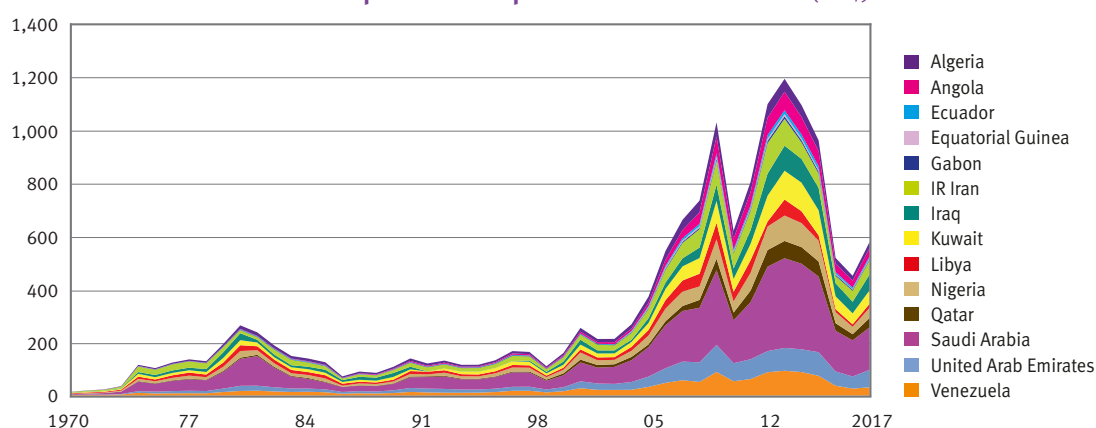
Notes:

Where applicable, petroleum product exports are included. Data for some countries may include condensates, as well as other NGLs; some countries import substantial amounts of crude and products, resulting in lower net revenue from petroleum operations.

Graph 2.9

OPEC Members' values of petroleum exports

(bn \$)



Graph 2.10

Values of petroleum exports as a share of total OPEC, 2017

(%)

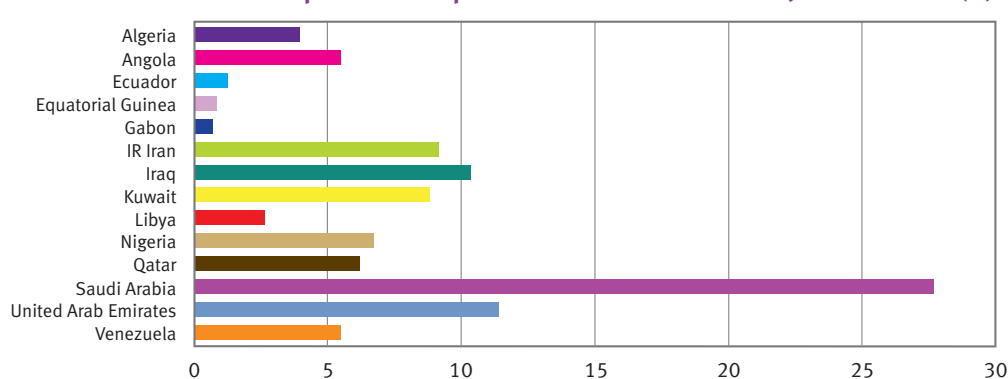


Table 2.6

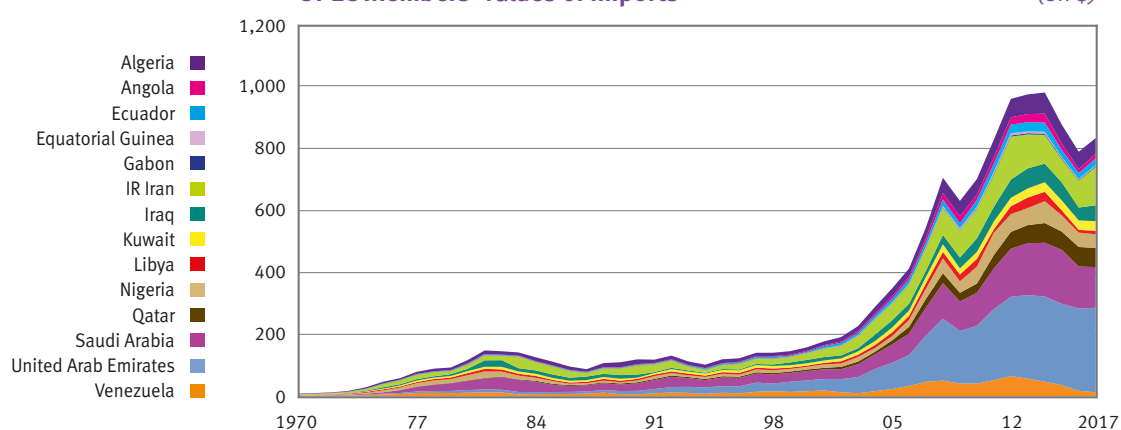
OPEC Members' values of imports*(m \$)*

	2013	2014	2015	2016	2017
Algeria	63,758	68,312	60,761	56,089	50,949
Angola	26,331	28,580	20,693	12,515	15,280
Ecuador	29,460	30,168	23,815	18,884	21,866
Equatorial Guinea	6,104	5,946	3,687	3,164	3,109
Gabon	3,908	4,055	3,376	2,651	2,823
IR Iran	109,607	93,254	74,373	87,191	123,935
Iraq	65,104	59,990	58,517	41,681	51,325
Kuwait	29,299	31,027	31,910	30,830	30,999
Libya	34,050	30,419	16,429	8,667	11,357
Nigeria	55,301	70,778	52,525	46,552	44,216
Qatar	58,792	63,829	59,109	63,301	62,022
Saudi Arabia	168,155	173,834	174,675	135,889	131,650
United Arab Emirates	270,540	275,987	263,381	266,540	273,663
Venezuela	57,183	47,508	36,496	17,977	13,364
OPEC	977,590	983,687	879,747	791,932	836,558

Notes:

All figures cif.

Graph 2.11

OPEC Members' values of imports*(bn \$)*

Graph 2.12

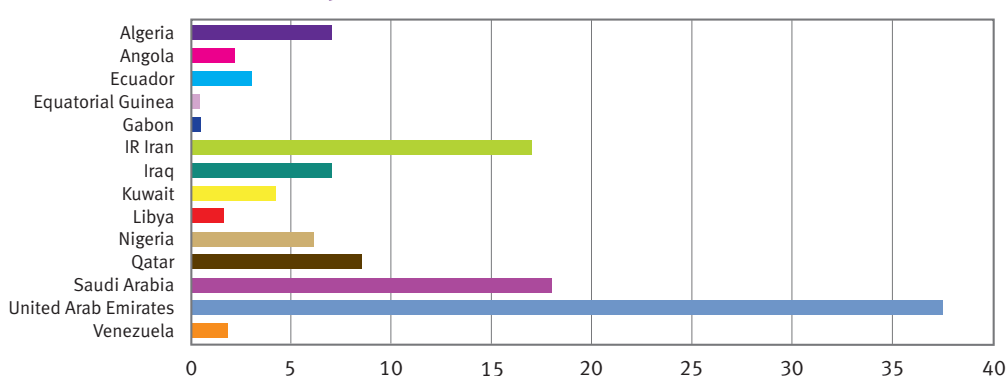
Values of imports as a share of total OPEC, 2017*(%)*

Table 2.7

Current account balances in OPEC Members

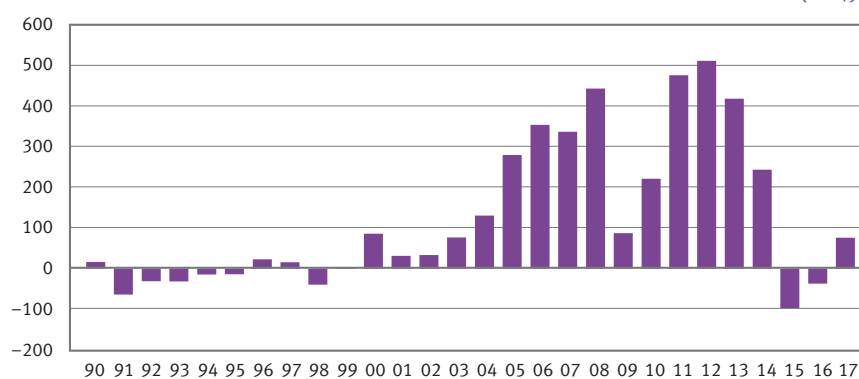
(m \$)

	2013	2014	2015	2016	2017
Algeria	1,153	-9,277	-27,289	-26,217	-11,900
Angola	8,145	-3,748	-10,273	-3,071	-6,501
Ecuador	-921	-522	-2,112	1,441	-260
Equatorial Guinea	-547	-929	-2,150	-1,067	-1,092
Gabon	1,241	1,344	-779	-1,279	-699
IR Iran	25,105	13,571	1,237	16,388	16,063
Iraq	22,591	24,428	1,913	5,404	15,744
Kuwait	70,471	53,966	8,587	640	4,684
Libya	10	-18,788	-9,233	-4,610	439
Nigeria	19,205	907	-15,439	2,722	7,924
Qatar	60,295	49,275	13,713	-8,302	6,408
Saudi Arabia	135,442	73,758	-56,724	-27,551	11,519
United Arab Emirates	71,192	54,471	17,525	13,197	27,491
Venezuela	4,604	4,919	-16,051	-3,870	6,578
OPEC	417,987	243,374	-97,074	-36,175	76,397

Graph 2.13

Current account balances in total OPEC

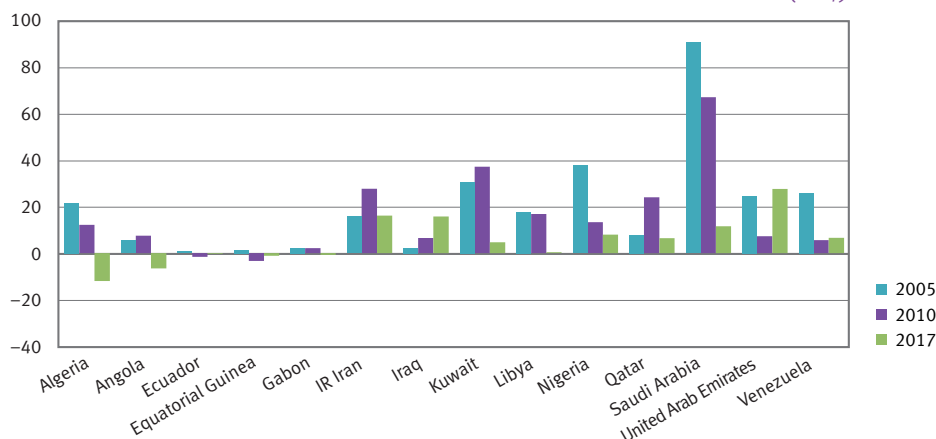
(bn \$)



Graph 2.14

Current account balances in OPEC Members

(bn \$)





SECTION 3

Oil data: upstream

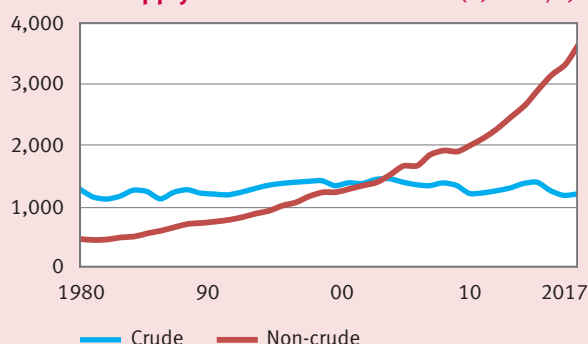
Recent developments in oil supply

The year 2017 was full of surprises in regard to liquid oil supply and crude oil production with two opposite trends. On the one hand, non-OPEC supply — led by the US — increased by almost 900,000 b/d, after experiencing a decline of around 750,000 b/d in the year 2016. This recovery was much stronger than market analysts expected one year ago. On the other hand, crude oil production from OPEC Member Countries (MCs) and some other non-OPEC countries, showed substantial declines. This was mainly a result of the ‘Declaration of Cooperation’ of December 2016, a joint decision by OPEC in cooperation with participating non-OPEC countries, which was considered to be the necessary response to growing market imbalance — and a demonstration of the discipline necessary to conform to voluntary production adjustments.

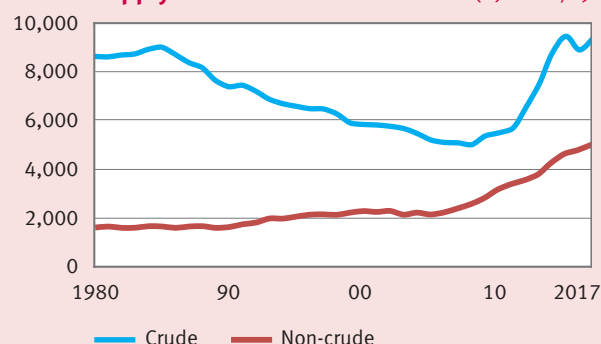
In total, OPEC crude oil production showed a drop of more than 900,000 b/d in the year 2017 with the biggest decreases coming from Saudi Arabia, Venezuela, Kuwait, Iraq and the United Arab Emirates. Among non-OPEC countries, the biggest production reductions were observed for Mexico and China. Natural declines at mature fields have already led to Mexican production deteriorations over many years. Additionally, Mexico’s own 2017 oil production was hit by earthquakes and hurricanes. As for China, output fell for the second year in a row due to aging oil fields, high production cost and investment cutbacks.

In regard to countries with increasing oil output in 2017, and with a focus on non-OPEC supply, output expansions were clearly driven by North America, notably by the US. With the recovery of oil prices and investment activities, oil supply in the US increased by more than 700,000 b/d in the year 2017, representing 83 per cent of total non-OPEC supply growth. This happened despite supply disruptions caused by the Hurricanes Harvey and Irma, the first weather disruptions to severely hit oil operations since Hurricanes Gustav and Ike in 2008. In 2017, Canada experienced the second largest oil output gains — of more than 350,000 b/d — mainly coming from the Alberta oil sands projects.

Graph 1:
Canada crude oil production vs non-crude oil supply
(1,000 b/d)



Graph 2:
US crude oil production vs non-crude oil supply
(1,000 b/d)



It is interesting to note that for both countries, non-crude oil supply elements play a vital role. Non-conventional oil has been the source for Canada’s supply growth for various decades, whereas conventional crude production is stagnant, with a slight decreasing trend. Three-fourths of oil supply in 2017 was non-crude supply. Similarly but to a lesser extent, the share of non-crude elements (especially NGLs) in US oil supply was constantly increasing over the last several years and in 2017 stood at 35 per cent.

Finally, high output surges have been seen in Kazakhstan (+170,000 b/d) and Brazil (+130,000 b/d) on the back of, respectively, production increases from the giant Kashagan field and oil deposits in the pre-salt layer.

Table 3.1
World proven crude oil reserves by country

(m b)

	2013	2014	2015	2016	2017	% change 17/16
North America	37,652.0	40,503.0	36,218.0	36,573.0	36,573.0	–
Canada ¹	4,281.0	4,118.0	3,900.0	3,800.0	3,800.0	–
United States	33,371.0	36,385.0	32,318.0	32,773.0	32,773.0	–
Latin America	340,516.0	341,190.0	342,326.0	336,942.0	336,172.0	–0.2
Argentina	2,820.0	2,354.0	2,380.0	2,185.0	2,162.0	–1.1
Brazil	15,050.0	15,544.0	16,184.0	13,000.0	12,634.0	–2.8
Colombia	2,377.0	2,445.0	2,308.0	2,002.0	1,665.0	–16.8
Ecuador	8,832.0	8,273.0	8,273.0	8,273.0	8,273.0	–
Mexico	10,073.0	9,812.0	9,711.0	7,141.0	6,537.0	–8.5
Venezuela	298,350.0	299,953.0	300,878.0	302,250.0	302,809.0	0.2
Others	3,014.0	2,809.0	2,592.0	2,091.0	2,092.0	–
Eastern Europe and Eurasia	119,874.0	119,863.0	119,860.0	119,856.0	119,839.0	–
Azerbaijan	7,000.0	7,000.0	7,000.0	7,000.0	7,000.0	–
Belarus	198.0	198.0	198.0	198.0	198.0	–
Kazakhstan	30,000.0	30,000.0	30,000.0	30,000.0	30,000.0	–
Russia	80,000.0	80,000.0	80,000.0	80,000.0	80,000.0	–
Turkmenistan	600.0	600.0	600.0	600.0	600.0	–
Ukraine	395.0	395.0	395.0	395.0	395.0	–
Uzbekistan	594.0	594.0	594.0	594.0	594.0	–
Others	1,087.0	1,076.0	1,073.0	1,069.0	1,052.0	–1.6
Western Europe	11,337.0	10,761.0	10,064.0	11,300.0	10,394.0	–8.0
Denmark	805.0	611.0	511.0	491.0	439.0	–10.6
Norway	5,825.0	5,497.0	5,139.0	6,611.0	6,376.0	–3.6
United Kingdom	2,979.0	2,982.0	2,755.0	2,564.0	2,069.0	–19.3
Others	1,727.0	1,670.0	1,660.0	1,634.0	1,510.0	–7.6
Middle East	802,958.0	802,512.0	802,848.0	807,730.0	804,639.0	–0.4
IR Iran	157,800.0	157,530.0	158,400.0	157,200.0	155,600.0	–1.0
Iraq	144,211.0	143,069.0	142,503.0	148,766.0	147,223.0	–1.0
Kuwait	101,500.0	101,500.0	101,500.0	101,500.0	101,500.0	–
Oman	4,974.0	5,151.0	5,306.0	5,373.0	5,373.0	–
Qatar	25,244.0	25,244.0	25,244.0	25,244.0	25,244.0	–
Saudi Arabia	265,789.0	266,578.0	266,455.0	266,208.0	266,260.0	–
Syrian Arab Republic	2,500.0	2,500.0	2,500.0	2,500.0	2,500.0	–
United Arab Emirates	97,800.0	97,800.0	97,800.0	97,800.0	97,800.0	–
Others	3,139.0	3,140.0	3,140.0	3,139.0	3,139.0	–
Africa	128,220.0	127,404.0	128,119.0	128,509.0	127,370.0	–0.9
Algeria	12,200.0	12,200.0	12,200.0	12,200.0	12,200.0	–
Angola	9,011.0	8,423.0	9,524.0	9,523.0	8,384.0	–12.0
Egypt	4,400.0	4,400.0	4,400.0	4,400.0	4,400.0	–
Equatorial Guinea	1,705.0	1,100.0	1,100.0	1,100.0	1,100.0	–
Gabon	2,000.0	2,000.0	2,000.0	2,000.0	2,000.0	–
Libya	48,363.0	48,363.0	48,363.0	48,363.0	48,363.0	–
Nigeria	37,071.0	37,448.0	37,062.0	37,453.0	37,453.0	–
Sudans	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0	–
Others	8,470.0	8,470.0	8,470.0	8,470.0	8,470.0	–
Asia and Pacific	47,928.0	48,265.0	47,491.0	47,876.0	47,786.0	–0.2
Australia	3,957.0	3,982.0	3,982.0	3,985.0	3,985.0	–
Brunei	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	–
China	24,376.0	24,649.0	25,132.0	25,620.0	25,627.0	–
India	5,711.0	5,743.0	4,786.0	4,622.0	4,495.0	–2.7
Indonesia	3,303.0	3,303.0	3,230.0	3,230.0	3,310.0	2.5
Malaysia	3,750.0	3,750.0	3,600.0	3,600.0	3,600.0	–
Vietnam	4,400.0	4,400.0	4,400.0	4,400.0	4,400.0	–
Others	1,331.0	1,338.0	1,261.0	1,319.0	1,269.0	–3.8
Total world	1,488,484.0	1,490,498.0	1,486,926.0	1,488,785.0	1,482,773.0	–0.4
<i>of which</i>						
OPEC	1,209,876.0	1,209,482.0	1,211,302.0	1,217,880.0	1,214,209.0	–0.3
<i>OPEC percentage</i>	<i>81.3</i>	<i>81.1</i>	<i>81.5</i>	<i>81.8</i>	<i>81.9</i>	
OECD	63,361.0	65,378.0	60,289.0	59,301.0	57,769.0	–2.6
FSU	118,886.0	118,886.0	118,886.0	118,886.0	118,886.0	–

Notes: Figures as at year-end.

1. Data excludes oil sands.

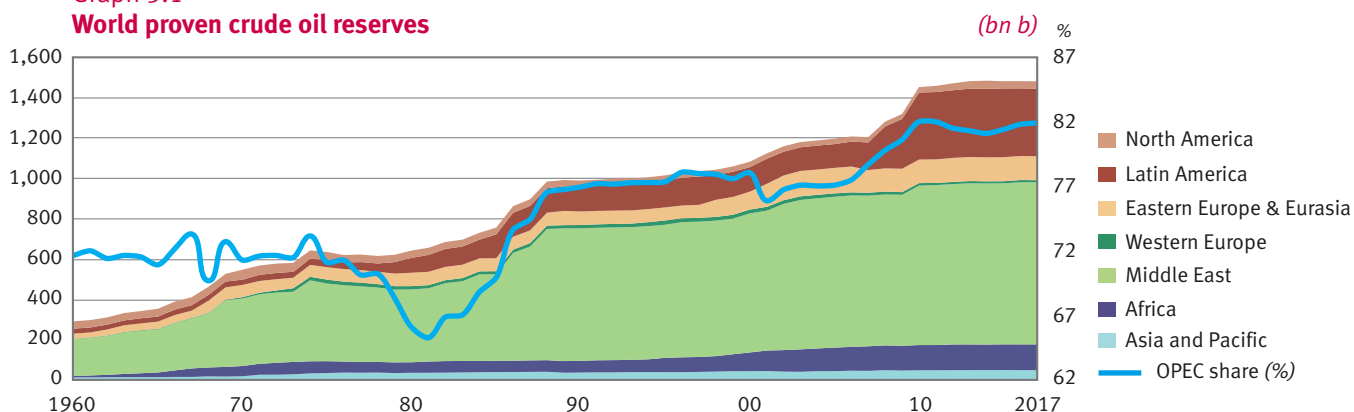
Table 3.2
Active rigs by country

	2013	2014	2015	2016	2017	change 17/16
North America	2,146	2,255	855	843	1,135	292
Canada	372	374	144	209	205	-4
United States	1,774	1,881	711	634	930	296
Latin America	550	553	389	270	343	73
Argentina	94	113	91	59	71	12
Bolivia	11	6	5	5	3	-2
Brazil	54	42	38	13	14	1
Colombia	45	46	12	19	25	6
Ecuador	50	41	7	7	14	7
Mexico	98	72	42	19	15	-4
Trinidad & Tobago	3	3	7	3	5	2
Venezuela	186	221	182	138	189	51
Others	9	9	5	7	7	-
Eastern Europe and Eurasia	410	420	427	438	452	14
Azerbaijan	14	17	17	17	18	1
Kazakhstan	59	57	57	57	59	2
Poland	12	12	12	12	12	-
Romania	12	17	18	18	19	1
Russia	304	307	311	322	332	10
Turkmenistan	9	10	12	12	12	-
Others	-	-	-	-	-	-
Western Europe	126	148	114	99	87	-12
Germany	4	3	6	4	3	-1
Italy	4	4	3	4	4	-
Netherlands	5	10	4	2	4	2
Norway	14	14	17	16	16	-
United Kingdom	12	20	9	11	5	-6
Others	87	97	75	62	55	-7
Middle East	535	505	529	566	535	-31
IR Iran	138	135	130	153	157	4
Iraq	83	69	65	44	54	10
Kuwait	31	45	58	58	78	20
Oman	65	57	73	59	55	-4
Qatar	5	6	6	10	17	7
Saudi Arabia	148	145	145	161	111	-50
Syrian Arab Republic	22	11	-	-	-	-
United Arab Emirates	30	30	51	79	59	-20
Yemen	6	3	-	-	-	-
Others	7	4	1	2	4	2
Africa	265	265	205	129	108	-21
Algeria	49	49	49	52	50	-2
Angola	28	37	30	10	7	-3
Egypt	52	52	44	24	22	-2
Equatorial Guinea	3	3	2	2	2	-
Gabon	6	7	2	-	2	2
Libya	31	31	31	17	1	-16
Nigeria	59	46	29	9	13	4
Others	37	40	18	15	11	-4
Asia and Pacific	1,126	1,113	1,099	1,224	1,147	-77
Australia	18	18	16	9	14	5
China	823	823	824	979	942	-37
India	121	114	100	116	116	-
Indonesia	92	92	104	73	34	-39
Malaysia	12	8	5	4	7	3
New Zealand	8	6	-	-	-	-
Pakistan	21	19	23	21	20	-1
Others	31	33	27	22	14	-8
Total world	5,158	5,259	3,618	3,569	3,807	238
<i>of which</i>						
OPEC	847	865	787	740	754	14
<i>OPEC percentage</i>	<i>16.4</i>	<i>16.4</i>	<i>21.8</i>	<i>20.7</i>	<i>19.8</i>	
OECD	2,367	2,466	999	954	1,231	277
FSU	410	420	427	438	452	14

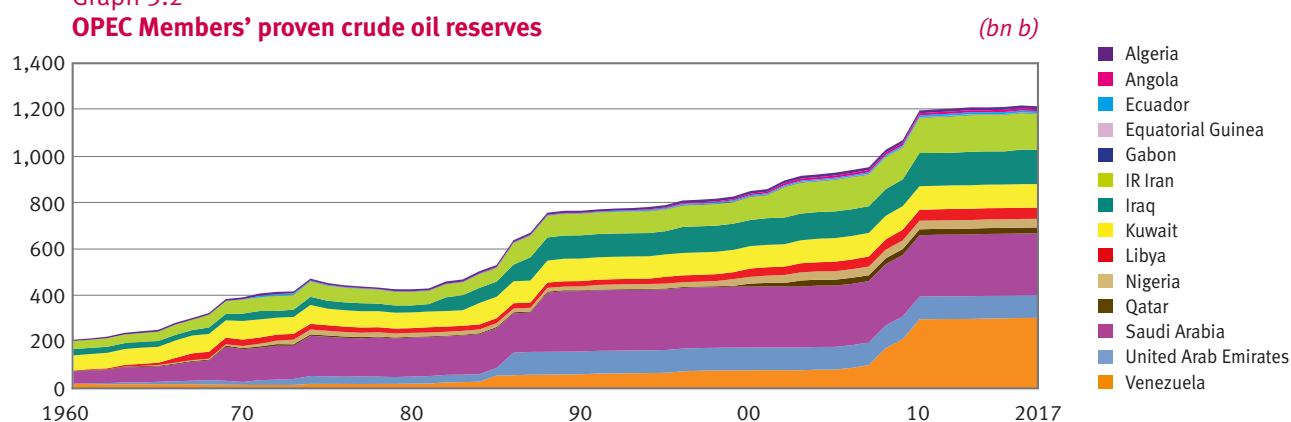
Notes:

Figure as at year end.

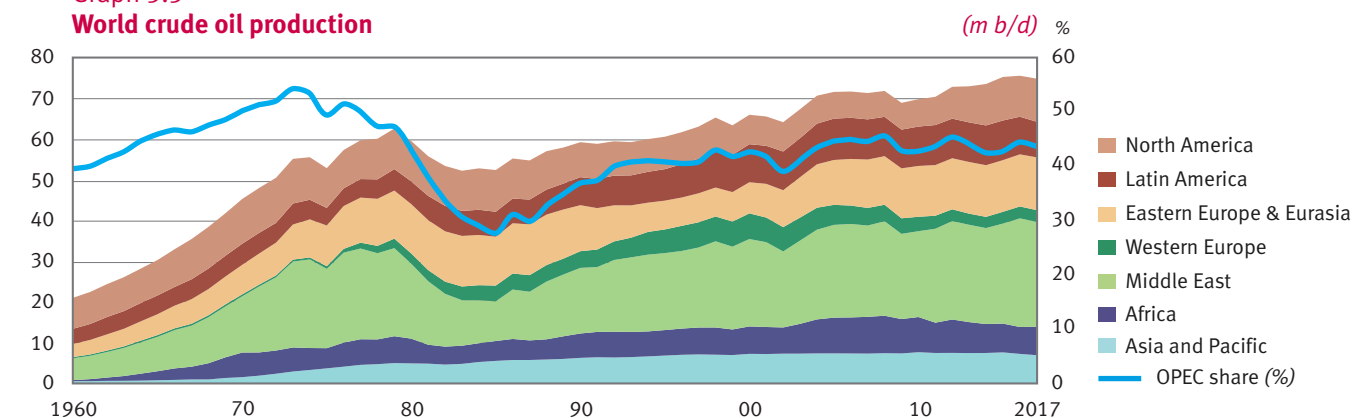
Graph 3.1
World proven crude oil reserves



Graph 3.2
OPEC Members' proven crude oil reserves



Graph 3.3
World crude oil production



Graph 3.4
OPEC Members' crude oil production

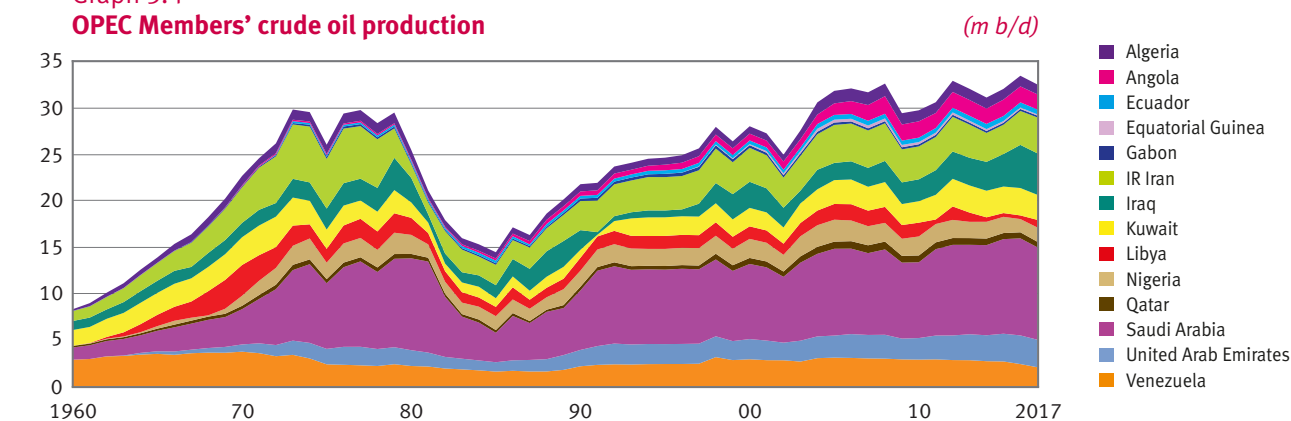


Table 3.3
Wells completed in OPEC Members

	2013	2014	2015	2016	2017	change 17/16
Algeria	191	215	250	292	332	40
Angola	115	87	92	67	43	-24
Ecuador	316	327	210	86	111	25
Equatorial Guinea	44	48	33	10	5	-5
Gabon	45	51	38	14	8	-6
IR Iran	321	306	288	206	216	10
Iraq	313	281	154	131	107	-24
Kuwait ¹	590	596	622	622	555	-67
Libya	106	162	35	14	17	3
Nigeria	114	141	116	76	76	-
Qatar	88	99	77	27	53	26
Saudi Arabia ¹	429	538	616	622	600	-22
United Arab Emirates	277	292	219	271	364	93
Venezuela	415	669	635	736	478	-258
OPEC	3,364	3,812	3,385	3,174	2,965	-209
Total world	104,888	101,670	71,308	52,086	58,294	6,208

Notes:

1. Figures include share of wells completed from Neutral Zone.

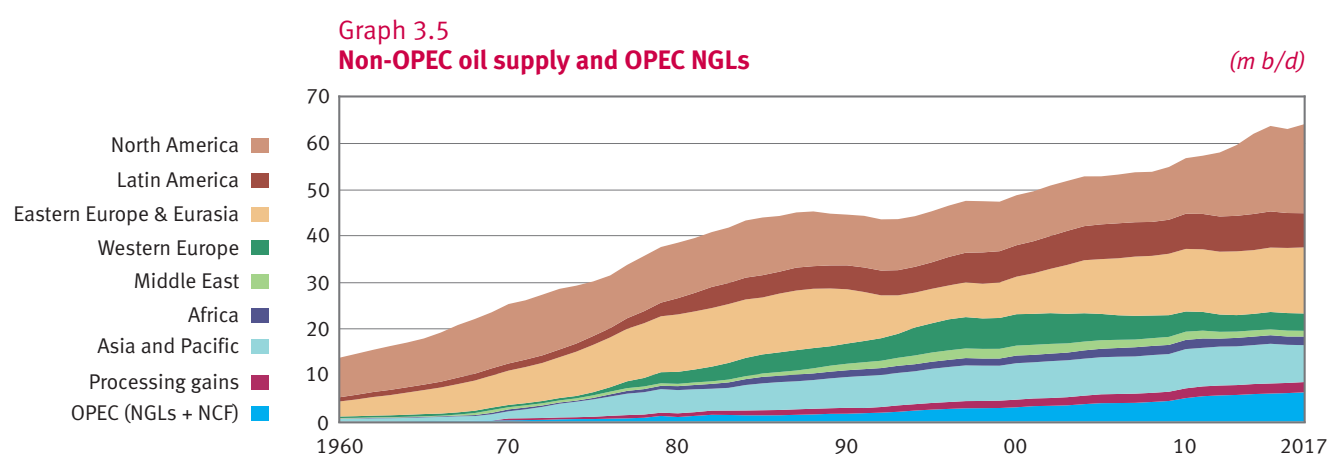


Table 3.4
Producing wells in OPEC Members

	2013	2014	2015	2016	2017	change 17/16
Algeria	2,061	2,042	1,968	1,936	1,847	–89
Angola	1,554	1,509	1,593	1,572	1,492	–80
Ecuador	3,414	3,592	3,483	3,496	3,399	–97
Equatorial Guinea	391	377	343	287	242	–45
Gabon	397	398	397	396	358	–38
IR Iran	2,204	2,281	2,339	2,886	3,130	244
Iraq	1,735	1,963	2,361	2,629	2,662	33
Kuwait ¹	1,794	1,760	1,731	1,780	1,689	–91
Libya	1,308	632	540	521	1,091	570
Nigeria	1,951	2,010	1,947	1,668	1,777	109
Qatar	511	500	467	460	425	–35
Saudi Arabia ¹	3,372	3,406	3,555	3,648	3,489	–159
United Arab Emirates	1,722	1,735	1,792	1,835	1,795	–40
Venezuela	14,809	14,710	14,685	13,395	11,915	–1,480
OPEC	36,832	36,538	36,858	36,222	35,069	–1,153
Total world	981,696	1,060,232	1,113,243	1,102,111	1,113,132	11,021

Notes:

Excluding shut-in wells.

1. Figures include share of producing wells from Neutral Zone.

Table 3.5
Daily and cumulative crude oil production in OPEC Members

(1,000 b)

Daily crude oil production

(average)

	1970	1980	1990	2000	2010	2017
Algeria	1,029.1	1,019.9	783.5	796.0	1,189.8	1,058.7
Angola	83.9	150.0	473.8	736.1	1,757.6	1,632.2
Ecuador	4.1	204.1	286.1	392.2	476.4	531.3
Equatorial Guinea	–	–	–	115.3	237.1	128.6
Gabon	108.8	174.5	274.4	282.8	233.2	210.1
IR Iran	3,829.0	1,467.4	3,135.3	3,661.3	3,544.0	3,867.3
Iraq	1,548.6	2,646.4	2,112.6	2,810.0	2,358.1	4,468.7
Kuwait ¹	2,989.6	1,663.7	858.6	1,996.1	2,312.1	2,704.2
Libya	3,318.0	1,831.6	1,389.1	1,347.2	1,486.6	817.3
Nigeria	1,083.1	2,058.0	1,726.7	2,053.6	2,048.3	1,535.6
Qatar	362.4	471.4	405.6	648.2	733.4	600.0
Saudi Arabia ¹	3,799.1	9,900.5	6,412.5	8,094.5	8,165.6	9,959.2
United Arab Emirates	779.6	1,701.9	1,762.6	2,174.7	2,323.8	2,966.5
Venezuela	3,708.0	2,165.0	2,135.2	2,891.0	2,853.6	2,034.8
OPEC	22,643.3	25,454.4	21,756.0	27,998.9	29,719.6	32,514.6

Cumulative crude oil production up to and including year

	1970	1980	1990	2000	2010	2017
Algeria	2,569,469	6,404,548	8,974,340	11,837,030	16,079,015	19,044,767
Angola	76,423	623,359	1,681,478	3,972,081	8,818,353	13,127,999
Ecuador	26,191	617,927	1,526,131	2,843,162	4,547,455	5,902,766
Equatorial Guinea	–	–	–	125,946	1,080,047	1,579,093
Gabon	195,732	870,019	1,507,592	2,691,226	3,586,461	4,143,894
IR Iran	12,357,977	29,969,896	38,410,483	51,367,070	65,152,744	74,167,763
Iraq	7,476,078	15,826,156	22,246,208	26,918,241	34,596,929	43,476,105
Kuwait ¹	13,028,906	21,993,164	25,857,094	32,092,887	40,548,105	47,833,913
Libya	5,476,384	12,810,843	16,929,582	21,993,272	27,594,678	29,430,461
Nigeria	1,138,896	8,389,456	13,656,562	20,572,881	28,198,355	32,655,006
Qatar	1,428,583	3,199,374	4,334,808	6,032,088	8,718,777	10,474,965
Saudi Arabia ¹	13,283,848	42,306,785	61,814,608	91,266,532	122,387,773	147,606,013
United Arab Emirates	1,160,471	7,164,231	11,921,927	19,785,670	28,265,801	35,517,303
Venezuela	26,301,976	36,046,663	42,528,079	51,772,971	62,363,887	69,018,682
OPEC	84,520,933	186,222,420	251,388,891	343,271,055	451,938,381	533,978,728

Notes:

1. Figures include share of production from Neutral Zone.

Table 3.6
World crude oil production by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	8,848.0	10,153.1	10,671.5	10,042.2	10,567.3	5.2
Canada	1,381.6	1,399.8	1,263.4	1,185.5	1,212.3	2.3
United States	7,466.4	8,753.3	9,408.2	8,856.7	9,355.0	5.6
Latin America	9,698.3	9,740.7	9,714.5	9,222.3	8,712.1	-5.5
Argentina	540.0	532.2	532.3	511.7	483.3	-5.5
Brazil	2,023.9	2,254.6	2,437.3	2,510.0	2,621.8	4.5
Chile	6.7	6.6	5.0	4.2	3.2	-22.2
Colombia	1,008.2	990.3	1,005.6	883.3	853.6	-3.4
Ecuador	526.4	556.6	543.1	549.0	531.3	-3.2
Mexico	2,522.2	2,428.9	2,266.8	2,153.5	1,948.4	-9.5
Peru	62.8	69.3	58.0	40.3	43.5	8.1
Trinidad & Tobago	81.2	81.2	78.6	71.5	71.8	0.4
Venezuela	2,789.5	2,682.6	2,653.9	2,372.5	2,034.8	-14.2
Others	137.7	138.4	133.9	126.5	120.3	-4.9
Eastern Europe and Eurasia	12,661.0	12,651.1	12,655.0	12,764.9	12,934.4	1.3
Azerbaijan	814.7	793.1	786.7	769.8	729.2	-5.3
Kazakhstan	1,372.8	1,344.8	1,321.6	1,295.0	1,466.8	13.3
Romania	82.1	80.2	78.8	75.5	72.2	-4.4
Russia	10,047.3	10,087.5	10,111.1	10,292.2	10,348.9	0.6
Turkmenistan	180.4	185.9	206.2	189.6	180.7	-4.7
Ukraine	43.7	40.7	36.2	32.3	30.1	-7.0
Others	120.0	118.8	114.3	110.4	106.6	-3.5
Western Europe	2,724.2	2,750.3	2,892.9	2,919.0	2,865.3	-1.8
Denmark	176.0	164.9	156.0	140.1	136.6	-2.5
France	16.0	15.3	16.7	16.5	15.2	-8.1
Germany	51.8	48.1	48.1	46.3	43.2	-6.7
Italy	101.6	106.3	100.1	70.7	77.5	9.7
Netherlands	21.6	29.7	26.9	17.8	18.2	1.8
Norway	1,463.6	1,511.8	1,567.4	1,614.6	1,587.9	-1.7
Turkey	46.2	47.7	48.5	49.5	49.2	-0.7
United Kingdom	796.1	776.0	879.7	914.8	891.2	-2.6
Others	51.3	50.4	49.5	48.7	46.4	-4.8
Middle East	23,845.3	23,510.9	24,494.3	26,608.4	25,693.2	-3.4
Bahrain	197.6	202.5	202.6	205.0	194.9	-4.9
IR Iran	3,575.3	3,117.1	3,151.6	3,651.3	3,867.3	5.9
Iraq	2,979.6	3,110.5	3,504.1	4,647.8	4,468.7	-3.9
Kuwait¹	2,924.7	2,866.8	2,858.7	2,954.3	2,704.2	-8.5
Oman	844.3	856.1	885.2	908.7	883.9	-2.7
Qatar	723.9	709.2	656.0	651.5	600.0	-7.9
Saudi Arabia¹	9,637.0	9,712.7	10,192.6	10,460.2	9,959.2	-4.8
Syrian Arab Republic	45.3	22.8	18.7	17.1	16.7	-2.5
United Arab Emirates	2,796.5	2,794.0	2,988.9	3,088.3	2,966.5	-3.9
Yemen	121.0	119.2	36.0	24.2	31.8	31.5
Africa	7,585.8	7,092.4	7,057.3	6,591.7	6,989.4	6.0
Algeria	1,202.6	1,192.8	1,157.1	1,146.3	1,058.7	-7.6
Angola	1,701.2	1,653.7	1,767.1	1,721.6	1,632.2	-5.2
Congo	280.7	266.2	266.7	300.7	354.0	17.7
Egypt	562.6	573.9	578.4	544.4	530.9	-2.5
Equatorial Guinea	210.0	199.8	185.3	160.1	128.6	-19.7
Gabon	213.4	210.9	213.5	220.7	210.1	-4.8
Libya	993.3	479.9	404.3	390.2	817.3	109.5
Nigeria	1,753.7	1,807.0	1,748.2	1,427.3	1,535.6	7.6
Sudans	232.3	285.6	278.6	260.5	245.3	-5.8
Others	435.8	422.5	458.2	420.1	476.8	13.5
Asia and Pacific	7,440.0	7,465.2	7,609.6	7,239.9	6,925.0	-4.3
Australia	334.7	353.4	322.2	289.8	263.0	-9.2
Brunei	122.1	114.4	115.3	109.1	100.6	-7.8
China	4,163.8	4,208.3	4,288.9	3,983.5	3,823.5	-4.0
India	755.8	752.8	746.8	720.8	719.9	-0.1
Indonesia	727.2	697.3	690.1	737.9	700.2	-5.1
Malaysia	588.2	610.1	660.5	656.6	648.0	-1.3
New Zealand	35.4	39.5	41.3	34.7	31.5	-9.3
Others	712.8	689.3	744.4	707.4	638.4	-9.8
Total world	72,802.6	73,363.7	75,095.2	75,388.3	74,686.8	-0.9
<i>of which</i>						
OPEC	32,027.2	31,093.6	32,024.4	33,441.0	32,514.6	-2.8
<i>OPEC percentage</i>	<i>44.0</i>	<i>42.4</i>	<i>42.6</i>	<i>44.4</i>	<i>43.5</i>	
OECD	14,484.4	15,744.5	16,209.9	15,456.0	15,692.1	1.5
FSU	12,521.8	12,511.1	12,517.1	12,629.9	12,804.2	1.4

Notes:

1. Figures include share of production from Neutral Zone.

Table 3.7
Non-OPEC oil supply and OPEC NGLs

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	15,282.1	17,318.2	18,453.9	18,139.5	19,227.7	6.0
Canada	4,038.0	4,312.4	4,419.8	4,505.3	4,866.8	8.0
United States	11,244.1	13,005.8	14,034.0	13,634.2	14,360.9	5.3
Latin America	7,668.7	7,805.1	7,806.0	7,541.0	7,375.3	-2.2
Argentina	693.0	679.2	679.3	675.7	649.3	-3.9
Brazil	2,602.5	2,859.2	3,079.7	3,110.0	3,235.9	4.0
Chile	10.4	8.7	5.9	5.3	6.3	17.2
Colombia	1,030.2	1,013.3	1,029.6	906.3	876.6	-3.3
Mexico	2,892.2	2,801.2	2,598.8	2,464.5	2,231.9	-9.4
Peru	167.3	172.9	149.4	135.1	134.3	-0.6
Trinidad & Tobago	115.4	112.1	108.4	96.6	98.7	2.2
Others	157.7	158.4	154.9	147.5	142.3	-3.5
Eastern Europe and Eurasia	13,773.5	13,764.4	13,909.4	14,063.9	14,271.0	1.5
Azerbaijan	891.5	866.2	860.1	849.1	803.9	-5.3
Kazakhstan	1,642.7	1,623.5	1,596.3	1,562.5	1,732.9	10.9
Romania	85.1	82.9	80.8	77.5	74.2	-4.3
Russia	10,635.3	10,675.4	10,846.3	11,083.3	11,170.9	0.8
Turkmenistan	209.4	217.9	238.3	221.7	213.5	-3.7
Ukraine	69.2	60.3	54.0	50.5	48.7	-3.5
Others	240.5	238.1	233.6	219.4	226.9	3.4
Western Europe	3,554.4	3,565.6	3,742.4	3,781.0	3,739.6	-1.1
Denmark	180.9	169.7	161.6	145.0	143.1	-1.3
France	90.5	89.8	91.0	90.6	92.8	2.4
Germany	145.2	141.2	141.4	143.7	140.2	-2.5
Italy	144.3	140.8	142.8	107.1	110.9	3.5
Netherlands	54.2	49.7	48.0	35.2	36.1	2.6
Norway	1,837.7	1,888.6	1,947.6	1,994.3	1,968.7	-1.3
Turkey	46.2	47.7	48.5	49.5	49.2	-0.7
United Kingdom	900.1	886.7	986.0	1,040.1	1,026.1	-1.3
Others	155.3	151.5	175.6	175.5	172.6	-1.7
Middle East	1,361.1	1,338.8	1,273.0	1,278.5	1,237.5	-3.2
Bahrain	218.6	223.5	223.6	225.0	208.4	-7.4
Oman	942.1	943.3	981.2	1,004.2	970.6	-3.3
Syrian Arab Republic	59.5	32.8	26.7	25.1	24.7	-1.7
Yemen	141.0	139.2	41.6	24.2	33.8	39.8
Africa	1,827.0	1,833.6	1,845.7	1,793.4	1,861.1	3.8
Congo	280.7	266.2	266.7	300.7	354.0	17.7
Egypt	709.6	710.9	719.4	687.5	661.5	-3.8
Sudans	232.3	285.6	278.6	260.5	245.3	-5.8
Others	604.4	570.9	581.1	544.7	600.3	10.2
Asia and Pacific	8,363.2	8,415.9	8,574.7	8,227.0	7,969.8	-3.1
Australia	401.4	428.3	379.4	349.7	317.3	-9.2
Brunei	135.3	126.7	126.8	120.9	113.1	-6.4
China	4,251.2	4,305.3	4,396.9	4,090.5	3,974.1	-2.8
India	870.4	867.3	867.6	851.5	858.3	0.8
Indonesia	904.3	865.2	874.1	936.5	882.6	-5.8
Malaysia	666.3	696.6	742.0	731.0	721.0	-1.4
New Zealand	41.4	46.6	48.0	39.9	37.3	-6.4
Others	1,092.8	1,079.8	1,139.9	1,107.1	1,066.0	-3.7
Non-OPEC production	51,830.1	54,041.4	55,605.0	54,824.1	55,681.9	1.6
Processing gains	2,132.0	2,163.0	2,172.0	2,194.0	2,211.0	0.8
Non-OPEC supply	53,962.1	56,204.4	57,777.0	57,018.1	57,892.9	1.5
OPEC NGLs	5,504.7	5,667.4	5,779.1	5,903.5	6,060.0	2.7
OPEC non-conventional (NCF)	232.0	260.0	263.3	237.3	248.3	4.6
OPEC (NGLs+NCF)	5,736.6	5,927.4	6,042.4	6,140.8	6,308.3	2.7
Non-OPEC & OPEC (NGLs+NCF)	59,698.7	62,131.9	63,819.4	63,158.9	64,201.2	1.7
<i>of which</i>						
OECD	22,297.1	24,282.5	25,342.2	24,887.3	25,682.9	3.2
FSU	13,553.9	13,544.3	13,692.2	13,859.9	14,059.0	1.4

Visit our

Interactive ASB



asb.opec.org



SECTION 4

Oil data: downstream

Downstream indicators continue to improve, as the global oil market gradually rebalances

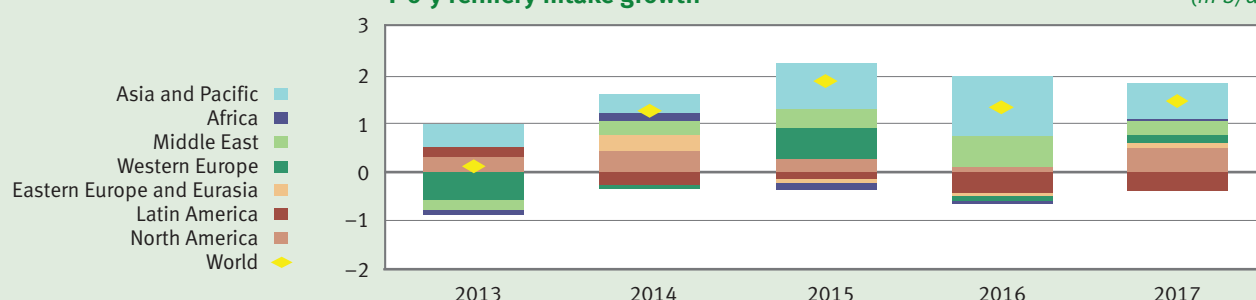
The year 2017 proved to be a good one for the downstream industry. Key indicators, such as products demand and refinery margins, continued to improve as the global oil market was rebalancing.

Oil demand growth accelerated in 2017 and supported downstream operations. In fact, world oil demand is estimated to have grown by more than 1.7m b/d, or 1.7 per cent, y-o-y to 97m b/d in 2017, slightly higher than the 1.5m b/d y-o-y growth seen in 2016. Higher oil requirements came amid a pickup of global economic activity, which translated into rising oil products consumption in both OECD and non-OECD countries. The OECD demand increase was driven mainly by the US (+195,000 b/d y-o-y) and Germany (+94,000 b/d y-o-y), as both countries saw key economic indicators, including GDP growth and the unemployment rate, improve. China was once again in the driver's seat of non-OECD oil demand growth (+519,000 b/d y-o-y), followed by India (+78,000 b/d y-o-y).

Refining margins increased y-o-y as demand growth outpaced refinery throughput. In Europe, the Brent refining margin moved up by \$1.70/b y-o-y to \$7.50/b in 2017, and Asia saw its Dubai refining margin increasing (+\$1/b y-o-y) to \$9.20/b. US refiners saw the sharpest margins increase last year (+\$3.80/b y-o-y to \$10.40/b), which was supported by rising product import requirements, mainly in Latin America. The improvement of these indicators translated into higher refinery throughput: +1.35m b/d y-o-y in 2017.

Graph 1:
Y-o-y refinery intake growth

(m b/d)



Global refining capacity increased by an annual average of more than 100,000 b/cd y-o-y over 2017, with most of the additions coming online in the second half of 2017, while the bulk of the closures occurred in early 2017. Non-OECD refining capacity expanded by around 274,000 b/cd y-o-y, while OECD refining capacity shrank by around 170,000 b/d y-o-y, on the back of stricter regulations and mounting competition from non-OECD refiners. In China, two projects (the 260,000 b/d greenfield Yunnan refinery and the 200,000 b/d expansion of the Huizhou refinery) materialized in late 2017, while in India two smaller-scale expansions (the 50,000 b/d Bhatinda and 80,000 b/d Paradip upgrades) came online earlier in the year. Several refiners in Japan closed down CDU capacities in the first quarter, following a second wave of government regulations designed to further enhance the country's CDU-to-conversion ratio. In OPEC Member Countries (MCs), Iraq brought online two small-scale CDU expansions, while in Saudi Arabia and Kuwait, the Jeddah and the Shuaiba refineries suspended operations in November and March, respectively.

Graph 2:
Y-o-y refinery capacity additions

(m b/cd)

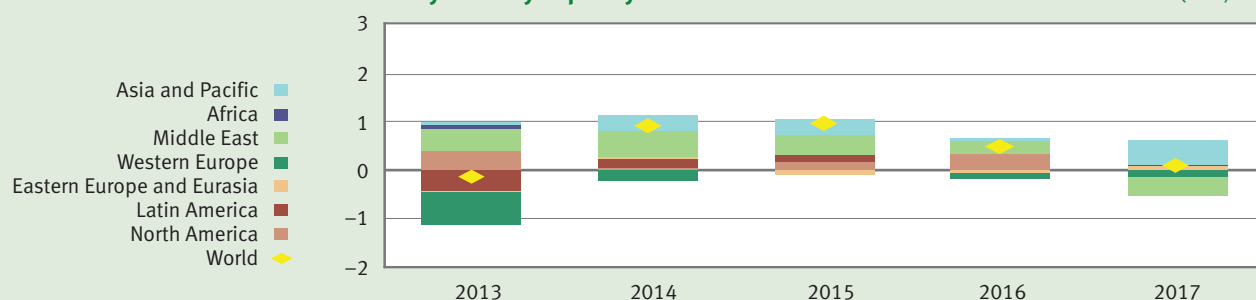


Table 4.1

Refinery capacity in OPEC Members by company and location

(1,000 b/cd)

	Location	2013	2014	2015	2016	2017
Algeria		651	651	651	651	651
Sonatrach	Skikda	355	355	355	355	355
	Skikda (condensate)	122	122	122	122	122
	Arzew	81	81	81	81	81
	Alger	58	58	58	58	58
	Hassi Messaoud	22	22	22	22	22
	In Amenas	nap	nap	nap	nap	nap
	Adrar	13	13	13	13	13
Angola		80	80	80	80	80
Fina Petroleos de Angola	Luanda	65	65	65	65	65
Sonangol	Malongo	15	15	15	15	15
Ecuador		191	191	191	191	188
Petroindustrial	Esmeraldas	110	110	110	110	110
	Santa Elens	45	45	45	45	45
	Shushufindi	20	20	20	20	20
Repsol YPF	Orellana	7	7	7	7	7
Andes Petroleum	Sucumbios	3	3	3	3	3
Petroproduccion	El Oro	2	2	2	2	nap
	Sucumbios	2	2	2	2	2
	Lago Agrio	1	1	1	1	1
Equatorial Guinea²		nap	nap	nap	nap	nap
Gabon		24	24	24	24	24
Total & Shell	Port Gentil	24	24	24	24	24
IR Iran		1,715	1,781	1,781	1,901	1,901
NIOC	Abadan	360	399	399	399	399
	Isfahan	370	375	375	375	375
	Bandar Abbas	320	284	284	284	284
	Tehran	220	245	245	245	245
	Arak	250	242	242	242	242
	Tabriz	110	110	110	110	110
	Shiraz	40	56	56	56	56
	Kermanshah	25	22	22	22	22
	Lavan	20	48	48	48	48
	Bandar Abbas	nap	nap	nap	120	120
Iraq		830	900	900	900	640
INOC	Baiji	310	310	310	310	nap
	Basrah	140	210	210	210	210
	Daura	140	140	140	140	140
	Kirkuk	30	30	30	30	30
	Sainia	30	30	30	30	30
	Najaf	30	30	30	30	30
	Samawa	30	30	30	30	30
	Nasiria	30	30	30	30	30
	Missan	30	30	30	30	30
	Diwania	20	20	20	20	20
	Haditha	16	16	16	16	16
	Qaiarah	14	14	14	14	14
	Kask	10	10	10	10	nap
	Kar	nap	nap	nap	nap	40
	Bazyan	nap	nap	nap	nap	20

Table 4.1

Refinery capacity in OPEC Members by company and location

(1,000 b/cd)

	Location	2013	2014	2015	2016	2017
Kuwait		936	936	936	936	762
KNPC	Mina Al-Ahmadi	466	466	466	466	442
	Mina Abdullah	270	270	270	270	270
	Shuaiba	200	200	200	200	50
Libya		380	380	380	380	380
NOC	Ras Lanuf	220	220	220	220	220
	Zawia	120	120	120	120	120
	Tobruk	20	20	20	20	20
	Marsa El-Brega	10	10	10	10	10
	Sarir	10	10	10	10	10
Nigeria		446	446	446	446	446
PHRC	Port Harcourt New	150	150	150	150	150
WRPC	Warri	125	125	125	125	125
KRPC	Kaduna	110	110	110	110	110
PHRC	Port Harcourt	60	60	60	60	60
NDPR	Rivers State	1	1	1	1	1
Qatar		283	283	283	429	433
Qatar Petroleum	Ras Laffan condensate	146	146	146	146	153
Qatar Petroleum	Mesaieed refinery & condensate	137	137	137	137	127
Takreer	Ras Laffan condensate II	nap	nap	nap	146	153
Saudi Arabia		2,507	2,899	2,899	2,899	2,886
Saudi Aramco	Ras Tanura	550	550	550	550	550
	Yanbu	235	245	245	245	245
	Riyadh	124	126	126	126	126
	Jeddah	88	78	78	78	65
Saudi Aramco & Mobil	Samrif	400	400	400	400	400
Saudi Aramco & Petrola	Rabigh	400	400	400	400	400
Saudi Aramco & Total	Satorp	400	400	400	400	400
Saudi Aramco	Yasref	nap	400	400	400	400
Saudi Aramco & Shell	Sasref	310	300	300	300	300
United Arab Emirates		707	707	1,124	1,124	1,124
ADNOC	Al-Ruwais	400	400	817	817	817
Emirate Oil	Jebel Ali	140	140	140	140	140
ADNOC	Umm Al-Narr	85	85	85	85	85
METRO Oil	Fujairah	82	82	82	82	82
Venezuela		1,855	1,891	1,891	1,891	1,891
PDVSA	Amuay	600	600	600	600	600
	Cardon	340	340	340	340	340
	Puerto La Cruz	196	196	196	196	196
	El Palito	127	127	127	127	127
	San Roque	5	5	5	5	5
	Bajo Grande	5	5	5	5	5
	Petropiar ¹	146	198	198	198	198
	Petromonagas ¹	132	136	136	136	136
	Petrocedeno ¹	182	153	153	153	153
	Petrozuata ¹	123	131	131	131	131
OPEC		10,590	11,153	11,570	11,836	11,406

Notes:

1. Upgrader refinery capacity.
2. Equatorial Guinea has no refinery.

Table 4.2
Charge refinery capacity in OPEC Members, 2017

(1,000 b/cd)

	Vacuum distillation	Thermal operations	Catalytic cracking	Catalytic reforming	Catalytic ¹ hydrocracking	Catalytic hydrotreating
Algeria	11	–	7	90	–	82
Angola	3	–	–	2	–	3
Ecuador	45	32	20	10	–	38
Equatorial Guinea ¹	nap	nap	nap	nap	nap	nap
Gabon	–	9	–	3	–	9
IR Iran	639	186	139	290	145	846
Iraq	47	–	–	41	–	95
Kuwait	85	80	43	36	86	446
Libya	4	–	–	20	–	43
Nigeria ²	132	23	104	74	33	111
Qatar ²	–	–	60	25	194	39
Saudi Arabia	654	191	175	237	249	752
United Arab Emirates	93	–	127	208	120	638
Venezuela	679	145	269	98	–	390
OPEC	2,391	666	943	1,134	826	3,492

Notes:

1. Equatorial Guinea has no refinery.

2. Includes GTL cracker capacities.

Table 4.3
World refinery capacity by country

(1,000 b/cd)

	2013	2014	2015	2016	2017	change 17/16
North America	19,782	19,837	20,024	20,367	20,378	12
Canada	1,964	1,964	1,966	1,966	1,966	–
United States	17,818	17,873	18,058	18,401	18,413	12
Latin America	8,364	8,541	8,669	8,669	8,667	–2
Argentina	631	631	631	631	631	–
Brazil	2,093	2,235	2,278	2,278	2,278	–
Colombia	330	330	415	415	415	–
Ecuador	191	191	191	191	188	–2
Mexico	1,690	1,690	1,690	1,690	1,690	–
Curaçao	320	320	320	320	320	–
Trinidad & Tobago	168	168	168	168	168	–
Venezuela¹	1,855	1,891	1,891	1,891	1,891	–
Others	1,086	1,086	1,086	1,086	1,086	–
Eastern Europe and Eurasia	10,132	10,182	10,095	10,032	10,113	81
Azerbaijan	399	399	259	120	120	–
Belarus	493	493	493	517	557	40
Kazakhstan	345	345	345	345	345	–
Poland	493	493	493	493	493	–
Romania	462	462	462	462	462	–

Table 4.3
World refinery capacity by country

(1,000 b/cd)

	2013	2014	2015	2016	2017	change 17/16
Eastern Europe and Eurasia (cont'd)						
Russia	5,798	5,848	5,901	5,953	5,965	12
Ukraine	880	880	880	880	880	–
Others	1,262	1,262	1,262	1,262	1,291	29
Western Europe	13,832	13,615	13,615	13,515	13,382	–132
Belgium	740	740	740	740	740	–
France	1,508	1,406	1,406	1,406	1,303	–103
Germany	2,247	2,188	2,188	2,188	2,188	–
Italy	2,116	2,046	2,046	2,046	2,046	–
Netherlands	1,113	1,113	1,113	1,113	1,113	–
Spain	1,292	1,428	1,428	1,428	1,428	–
United Kingdom	1,524	1,402	1,402	1,302	1,302	–
Others	3,293	3,293	3,293	3,293	3,263	–29
Middle East	8,160	8,688	9,105	9,371	8,990	–382
IR Iran²	1,715	1,781	1,781	1,901	1,901	–
Iraq	830	900	900	900	640	–260
Kuwait	936	936	936	936	762	–174
Qatar²	283	283	283	429	433	4
Saudi Arabia²	2,507	2,899	2,899	2,899	2,886	–13
United Arab Emirates²	707	707	1,124	1,124	1,124	–
Others	1,182	1,182	1,182	1,182	1,244	62
Africa	3,507	3,507	3,507	3,507	3,542	35
Algeria²	651	651	651	651	651	–
Angola	80	80	80	80	80	–
Egypt	726	726	726	726	761	35
South Africa	485	485	485	485	485	–
Gabon	24	24	24	24	24	–
Libya	380	380	380	380	380	–
Nigeria	446	446	446	446	446	–
Others	715	715	715	715	715	–
Asia and Pacific	30,687	31,005	31,324	31,367	31,860	492
Australia	674	541	440	440	446	6
China	11,787	12,337	12,437	12,497	12,889	392
India	4,319	4,319	4,619	4,619	4,722	103
Indonesia	1,157	1,157	1,157	1,157	1,160	3
Japan	4,340	3,947	3,917	3,790	3,704	–86
South Korea ²	2,949	3,009	3,059	3,169	3,169	–
Singapore	1,414	1,514	1,514	1,514	1,514	–
Others	4,047	4,181	4,181	4,181	4,257	75
Total world	94,464	95,376	96,339	96,828	96,931	104
<i>of which</i>						
OPEC	10,605	11,169	11,586	11,852	11,406	–445
<i>OPEC percentage</i>	<i>11.2</i>	<i>11.7</i>	<i>12.0</i>	<i>12.2</i>	<i>11.8</i>	
OECD	43,890	43,226	43,294	43,323	43,152	–171
FSU	8,537	8,612	8,522	8,439	8,462	22

Notes:

1. Includes upgrader capacity.

2. Includes condensate splitters.

Table 4.4

World refinery throughput by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	17,576	18,005	18,279	18,380	18,886	2.8
Canada	1,852	1,849	1,848	1,866	1,993	6.8
United States	15,724	16,156	16,431	16,514	16,893	2.3
Latin America	6,685	6,404	6,251	5,817	5,439	-6.5
Argentina	523	519	536	481	496	3.2
Brazil	2,055	2,107	1,984	1,800	1,677	-6.8
Colombia	289	245	244	337	346	2.7
Ecuador	140	124	119	151	166	10.4
Mexico	1,225	1,153	1,060	932	767	-17.6
Curaçao	174	194	182	186	191	2.7
Trinidad & Tobago	126	83	128	132	128	-3.4
Venezuela	1,394	1,351	1,417	1,210	1,048	-13.4
Others	760	628	582	588	620	5.3
Eastern Europe and Eurasia	7,849	8,200	8,114	8,034	8,140	1.3
Azerbaijan	129	132	126	114	113	-0.7
Belarus	418	450	464	375	367	-2.2
Kazakhstan	292	307	313	316	333	5.5
Poland	488	486	525	516	504	-2.3
Romania	194	216	213	234	231	-1.2
Russia	5,449	5,770	5,638	5,578	5,588	0.2
Ukraine	77	59	19	18	38	111.1
Others	802	781	816	884	966	9.2
Western Europe	10,691	10,620	11,276	11,188	11,343	1.4
Belgium	556	645	644	640	684	6.8
France	1,117	1,091	1,152	1,135	1,139	0.4
Germany	1,848	1,810	1,868	1,880	1,853	-1.5
Italy	1,258	1,193	1,339	1,295	1,364	5.3
Netherlands	960	1,004	1,062	1,089	1,081	-0.7
Spain	1,161	1,178	1,298	1,294	1,317	1.7
United Kingdom	1,206	1,133	1,131	1,106	1,087	-1.7
Others	2,585	2,566	2,782	2,748	2,817	2.5
Middle East	6,605	6,896	7,293	7,949	8,131	2.3
IR Iran	1,817	1,817	1,817	1,857	1,747	-6.0
Iraq	607	495	415	626	534	-14.7
Kuwait	864	872	893	826	711	-13.9
Qatar	269	261	253	280	368	31.5
Saudi Arabia	1,577	1,997	2,181	2,459	2,858	16.2
United Arab Emirates	650	637	919	1,100	1,067	-3.0
Others	820	817	816	800	845	5.6
Africa	2,105	2,270	2,132	2,077	2,110	1.6
Algeria	518	683	656	654	648	-0.9
Angola	37	35	56	48	55	14.6
Egypt	487	514	527	502	506	0.9
South Africa	401	451	423	413	414	0.4
Gabon	19	20	20	20	20	0.2
Libya	140	92	92	90	87	-3.0
Nigeria	95	59	24	52	82	58.2
Others	408	416	335	300	298	-0.7
Asia and Pacific	26,301	26,690	27,628	28,873	29,615	2.6
Australia	588	539	427	433	419	-3.3
China	9,782	10,348	11,001	11,545	12,219	5.8
India	4,463	4,476	4,561	4,930	4,982	1.0
Indonesia	822	848	836	861	871	1.1
Japan	3,666	3,509	3,456	3,480	3,385	-2.7
South Korea	2,498	2,533	2,799	2,949	3,061	3.8
Singapore	1,277	1,262	1,210	1,240	1,265	1.9
Others	3,206	3,175	3,336	3,434	3,413	-0.6
Total world	77,812	79,084	80,972	82,318	83,664	1.6
<i>of which</i>						
OPEC	8,128	8,443	8,859	9,373	9,392	0.2
<i>OPEC percentage</i>	<i>10.4</i>	<i>10.7</i>	<i>10.9</i>	<i>11.4</i>	<i>11.2</i>	
OECD	37,433	37,588	38,563	38,561	39,153	1.5
FSU	6,763	7,094	6,958	6,817	6,867	0.7

Notes:

May include throughput of condensate splitting units in some countries and regions.
Equatorial Guinea is not included, as the country does not have a refinery.

Table 4.5
Output of petroleum products in OPEC Members

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
Algeria	506	655	629	621	629	1.2
Gasoline	49	63	59	55	55	0.4
Kerosene	36	42	34	35	34	-1.4
Distillates	149	190	186	187	185	-1.2
Residuals	113	139	140	145	126	-13.1
Others	160	220	209	200	229	14.6
Angola	49	48	48	53	55	3.7
Gasoline	1	1	–	1	1	6.7
Kerosene	10	12	7	9	9	-2.0
Distillates	15	13	16	12	16	28.5
Residuals	17	13	17	18	17	-4.7
Others	6	10	7	12	12	-4.6
Ecuador	210	201	194	206	208	1.2
Gasoline	65	81	86	83	79	-4.5
Kerosene	9	8	8	8	9	12.0
Distillates	32	30	29	36	39	7.6
Residuals	55	45	45	57	64	13.3
Others	49	37	26	23	17	-22.6
Equatorial Guinea	nap	nap	nap	nap	nap	–
Gabon	22	22	22	22	22	0.5
Gasoline	3	3	3	3	3	1.0
Kerosene	1	1	1	1	1	0.1
Distillates	7	8	8	8	8	1.0
Residuals	9	9	9	9	9	0.1
Others	2	2	2	2	2	0.1
IR Iran	1,918	1,812	1,819	1,857	1,782	-4.1
Gasoline	456	413	422	435	418	-4.0
Kerosene	124	138	129	131	126	-3.8
Distillates	589	533	545	562	578	2.9
Residuals	513	464	458	462	407	-12.0
Others	237	264	264	267	253	-5.1
Iraq	601	523	445	449	486	8.3
Gasoline	86	66	56	49	57	16.8
Kerosene	42	31	28	34	39	13.6
Distillates	132	104	72	67	82	23.0
Residuals	293	249	222	221	267	21.0
Others	48	72	67	78	41	-47.4
Kuwait	992	918	1,013	924	716	-22.4
Gasoline	59	37	48	61	43	-29.0
Kerosene	188	196	190	169	148	-12.1
Distillates	248	245	226	212	181	-14.7
Residuals	180	150	185	201	169	-16.4
Others	317	291	364	280	176	-37.3

Table 4.5

Output of petroleum products in OPEC Members

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
Libya	145	135	137	134	126	-6.2
Gasoline	17	17	16	16	15	-8.8
Kerosene	16	17	16	16	15	-4.5
Distillates	42	38	38	36	34	-6.4
Residuals	44	42	43	42	40	-4.2
Others	25	21	23	23	21	-8.8
Nigeria	89	57	24	54	82	52.9
Gasoline	30	17	12	15	27	80.3
Kerosene	16	10	3	8	13	59.9
Distillates	18	13	5	14	20	43.7
Residuals	21	15	4	7	15	120.9
Others	3	2	–	9	6	-35.9
Qatar	650	638	611	632	699	10.5
Gasoline	37	46	37	46	45	-1.4
Kerosene	76	67	71	80	109	35.9
Distillates	44	45	43	42	52	23.4
Residuals	7	5	10	4	4	2.0
Others	486	476	451	460	488	6.1
Saudi Arabia	1,842	2,104	2,481	2,826	2,874	1.7
Gasoline	369	425	493	553	558	0.9
Kerosene	163	199	211	245	249	1.7
Distillates	602	711	963	1,051	1,079	2.7
Residuals	455	469	447	460	466	1.3
Others	252	299	367	518	522	0.9
United Arab Emirates	653	626	835	1,089	1,050	-3.6
Gasoline	91	87	103	132	129	-2.1
Kerosene	191	181	257	341	327	-4.0
Distillates	123	123	177	220	211	-3.9
Residuals	51	26	26	33	32	-3.6
Others	196	209	273	363	350	-3.6
Venezuela	1,245	1,163	1,050	961	726	-24.4
Gasoline	293	274	248	203	179	-11.6
Kerosene	68	63	61	38	25	-34.3
Distillates	255	243	207	167	116	-30.4
Residuals	312	272	256	266	220	-17.4
Others	317	311	279	287	186	-35.2
OPEC	8,923	8,901	9,306	9,827	9,455	-3.8
Gasoline	1,556	1,528	1,582	1,650	1,610	-2.4
Kerosene	939	963	1,015	1,115	1,105	-0.9
Distillates	2,252	2,289	2,508	2,611	2,601	-0.4
Residuals	2,069	1,897	1,860	1,924	1,836	-4.6
Others	2,099	2,213	2,331	2,523	2,303	-8.7

Notes:

Data may include products from GTLs and condensate units.
Equatorial Guinea does not produce petroleum products.

Table 4.6
World output of petroleum products by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	21,177	21,706	21,907	22,112	22,471	1.6
Canada	2,071	2,052	2,021	2,033	2,160	6.3
United States	19,106	19,654	19,886	20,079	20,311	1.2
Latin America	7,377	7,079	6,750	6,308	5,759	-8.7
Argentina	682	682	716	694	672	-3.2
Brazil	2,179	2,211	2,063	1,912	1,787	-6.5
Colombia	314	342	349	356	362	1.8
Ecuador	210	201	194	206	208	1.2
Mexico	1,517	1,464	1,334	1,112	895	-19.5
Curaçao	147	161	166	171	175	2.6
Trinidad & Tobago	125	99	125	129	125	-3.3
Venezuela	1,245	1,163	1,050	961	726	-24.4
Others	959	757	754	768	809	5.3
Eastern Europe and Eurasia	9,130	9,252	9,113	8,938	9,053	1.3
Azerbaijan	126	129	125	114	107	-6.6
Belarus	404	357	395	369	366	-1.0
Kazakhstan	322	386	359	359	369	2.6
Poland	518	516	566	556	552	-0.6
Romania	215	244	242	263	266	1.0
Russia	6,536	6,636	6,437	6,337	6,349	0.2
Ukraine	90	74	29	25	46	82.7
Others	918	911	958	914	999	9.2
Western Europe	12,321	12,234	12,852	12,787	12,959	1.3
Belgium	666	735	729	701	730	4.2
France	1,261	1,264	1,271	1,273	1,303	2.4
Germany	2,139	2,115	2,164	2,185	2,147	-1.8
Italy	1,495	1,408	1,567	1,557	1,597	2.6
Netherlands	1,186	1,214	1,278	1,280	1,282	0.2
Spain	1,239	1,244	1,336	1,327	1,345	1.4
United Kingdom	1,411	1,333	1,341	1,314	1,324	0.8
Others	2,924	2,922	3,168	3,151	3,231	2.5
Middle East	7,576	7,485	8,100	8,664	8,544	-1.4
IR Iran	1,918	1,812	1,819	1,857	1,782	-4.1
Iraq	601	523	445	449	486	8.3
Kuwait	992	918	1,013	924	716	-22.4
Qatar	650	638	611	632	699	10.5
Saudi Arabia	1,842	2,104	2,481	2,826	2,874	1.7
United Arab Emirates	653	626	835	1,089	1,050	-3.6
Others	919	865	896	887	937	5.6
Africa	2,172	2,334	2,174	2,143	2,181	1.8
Algeria	506	655	629	621	629	1.2
Angola	49	48	48	53	55	3.7
Egypt	487	511	528	501	506	0.9
South Africa	436	476	452	465	470	1.1
Gabon	22	22	22	22	22	0.5
Libya	145	135	137	134	126	-6.2
Nigeria	89	57	24	54	82	52.9
Others	438	430	334	294	292	-0.7
Asia and Pacific	26,783	27,529	28,230	29,081	30,070	3.4
Australia	628	604	479	469	459	-2.2
China	10,248	10,795	11,119	11,418	12,085	5.8
India	4,515	4,798	4,888	5,236	5,426	3.6
Indonesia	890	939	971	1,000	1,022	2.1
Japan	3,669	3,518	3,509	3,517	3,450	-1.9
South Korea	2,695	2,767	3,006	3,111	3,299	6.1
Singapore	1,044	1,032	1,001	1,024	1,044	1.9
Others	3,093	3,076	3,258	3,307	3,287	-0.6
Total world	86,535	87,619	89,125	90,033	91,037	1.1
<i>of which</i>						
OPEC	8,923	8,901	9,306	9,827	9,455	-3.8
<i>OPEC percentage</i>	<i>10.3</i>	<i>10.2</i>	<i>10.4</i>	<i>10.9</i>	<i>10.4</i>	
OECD	43,516	43,812	44,683	44,657	45,343	1.5
FSU	7,020	7,255	7,181	7,022	7,074	0.7

Notes:

Data may include products from GTL and condensate units.

Table 4.7

Oil demand by main petroleum product in OPEC Members

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
Algeria	377	389	419	399	422	5.6
Gasoline	81	87	93	90	90	-0.1
Kerosene	11	12	12	12	13	10.3
Distillates	207	212	225	218	218	-0.1
Residuals	5	4	5	4	3	-14.8
Others	73	75	84	75	97	29.8
Angola	149	147	142	122	115	-5.4
Gasoline	29	34	31	26	19	-25.1
Kerosene	11	12	12	9	11	20.1
Distillates	75	77	86	60	63	5.2
Residuals	7	2	1	3	3	17.9
Others	28	22	12	24	18	-23.9
Ecuador	272	286	259	247	241	-2.5
Gasoline	51	53	59	64	60	-6.4
Kerosene	8	8	8	7	7	3.7
Distillates	89	93	92	84	85	1.2
Residuals	33	39	34	26	21	-19.1
Others	92	94	67	65	67	2.6
Equatorial Guinea	4	7	8	6	6	0.6
Gasoline	1	2	2	2	2	3.6
Kerosene	—	—	2	1	1	-7.2
Distillates	3	5	4	3	3	1.3
Residuals	—	—	—	—	—	—
Others	—	—	—	—	—	—
Gabon	24	24	24	25	26	2.0
Gasoline	2	2	2	2	2	1.3
Kerosene	3	2	2	2	2	2.0
Distillates	15	15	16	17	17	2.6
Residuals	3	3	3	3	3	-1.0
Others	1	1	1	1	1	3.0
IR Iran	1,776	1,846	1,795	1,801	1,819	1.0
Gasoline	395	438	455	444	582	31.1
Kerosene	104	138	129	138	114	-17.3
Distillates	620	538	546	499	491	-1.6
Residuals	344	414	379	366	281	-23.2
Others	314	318	285	354	351	-0.9
Iraq	715	680	686	757	794	4.9
Gasoline	134	110	105	109	125	14.6
Kerosene	45	33	31	33	36	8.3
Distillates	159	131	104	100	114	14.4
Residuals	174	153	179	218	271	24.7
Others	203	253	267	298	248	-16.7
Kuwait	330	337	346	350	371	6.2
Gasoline	66	69	71	70	61	-13.4
Kerosene	13	15	16	17	14	-17.1
Distillates	57	55	48	49	51	3.5
Residuals	128	127	122	131	109	-16.5
Others	66	71	88	82	136	65.9

Table 4.7
Oil demand by main petroleum product in OPEC Members

(1,000 b/d)

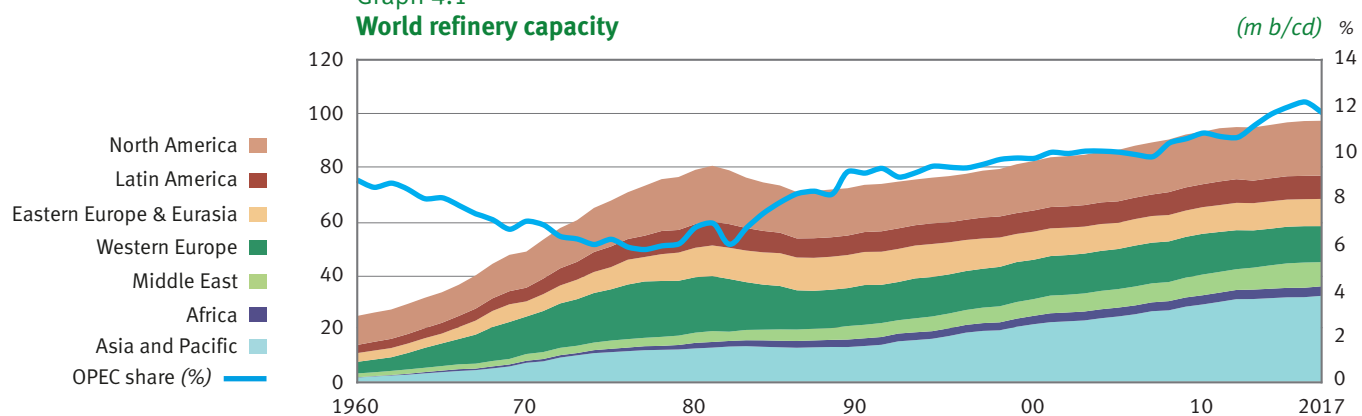
	2013	2014	2015	2016	2017	% change 17/16
Libya	250	222	211	208	208	0.3
Gasoline	88	78	75	76	78	1.8
Kerosene	9	7	5	5	5	0.2
Distillates	98	90	85	84	88	4.9
Residuals	39	33	32	29	26	-10.7
Others	15	14	14	13	11	-14.1
Nigeria	385	396	408	393	426	8.3
Gasoline	274	284	306	299	316	5.6
Kerosene	53	53	44	25	26	2.6
Distillates	49	50	56	67	82	22.2
Residuals	8	8	1	2	2	25.0
Others	1	1	1	1	1	0.3
Qatar	221	243	286	350	339	-3.2
Gasoline	30	34	33	29	42	42.5
Kerosene	57	65	95	111	79	-29.1
Distillates	40	45	53	51	48	-5.1
Residuals	2	2	2	6	6	-2.2
Others	93	96	103	153	164	7.5
Saudi Arabia	2,994	3,163	3,319	3,210	3,242	1.0
Gasoline	504	522	559	556	599	7.9
Kerosene	70	75	86	88	101	15.7
Distillates	730	753	778	701	591	-15.7
Residuals	370	380	399	470	516	9.6
Others	1,320	1,433	1,497	1,395	1,435	2.9
United Arab Emirates	665	719	778	799	789	-1.2
Gasoline	144	168	175	176	185	5.1
Kerosene	103	119	146	148	157	6.3
Distillates	92	98	105	106	102	-4.1
Residuals	291	295	312	329	300	-8.8
Others	36	39	40	40	45	12.5
Venezuela	831	752	658	566	503	-11.2
Gasoline	299	283	259	227	195	-14.2
Kerosene	7	6	5	4	8	70.1
Distillates	249	237	210	163	127	-22.0
Residuals	48	37	21	20	18	-10.8
Others	228	188	162	151	155	2.3
OPEC	8,993	9,212	9,338	9,233	9,302	0.7
Gasoline	2,097	2,163	2,225	2,170	2,355	8.5
Kerosene	496	545	592	601	575	-4.4
Distillates	2,483	2,401	2,411	2,203	2,082	-5.5
Residuals	1,450	1,497	1,489	1,607	1,561	-2.9
Others	2,468	2,606	2,620	2,651	2,729	2.9

Table 4.8
World oil demand by country

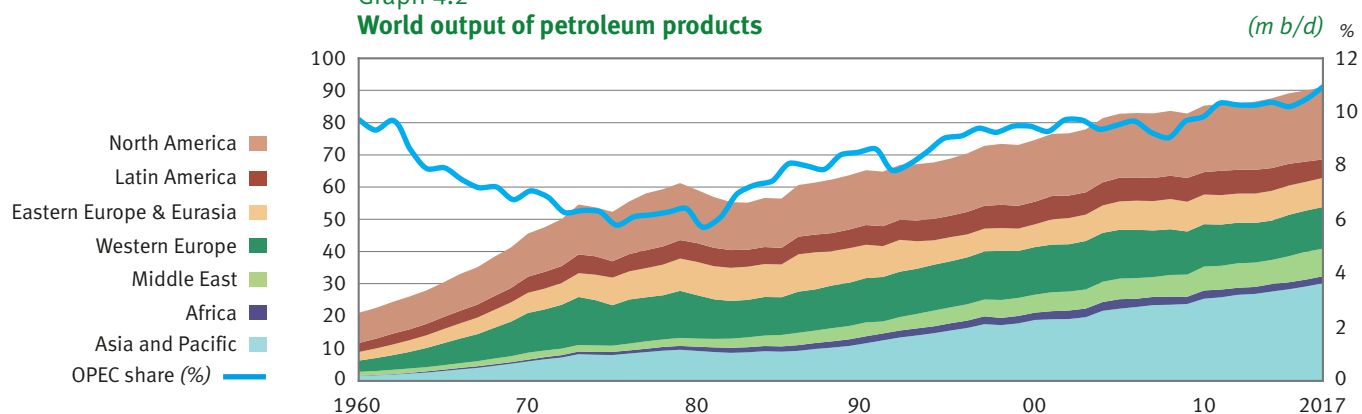
(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	21,448	21,531	21,951	22,103	22,342	1.1
Canada	2,456	2,375	2,373	2,379	2,422	1.8
United States	18,989	19,153	19,576	19,722	19,917	1.0
Others	3	3	3	3	3	1.0
Latin America	9,295	9,325	9,161	9,111	9,046	-0.7
Argentina	689	720	716	720	736	2.3
Brazil	3,098	3,178	3,111	3,072	3,104	1.0
Colombia	298	306	319	324	331	2.1
Ecuador	272	286	259	247	241	-2.5
Mexico	2,091	2,040	2,006	2,027	1,925	-5.0
Venezuela	831	752	658	566	503	-11.2
Others	2,017	2,044	2,091	2,155	2,207	2.4
Eastern Europe and Eurasia	5,770	5,986	5,935	6,032	6,234	3.3
Czech Republic	189	202	196	180	216	20.2
Hungary	131	146	156	157	171	8.8
Kazakhstan	271	270	271	290	294	1.3
Poland	505	505	533	578	638	10.4
Romania	167	175	180	187	195	4.3
Russia	3,374	3,548	3,434	3,430	3,477	1.4
Slovakia	77	73	79	84	89	6.0
Ukraine	273	259	257	269	272	1.4
Others	783	808	828	857	881	2.9
Western Europe	12,985	12,889	13,149	13,331	13,557	1.7
France	1,714	1,692	1,692	1,657	1,707	3.0
Germany	2,435	2,374	2,368	2,410	2,504	3.9
Italy	1,260	1,266	1,274	1,253	1,283	2.4
Netherlands	991	992	962	973	964	-0.9
Spain	1,208	1,200	1,247	1,287	1,296	0.7
United Kingdom	1,508	1,509	1,547	1,586	1,579	-0.4
Others	3,868	3,857	4,061	4,165	4,224	1.4
Middle East	7,782	8,018	8,256	8,295	8,385	1.1
IR Iran	1,776	1,846	1,795	1,801	1,819	1.0
Iraq	715	680	686	757	794	4.9
Kuwait	330	337	346	350	371	6.2
Qatar	221	243	286	350	339	-3.2
Saudi Arabia	2,994	3,163	3,319	3,210	3,242	1.0
Syrian Arab Republic	154	143	131	121	117	-3.2
United Arab Emirates	665	719	778	799	789	-1.2
Others	927	886	915	907	913	0.7
Africa	3,835	3,904	3,992	4,095	4,203	2.6
Algeria	377	389	419	399	422	5.6
Angola	149	147	142	122	115	-5.4
Egypt	815	826	823	872	855	-1.9
Equatorial Guinea	4	7	8	6	6	0.6
Gabon	24	24	24	25	26	2.0
Libya	250	222	211	208	208	0.3
Nigeria	385	396	408	393	426	8.3
South Africa	641	638	642	658	668	1.5
Tunisia	90	94	88	90	99	9.9
Others	1,100	1,160	1,227	1,322	1,379	4.2
Asia and Pacific	30,030	30,415	31,634	32,574	33,429	2.6
Australia	1,125	1,113	1,106	1,100	1,176	6.9
China	10,399	10,785	11,490	11,801	12,321	4.4
India	3,668	3,786	4,051	4,387	4,465	1.8
Indonesia	1,605	1,635	1,669	1,684	1,715	1.8
Japan	4,504	4,248	4,120	4,021	3,942	-2.0
New Zealand	154	157	161	168	176	5.2
South Korea	2,328	2,348	2,473	2,630	2,654	0.9
Thailand	1,315	1,331	1,325	1,378	1,409	2.3
Others	4,931	5,013	5,240	5,405	5,570	3.0
Total world	91,146	92,068	94,078	95,541	97,196	1.7
<i>of which</i>						
OPEC	8,993	9,212	9,338	9,233	9,302	0.7
<i>OPEC percentage</i>	<i>9.9</i>	<i>10.0</i>	<i>9.9</i>	<i>9.7</i>	<i>9.6</i>	
OECD	46,113	45,756	46,441	46,900	47,413	1.1
FSU	4,570	4,750	4,649	4,697	4,770	1.6

Graph 4.1
World refinery capacity



Graph 4.2
World output of petroleum products



Graph 4.3
OPEC output of petroleum products

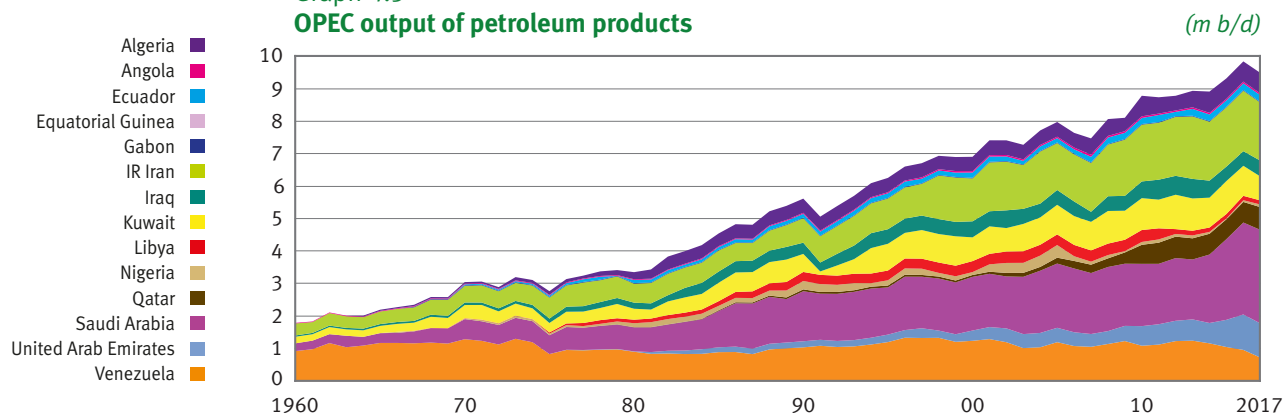


Table 4.9

World oil demand by main petroleum product and region

(1,000 b/d)

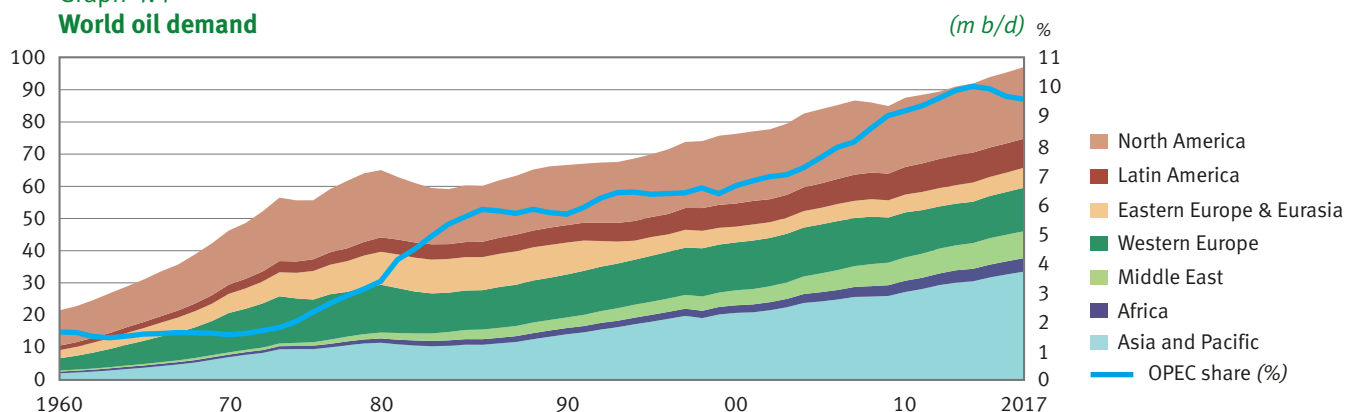
	2013	2014	2015	2016	2017	% change 17/16
North America	21,448	21,531	21,951	22,103	22,342	1.1
Gasoline	9,806	9,881	10,099	10,206	10,210	–
Kerosene	1,580	1,622	1,692	1,762	1,835	4.1
Distillates	4,497	4,740	4,712	4,420	4,522	2.3
Residuals	408	333	252	399	462	15.8
Others	5,157	4,955	5,197	5,316	5,313	–0.1
Latin America	9,295	9,325	9,161	9,111	9,046	–0.7
Gasoline	2,575	2,678	2,751	2,805	2,766	–1.4
Kerosene	383	390	397	386	407	5.4
Distillates	2,782	2,828	2,780	2,643	2,568	–2.9
Residuals	1,014	960	870	735	704	–4.2
Others	2,541	2,469	2,362	2,542	2,601	2.3
Eastern Europe and Eurasia	5,770	5,986	5,935	6,032	6,234	3.3
Gasoline	1,381	1,389	1,361	1,387	1,416	2.1
Kerosene	340	324	299	299	308	3.1
Distillates	1,613	1,829	1,935	2,032	2,172	6.9
Residuals	371	416	368	358	352	–1.7
Others	2,065	2,028	1,972	1,957	1,987	1.5
Western Europe	12,985	12,889	13,149	13,331	13,557	1.7
Gasoline	1,801	1,792	1,761	1,791	1,805	0.8
Kerosene	1,223	1,257	1,309	1,371	1,422	3.7
Distillates	5,662	5,613	5,845	5,902	6,051	2.5
Residuals	1,093	1,030	968	948	955	0.8
Others	3,206	3,197	3,267	3,320	3,324	0.1
Middle East	7,782	8,018	8,256	8,295	8,385	1.1
Gasoline	1,527	1,555	1,565	1,560	1,736	11.3
Kerosene	415	462	517	552	518	–6.2
Distillates	2,264	2,256	2,048	1,929	1,845	–4.4
Residuals	1,491	1,494	1,468	1,548	1,508	–2.6
Others	2,086	2,251	2,657	2,705	2,778	2.7
Africa	3,835	3,904	3,992	4,095	4,203	2.6
Gasoline	966	959	1,033	1,035	1,069	3.3
Kerosene	300	298	299	325	360	10.7
Distillates	1,512	1,568	1,618	1,644	1,664	1.2
Residuals	438	451	438	432	381	–11.8
Others	618	627	604	660	729	10.5

Table 4.9
World oil demand by main petroleum product and region

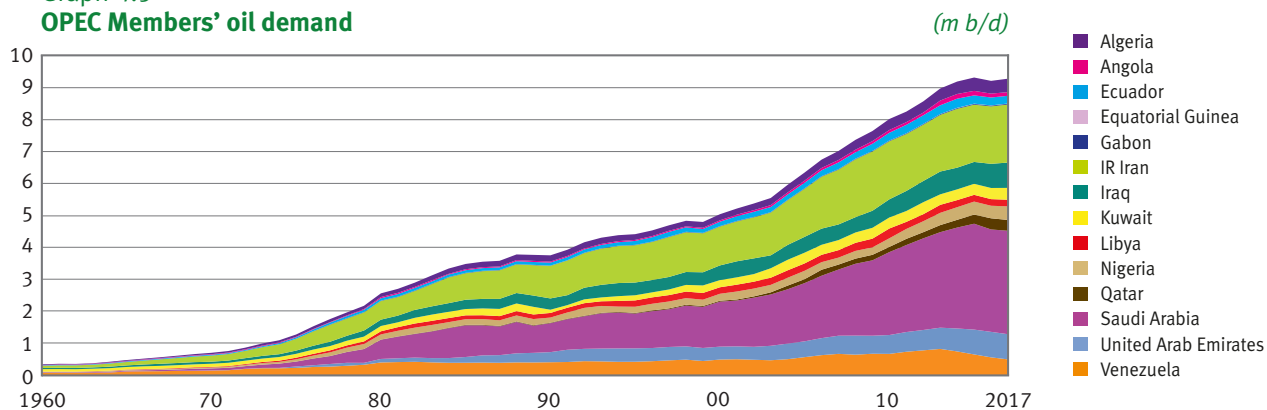
(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
Asia and Pacific	30,030	30,415	31,634	32,574	33,429	2.6
Gasoline	5,807	5,862	6,390	6,709	7,044	5.0
Kerosene	2,170	2,195	2,291	2,468	2,505	1.5
Distillates	8,650	8,700	8,840	8,935	9,141	2.3
Residuals	2,622	2,487	2,532	2,547	2,640	3.6
Others	10,782	11,172	11,580	11,914	12,099	1.6
Total world	91,146	92,068	94,078	95,541	97,196	1.7
Gasoline	23,863	24,117	24,960	25,493	26,046	2.2
Kerosene	6,410	6,548	6,805	7,164	7,355	2.7
Distillates	26,980	27,533	27,778	27,504	27,962	1.7
Residuals	7,438	7,170	6,897	6,967	7,002	0.5
Others	26,455	26,701	27,639	28,413	28,831	1.5
<i>of which</i>						
OPEC	8,993	9,212	9,338	9,233	9,302	0.7
Gasoline	2,097	2,163	2,225	2,170	2,355	8.5
Kerosene	496	545	592	601	575	-4.4
Distillates	2,483	2,401	2,411	2,203	2,082	-5.5
Residuals	1,450	1,497	1,489	1,607	1,561	-2.9
Others	2,468	2,606	2,620	2,651	2,729	2.9
OECD	46,113	45,756	46,441	46,900	47,413	1.1
Gasoline	14,082	14,107	14,338	14,560	14,566	—
Kerosene	3,802	3,862	3,991	4,150	4,306	3.8
Distillates	12,830	12,833	13,238	13,169	13,462	2.2
Residuals	2,519	2,208	2,139	2,198	2,311	5.1
Others	12,880	12,746	12,735	12,823	12,768	-0.4
FSU	4,570	4,750	4,649	4,697	4,770	1.6
Gasoline	1,170	1,173	1,137	1,152	1,171	1.7
Kerosene	310	292	266	265	267	1.1
Distillates	1,043	1,244	1,316	1,359	1,393	2.5
Residuals	336	387	336	324	321	-1.0
Others	1,711	1,653	1,595	1,598	1,618	1.3

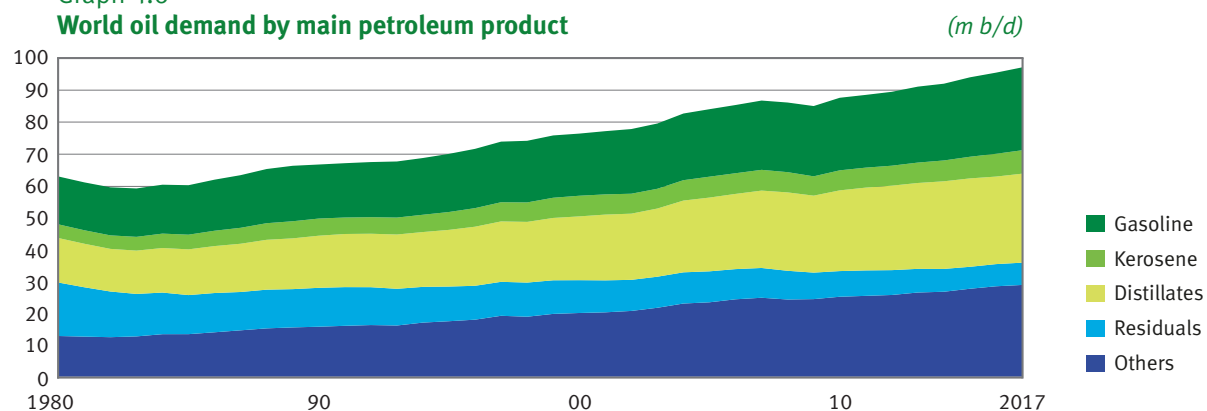
Graph 4.4
World oil demand



Graph 4.5
OPEC Members' oil demand



Graph 4.6
World oil demand by main petroleum product





SECTION 5

Oil trade

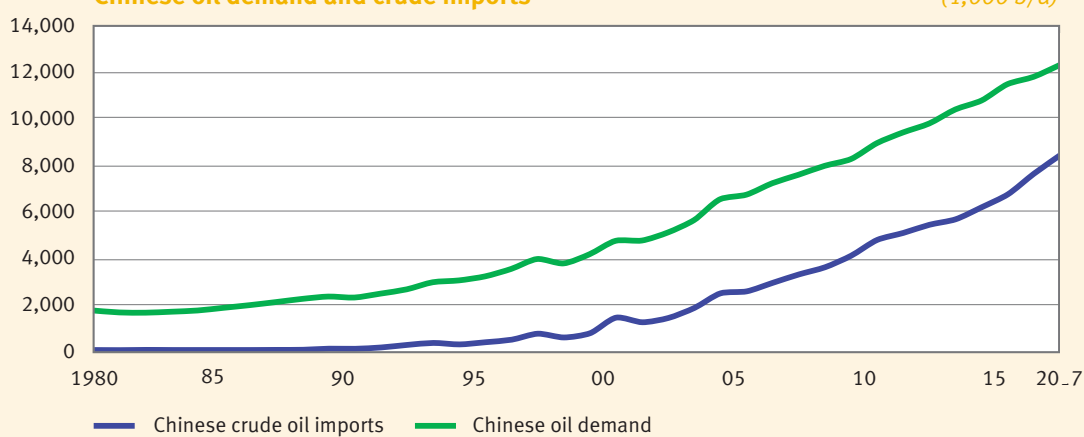
The development of Middle East's crude oil exports to China

In line with the strong development of the Chinese economy, the demand for petroleum products in the most populous country in the world has also increased rapidly over the last decades. In view of the fact that Chinese domestic crude oil production could not meet the huge demand of refinery throughput volumes, China has evolved as a major international crude oil importer.

According to import statistics, the US used to be the biggest importer of crude oil worldwide. However, in 2017, China outperformed the world's biggest economy, importing on average 514,000 b/d more of crude oil than the US. In 2017, Chinese imports amounted to 8.426m b/d compared to 7.912m b/d for the US.

Graph 1:
Chinese oil demand and crude imports

(1,000 b/d)



The sources of Chinese crude oil imports are numerous and, geographically, encompass places all over the world. From a regional point of view, the Middle East represents China's biggest trading partner in regards to crude oil imports. In 2017, the region's exports to China amounted to about 3.646m b/d, implying a share of approximately 43 per cent. Among Middle Eastern economies, Saudi Arabia undoubtedly represents China's most important bilateral partner. In 2017, China purchased about 1.047m b/d alone from this country. Further significant volumes of Chinese imports came from Iraq, Iran, Oman, Kuwait and the United Arab Emirates, with average volumes of 739,000 b/d, 625,000 b/d, 622,000 b/d, 366,000 b/d and 204,000 b/d, respectively. More generally, over the last decade Middle Eastern crude oil exports to China were on an increasing trend with an average volume of about 2.701m b/d, representing an average historical share of almost 50 per cent as of 2007. Such figures obviously indicate China's strong dependency of its economy on crude oil from the Middle East.

Graph 2:
Chinese crude imports from the Middle East

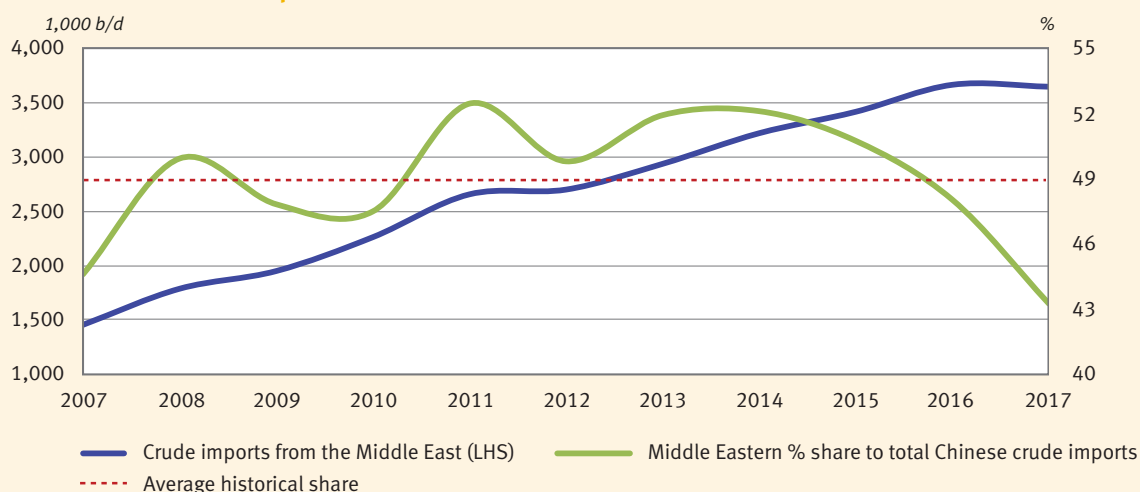


Table 5.1

OPEC Members' crude oil exports by destination

(1,000 b/d)

	Destination	2013	2014	2015	2016	2017
Algeria		744.0	622.9	642.2	668.3	632.6
	Europe	522.4	517.6	543.9	394.0	388.8
	North America	101.3	44.8	35.3	143.4	74.2
	Asia and Pacific	81.6	42.1	36.6	86.1	122.6
	Latin America	38.7	18.5	26.4	44.1	46.9
	Africa	–	–	–	0.7	–
	Middle East	–	–	–	–	–
Angola		1,669.4	1,607.9	1,710.9	1,670.1	1,576.7
	Europe	313.3	340.6	435.6	326.5	105.0
	North America	159.0	132.1	114.0	59.9	113.3
	Asia and Pacific	1,103.2	1,011.3	1,058.9	1,163.9	1,259.3
	Latin America	49.9	61.5	31.3	39.0	26.7
	Africa	44.0	62.4	71.2	80.8	72.4
	Middle East	–	–	–	–	–
Ecuador		388.2	422.4	432.9	414.7	385.4
	Europe	4.9	1.0	–	–	–
	North America	255.8	248.7	284.8	274.2	211.1
	Asia and Pacific	20.3	15.7	27.1	38.2	34.8
	Latin America	107.1	147.4	121.0	102.3	123.3
	Africa	–	9.7	–	–	–
	Middle East	–	–	–	–	16.3
Equatorial Guinea		206.7	196.7	182.4	157.6	128.2
	Europe	132.9	87.1	118.2	104.1	58.7
	North America	–	–	–	3.3	7.4
	Asia and Pacific	73.8	109.6	64.1	50.1	62.1
	Latin America	–	–	–	–	–
	Africa	–	–	–	–	–
	Middle East	–	–	–	–	–
Gabon		207.5	207.4	206.4	205.2	188.4
	Europe	29.1	20.0	53.3	48.4	35.5
	North America	24.0	16.0	10.0	1.2	6.2
	Asia and Pacific	140.8	137.6	126.0	123.4	136.9
	Latin America	12.5	31.2	15.7	29.6	7.8
	Africa	1.1	2.7	1.4	2.6	2.0
	Middle East	–	–	–	–	–
IR Iran		1,215.4	1,109.2	1,081.1	1,921.7	2,125.0
	Europe	128.0	117.0	111.4	497.3	755.0
	North America	–	–	–	–	–
	Asia and Pacific	1,085.2	992.2	969.7	1,423.6	1,370.0
	Latin America	–	–	–	–	–
	Africa	2.2	–	–	0.8	–
	Middle East	–	–	–	–	–
Iraq		2,390.4	2,515.5	3,004.9	3,803.5	3,802.0
	Europe	534.9	625.2	844.8	981.8	987.8
	North America	432.7	411.7	220.0	416.9	598.4
	Asia and Pacific	1,412.9	1,465.9	1,876.2	2,270.6	2,130.4
	Latin America	–	12.7	63.8	134.3	27.4
	Africa	–	–	–	–	17.0
	Middle East	9.8	–	–	–	41.0
Kuwait		2,058.5	1,994.8	1,963.8	2,128.2	2,010.0
	Europe	84.2	105.9	118.0	181.1	137.5
	North America	320.3	277.3	196.5	244.5	253.8
	Asia and Pacific	1,613.5	1,550.6	1,561.1	1,643.4	1,579.5
	Latin America	–	3.0	–	–	–
	Africa	40.6	58.0	88.2	59.2	39.2
	Middle East	–	–	–	–	–

Table 5.1
OPEC Members' crude oil exports by destination

(1,000 b/d)

	Destination	2013	2014	2015	2016	2017
Libya		836.1	329.4	288.4	350.1	792.1
	Europe	757.5	298.4	261.3	302.1	635.6
	North America	7.3	2.9	2.5	16.5	56.4
	Asia and Pacific	63.8	25.2	22.0	28.6	98.2
	Latin America	2.4	1.0	0.8	–	–
	Africa	5.0	2.0	1.7	2.9	1.9
	Middle East	–	–	–	–	–
Nigeria		2,193.0	2,120.1	2,114.0	1,738.0	1,811.1
	Europe	965.0	968.9	992.3	611.5	692.6
	North America	395.0	74.2	83.6	307.1	331.5
	Asia and Pacific	373.0	558.0	550.3	489.4	512.6
	Latin America	263.0	248.4	209.1	81.3	50.1
	Africa	197.0	270.6	278.7	248.7	221.8
	Middle East	–	–	–	–	2.5
Qatar		598.7	595.5	490.7	503.4	466.0
	Europe	–	–	–	–	–
	North America	–	–	–	–	–
	Asia and Pacific	598.7	595.5	488.7	501.4	466.0
	Latin America	–	–	–	–	–
	Africa	–	–	2.0	2.0	–
	Middle East	–	–	–	–	–
Saudi Arabia		7,570.7	7,153.5	7,163.3	7,463.4	6,968.3
	Europe	951.9	952.1	877.3	870.8	777.4
	North America	1,459.0	1,251.3	1,190.8	1,177.0	1,003.5
	Asia and Pacific	4,586.2	4,416.7	4,592.0	4,918.1	4,797.3
	Latin America	79.6	68.9	70.0	71.4	71.3
	Africa	221.9	191.0	147.0	153.1	163.8
	Middle East	272.2	273.4	286.3	272.9	155.1
United Arab Emirates		2,701.4	2,496.7	2,441.5	2,407.8	2,378.7
	Europe	6.4	9.9	17.0	18.4	–
	North America	2.5	13.4	–	6.6	13.4
	Asia and Pacific	2,661.8	2,446.7	2,385.5	2,361.0	2,345.0
	Latin America	–	–	–	–	–
	Africa	30.6	22.3	32.0	20.5	12.4
	Middle East	0.1	4.5	7.0	1.3	7.9
Venezuela		1,528.0	1,964.9	1,974.2	1,835.0	1,596.4
	Europe	41.5	109.1	88.3	63.6	65.4
	North America	328.9	694.3	670.8	645.9	545.6
	Asia and Pacific	626.8	569.4	662.3	682.8	643.8
	Latin America	530.8	592.0	552.8	442.7	341.6
	Africa	–	–	–	–	–
	Middle East	–	–	–	–	–
OPEC		24,307.9	23,336.9	23,696.7	25,266.9	24,860.9
	Europe	4,472.0	4,152.7	4,461.4	4,399.6	4,639.3
	North America	3,485.7	3,166.7	2,808.2	3,296.6	3,214.8
	Asia and Pacific	14,441.6	13,936.3	14,420.7	15,780.5	15,558.6
	Latin America	1,084.1	1,184.6	1,090.9	944.7	694.9
	Africa	542.3	618.7	622.2	571.2	530.5
	Middle East	282.2	277.8	293.2	274.2	222.8

Notes:

Data may include lease condensates and volumes of oil in transit.

Table 5.2

OPEC Members' petroleum products exports by destination

(1,000 b/d)

	Destination	2013	2014	2015	2016	2017
Algeria		453.0	582.6	605.4	541.1	569.7
	Europe	196.2	246.3	243.3	220.5	255.8
	North America	81.2	114.8	111.9	108.5	117.1
	Asia and Pacific	59.4	90.4	114.0	52.9	68.7
	Latin America	54.1	69.7	65.7	73.5	75.2
	Africa	60.8	60.7	67.6	63.2	48.0
	Middle East	1.3	0.6	2.9	22.5	4.9
Angola		32.2	31.0	36.7	54.3	17.2
	Europe	6.3	6.7	7.3	15.5	3.3
	North America	13.3	13.2	17.5	11.0	0.8
	Asia and Pacific	10.7	10.1	10.9	20.3	11.6
	Latin America	1.3	–	–	6.3	1.0
	Africa	0.6	1.0	1.0	1.2	0.5
	Middle East	–	–	–	–	–
Ecuador		19.7	7.7	15.6	31.4	42.3
	Europe	–	–	–	–	–
	North America	3.4	1.0	4.9	2.2	40.9
	Asia and Pacific	–	–	–	–	–
	Latin America	16.3	6.7	10.7	29.2	–
	Africa	–	–	–	–	–
	Middle East	–	–	–	–	1.4
Equatorial Guinea		–	–	–	–	–
	Europe	–	–	–	–	–
	North America	–	–	–	–	–
	Asia and Pacific	–	–	–	–	–
	Latin America	–	–	–	–	–
	Africa	–	–	–	–	–
	Middle East	–	–	–	–	–
Gabon		11.4	10.9	10.7	10.4	12.3
	Europe	0.6	3.1	8.0	2.6	5.8
	North America	1.7	2.5	1.8	0.9	–
	Asia and Pacific	–	–	–	–	–
	Latin America	–	–	–	–	–
	Africa	9.0	5.3	0.9	6.9	6.6
	Middle East	–	–	–	–	–
IR Iran		394.0	469.9	514.3	897.9	992.5
	Europe	–	–	–	7.7	8.4
	North America	–	–	–	–	–
	Asia and Pacific	394.0	469.3	513.6	889.4	983.3
	Latin America	–	–	–	–	–
	Africa	–	0.6	0.7	0.8	0.9
	Middle East	–	–	–	–	–
Iraq		11.5	9.3	13.7	36.8	20.1
	Europe	3.1	0.1	4.4	0.1	0.1
	North America	–	–	–	1.8	0.3
	Asia and Pacific	–	–	–	–	2.4
	Latin America	–	–	–	–	–
	Africa	–	–	–	–	–
	Middle East	8.4	9.2	9.3	35.0	17.4
Kuwait		805.3	751.1	739.4	707.4	428.0
	Europe	84.8	90.6	70.6	46.3	46.0
	North America	2.1	2.2	0.5	0.6	–
	Asia and Pacific	718.4	658.3	668.3	660.4	299.0
	Latin America	–	–	–	–	1.0
	Africa	–	–	–	–	60.0
	Middle East	–	–	–	–	22.0

Table 5.2
OPEC Members' petroleum products exports by destination

(1,000 b/d)

	Destination	2013	2014	2015	2016	2017
Libya		86.3	17.2	21.8	23.1	23.5
	Europe	57.4	12.3	16.1	14.7	16.5
	North America	9.5	—	0.7	0.5	4.0
	Asia and Pacific	9.7	2.8	2.5	3.3	—
	Latin America	3.6	0.8	0.9	2.2	1.2
	Africa	1.5	0.3	0.4	0.8	0.5
	Middle East	4.6	1.0	1.2	1.6	1.2
Nigeria		23.1	49.3	18.0	17.9	19.3
	Europe	8.2	7.1	3.8	5.0	6.6
	North America	13.1	23.6	9.1	9.0	11.2
	Asia and Pacific	—	18.5	5.1	3.9	1.4
	Latin America	1.8	0.1	—	—	—
	Africa	—	—	—	—	—
	Middle East	—	—	—	—	—
Qatar		511.0	522.1	521.0	568.1	639.4
	Europe	—	—	—	—	—
	North America	—	—	—	—	—
	Asia and Pacific	511.0	522.1	521.0	568.1	639.4
	Latin America	—	—	—	—	—
	Africa	—	—	—	—	—
	Middle East	—	—	—	—	—
Saudi Arabia		794.0	987.8	1,154.7	1,502.6	1,438.2
	Europe	76.4	112.7	180.7	224.4	269.6
	North America	—	12.9	—	1.5	7.3
	Asia and Pacific	499.9	548.7	578.9	734.0	379.8
	Latin America	8.3	13.0	4.1	7.4	—
	Africa	91.5	114.3	195.2	238.7	301.0
	Middle East	117.8	186.1	195.8	296.6	480.5
United Arab Emirates		280.2	255.9	414.8	630.0	653.7
	Europe	27.9	25.3	0.2	0.4	118.1
	North America	2.8	1.8	—	—	15.0
	Asia and Pacific	226.4	210.7	318.7	484.1	323.2
	Latin America	—	—	0.9	1.3	3.8
	Africa	8.5	11.2	0.2	0.3	68.7
	Middle East	14.6	6.9	94.7	143.9	124.9
Venezuela		713.2	312.4	317.8	262.5	211.7
	Europe	42.7	6.5	9.8	9.8	3.7
	North America	402.1	58.1	54.1	49.5	43.1
	Asia and Pacific	15.2	—	—	0.4	1.0
	Latin America	246.0	242.5	246.7	196.6	162.7
	Africa	7.3	5.3	7.1	6.2	0.6
	Middle East	—	—	—	—	0.6
OPEC		4,134.8	4,007.1	4,383.9	5,283.7	5,067.8
	Europe	503.6	510.7	544.2	547.0	733.7
	North America	529.1	230.0	200.6	185.5	239.7
	Asia and Pacific	2,444.6	2,530.8	2,733.0	3,416.9	2,709.7
	Latin America	331.4	332.9	329.0	316.5	244.8
	Africa	179.3	198.8	273.2	318.1	486.7
	Middle East	146.8	203.8	304.0	499.6	653.0

Notes:

Data may include re-exports and volumes of oil in transit.

Table 5.3

World crude oil exports by country

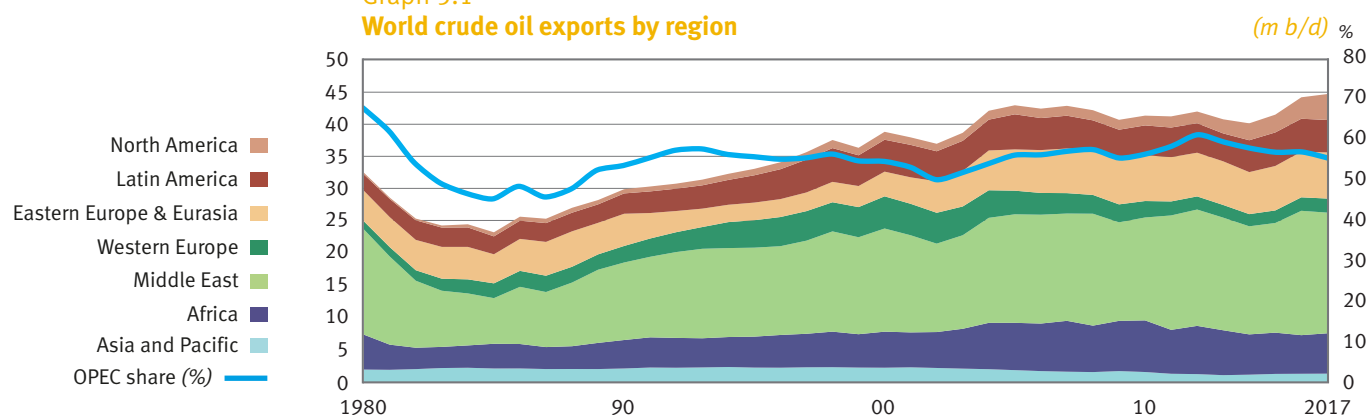
(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	2,192.7	2,627.2	2,766.2	3,333.1	4,030.1	20.9
Canada	2,058.7	2,276.2	2,301.2	2,742.1	2,912.1	6.2
United States	134.0	351.0	465.0	591.0	1,118.0	89.2
Latin America	4,336.2	4,953.0	5,210.5	5,119.4	5,042.8	-1.5
Brazil	365.6	517.3	736.0	891.3	1,127.4	26.5
Colombia	703.3	722.0	736.1	613.5	580.5	-5.4
Ecuador	388.2	422.4	432.9	414.7	385.4	-7.0
Mexico	1,270.7	1,219.8	1,247.1	1,274.4	1,264.6	-0.8
Trinidad & Tobago	38.2	34.2	29.1	28.3	23.5	-16.7
Venezuela	1,528.0	1,964.9	1,974.2	1,835.0	1,596.4	-13.0
Others	42.3	72.5	55.1	62.3	65.0	4.3
Eastern Europe and Eurasia	6,780.0	6,525.4	6,907.1	7,089.0	7,166.0	1.1
Azerbaijan	692.1	669.4	663.1	655.1	615.3	-6.1
Kazakhstan	1,276.9	1,250.9	1,229.3	1,231.5	1,370.7	11.3
Russia	4,689.0	4,488.4	4,897.3	5,080.6	5,061.5	-0.4
Others	122.0	116.7	117.4	121.8	118.5	-2.8
Western Europe	1,968.8	1,891.9	1,949.4	2,095.5	2,186.6	4.3
Norway	1,198.5	1,203.2	1,234.7	1,372.7	1,362.1	-0.8
United Kingdom	614.4	570.7	594.8	620.3	693.1	11.7
Others	155.9	117.9	120.0	102.5	131.5	28.2
Middle East	17,497.2	16,792.8	17,037.3	19,321.1	18,746.4	-3.0
IR Iran	1,215.4	1,109.2	1,081.1	1,921.7	2,125.0	10.6
Iraq	2,390.4	2,515.5	3,004.9	3,803.5	3,802.0	-
Kuwait	2,058.5	1,994.8	1,963.8	2,128.2	2,010.0	-5.6
Oman	838.2	804.3	788.0	887.5	803.0	-9.5
Qatar	598.7	595.5	490.7	503.4	466.0	-7.4
Saudi Arabia	7,570.7	7,153.5	7,163.3	7,463.4	6,968.3	-6.6
United Arab Emirates	2,701.4	2,496.7	2,441.5	2,407.8	2,378.7	-1.2
Others	124.0	123.4	104.0	205.5	193.3	-5.9
Africa	6,975.9	6,260.8	6,410.3	5,999.9	6,272.6	4.5
Algeria	744.0	622.9	642.2	668.3	632.6	-5.3
Angola	1,669.4	1,607.9	1,710.9	1,670.1	1,576.7	-5.6
Congo	240.7	260.9	227.0	254.3	261.2	2.8
Egypt	96.5	117.0	155.8	164.6	139.3	-15.3
Equatorial Guinea	206.7	196.7	182.4	157.6	128.2	-18.6
Gabon	207.5	207.4	206.4	205.2	188.4	-8.2
Libya	836.1	329.4	288.4	350.1	792.1	126.2
Nigeria	2,193.0	2,120.1	2,114.0	1,738.0	1,811.1	4.2
Sudans	133.0	168.0	166.0	162.4	141.1	-13.1
Others	649.1	630.5	717.3	629.4	601.8	-4.4
Asia and Pacific	1,076.7	1,150.5	1,270.7	1,291.2	1,308.9	1.4
Australia	205.6	244.3	221.8	199.5	179.4	-10.1
Brunei	114.6	108.0	112.0	104.7	98.0	-6.4
China	32.0	12.2	57.2	58.3	97.7	67.4
Indonesia	228.6	255.9	315.1	334.5	344.2	2.9
Malaysia	209.0	229.0	312.0	325.0	339.0	4.3
Vietnam	170.3	173.4	143.6	146.3	129.5	-11.5
Others	116.6	127.7	108.9	122.9	121.1	-1.5
Total world	40,827.5	40,201.6	41,551.5	44,249.1	44,753.3	1.1
<i>of which</i>						
OPEC	24,307.9	23,336.9	23,696.7	25,266.9	24,860.9	-1.6
<i>OPEC percentage</i>	<i>59.5</i>	<i>58.0</i>	<i>57.0</i>	<i>57.1</i>	<i>55.6</i>	
OECD	5,676.8	6,024.9	6,224.6	6,937.4	7,693.1	10.9
FSU	6,769.3	6,513.7	6,898.1	7,081.3	7,156.0	1.1

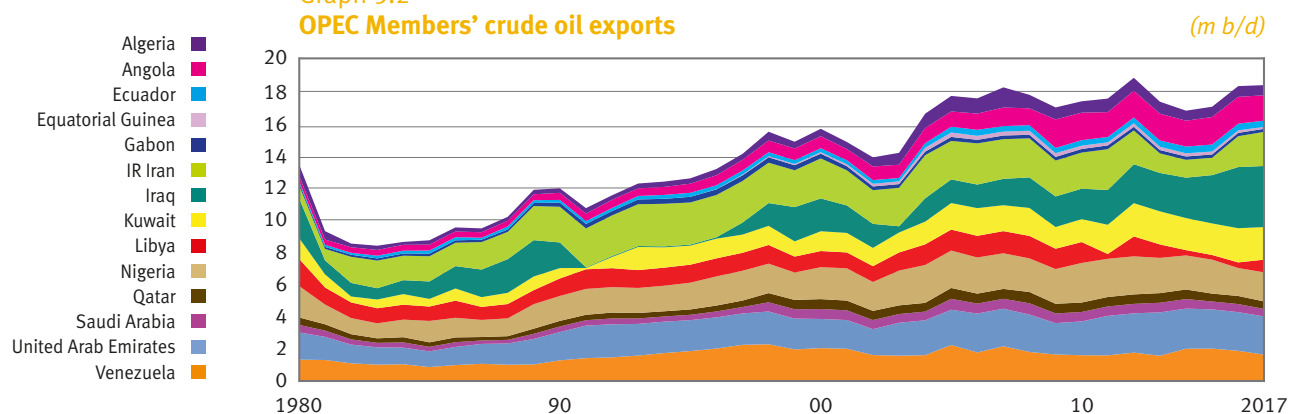
Notes:

Data may include lease condensates and volumes of oil in transit.

Graph 5.1
World crude oil exports by region

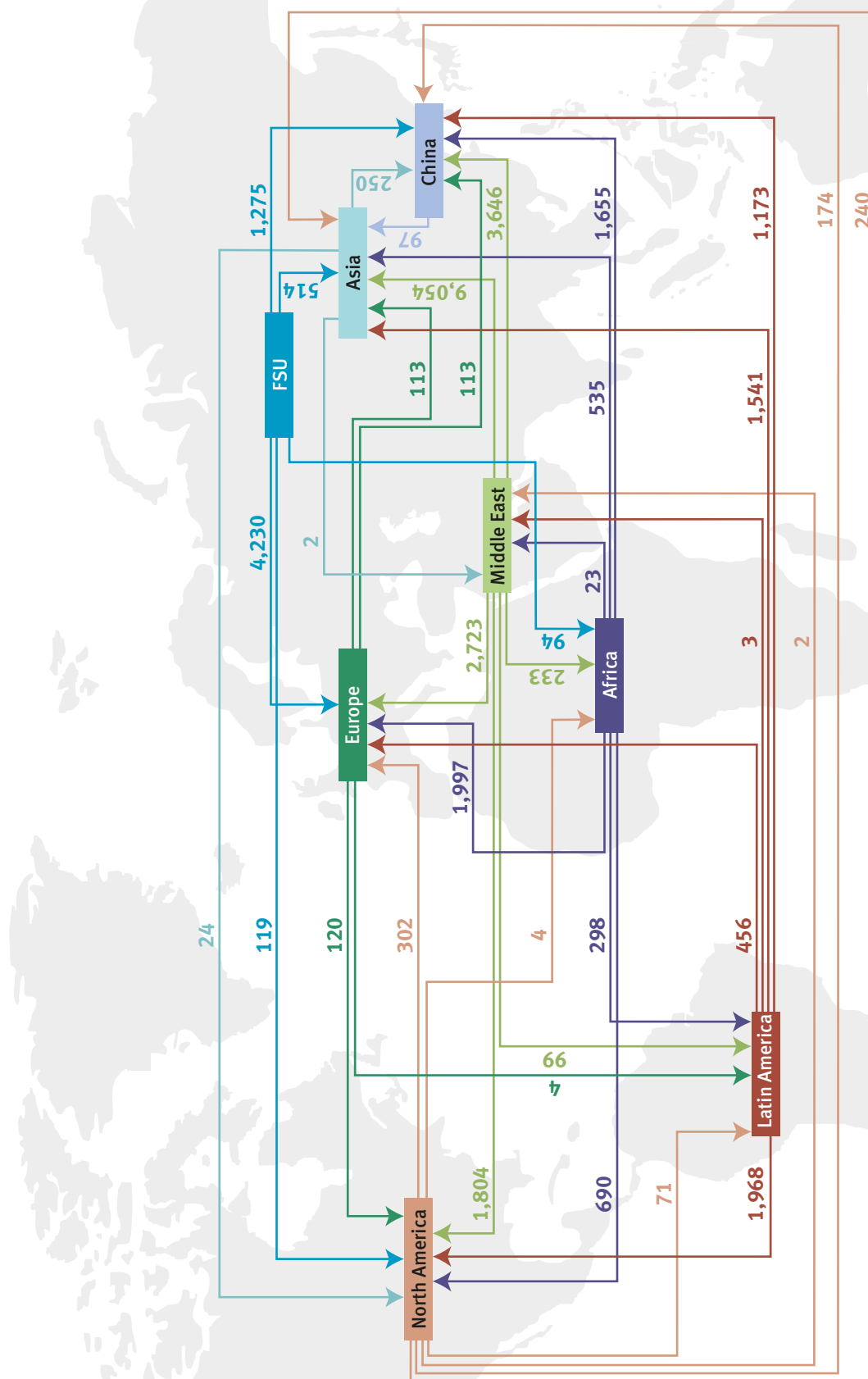


Graph 5.2
OPEC Members' crude oil exports



(1,000 b/d)

Graph 5.3
World trade of crude oil, 2017



Notes:
Excluding intraregional trade.

Table 5.4

World exports of petroleum products by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	3,992.2	4,288.0	4,756.9	5,105.9	5,715.8	11.9
Canada	505.2	464.0	483.9	435.9	490.8	12.6
United States	3,487.0	3,824.0	4,273.0	4,670.0	5,225.0	11.9
Latin America	1,669.4	1,195.2	1,192.6	1,227.8	1,121.6	-8.7
Brazil	150.6	152.8	124.5	124.4	133.1	7.0
Ecuador	19.7	7.7	15.6	31.4	42.3	34.6
Mexico	183.0	201.6	196.1	180.3	151.1	-16.2
Trinidad & Tobago	91.7	69.9	91.5	121.0	118.2	-2.3
Venezuela	713.2	312.4	317.8	262.5	211.7	-19.4
Others	511.2	450.7	447.2	508.2	465.2	-8.5
Eastern Europe and Eurasia	3,664.3	3,917.6	3,807.7	3,630.0	3,563.9	-1.8
Romania	67.9	87.1	88.2	96.1	89.2	-7.2
Russia	2,468.6	2,610.7	2,725.8	2,501.7	2,478.6	-0.9
Others	1,127.8	1,219.8	993.7	1,032.3	996.1	-3.5
Western Europe	6,355.0	6,358.5	6,934.1	7,085.5	7,435.6	4.9
Belgium	493.7	523.9	531.7	537.8	623.5	16.0
France	405.7	411.3	440.3	428.1	434.8	1.6
Germany	413.6	433.5	453.4	465.5	483.1	3.8
Italy	490.4	417.5	564.8	582.2	634.4	9.0
Netherlands	2,079.3	2,081.2	2,245.3	2,303.5	2,335.2	1.4
Norway	360.2	372.4	402.2	351.8	433.2	23.1
Spain	369.0	384.7	411.5	422.9	470.7	11.3
Sweden	191.9	245.9	297.7	320.6	349.6	9.1
United Kingdom	553.2	483.8	484.9	523.2	505.5	-3.4
Others	998.2	1,004.3	1,102.3	1,149.8	1,165.6	1.4
Middle East	3,118.6	3,319.6	3,666.7	4,630.6	4,489.4	-3.1
Bahrain	246.8	248.3	249.3	230.3	240.7	4.5
IR Iran	394.0	469.9	514.3	897.9	992.5	10.5
Iraq	11.5	9.3	13.7	36.8	20.1	-45.3
Kuwait	805.3	751.1	739.4	707.4	428.0	-39.5
Qatar	511.0	522.1	521.0	568.1	639.4	12.5
Saudi Arabia	794.0	987.8	1,154.7	1,502.6	1,438.2	-4.3
United Arab Emirates	280.2	255.9	414.8	630.0	653.7	3.8
Others	75.8	75.3	59.6	57.6	76.9	33.5
Africa	840.5	916.3	909.4	856.3	825.8	-3.6
Algeria	453.0	582.6	605.4	541.1	569.7	5.3
Angola	32.2	31.0	36.7	54.3	17.2	-68.4
Egypt	46.5	45.2	46.5	36.3	30.7	-15.6
Gabon	11.4	10.9	10.7	10.4	12.3	18.2
Libya	86.3	17.2	21.8	23.1	23.5	1.5
Nigeria	23.1	49.3	18.0	17.9	19.3	7.5
Others	188.1	180.2	170.3	173.1	153.2	-11.5
Asia and Pacific	6,810.1	6,785.8	7,032.7	7,709.4	8,000.2	3.8
Australia	57.4	55.8	46.6	51.1	45.9	-10.0
China	665.8	692.7	836.4	1,088.5	1,168.8	7.4
India	1,475.1	1,374.1	1,245.4	1,401.7	1,412.2	0.7
Indonesia	87.4	88.5	89.1	82.9	80.3	-3.1
Japan	513.3	509.3	559.5	594.8	575.3	-3.3
Malaysia	473.8	473.5	438.4	570.0	626.6	9.9
Singapore	1,729.8	1,761.0	1,870.5	1,995.0	2,087.1	4.6
South Korea	1,161.9	1,206.1	1,279.5	1,312.9	1,368.7	4.3
Others	645.7	624.8	667.3	612.7	635.3	3.7
Total world	26,450.0	26,781.0	28,300.2	30,245.7	31,152.3	3.0
<i>of which</i>						
OPEC	4,134.8	4,007.1	4,383.9	5,283.7	5,067.8	-4.1
<i>OPEC percentage</i>	<i>15.6</i>	<i>15.0</i>	<i>15.5</i>	<i>17.5</i>	<i>16.3</i>	
OECD	12,721.8	13,096.6	14,258.2	14,766.2	15,723.2	6.5
FSU	3,252.3	3,416.4	3,566.1	3,478.8	3,392.0	-2.5

Notes:

Data may include re-exports and volumes of oil in transit.

(1,000 b/d)

Graph 5.4
OPEC Members' petroleum products exports by destination, 2017

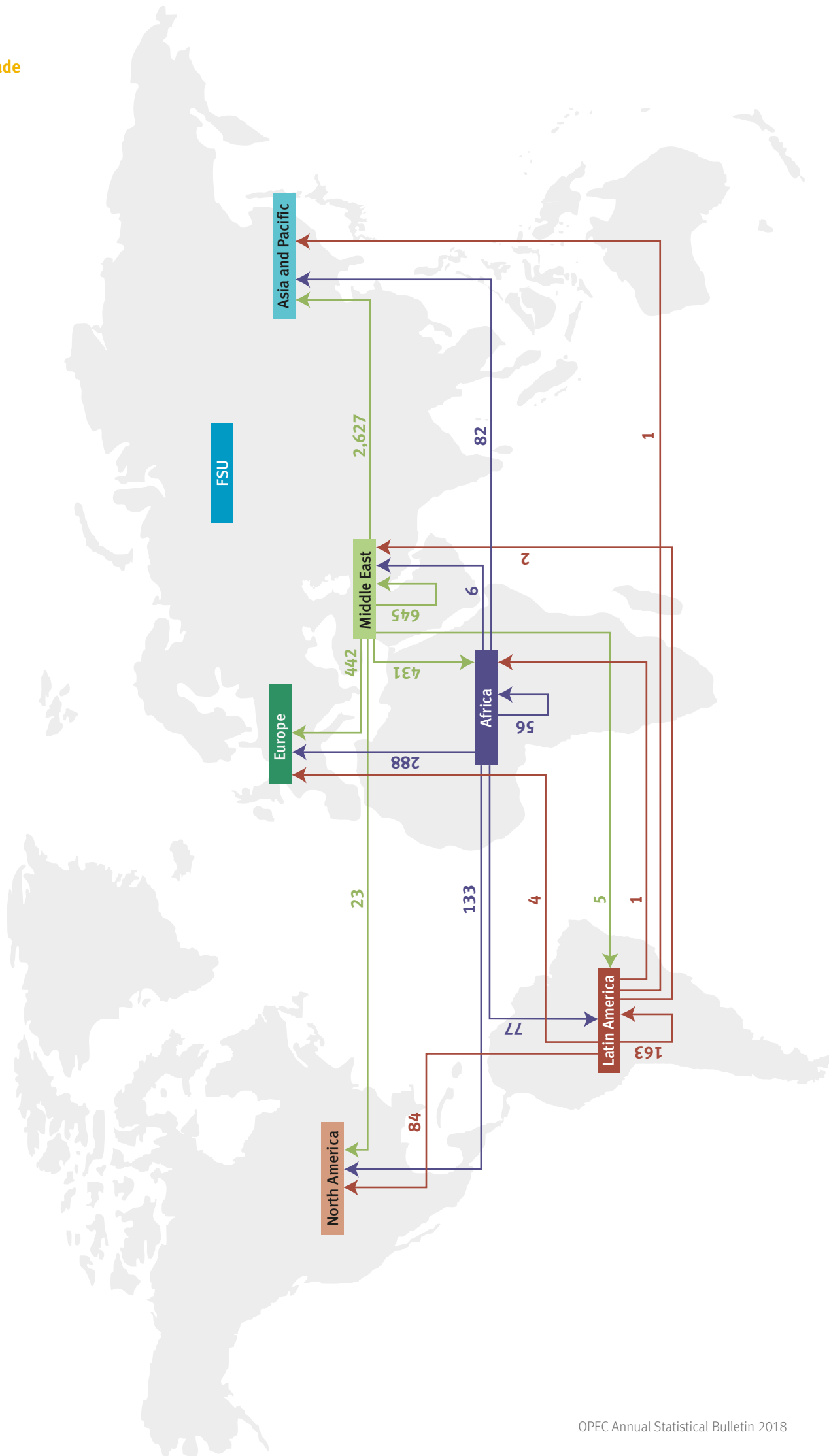


Table 5.5

World exports of petroleum products by main petroleum product and region

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	3,992.2	4,288.0	4,756.9	5,105.9	5,715.8	11.9
Gasoline	649.4	690.4	791.1	933.5	1,010.3	8.2
Kerosene	165.9	171.3	180.4	184.3	202.4	9.9
Distillates	1,292.0	1,236.3	1,324.4	1,314.6	1,524.0	15.9
Residuals	445.3	429.9	385.5	352.5	347.4	-1.5
Others	1,439.6	1,760.2	2,075.5	2,321.0	2,631.7	13.4
Latin America	1,669.4	1,195.2	1,192.6	1,227.8	1,121.6	-8.7
Gasoline	110.3	103.1	91.3	118.9	95.8	-19.5
Kerosene	84.4	70.0	67.1	56.0	55.3	-1.1
Distillates	110.1	83.7	82.0	140.4	98.1	-30.1
Residuals	606.6	598.7	548.6	592.2	578.8	-2.3
Others	757.9	339.6	403.5	320.4	293.5	-8.4
Eastern Europe and Eurasia	3,664.3	3,917.6	3,807.7	3,630.0	3,563.9	-1.8
Gasoline	389.4	418.5	432.5	441.8	421.8	-4.5
Kerosene	78.6	113.8	99.1	101.5	91.2	-10.2
Distillates	1,407.7	1,597.8	1,645.5	1,554.5	1,571.1	1.1
Residuals	1,522.3	1,480.7	1,339.9	1,132.3	1,067.1	-5.8
Others	266.3	306.8	290.7	399.9	412.7	3.2
Western Europe	6,355.0	6,358.5	6,934.1	7,085.5	7,435.6	4.9
Gasoline	1,563.7	1,585.8	1,808.8	1,800.3	1,884.3	4.7
Kerosene	335.4	292.0	298.0	315.7	349.3	10.6
Distillates	1,862.3	1,827.0	1,911.3	2,024.4	2,138.4	5.6
Residuals	1,197.5	1,268.3	1,419.1	1,328.4	1,070.6	-19.4
Others	1,396.1	1,385.4	1,497.0	1,616.6	1,993.1	23.3
Middle East	3,118.6	3,319.6	3,666.7	4,630.6	4,489.4	-3.1
Gasoline	353.1	409.8	531.2	632.2	903.8	43.0
Kerosene	597.5	566.4	615.0	750.6	531.1	-29.2
Distillates	529.3	544.1	573.0	723.8	582.4	-19.5
Residuals	339.6	384.4	493.8	580.1	862.4	48.7
Others	1,299.1	1,415.0	1,453.6	1,943.9	1,609.6	-17.2
Africa	840.5	916.3	909.4	856.3	825.8	-3.6
Gasoline	9.6	8.4	14.9	23.0	9.7	-57.6
Kerosene	70.0	57.2	53.9	42.1	45.6	8.3
Distillates	9.4	12.7	20.1	11.0	5.8	-47.7
Residuals	202.7	207.7	283.2	320.8	301.9	-5.9
Others	548.9	630.3	537.3	459.5	462.9	0.7

Table 5.5

World exports of petroleum products by main petroleum product and region*(1,000 b/d)*

	2013	2014	2015	2016	2017	% change 17/16
Asia and Pacific	6,810.1	6,785.8	7,032.7	7,709.4	8,000.2	3.8
Gasoline	1,363.6	1,442.3	1,451.4	1,600.8	1,645.4	2.8
Kerosene	742.8	749.1	857.1	879.7	901.4	2.5
Distillates	1,974.3	1,973.3	2,076.9	2,373.9	2,423.0	2.1
Residuals	1,344.2	1,233.9	1,272.0	1,356.8	1,450.0	6.9
Others	1,385.2	1,387.2	1,375.3	1,498.2	1,580.4	5.5
Total world	26,450.0	26,781.0	28,300.2	30,245.7	31,152.3	3.0
Gasoline	4,439.0	4,658.3	5,121.1	5,550.5	5,971.2	7.6
Kerosene	2,074.6	2,019.9	2,170.8	2,329.8	2,176.3	-6.6
Distillates	7,185.0	7,274.9	7,633.2	8,142.7	8,342.8	2.5
Residuals	5,658.2	5,603.6	5,742.2	5,663.1	5,678.1	0.3
Others	7,093.2	7,224.3	7,632.9	8,559.6	8,983.9	5.0
<i>of which</i>						
OPEC	4,134.8	4,007.1	4,383.9	5,283.7	5,067.8	-4.1
Gasoline	69.7	134.6	230.1	324.4	326.9	0.8
Kerosene	551.9	545.3	557.4	640.0	601.6	-6.0
Distillates	436.9	570.1	793.2	1,130.6	1,050.0	-7.1
Residuals	867.8	822.8	916.3	1,081.4	1,134.0	4.9
Others	2,208.5	1,934.3	1,886.9	2,107.2	1,955.3	-7.2
OECD	12,721.8	13,096.6	14,258.2	14,766.2	15,723.2	6.5
Gasoline	2,712.6	2,847.1	3,310.6	3,259.6	3,472.4	6.5
Kerosene	873.3	856.3	942.6	933.5	1,000.8	7.2
Distillates	4,192.0	4,255.9	4,581.1	4,427.3	4,756.9	7.4
Residuals	2,072.6	2,213.3	2,343.8	2,101.5	1,832.0	-12.8
Others	2,871.2	2,923.9	3,080.2	4,044.3	4,661.0	15.2
FSU	3,252.3	3,416.4	3,566.1	3,478.8	3,392.0	-2.5
Gasoline	224.2	264.9	295.5	313.2	292.2	-6.7
Kerosene	63.1	92.5	86.2	90.9	85.4	-6.0
Distillates	1,309.0	1,446.7	1,612.6	1,559.4	1,569.1	0.6
Residuals	1,496.8	1,402.5	1,381.4	1,193.9	1,112.1	-6.9
Others	159.2	209.9	190.5	321.4	333.2	3.7

Notes:

Data may include re-exports and volumes of oil in transit.

Table 5.6

World exports of crude oil and petroleum products by country

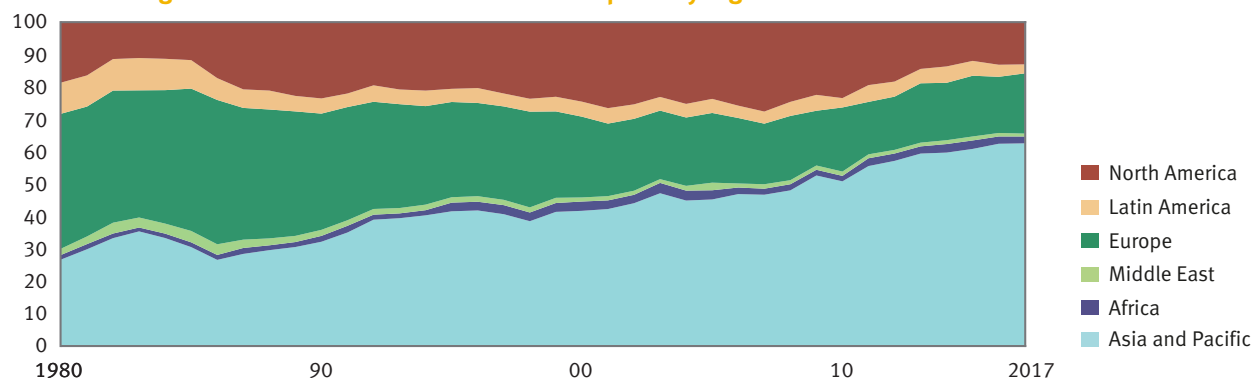
(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	6,184.8	6,915.1	7,523.2	8,439.0	9,746.0	15.5
Canada	2,563.8	2,740.1	2,785.2	3,178.0	3,403.0	7.1
United States	3,621.0	4,175.0	4,738.0	5,261.0	6,343.0	20.6
Latin America	6,005.6	6,148.1	6,403.1	6,347.2	6,164.4	-2.9
Brazil	516.2	670.1	860.5	1,015.7	1,260.5	24.1
Colombia	787.6	821.4	789.6	710.4	659.5	-7.2
Ecuador	407.9	430.2	448.5	446.1	427.7	-4.1
Mexico	1,453.7	1,421.4	1,443.1	1,454.7	1,415.6	-2.7
Trinidad & Tobago	129.9	104.1	120.5	149.3	141.7	-5.0
Venezuela	2,241.2	2,277.2	2,292.0	2,097.5	1,808.1	-13.8
Others	469.2	423.8	448.9	473.6	451.2	-4.7
Eastern Europe and Eurasia	10,444.3	10,443.1	10,714.8	10,719.0	10,729.8	0.1
Azerbaijan	731.5	716.8	711.2	691.9	640.1	-7.5
Kazakhstan	1,421.1	1,396.4	1,375.1	1,364.6	1,516.6	11.1
Russia	7,157.6	7,099.1	7,623.2	7,582.3	7,540.1	-0.6
Others	1,134.1	1,230.8	1,005.4	1,080.3	1,033.0	-4.4
Western Europe	8,323.8	8,250.4	8,883.6	9,181.0	9,622.2	4.8
Belgium	493.7	523.9	531.7	537.8	623.5	16.0
France	407.2	411.3	440.3	428.1	434.8	1.6
Germany	414.3	434.1	460.1	467.7	483.1	3.3
Italy	500.9	424.6	579.0	594.8	649.4	9.2
Netherlands	2,090.3	2,093.6	2,251.2	2,310.1	2,343.5	1.4
Norway	1,558.6	1,575.7	1,636.9	1,724.6	1,795.2	4.1
United Kingdom	1,167.6	1,054.5	1,079.7	1,143.5	1,198.6	4.8
Others	1,691.3	1,732.7	1,904.7	1,974.6	2,094.1	6.1
Middle East	20,615.8	20,112.4	20,704.1	23,951.7	23,235.8	-3.0
Bahrain	246.8	248.3	249.3	374.3	395.5	5.7
IR Iran	1,609.4	1,579.1	1,595.5	2,819.7	3,117.5	10.6
Iraq	2,401.9	2,524.8	3,018.6	3,840.3	3,822.1	-0.5
Kuwait	2,863.8	2,745.9	2,703.2	2,835.6	2,438.0	-14.0
Oman	862.3	829.0	814.0	912.5	828.4	-9.2
Qatar	1,109.7	1,117.5	1,011.7	1,071.5	1,105.4	3.2
Saudi Arabia	8,364.7	8,141.3	8,318.1	8,965.9	8,406.5	-6.2
United Arab Emirates	2,981.6	2,752.6	2,856.2	3,037.8	3,032.4	-0.2
Others	175.6	173.9	137.6	94.1	90.0	-4.4
Africa	7,816.5	7,177.1	7,319.7	6,856.2	7,098.4	3.5
Algeria	1,196.9	1,205.5	1,247.6	1,209.4	1,202.2	-0.6
Angola	1,701.6	1,638.9	1,747.6	1,724.4	1,593.9	-7.6
Congo	256.4	282.4	241.9	271.8	275.7	1.4
Egypt	143.0	162.2	202.3	200.9	170.0	-15.4
Equatorial Guinea	206.7	196.7	182.4	157.6	128.2	-18.6
Gabon	218.9	218.3	217.1	215.6	200.7	-6.9
Libya	922.4	346.6	310.2	373.3	815.5	118.5
Nigeria	2,216.1	2,169.4	2,132.0	1,755.9	1,830.4	4.2
Sudans	142.0	176.0	174.0	171.4	150.3	-12.3
Others	812.5	781.2	864.7	775.9	731.4	-5.7
Asia and Pacific	7,886.8	7,936.3	8,303.4	9,000.6	9,309.1	3.4
Australia	262.9	300.1	268.5	250.6	225.4	-10.1
Brunei	116.3	109.3	113.8	106.9	99.5	-6.9
China	697.8	704.9	893.5	1,146.8	1,266.4	10.4
India	1,475.1	1,374.1	1,245.4	1,401.7	1,412.2	0.7
Indonesia	316.0	344.4	404.3	417.4	424.5	1.7
Japan	513.3	509.3	559.5	594.8	575.3	-3.3
Malaysia	682.8	702.5	750.4	895.0	965.6	7.9
Singapore	1,741.0	1,772.5	1,885.3	2,007.0	2,096.9	4.5
South Korea	1,161.9	1,206.1	1,279.5	1,312.9	1,368.7	4.3
Vietnam	203.3	206.4	175.6	177.3	161.0	-9.2
Others	716.4	706.7	727.6	690.3	713.6	3.4
Total world	67,277.6	66,982.6	69,851.8	74,494.7	75,905.6	1.9
<i>of which</i>						
OPEC	28,442.7	27,344.0	28,080.6	30,550.6	29,928.7	-2.0
<i>OPEC percentage</i>	<i>42.3</i>	<i>40.8</i>	<i>40.2</i>	<i>41.0</i>	<i>39.4</i>	
OECD	18,398.5	19,121.5	20,482.8	21,703.7	23,416.3	7.9
FSU	10,021.6	9,930.2	10,464.3	10,560.1	10,548.0	-0.1

Notes:

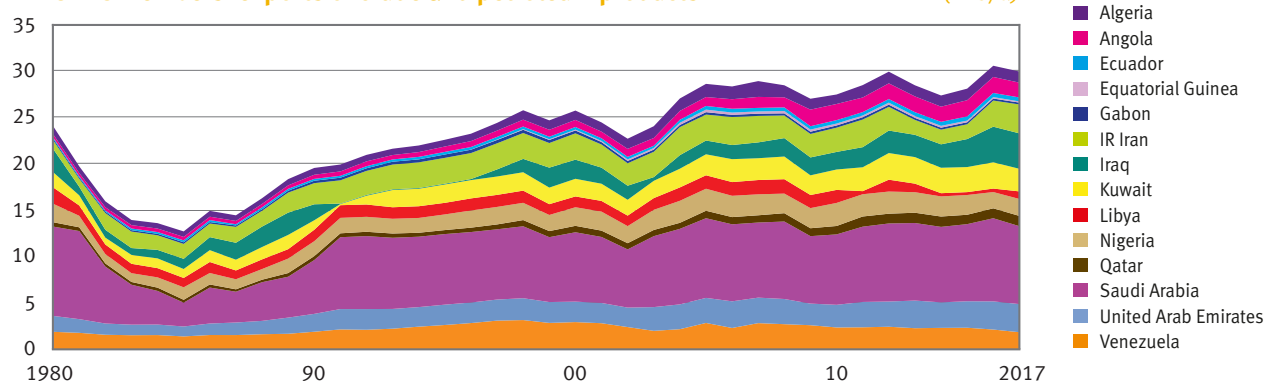
Data may include lease condensates, re-exports of petroleum products and volumes of oil in transit.

Graph 5.5
Percentage share of OPEC Members' crude oil exports by regions



Graph 5.6
OPEC Members' exports of crude and petroleum products

(m b/d)



Graph 5.7
OPEC Members' exports of petroleum products

(1,000 b/d)

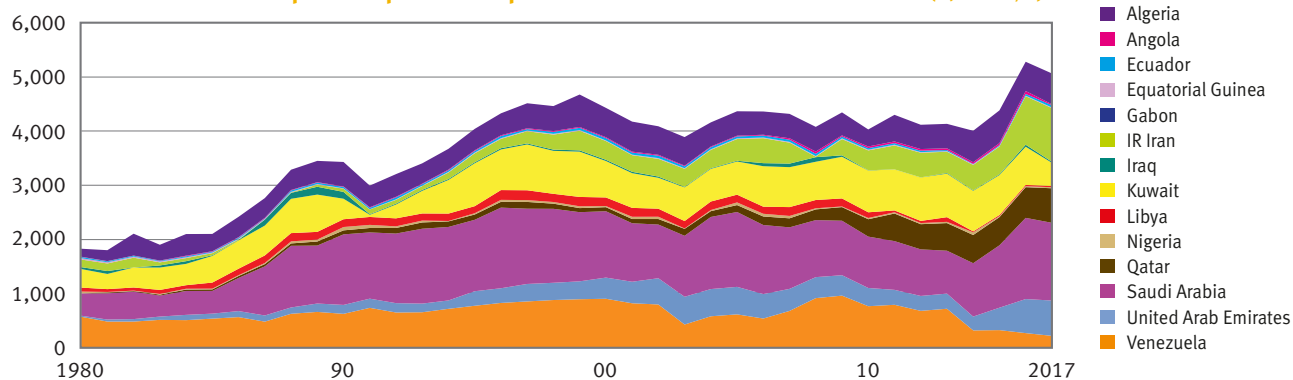


Table 5.7

World imports of crude oil by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	8,381.4	7,907.6	7,928.5	8,738.5	8,719.1	-0.2
Canada	651.4	563.6	565.5	888.5	807.1	-9.2
United States	7,730.0	7,344.0	7,363.0	7,850.0	7,912.0	0.8
Latin America	1,076.4	1,005.7	946.8	868.4	901.5	3.8
Brazil	363.5	333.3	251.7	134.3	149.8	11.6
Chile	178.6	173.2	162.2	160.8	168.0	4.5
Cuba	109.5	101.8	112.7	113.8	114.4	0.5
Trinidad & Tobago	82.4	58.6	81.1	101.0	93.7	-7.3
Others	342.4	338.7	339.2	358.6	375.6	4.8
Eastern Europe and Eurasia	1,850.5	1,740.6	1,881.2	1,716.3	1,804.2	5.1
Belarus	454.0	453.8	461.9	365.6	365.3	-0.1
Bulgaria	113.3	102.4	121.4	124.2	137.4	10.7
Czech Republic	132.3	148.7	144.1	107.3	157.7	47.0
Hungary	108.7	122.0	125.1	121.0	120.5	-0.5
Poland	471.4	478.8	534.0	494.5	497.3	0.6
Romania	108.7	138.4	135.5	153.2	159.1	3.9
Others	462.2	296.4	359.2	350.5	366.9	4.7
Western Europe	9,908.8	9,748.9	10,434.2	10,273.0	10,721.6	4.4
Belgium	558.4	650.0	647.9	642.0	688.4	7.2
France	1,110.1	1,076.7	1,145.8	1,092.4	1,140.7	4.4
Germany	1,828.4	1,806.8	1,843.1	1,837.4	1,832.3	-0.3
Greece	392.1	420.5	445.7	473.0	478.2	1.1
Italy	1,178.7	1,085.9	1,261.6	1,225.5	1,340.4	9.4
Netherlands	952.1	957.2	1,056.5	1,091.5	1,092.9	0.1
Spain	1,168.5	1,191.5	1,308.0	1,292.1	1,329.9	2.9
Sweden	338.8	378.0	406.2	396.2	401.0	1.2
Turkey	374.8	353.1	505.9	502.4	519.6	3.4
United Kingdom	1,017.6	940.2	856.2	797.0	893.8	12.2
Others	989.1	888.9	957.3	923.5	1,004.3	8.8
Middle East	396.7	420.2	452.7	464.7	491.5	5.8
Bahrain	218.9	211.1	218.2	212.4	222.9	4.9
Others	177.8	209.2	234.6	252.3	268.6	6.5
Africa	676.8	757.5	656.1	615.4	619.1	0.6
Morocco	113.0	104.9	43.0	—	—	—
South Africa	405.8	458.9	420.5	431.9	436.7	1.1
Others	158.0	193.7	192.6	183.5	182.5	-0.6
Asia and Pacific	19,281.7	19,626.0	20,517.0	21,961.1	23,189.5	5.6
Australia	450.7	440.9	318.2	332.7	333.7	0.3
China	5,657.7	6,177.5	6,730.9	7,625.4	8,425.7	10.5
India	3,792.6	3,791.4	3,935.5	4,308.3	4,341.5	0.8
Indonesia	401.7	383.2	374.4	366.1	389.0	6.3
Japan	3,408.9	3,244.6	3,233.5	3,157.8	3,235.2	2.5
Malaysia	178.3	180.3	147.0	121.9	190.0	55.9
New Zealand	104.2	100.2	103.2	107.2	106.2	-0.9
Philippines	151.8	183.6	188.8	212.0	196.7	-7.2
Singapore	784.3	786.4	806.3	896.9	977.0	8.9
South Korea	2,450.3	2,475.7	2,781.1	2,928.0	3,040.6	3.8
Thailand	868.0	805.9	874.0	852.6	906.0	6.3
Others	1,033.2	1,056.3	1,024.0	1,052.3	1,047.8	-0.4
Total world	41,572.3	41,206.6	42,816.6	44,637.4	46,446.5	4.1
<i>of which</i>						
OECD	25,861.3	25,116.1	26,053.2	26,685.2	27,354.2	2.5
FSU	748.4	724.5	770.9	661.3	682.2	3.2

Notes:

Data may include lease condensates and volumes of oil in transit.

(1,000 b/d)

Graph 5.8
OPEC Members' crude oil exports by destination, 2017

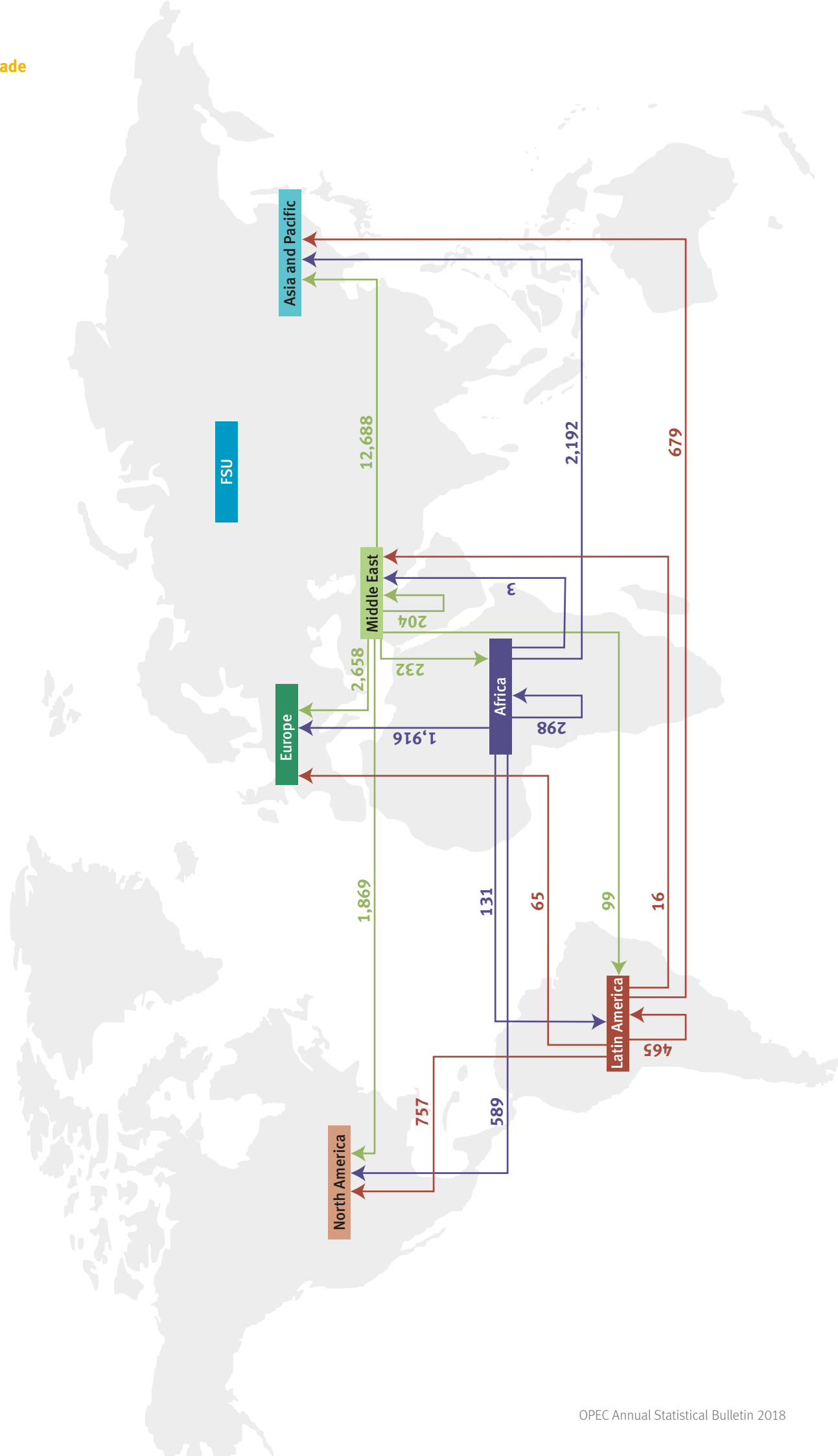


Table 5.8

World imports of petroleum products by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	2,346.5	2,138.6	2,326.7	2,450.6	2,433.2	-0.7
Canada	217.5	241.6	240.7	245.6	270.2	10.0
United States	2,129.0	1,897.0	2,086.0	2,205.0	2,163.0	-1.9
Latin America	2,306.3	2,464.7	2,688.4	2,776.8	3,010.8	8.4
Brazil	544.4	610.5	556.1	550.5	697.8	26.7
Chile	140.0	134.9	154.0	156.3	160.0	
Ecuador	133.2	157.4	151.7	122.6	134.2	9.5
Mexico	559.9	616.4	712.1	745.1	847.7	13.8
Panama	58.8	62.3	57.4	66.1	63.0	-4.7
Venezuela	133.0	158.3	187.1	160.2	164.7	2.8
Others	737.0	724.9	870.1	976.0	943.4	-3.3
Eastern Europe and Eurasia	805.2	866.0	907.0	1,040.2	1,115.9	7.3
Bulgaria	31.8	33.5	37.6	39.0	43.3	11.1
Hungary	45.2	48.0	57.0	65.5	84.7	29.3
Poland	107.7	120.6	127.2	169.7	209.7	23.6
Ukraine	153.3	168.8	163.1	196.2	201.2	2.5
Others	467.2	495.2	522.2	569.8	577.0	1.3
Western Europe	7,039.4	7,026.2	7,318.5	7,698.7	7,803.7	1.4
Belgium	545.8	490.1	546.7	552.9	575.6	4.1
France	881.4	897.3	857.0	825.5	861.7	4.4
Germany	802.1	791.9	800.1	827.1	899.5	8.7
Italy	260.2	252.5	261.9	324.7	346.5	6.7
Netherlands	1,843.3	1,792.5	1,900.5	1,931.5	1,927.2	-0.2
Spain	284.1	330.3	321.7	363.8	400.7	10.1
Turkey	461.1	480.2	498.3	522.8	555.7	6.3
United Kingdom	595.4	607.8	652.4	734.3	695.1	-5.3
Others	1,366.0	1,383.7	1,479.9	1,616.1	1,541.5	-4.6
Middle East	1,555.9	1,665.4	1,844.1	1,848.5	1,862.6	0.8
IR Iran	15.0	39.9	52.5	61.6	96.0	55.8
Iraq	84.0	99.0	81.1	91.7	115.6	26.1
Kuwait	0.0	0.0	0.0	0.0	0.5	-
Qatar	6.0	5.4	32.8	20.6	20.5	-0.4
Saudi Arabia	482.0	465.0	588.0	591.1	486.8	-17.6
United Arab Emirates	292.1	349.8	358.0	340.2	277.5	-18.4
Others	676.8	706.3	731.8	743.3	865.6	16.5
Africa	1,591.2	1,651.9	1,915.8	1,906.2	1,885.3	-1.1
Algeria	101.6	55.3	83.2	73.3	74.5	1.6
Angola	89.2	99.1	134.5	75.8	70.6	-6.9
Egypt	177.6	185.8	367.2	351.3	318.2	-9.4
Equatorial Guinea	4.3	7.3	7.6	6.4	6.2	-3.8
Gabon	5.6	5.6	5.7	6.1	6.2	0.6
Libya	127.4	113.9	106.2	107.9	130.9	21.3
Morocco	166.3	163.2	161.0	256.8	265.0	3.2
Nigeria	331.0	438.7	441.0	423.4	391.7	-7.5
Tunisia	61.3	67.6	81.3	74.6	82.5	10.6
Others	526.9	515.6	528.1	530.7	539.7	1.7
Asia and Pacific	8,851.4	9,126.4	9,762.5	10,057.9	10,726.9	6.7
Australia	423.2	429.7	545.5	553.4	608.2	9.9
China	1,093.1	957.7	1,150.9	1,220.3	1,368.5	12.1
India	372.3	487.9	636.5	814.1	843.5	3.6
Indonesia	461.4	554.6	506.0	498.6	586.1	17.5
Japan	1,003.3	992.7	972.9	868.9	923.5	6.3
Malaysia	505.4	545.6	582.9	646.4	726.6	12.4
Singapore	2,272.7	2,354.2	2,535.7	2,472.6	2,634.9	6.6
South Korea	899.4	885.7	844.2	900.6	869.0	-3.5
Others	1,820.7	1,918.4	1,988.0	2,083.1	2,166.5	4.0
Total world	24,496.0	24,939.3	26,763.1	27,779.0	28,838.3	3.8
<i>of which</i>						
OPEC	1,804.4	1,994.6	2,229.4	2,081.0	1,975.8	-5.1
<i>OPEC percentage</i>	<i>7.4</i>	<i>8.0</i>	<i>8.3</i>	<i>7.5</i>	<i>6.9</i>	
OECD	12,629.9	12,398.6	13,077.9	13,647.3	13,904.9	1.9
FSU	429.6	477.8	503.8	512.8	509.9	-0.6

Notes:

Data may include re-exports and volumes of oil in transit.

Table 5.9

World imports of petroleum products by main petroleum product and region

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	2,346.5	2,138.6	2,326.7	2,450.6	2,433.2	-0.7
Gasoline	696.0	657.1	733.5	752.2	792.7	5.4
Kerosene	124.8	133.3	173.5	173.7	169.8	-2.2
Distillates	175.3	224.7	236.6	229.7	225.9	-1.7
Residuals	241.8	190.7	198.4	201.0	202.4	0.7
Others	1,108.5	932.8	984.6	1,094.1	1,042.4	-4.7
Latin America	2,306.3	2,464.7	2,688.4	2,776.8	3,010.8	8.4
Gasoline	608.4	829.8	950.0	997.4	1,168.4	17.1
Kerosene	48.3	54.3	75.5	65.4	72.9	11.5
Distillates	767.8	737.9	725.6	802.4	932.4	16.2
Residuals	143.2	111.3	131.8	108.3	129.1	19.2
Others	738.7	731.4	805.6	803.3	708.0	-11.9
Eastern Europe and Eurasia	805.2	866.0	907.0	1,040.2	1,115.9	7.3
Gasoline	125.9	187.0	127.2	172.6	152.0	-12.0
Kerosene	11.6	14.6	10.3	15.0	19.3	28.5
Distillates	345.4	371.3	410.7	515.8	556.2	7.8
Residuals	26.9	25.2	37.4	44.4	38.8	-12.7
Others	295.4	267.9	321.5	292.4	349.7	19.6
Western Europe	7,039.4	7,026.2	7,318.5	7,698.7	7,803.7	1.4
Gasoline	650.5	641.1	700.4	723.9	727.3	0.5
Kerosene	718.8	699.8	731.2	783.5	815.2	4.0
Distillates	2,593.0	2,464.1	2,649.3	2,831.6	2,782.1	-1.7
Residuals	1,133.3	1,161.5	1,204.9	1,124.0	791.6	-29.6
Others	1,943.9	2,059.7	2,032.7	2,235.8	2,687.5	20.2
Middle East	1,555.9	1,665.4	1,844.1	1,848.5	1,862.6	0.8
Gasoline	528.3	646.1	729.5	696.8	813.9	16.8
Kerosene	14.3	57.0	70.0	173.4	147.8	-14.8
Distillates	700.3	737.8	701.6	609.8	329.7	-45.9
Residuals	256.5	165.2	238.8	313.0	498.2	59.1
Others	56.5	59.3	104.3	55.5	72.9	31.5
Africa	1,591.2	1,651.9	1,915.8	1,906.2	1,885.3	-1.1
Gasoline	564.8	564.3	484.4	579.2	808.3	39.6
Kerosene	140.3	182.9	121.8	52.4	17.9	-65.9
Distillates	604.6	496.3	654.7	655.7	577.7	-11.9
Residuals	64.2	186.2	219.5	155.3	55.9	-64.0
Others	217.3	222.3	435.4	463.6	425.5	-8.2

Table 5.9

World imports of petroleum products by main petroleum product and region*(1,000 b/d)*

	2013	2014	2015	2016	2017	% change 17/16
Asia and Pacific	8,851.4	9,126.4	9,762.5	10,057.9	10,726.9	6.7
Gasoline	1,338.8	1,451.8	1,489.5	1,561.3	1,554.4	-0.4
Kerosene	488.0	447.8	475.7	504.0	584.0	15.9
Distillates	1,308.5	1,342.0	1,298.3	1,541.6	1,586.1	2.9
Residuals	2,885.4	2,718.3	2,829.6	2,679.5	3,005.2	12.2
Others	2,830.7	3,166.5	3,669.5	3,771.5	3,997.2	6.0
Total world	24,496.0	24,939.3	26,763.1	27,779.0	28,838.3	3.8
Gasoline	4,512.6	4,977.2	5,214.4	5,483.4	6,016.9	9.7
Kerosene	1,546.0	1,589.7	1,658.0	1,767.4	1,826.9	3.4
Distillates	6,494.9	6,374.1	6,676.8	7,186.5	6,990.0	-2.7
Residuals	4,751.4	4,558.4	4,860.4	4,625.5	4,721.2	2.1
Others	7,191.1	7,439.9	8,353.7	8,716.2	9,283.3	6.5
<i>of which</i>						
OPEC	1,804.4	1,994.6	2,229.4	2,081.0	1,975.8	-5.1
Gasoline	581.5	676.6	743.2	775.1	927.4	19.6
Kerosene	76.6	107.0	120.4	117.9	93.8	-20.5
Distillates	701.9	669.1	654.8	587.4	383.0	-34.8
Residuals	160.2	120.4	175.0	206.8	322.8	56.1
Others	284.1	421.5	536.0	393.8	248.8	-36.8
OECD	12,629.9	12,398.6	13,077.9	13,647.3	13,904.9	1.9
Gasoline	1,777.7	1,747.9	1,977.1	2,061.4	2,166.9	5.1
Kerosene	93.5	86.7	88.2	85.4	87.4	2.3
Distillates	3,382.1	3,355.3	3,616.0	3,882.1	3,939.8	1.5
Residuals	1,618.2	1,558.0	1,561.9	1,477.1	1,203.7	-18.5
Others	5,758.3	5,650.7	5,834.7	6,141.4	6,507.1	6.0
FSU	429.6	477.8	503.8	512.8	509.9	-0.6
Gasoline	88.7	129.0	95.3	88.5	70.4	-20.5
Kerosene	9.2	6.0	8.5	9.6	10.8	11.9
Distillates	220.6	227.0	248.9	270.7	258.6	-4.5
Residuals	22.9	19.9	34.8	39.1	34.7	-11.4
Others	88.2	96.1	116.4	104.8	135.4	29.3

Notes:

Data may include re-exports and volumes of oil in transit.

Table 5.10

World imports of crude oil and petroleum products by country

(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
North America	10,727.9	10,046.3	10,255.2	11,189.1	11,152.3	-0.3
Canada	868.9	805.3	806.2	1,134.1	1,077.3	-5.0
United States	9,859.0	9,241.0	9,449.0	10,055.0	10,075.0	0.2
Latin America	3,382.8	3,470.4	3,635.3	3,645.2	3,912.3	7.3
Brazil	907.9	943.8	807.8	684.8	847.6	23.8
Chile	318.6	308.1	316.2	317.1	328.0	3.4
Ecuador	133.2	157.4	151.7	128.6	149.5	16.3
Mexico	559.9	616.4	712.1	745.1	847.7	13.8
Venezuela	157.5	199.8	220.5	165.9	165.7	-0.1
Others	1,305.7	1,244.8	1,427.2	1,603.8	1,573.8	-1.9
Eastern Europe and Eurasia	2,655.8	2,606.6	2,788.2	2,756.5	2,920.2	5.9
Belarus	455.3	457.1	473.1	388.3	394.2	1.5
Bulgaria	145.1	135.9	159.0	163.2	180.8	10.8
Czech Republic	202.1	218.3	223.9	207.9	238.9	14.9
Hungary	153.9	170.0	182.1	186.6	205.2	10.0
Poland	579.1	599.4	661.2	664.2	707.1	6.5
Romania	141.8	172.3	178.9	196.3	210.3	7.2
Ukraine	168.7	172.4	167.7	206.6	221.8	7.3
Others	809.8	681.3	742.4	743.6	762.0	2.5
Western Europe	16,948.2	16,775.1	17,752.8	17,971.7	18,525.3	3.1
Belgium	1,104.2	1,140.1	1,194.6	1,194.9	1,264.1	5.8
France	1,991.6	1,974.0	2,002.7	1,917.8	2,002.5	4.4
Germany	2,630.5	2,598.7	2,643.2	2,664.5	2,731.8	2.5
Greece	467.7	488.2	530.6	555.8	559.8	0.7
Italy	1,438.9	1,338.4	1,523.5	1,550.2	1,686.9	8.8
Netherlands	2,795.4	2,749.7	2,957.0	3,023.0	3,020.1	-0.1
Spain	1,452.6	1,521.8	1,629.7	1,656.0	1,730.6	4.5
Sweden	490.9	557.6	580.6	631.5	617.6	-2.2
Turkey	836.0	833.3	1,004.2	1,025.2	1,075.3	4.9
United Kingdom	1,613.0	1,548.0	1,508.6	1,531.3	1,589.0	3.8
Others	2,127.5	2,025.3	2,177.9	2,221.5	2,247.7	1.2
Middle East	1,952.6	2,085.6	2,296.9	2,313.2	2,354.0	1.8
Bahrain	232.0	225.0	231.2	225.3	236.0	4.7
IR Iran	15.0	39.9	52.5	61.6	96.0	55.8
Iraq	84.0	99.0	81.1	91.7	115.6	26.1
Kuwait	-	-	-	-	0.5	-

Table 5.10

World imports of crude oil and petroleum products by country

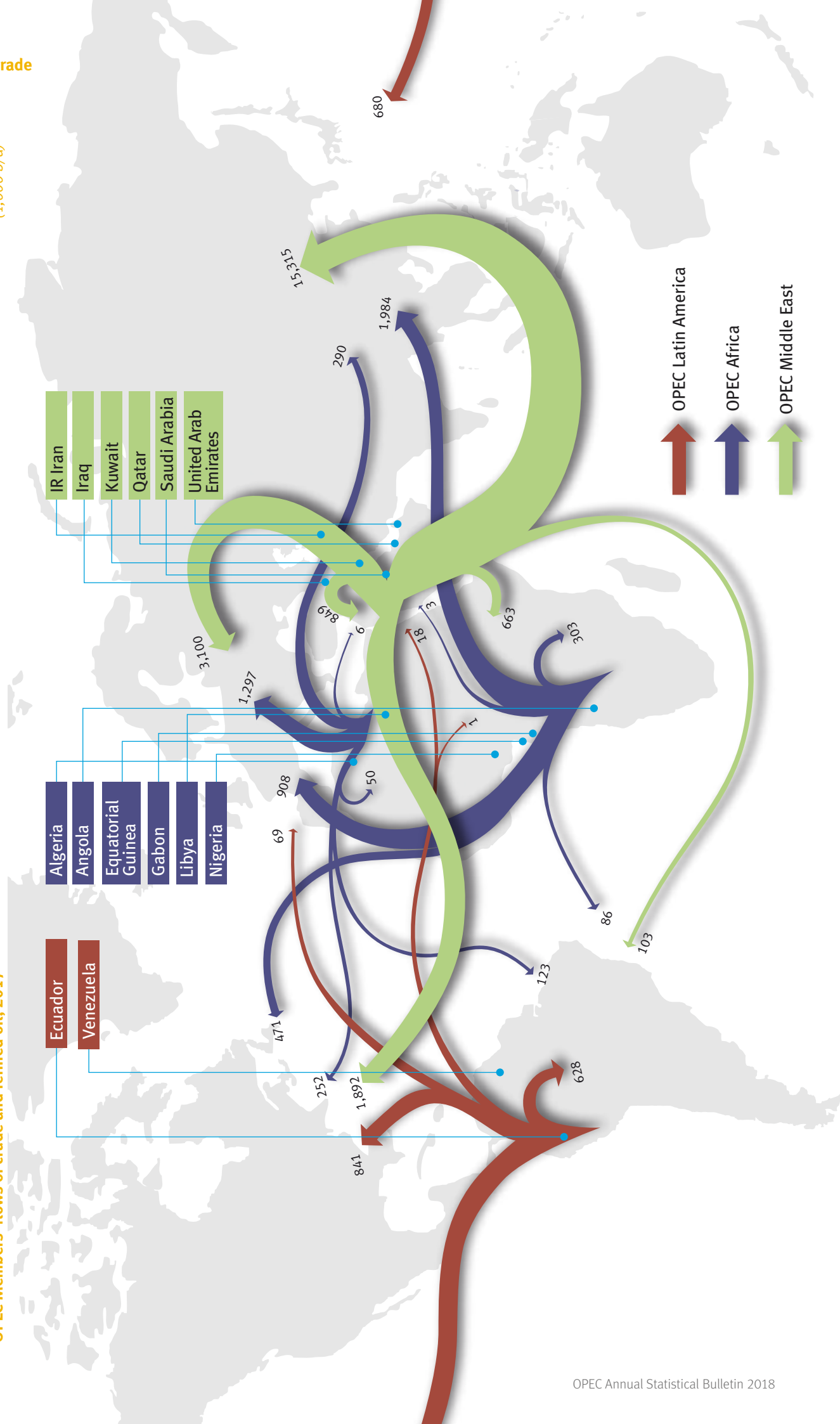
(1,000 b/d)

	2013	2014	2015	2016	2017	% change 17/16
Middle East (cont'd)						
Qatar	6.0	5.4	32.8	20.6	20.5	-0.4
Saudi Arabia	482.0	465.0	588.0	591.1	486.8	-17.6
United Arab Emirates	308.7	371.8	396.1	392.7	345.5	-12.0
Others	824.9	879.6	915.2	930.2	1,053.0	13.2
Africa	2,268.0	2,409.5	2,571.9	2,521.6	2,504.4	-0.7
Algeria	104.6	61.4	88.9	78.2	79.3	1.3
Angola	89.2	99.1	134.5	75.8	70.6	-6.9
Egypt	234.9	270.3	458.7	434.5	405.1	-6.8
Equatorial Guinea	4.3	7.3	7.6	6.4	6.2	-3.8
Gabon	5.6	5.6	5.7	6.1	6.2	0.6
Libya	127.4	113.9	106.2	107.9	130.9	21.3
Morocco	279.3	268.1	204.0	256.8	265.0	3.2
Nigeria	331.0	438.7	441.0	423.4	391.7	-7.5
South Africa	461.8	515.1	483.0	494.7	498.5	0.8
Tunisia	85.3	92.3	99.9	93.0	98.6	6.0
Others	544.5	537.7	542.5	544.8	552.5	1.4
Asia and Pacific	28,133.1	28,752.5	30,279.5	32,019.0	33,916.4	5.9
Australia	873.8	870.6	863.8	886.1	941.9	6.3
China	6,750.7	7,135.2	7,881.8	8,845.7	9,794.2	10.7
India	4,164.9	4,279.3	4,572.0	5,122.3	5,185.0	1.2
Indonesia	863.1	937.8	880.4	864.7	975.1	12.8
Japan	4,412.2	4,237.3	4,206.4	4,026.7	4,158.7	3.3
Malaysia	683.8	725.9	729.9	768.3	916.6	19.3
New Zealand	149.8	149.1	149.4	161.8	162.3	0.3
Philippines	330.8	363.9	394.3	442.3	483.4	9.3
Singapore	3,057.0	3,140.6	3,341.9	3,369.5	3,611.9	7.2
South Korea	3,349.7	3,361.4	3,625.3	3,828.6	3,909.6	2.1
Thailand	999.2	982.4	1,023.0	1,019.8	1,080.8	6.0
Others	2,498.1	2,568.9	2,611.2	2,683.2	2,696.7	0.5
Total world	66,068.3	66,145.9	69,579.7	72,416.4	75,284.9	4.0
<i>of which</i>						
OPEC	1,848.6	2,064.2	2,306.5	2,150.1	2,064.9	-4.0
OECD	38,491.2	37,514.6	39,131.1	40,332.6	41,259.1	2.3
FSU	1,178.0	1,202.3	1,274.8	1,174.2	1,192.0	1.5

Notes:

Data may include lease condensates, re-exports of petroleum products and volumes of oil in transit.

Graph 5.9
OPEC Members' flows of crude and refined oil, 2017



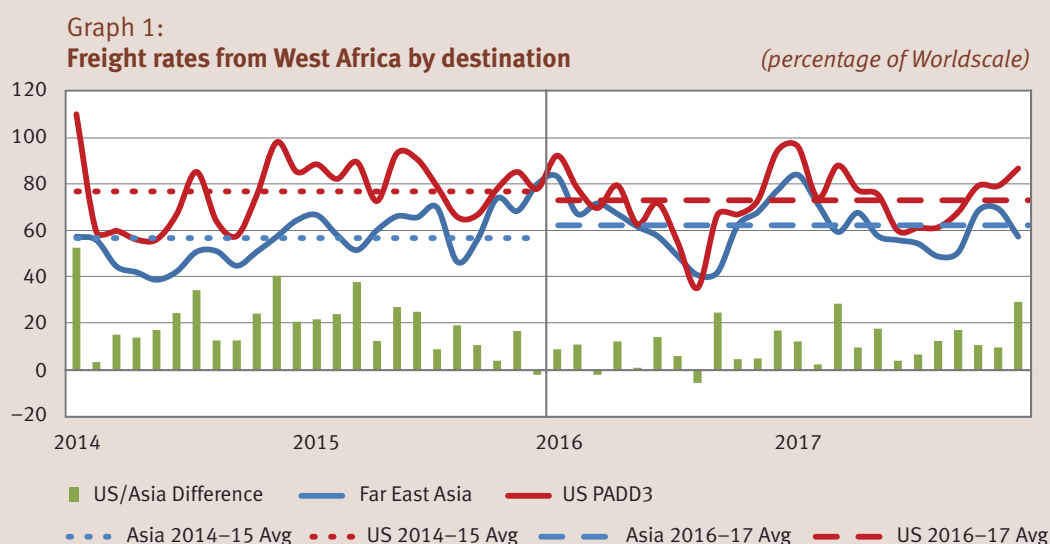


SECTION 6

Oil transportation

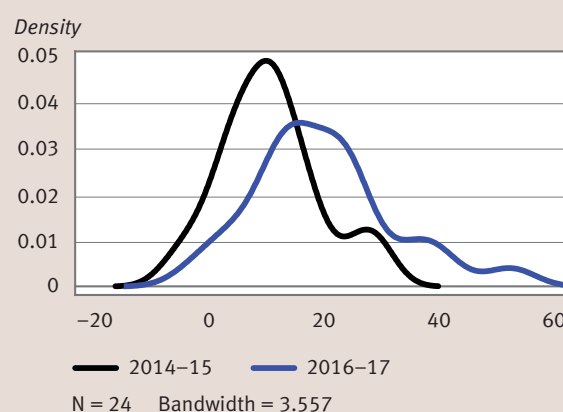
Comparison of West African freight rates towards East and West

Global oil markets have undergone a major structural change as increasing quantities of light sweet crude leave North America and head for Asia. At the end of 2015, the US administration lifted the 40-year ban on crude oil exports outside the continent. A possible indicator for the impact of those changes are the freight rates for shipping crude outside of West Africa and, in particular, monthly dirty tanker freight rates in Worldscale terms for the routes to Far East Asia and US PADD3 for the years 2014–2017. **Graph 1** displays the evolution of both time series.



The differences between the two routes for the periods 2014–15 and 2016–17 are considered separately. The empirical densities (using a normal kernel estimation) of both time series differences are presented in **Graph 2**. The figure shows an apparent dissimilarity between the underlying statistical distributions in terms of the means. The Kolmogorov Smirnov test applied to both samples and the normal distributions with their empirical parameters (mean and variance) each yield p-values of 0.34 and 0.40 for the years 2014–15 and 2016–17, respectively. This means that there is no statistical evidence that they are not drawn from normal distributions. An F-test for variance equality on the two samples yields a p-value of 0.09, which does not allow rejection of the null hypothesis that the variances are equal. Finally a Student's t-test can be conducted in order to test the equality of means. The test's p-value of 0.0025 implies that the empirical hypothesis of equal means for both time series could be rejected at a risk level lower than one per cent against the one-sided hypothesis of a lower mean during the period 2016–17.

Graph 2:
Empirical densities obtained via normal kernel estimation of differences between US PADD3 and Far East Asia freight rates



This result is in line with expectations that during the period 2016–17 and following the lifting of the US crude exports ban, freight rates to Asia and US PADD3 from West Africa moved closer on average as compared to the period immediately prior to the crude exports ban, that is, 2014–15. While average freight rates to US PADD3 had fallen from 76.6 in 2014–15 to 72.8 in 2016–17 in percentage of Worldscale terms, the respective values towards Far East grew from 56.7 to 62.1, consequently narrowing the difference from 19.9 to 10.8. A possible explanation could be that recent US crude exports reduced the number of tanker's empty routes towards the East.

Table 6.1

World tanker fleet by year of build and categories*(1,000 dwt)*

Tanker size		up to 2002 no dwt		2003–07 no dwt		2008–12 no dwt		2013–17 no dwt		Total no dwt	
GP	16.5–24.9	178	2,921	191	3,147	302	4,940	90	1,722	761	12,730
MR	25.0–44.9	324	12,414	402	15,980	321	12,981	327	14,165	1,375	55,540
LR1	45.0–79.9	165	8,504	464	26,663	514	29,021	310	16,713	1,452	80,901
LR2	80.0–159.9	287	34,545	390	46,877	495	61,798	312	40,571	1,484	183,790
VLCC	160.0–319.9	154	43,841	169	47,432	267	78,363	158	48,440	748	218,076
Total world		1,108	102,226	1,616	140,099	1,899	187,102	1,197	121,611	5,820	551,038

Notes:

Figures as at year-end. Data is adjusted to take in account different categories of vessels. Data includes clean, dirty and chemical tankers.

GP = general purpose carrier; MR = medium range carrier; LR1 = large range 1 carrier; LR2 = large range 2 carrier; VLCC = very large crude carrier.

Table 6.2

World LPG carrier fleet by size*(1,000 cu m)*

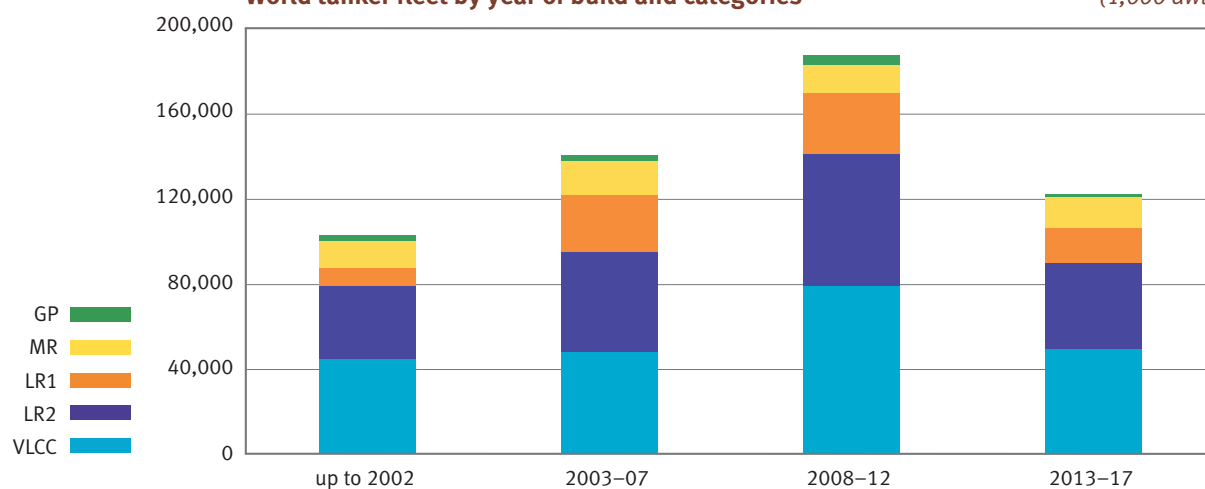
	2013 no capacity		2014 no capacity		2015 no capacity		2016 no capacity		2017 no capacity	
up to 19,999	866	3,708	902	3,900	937	4,138	960	4,283	981	4,422
20,000–44,999	116	3,380	125	3,651	135	3,918	156	4,581	181	5,388
45,000–64,999	19	1,127	19	1,127	22	1,308	24	1,428	24	1,428
65,000 and over	152	12,246	160	12,915	195	15,850	241	19,713	266	21,795
Total world	1,153	20,461	1,206	21,592	1,289	25,214	1,381	30,005	1,452	33,032

Notes:

Figures as at year-end.

Graph 6.1
World tanker fleet by year of build and categories

(1,000 dwt)



Graph 6.2
World tanker fleet by year of build and categories

(number of vessels)

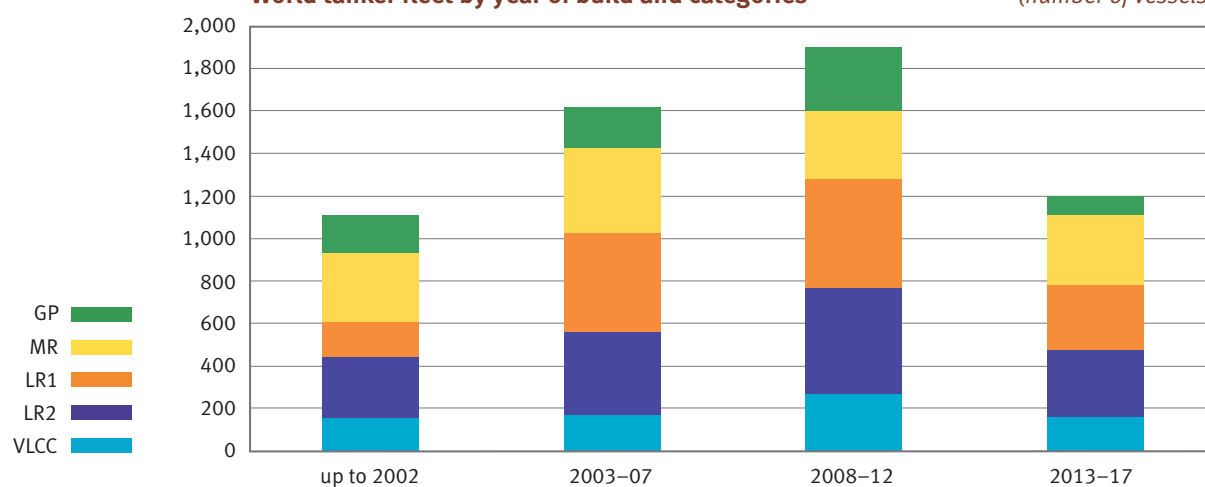


Table 6.3

World combined carrier fleet by size*(1,000 dwt)*

	2013		2014		2015		2016		2017	
	no	dwt	no	dwt	no	dwt	no	dwt	no	dwt
10,000–39,999	2	42	1	28	1	28	1	28	1	28
40,000–49,999	2	87	2	87	2	87	2	87	2	87
50,000–59,999	–	–	–	–	–	–	–	–	–	–
60,000–69,999	–	–	–	–	–	–	–	–	–	–
70,000–79,999	–	–	6	435	6	435	6	435	6	435
80,000–99,999	–	–	–	–	–	–	2	161	3	241
100,000–119,999	10	1,098	10	1,098	10	1,098	8	879	7	769
120,000–129,999	2	241	2	241	2	241	2	241	2	241
130,000–319,999	5	1,599	5	1,599	–	–	–	–	–	–
Total world	21	3,066	26	3,490	21	1,890	21	1,831	21	1,802

Notes:

Figures as at year-end.

Table 6.4

Average spot freight rates by vessel category*(% of Worldscale)*

	Tanker size (1,000 dwt)	2013	2014	2015	2016	2017
GP	16.5–24.9	146.2	144.7	154.6	105.3	141.5
MR	25.0–44.9	145.7	144.2	154.9	135.4	163.7
LR1	45.0–79.9	94.4	110.3	117.9	97.6	109.7
LR2	80.0–159.9	54.0	68.9	75.1	66.9	69.3
VLCC	160.0–319.9	41.7	52.5	66.0	52.9	50.1

Notes:

Average spot freight rates are the average of all spot freight rates by tanker size reported each month in the spot market. GP = general purpose carrier; MR = medium range carrier; LR1 = large range 1 carrier; LR2 = large range 2 carrier; VLCC = very large crude carrier.

Graph 6.3

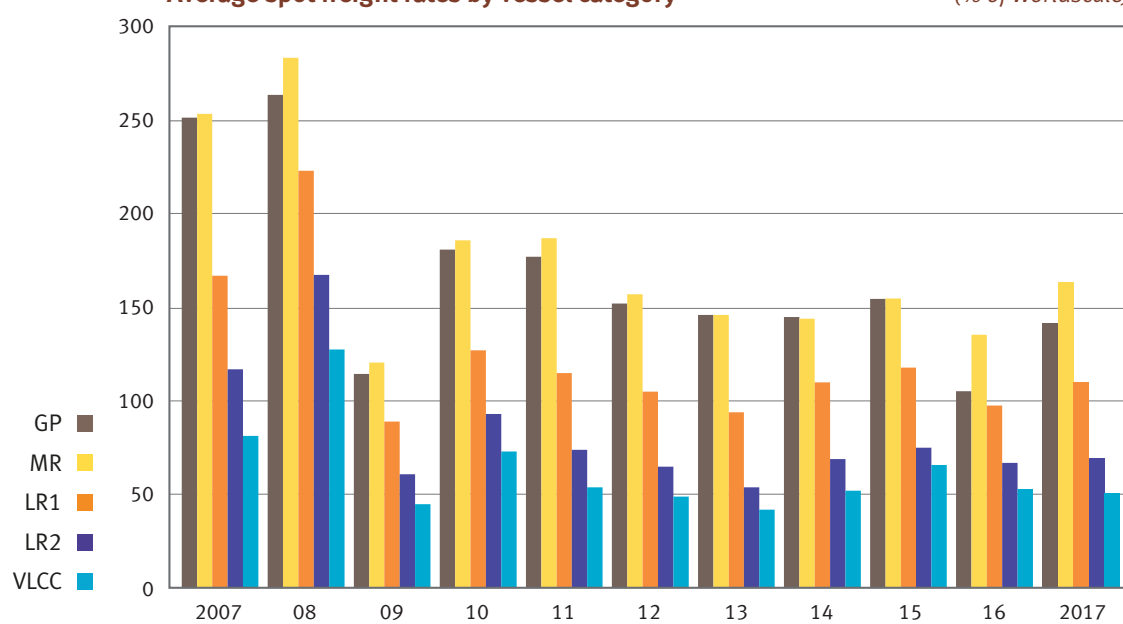
Average spot freight rates by vessel category*(% of Worldscale)*

Table 6.5

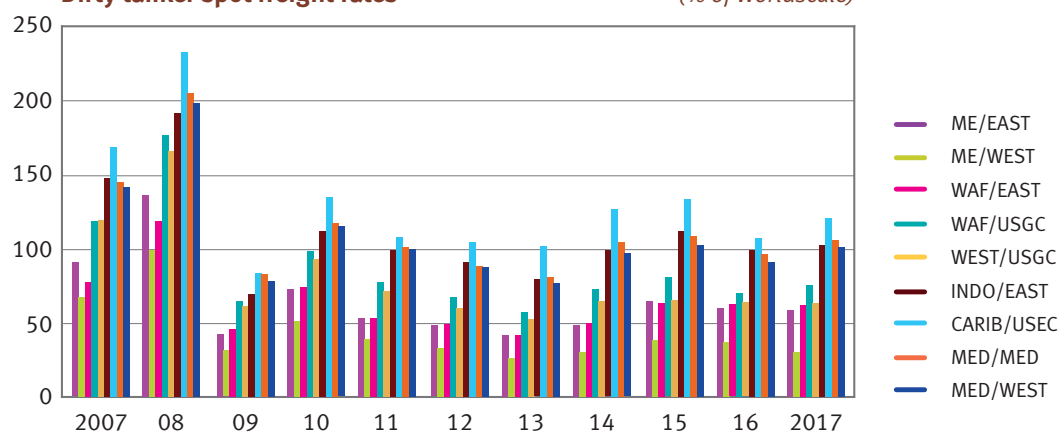
Dirty tanker spot freight rates*(% of Worldscale and \$/t)*

	2013		2014		2015		2016		2017	
	%	\$/t	%	\$/t	%	\$/t	%	\$/t	%	\$/t
ME/EAST	48	7.5	41	7.1	49	7.9	64	10.3	60	10.8
ME/WEST	33	14.2	26	12.4	30	11.8	38	13.4	37	7.6
WAF/EAST	49	19.3	41	17.7	50	20.1	63	25.0	62	17.7
WAF/USGC	67	16.7	57	15.4	73	18.6	81	20.3	70	12.6
WEST/USGC	60	12.6	52	11.8	65	14.2	66	14.3	64	11.6
INDO/EAST	91	13.7	79	13.0	99	15.2	112	16.8	99	11.4
CAR/USEC	105	10.2	102	10.8	127	12.8	134	13.3	107	8.6
MED/MED	88	5.6	81	5.4	104	6.8	108	7.1	97	6.1
MED/WEST	88	10.9	77	10.2	97	12.3	102	12.8	91	9.8

Notes:

ME = Middle East; EAST = Far East; WEST = North-West Europe; WAF = West Africa; USGC = US Gulf Coast; INDO = Indonesia; CAR = Caribbean; USEC = US East Coast; MED = Mediterranean.

Graph 6.4

Dirty tanker spot freight rates*(% of Worldscale)*

Graph 6.5

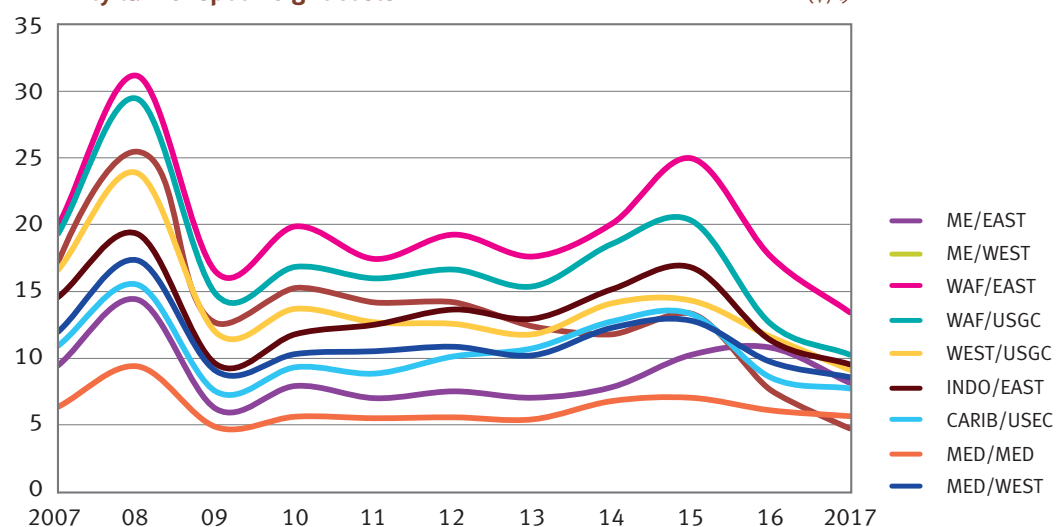
Dirty tanker spot freight costs*(\$/t)*

Table 6.6
Clean tanker spot freight rates

(% of Worldscale and \$/t)

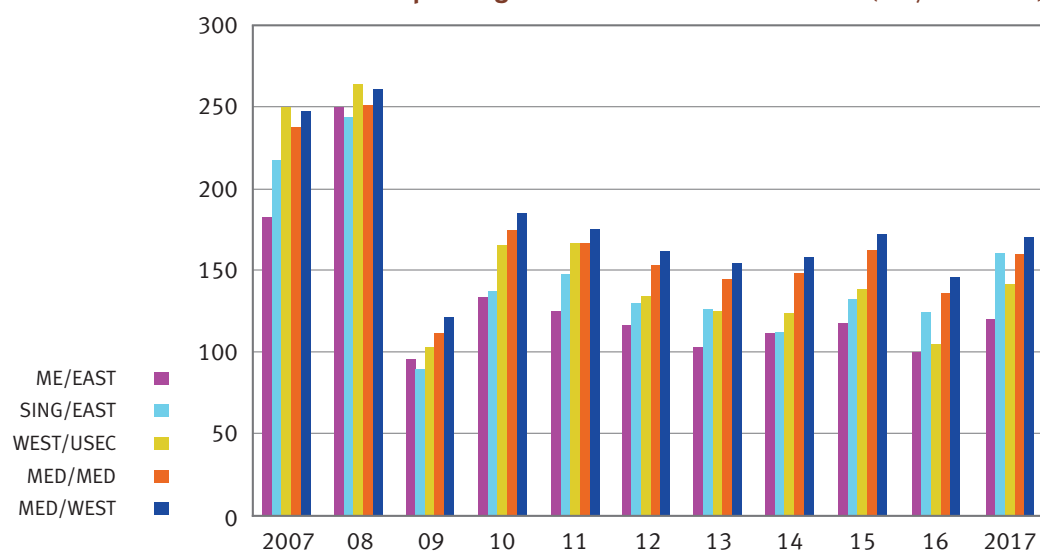
	2013		2014		2015		2016		2017	
	%	\$/t	%	\$/t	%	\$/t	%	\$/t	%	\$/t
ME/EAST	103	30.4	111	30.8	118	31.9	100	19.5	120	18.2
SING/EAST	126	18.3	112	15.3	132	17.5	124	12.2	161	12.6
WEST/USEC	125	21.6	124	20.4	139	22.7	105	14.5	141	15.4
MED/MED	145	9.3	149	9.4	162	10.4	136	7.9	160	8.0
MED/WEST	155	22.2	159	21.8	172	23.5	146	15.5	170	14.7

Notes:

ME = Middle East; EAST = Far East; SING = Singapore; WEST = North-West Europe; USEC = US East Coast; MED = Mediterranean.

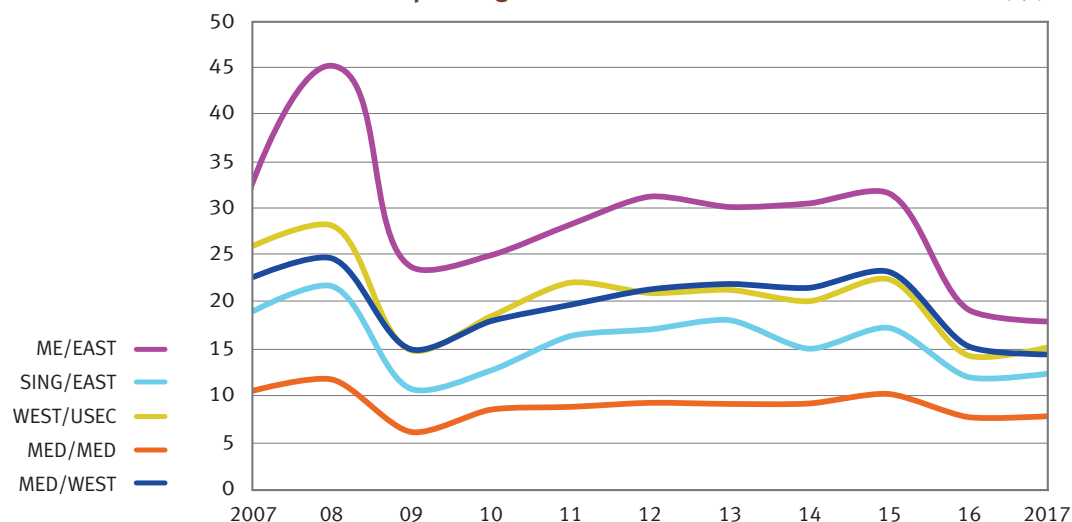
Graph 6.6
Clean tanker spot freight rates

(% of Worldscale)



Graph 6.7
Clean tanker spot freight costs

(\$/t)



Follow the OPEC Secretariat on Social Media



Facebook

facebook.com/OPECsecretariat



Twitter

twitter.com/opeccsecretariat





SECTION 7

Oil prices

The effect of Asian refining capacity improvements on crude quality spreads

The Asian petroleum industry has been progressing significantly over the past decades. At the same time, local governments have introduced higher fuel quality standards in the downstream sector amid environmental concerns. In line with cleaner corporate environmental governance, China and India have been the main drivers of secondary capacity additions in Asia over the last few years. These additions came online not only at grassroots refineries but also at existing plants as part of various modernization programmes and the consecutive need to increase complexity rates in order to be able to meet new fuel standards. Moreover, Asian refiners aimed to expand their foothold in the global product market for clean fuels, which was another reason for the industry to have invested in such upgrades.

Overall, Asia saw an addition of around 290,000 b/cd and 200,000 b/cd of conversion and desulphurization capacity, respectively, in 2017. This compares to 260,000 b/cd (conversion) and 440,000 b/cd (desulphurization added) in 2016. These additions have translated into an improvement of the conversion-to-CDU and desulphurization-to-CDU ratios in this region. Elsewhere in Asia, Indonesia and Thailand were among those countries which also saw conversion capacities coming online over the past couple of years.

Such modernization processes ultimately have allowed refiners to throughput heavier and more sulphurous crudes. Consequently, the spread between light-sweet and medium-sour grades in Asia began to decrease over the last few years, as heavier crudes became relatively more attractive. This trend is also empirically recorded by looking at the price spread between the Asian benchmark crude streams, Tapis and Dubai, which are considered to be light-sweet and medium-sour grades, respectively. While in 2015, this spread amounted to \$4.81/b, this gap narrowed further to \$4.30/b and \$3.21/b in 2016 and 2017, respectively.

Graph 1:
Conversion capacity growth and crude quality spread

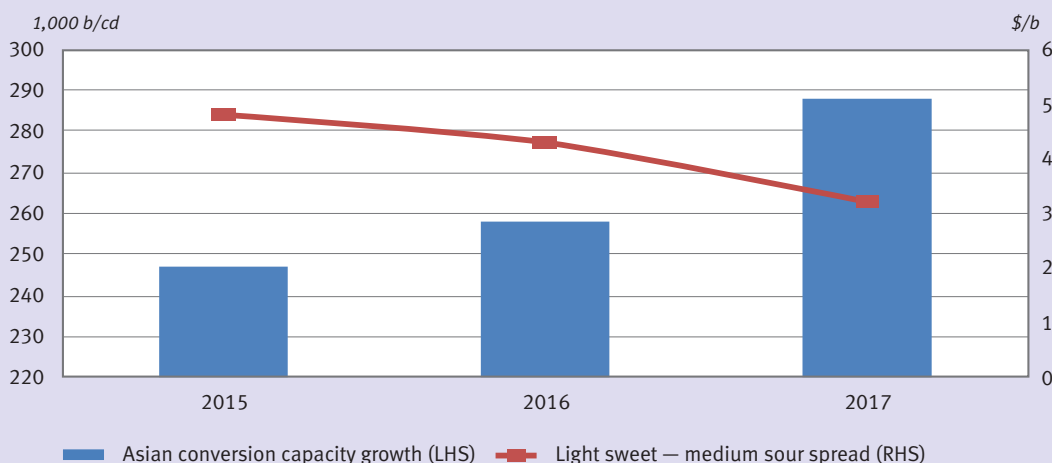


Table 7.1

OPEC Reference Basket (ORB) and corresponding components spot prices

(\$/b)

	Representative crude stream	2013	2014	2015	2016	2017
Algeria	Saharan Blend	109.38	99.68	52.79	44.28	54.12
Angola	Girassol	109.14	99.19	52.96	43.61	54.47
Ecuador	Oriente	97.74	87.31	44.94	38.44	50.00
Equatorial Guinea	Zafiro	109.21	98.28	50.96	42.43	54.04
Gabon	Rabi Light	na	na	52.83	42.62	53.16
IR Iran	Iran Heavy	105.73	96.18	48.80	39.57	51.71
Iraq	Basrah Light	103.60	94.45	47.87	39.53	51.87
Kuwait	Kuwait Export	105.04	95.32	48.13	39.30	51.60
Libya	Ess Sider	108.51	98.51	51.38	42.69	52.82
Nigeria	Bonny Light	111.36	100.85	52.95	44.02	54.55
Qatar	Marine	105.32	96.39	50.71	41.43	52.80
Saudi Arabia	Arab Light	106.53	97.18	49.85	40.96	52.59
United Arab Emirates	Murban	108.21	99.45	53.87	44.83	54.82
Venezuela	Merey	96.66	86.88	41.11	34.02	47.63
OPEC	ORB	105.87	96.29	49.49	40.76	52.43
ORB	Volatility ¹	3.93	14.56	8.50	7.28	5.00
ORB	Coefficient of variation ² , %	3.71	15.12	17.18	17.85	9.54

Notes:

1. Standard deviation of daily prices.
2. Ratio of volatility to annual average price.

Graph 7.1
OPEC Reference Basket

(\$/b)

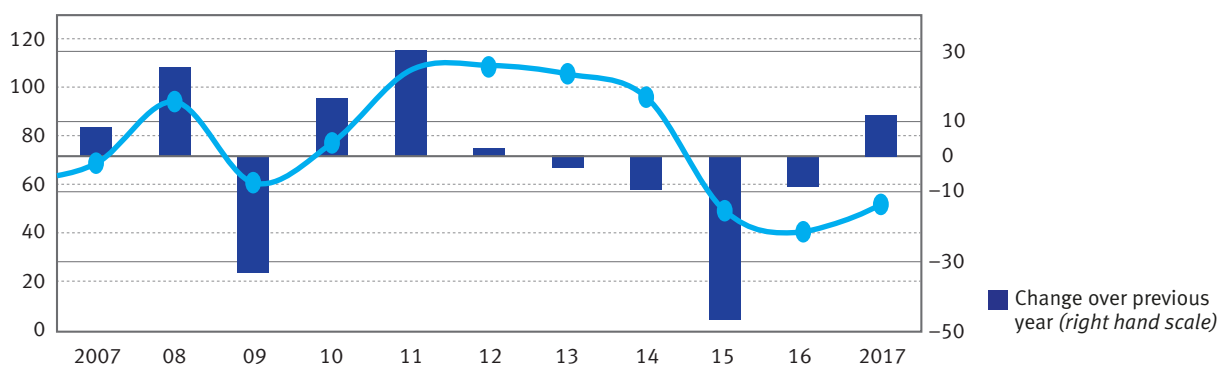


Table 7.2

Selected spot crude oil prices

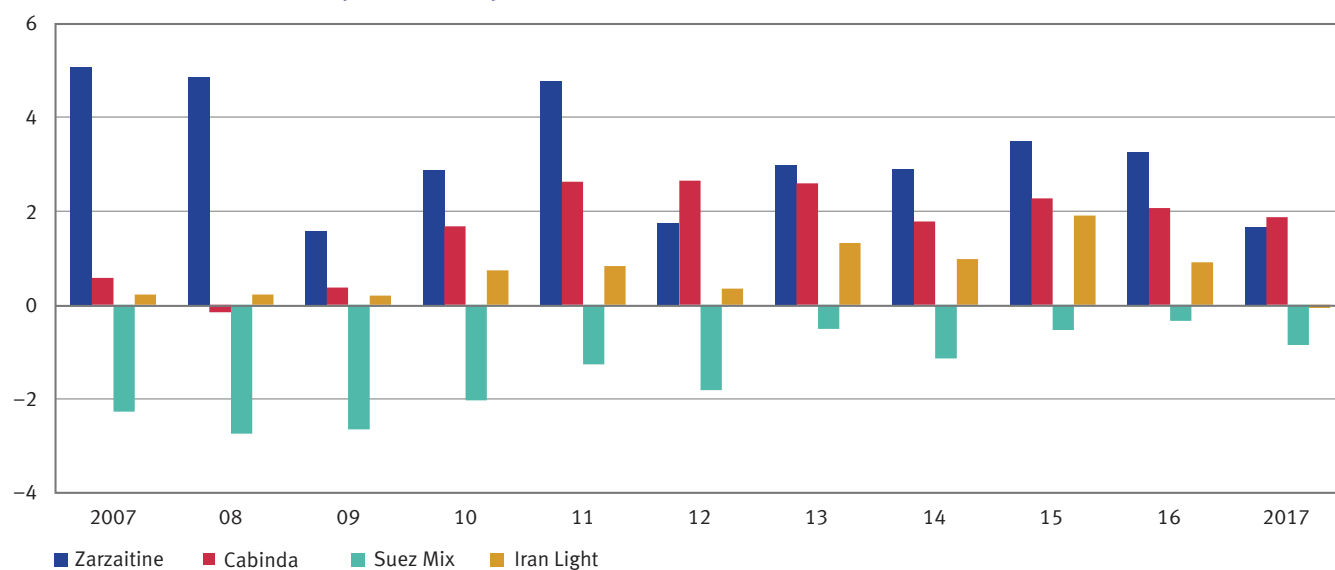
(\$/b)

	Crude stream	2013	2014	2015	2016	2017
Algeria	Zarzaitine	108.85	99.19	53.00	44.02	54.08
Angola	Cabinda	108.47	98.07	51.77	42.83	54.30
Egypt	Suez Mix	105.35	95.13	48.94	40.41	51.56
IR Iran	Iran Light	107.19	97.26	51.40	41.66	52.36
Indonesia	Minas	107.41	98.68	49.17	41.11	48.99
Libya	Brega	108.88	98.79	52.08	43.73	53.62
Malaysia	Miri	115.51	105.10	57.93	46.39	56.93
Malaysia	Tapis	114.39	103.15	55.75	45.69	56.29
Mexico	Isthmus	105.16	93.65	51.14	42.37	54.60
Mexico	Maya	97.31	85.80	44.11	36.52	47.00
Nigeria	Forcados	111.95	101.35	54.41	43.70	54.58
Norway	Ekosfisk	109.88	99.72	53.12	44.01	54.49
Norway	Oseberg	110.04	99.99	53.61	44.52	55.04
Oman	Oman	105.51	97.04	51.21	41.96	53.32
Qatar	Dukhan	107.05	98.44	52.87	43.69	54.12
Russia	Urals	108.00	98.08	51.90	42.16	53.27
Saudi Arabia	Arab Heavy	103.89	93.68	47.01	38.45	50.96
United Kingdom	Brent Dated	108.62	99.08	52.41	43.76	54.17
United Kingdom	Forties	108.65	99.14	52.50	43.42	54.20
United States	WTI	97.96	93.26	48.73	43.27	50.82
United Arab Emirates	Dubai	105.45	96.71	50.94	41.39	53.08
Spread	WTI — Brent	-10.66	-5.82	-3.68	-0.49	-3.35
	WTI — Dubai	-7.49	-3.45	-2.21	1.88	-2.26
	Brent — Dubai	3.17	2.37	1.47	2.37	1.09

Graph 7.2

Differentials of selected spot crude oil prices to OPEC Reference Basket (1)

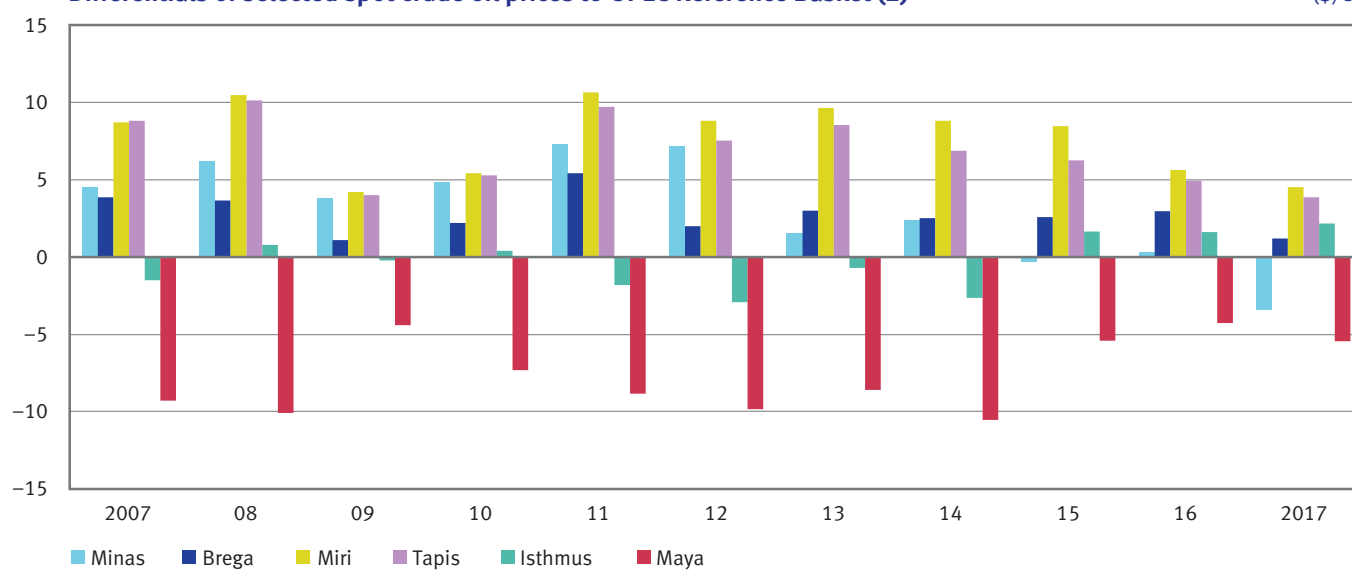
(\$/b)



Graph 7.3

Differentials of selected spot crude oil prices to OPEC Reference Basket (2)

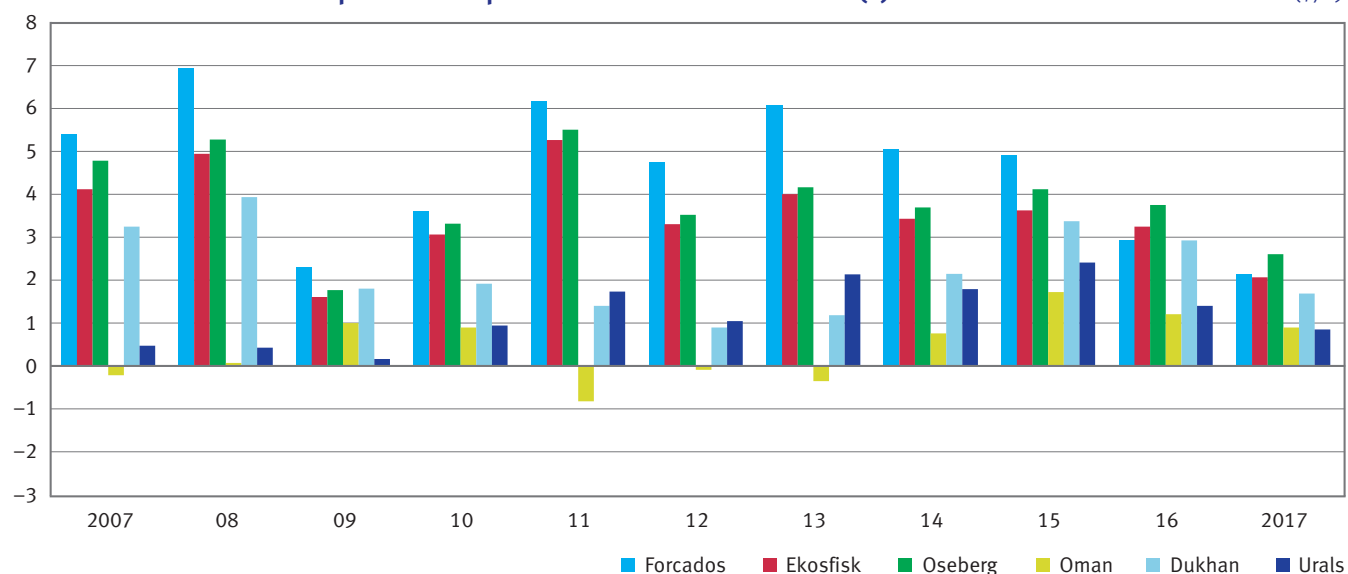
(\$/b)



Graph 7.4

Differentials of selected spot crude oil prices to OPEC Reference Basket (3)

(\$/b)



Graph 7.5

Differentials of selected spot crude oil prices to OPEC Reference Basket (4)

(\$/b)

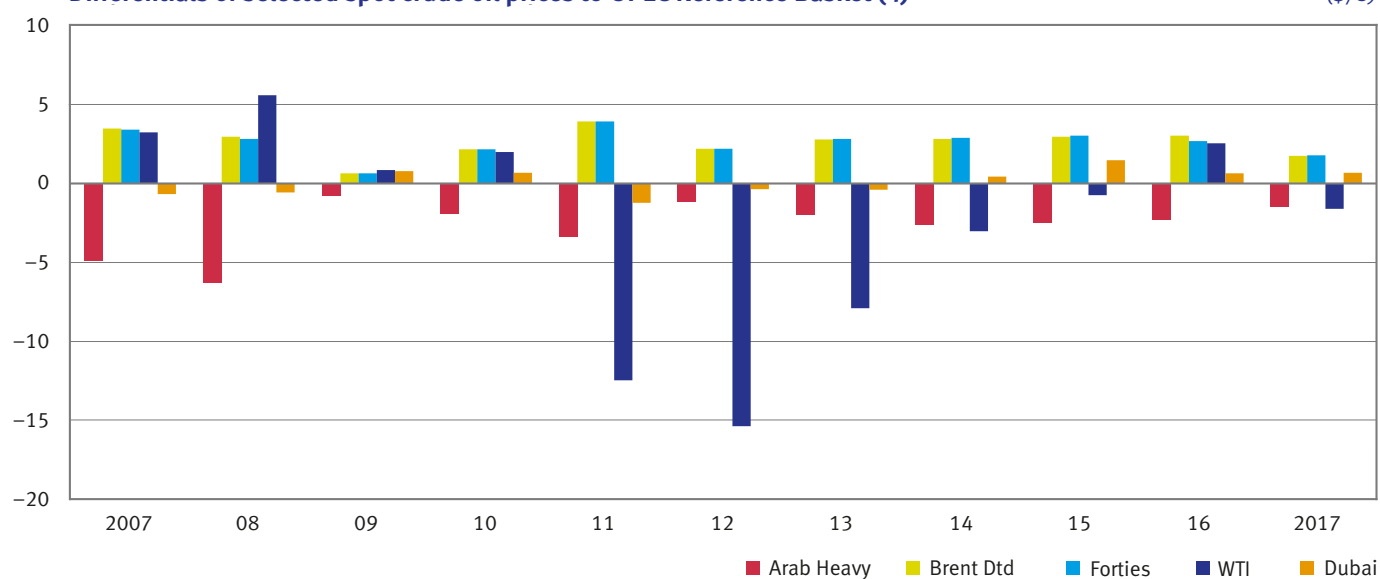


Table 7.3

ICE Brent, NYMEX WTI and DME Oman annual average of the 1st, 6th and 12th forward months (\$/b)

	2013	2014	2015	2016	2017
ICE Brent					
1 st forward month	108.69	99.45	53.60	45.13	54.74
6 th forward month	105.91	99.29	57.21	47.65	55.08
12 th forward month	103.02	98.30	60.18	49.49	54.88
NYMEX WTI					
1 st forward month	98.04	92.91	48.73	43.47	50.85
6 th forward month	96.33	90.23	52.56	46.88	51.95
12 th forward month	92.99	87.57	55.08	48.45	51.88
DME Oman					
1 st forward month	105.55	96.86	51.25	41.99	53.24
6 th forward month	103.07	96.61	54.36	43.89	53.47
12 th forward month	100.76	95.55	57.31	45.81	53.30

Table 7.4

OPEC Reference Basket in nominal and real terms

(\$/b)

	2013	2014	2015	2016	2017
Nominal oil price	105.87	96.29	49.49	40.76	52.43
Nominal price adjusted for:					
Exchange rates ¹	82.67	75.36	43.35	35.92	46.28
Inflation ²	85.24	76.70	39.37	32.29	40.87
Combined ³	66.56	60.03	34.49	28.45	36.07

Notes:

Base: 2001 = 100.

1. Based on weighted average index of currency exchange rates in the modified Geneva I Agreement (see Geneva I Agreement definition under 'General Notes').

2. Based on weighted average consumer price indices of modified Geneva I countries and the US.

3. Based on combined indices of exchange rates and inflation.

Graph 7.6

OPEC Reference Basket in nominal and real terms

(\$/b)

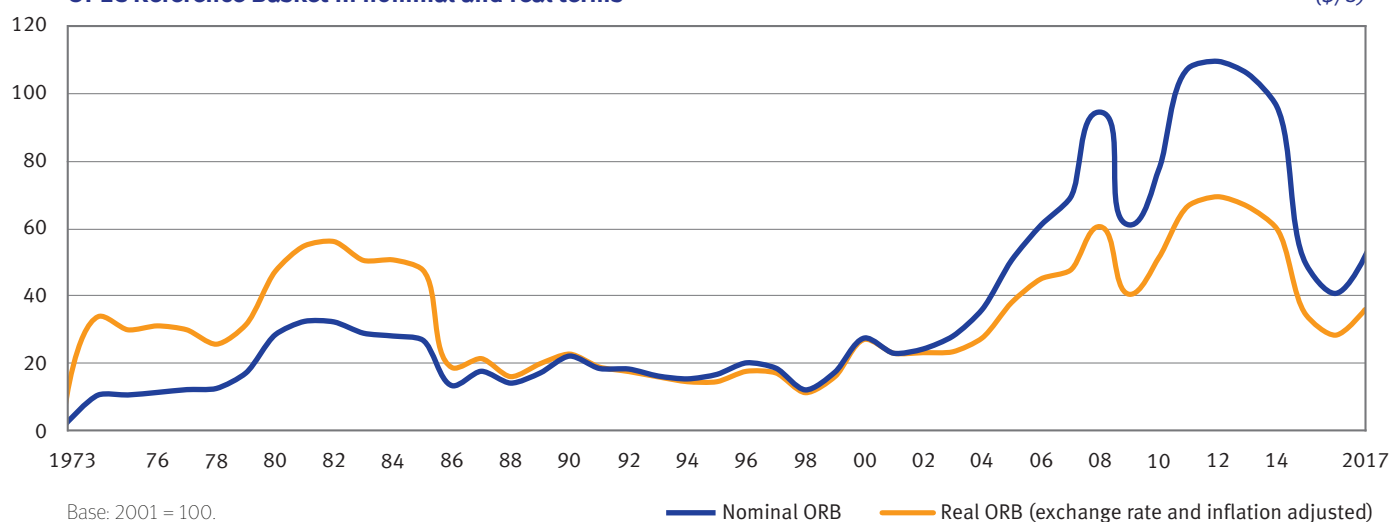


Table 7.5

Annual average of premium factors for selected OPEC Reference Basket components

(\$/b)

		2013	2014	2015	2016	2017
Europe						
Algeria	Saharan Blend	0.75	0.61	0.38	0.52	-0.05
IR Iran	Iran Heavy	-3.70	-4.60	-5.09	-6.38	-5.13
Iraq	Basrah Light	-4.20	-4.74	-4.83	-4.74	-3.40
Libya	Es Sider	-0.11	-0.56	-1.04	-1.08	-1.35
Nigeria	Bonny Light	2.73	1.77	0.54	0.26	0.39
Saudi Arabia	Arab Light	-1.52	-2.78	-3.53	-4.64	-3.19
Asia						
IR Iran	Iran Heavy	0.48	-0.58	-2.24	-2.01	-1.11
Iraq	Basrah Light	-0.14	-1.02	-2.81	-1.94	-0.64
Kuwait	Kuwait Export	0.33	-0.96	-2.73	-2.31	-1.32
Saudi Arabia	Arab Light	2.51	1.48	-0.85	-0.42	-0.09
US						
Iraq	Basrah Light	-1.87	0.06	-0.43	-0.59	-0.07
Saudi Arabia	Arab Light	0.64	2.43	1.06	0.29	0.76
	Arab Medium	-1.78	0.05	-0.53	-1.17	-0.52
	Arab Heavy	-3.45	-1.55	-1.13	-1.74	-1.85

Notes:

Premium factors are related to corresponding benchmark crudes.

Table 7.6
Spot prices of petroleum products in major markets

(\$/b)

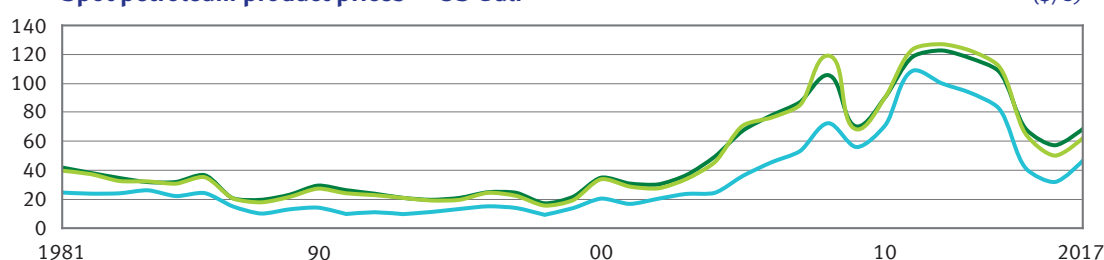
	Specifications	2013	2014	2015	2016	2017
US Gulf						
Gasoline	Regular unleaded 87	116.55	107.90	67.58	57.15	68.57
Gasoil	0.2% sulphur	121.75	111.39	63.80	50.10	62.31
Fuel oil	3.0% sulphur	93.05	82.67	40.78	32.13	47.05
Singapore						
Gasoline	Premium unleaded 97	121.51	111.96	71.41	57.81	69.51
Gasoil	0.05% sulphur	123.38	112.67	64.57	52.05	65.69
Fuel oil	380 centistokes	95.67	86.58	44.27	34.92	49.24
Rotterdam						
Gasoline	Premium unleaded 98	122.57	115.10	75.53	63.58	75.13
Gasoil	10ppm sulphur	123.87	112.91	66.03	53.28	66.35
Fuel oil	3.5% sulphur	93.89	83.68	40.75	29.64	44.31

Notes:

US Gulf and Singapore prices apply to cargo. Rotterdam prices apply to barge size lots.

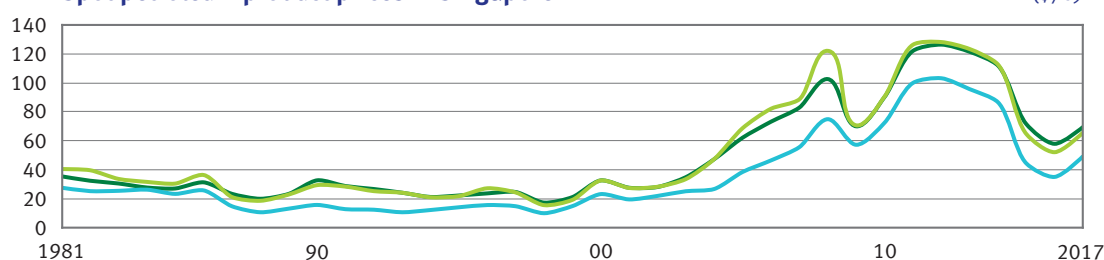
Graph 7.7
Spot petroleum product prices – US Gulf

(\$/b)



Graph 7.8
Spot petroleum product prices – Singapore

(\$/b)



Graph 7.9
Spot petroleum product prices – Rotterdam

(\$/b)

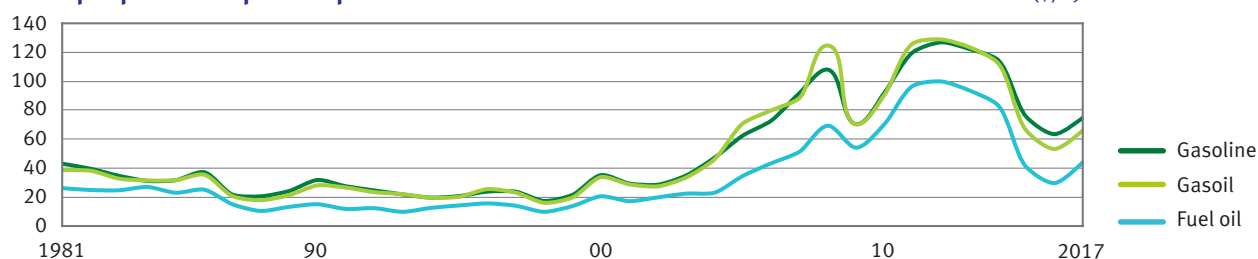


Table 7.7

Retail prices of petroleum products in OPEC Members*(units of national currency/b)*

	2013	2014	2015	2016	2017
Algeria					
Gasoline	2,227	2,227	3,593	4,932	5,578
Diesel oil	1,370	1,370	2,178	2,983	3,217
Kerosene	na	na	na	na	na
Fuel oil	na	na	na	na	na
Angola					
Gasoline	9,540	14,310	18,285	25,440	25,440
Diesel oil	6,360	9,540	11,925	21,465	21,465
Kerosene	3,339	5,565	7,155	11,130	11,130
Fuel oil	8,831	7,950	12,561	13,396	11,338
Ecuador					
Gasoline	63.42	62.79	62.79	62.79	62.16
Diesel oil	39.53	37.80	37.80	43.26	43.58
Kerosene	39.53	37.80	37.80	37.80	89.15
Fuel oil	19.99	19.99	9.10	9.10	36.18
Equatorial Guinea					
Gasoline	na	na	na	na	na
Diesel oil	na	na	na	na	na
Kerosene	na	na	na	na	na
Fuel oil	na	na	na	na	na
Gabon					
Gasoline	85,065	85,065	85,065	90,630	106,000
Diesel oil	74,730	74,730	74,730	80,454	95,948
Kerosene	na	na	na	na	na
Fuel oil	na	na	na	na	na
IR Iran					
Gasoline	1,192,500	1,192,500	1,749,000	1,749,000	1,749,000
Diesel oil	159,000	159,000	477,000	795,000	795,000
Kerosene	159,000	159,000	238,500	2,146,500	2,146,500
Fuel oil	318,000	318,000	477,000	1,590,000	1,590,000
Iraq					
Gasoline	71,550	71,550	82,150	92,750	71,550
Diesel oil	63,600	63,600	55,650	47,700	39,750
Kerosene	23,850	23,850	31,800	39,750	23,850
Fuel oil	na	na	na	na	23,850
Kuwait					
Gasoline	11.40	11.40	11.40	13.87	16.70
Diesel oil	8.75	8.75	24.05	14.11	15.11
Kerosene	8.75	8.75	24.05	14.11	15.11
Fuel oil	na	na	na	na	na
Libya					
Gasoline	23.85	23.85	na	na	na
Diesel oil	27.03	27.03	na	na	na
Kerosene	12.72	12.72	na	na	na
Fuel oil	na	na	na	na	na

Table 7.7

Retail prices of petroleum products in OPEC Members*(units of national currency/b)*

	2013	2014	2015	2016	2017
Nigeria					
Gasoline	15,423	15,423	14,628	18,505	23,055
Diesel oil	24,853	24,853	18,085	17,474	24,566
Kerosene	7,950	7,950	7,950	18,954	24,977
Fuel oil	18,395	18,395	10,655	10,295	17,585
Qatar					
Gasoline	147.08	147.08	194.78	254.40	258.38
Diesel oil	159.00	238.50	238.50	238.50	246.45
Kerosene	na	na	na	na	197.96
Fuel oil	na	na	na	na	195.95
Saudi Arabia					
Gasoline	83.48	83.48	107.33	131.18	143.10
Diesel oil	39.75	39.75	55.65	71.63	71.63
Kerosene	69.17	69.17	82.78	96.39	96.39
Fuel oil	na	na	142.46	142.46	142.46
United Arab Emirates					
Gasoline	262.52	262.52	278.25	259.04	299.45
Diesel oil	361.27	361.27	354.57	266.59	316.87
Kerosene	na	na	na	na	na
Fuel oil	na	na	na	na	na
Venezuela					
Gasoline	13.28	13.28	13.28	556.50	0.166
Diesel oil	7.63	7.63	7.63	7.63	0.002
Kerosene	671.27	648.93	333.87	196.89	0.059
Fuel oil	9.62	9.62	9.62	9.62	na

Table 7.8

Crack spread in major markets*(\$/b)*

	Specifications	2013	2014	2015	2016	2017
US Gulf crack spread vs WTI						
Gasoline	Regular unleaded 87	18.63	14.80	18.99	14.10	17.69
Gasoil	0.2% sulphur	23.68	18.21	14.96	6.98	11.33
Fuel oil	3.0% sulphur	-4.96	-10.50	-8.01	-11.09	-3.82
Singapore crack spread vs Dubai						
Gasoline	Premium unleaded 97	15.88	15.29	20.43	16.55	16.38
Gasoil	0.05% sulphur	17.81	15.98	13.54	10.85	12.57
Fuel oil	380 centistokes	-9.86	-10.08	-6.77	-6.33	-3.87
Rotterdam crack spread vs Brent						
Gasoline	Premium unleaded 98	13.92	15.99	23.14	19.86	20.89
Gasoil	10ppm sulphur	15.25	13.77	13.51	9.57	12.11
Fuel oil	3.5% sulphur	-14.74	-15.42	-11.75	-14.05	-9.90

Notes:

US Gulf and Singapore prices apply to cargo. Rotterdam prices apply to barge size lots.



SECTION 8

Taxes on oil

A glimpse at US gasoline taxation scheme

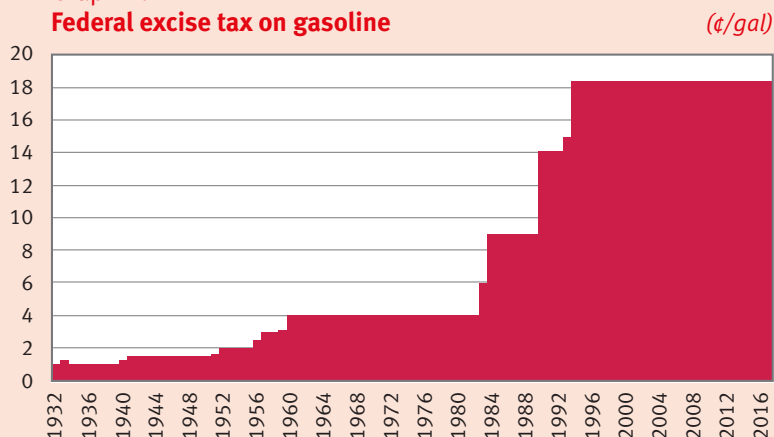
Approximately one in every ten barrels of oil produced globally is consumed in the form of gasoline in the United States. Local taxation schemes complicate the picture, as the federal government gives a lot of flexibility to the states in terms of taxation.

The pump price of gasoline can be disaggregated into several primary components. In principle, gasoline taxes in the US consist of federal and state taxes that can be further disaggregated based on whether they are applied in fixed terms (as in, for example, an excise tax) or in percentage terms (such as sales taxes).

Federal taxation

The federal tax on gasoline was introduced in 1932 at a rate of \$0.01/gallon. Since then, the tax rate has been changed occasionally, with the last substantial change noted in 1993 when it increased from \$0.141/gal to \$0.184/gal. The federal tax is fixed in nominal terms and is not adjusted for inflation, so in real terms, its impact has been diminishing since 1993.

Graph 1:
Federal excise tax on gasoline



Local taxation

The first US state to introduce a local gasoline tax was Oregon in 1919. That tax policy was then quickly adopted by other states and even by some municipalities. Given the decentralization and complexity of the taxing scheme, the American Petroleum Institute uses a weighted average of local taxes by population of each municipality to come up with an average tax for an entire state. The average taxation at the state level is estimated at around \$0.333/gal, almost double the federal rate. The rate varies widely among states with Alaska having the lowest tax rate at \$0.144/gal and Pennsylvania with the highest rate at \$0.587/gal.

Graph 2:
Local taxation

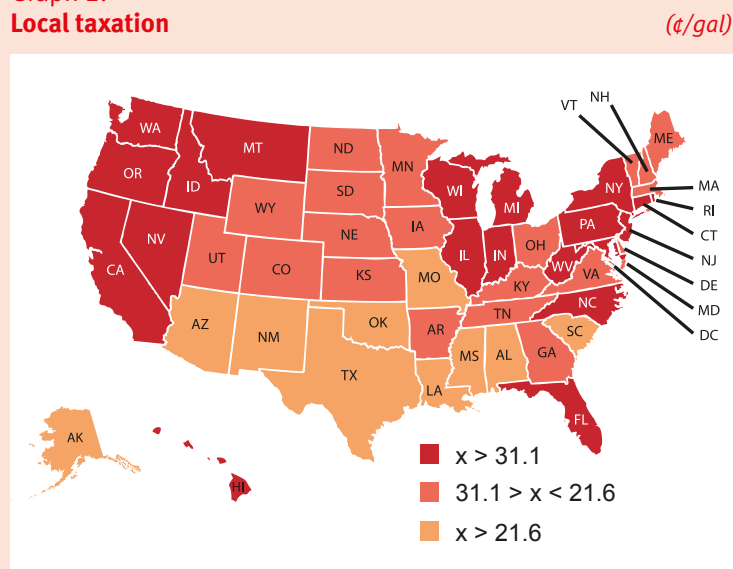
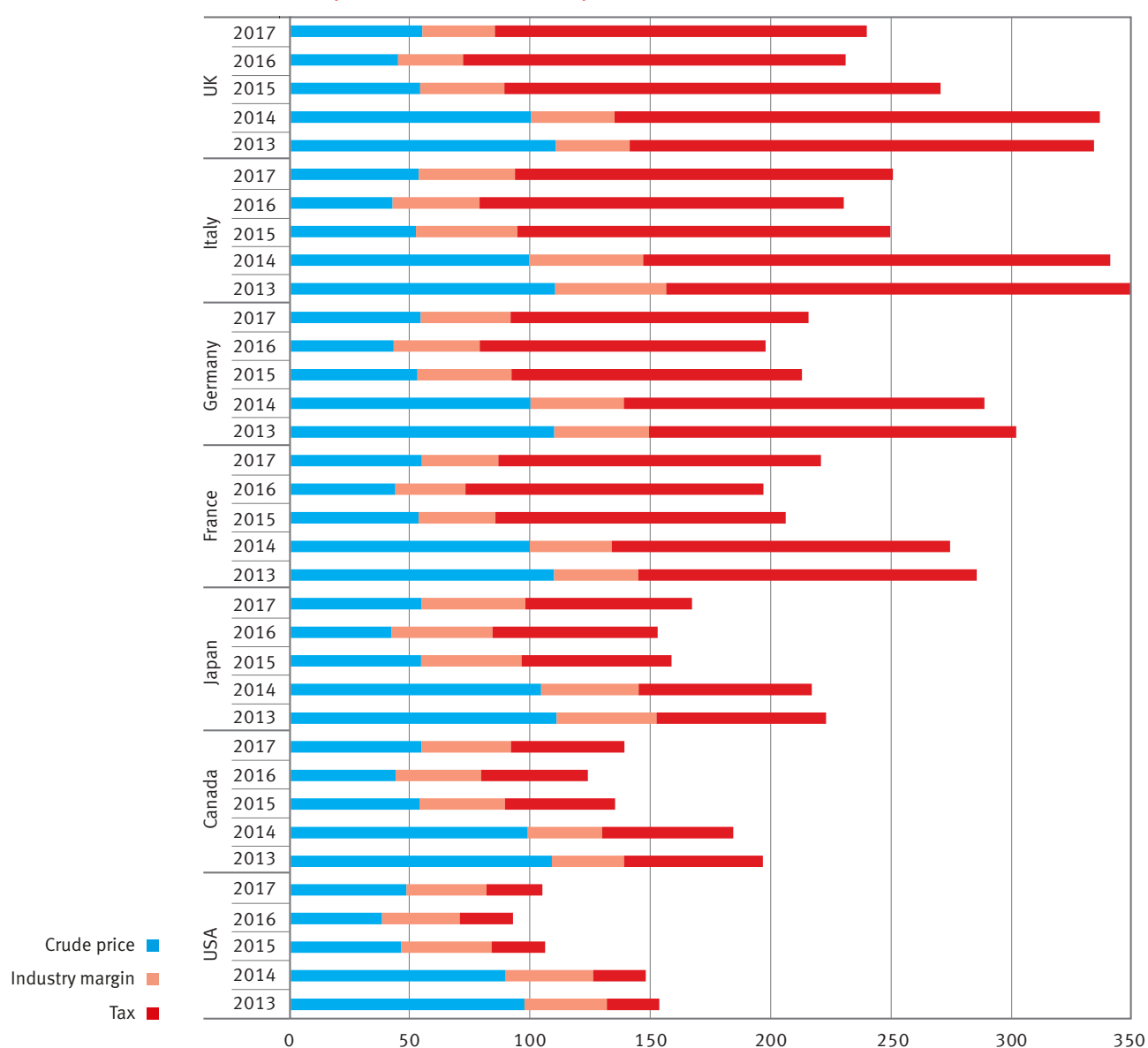


Table 8.1
Composite barrel and its components in major OECD oil consuming countries

	2013			2014			2015			2016			2017		
	\$/b	% share	% change y-o-y	\$/b	% share	% change y-o-y	\$/b	% share	% change y-o-y	\$/b	% share	% change y-o-y	\$/b	% share	% change y-o-y
United States															
Composite barrel	153.34		-2.4	147.69		-3.7	105.81		-28.4	92.45		-12.6	104.67		13.2
Crude cif price	97.25	63.4	-3.9	89.43	60.6	-8.0	45.81	43.3	-48.8	37.94	41.0	-17.2	48.12	46.0	26.8
Tax	21.81	14.2	5.6	21.88	14.8	0.3	22.29	21.1	1.9	22.16	24.0	-0.6	23.24	22.2	4.9
Industry margin	34.28	22.4	-2.8	36.37	24.6	6.1	37.71	35.6	3.7	32.36	35.0	-14.2	33.31	31.8	2.9
Canada															
Composite barrel	196.43		-2.9	184.17		-6.2	134.91		-26.7	123.58		-8.4	138.79		12.3
Crude cif price	108.60	55.3	-1.8	98.60	53.5	-9.2	53.48	39.6	-45.8	43.60	35.3	-18.5	54.30	39.1	24.5
Tax	57.74	29.4	-1.9	54.66	29.7	-5.3	45.84	34.0	-16.1	44.41	35.9	-3.1	47.22	34.0	6.3
Industry margin	30.09	15.3	-8.4	30.92	16.8	2.7	35.59	26.4	15.1	35.57	28.8	-0.1	37.27	26.9	4.8
Japan															
Composite barrel	222.76		-11.6	216.83		-2.7	158.43		-26.9	152.65		-3.6	166.97		9.4
Crude cif price	110.61	49.7	-3.6	104.16	48.0	-5.8	54.20	34.2	-48.0	41.79	27.4	-22.9	54.42	32.6	30.2
Tax	70.59	31.7	-14.4	72.10	33.3	2.1	62.40	39.4	-13.5	68.75	45.0	10.2	69.33	41.5	0.8
Industry margin	41.56	18.7	-24.1	40.57	18.7	-2.4	41.82	26.4	3.1	42.11	27.6	0.7	43.22	25.9	2.6
France															
Composite barrel	285.54		0.6	274.40		-3.9	205.99		-24.9	196.66		-4.5	220.62		12.2
Crude cif price	109.56	38.4	-2.2	99.40	36.2	-9.3	53.14	25.8	-46.5	43.48	22.1	-18.2	54.47	24.7	25.3
Tax	140.93	49.4	4.2	140.80	51.3	-0.1	120.86	58.7	-14.2	124.02	63.1	2.6	134.25	60.9	8.2
Industry margin	35.05	12.3	-4.5	34.20	12.5	-2.4	31.99	15.5	-6.5	29.16	14.8	-8.8	31.90	14.5	9.4
Germany															
Composite barrel	301.96		-0.3	288.69		-4.4	212.73		-26.3	197.61		-7.1	215.47		9.0
Crude cif price	109.62	36.3	-2.3	99.76	34.6	-9.0	52.65	24.8	-47.2	42.80	21.7	-18.7	54.02	25.1	26.2
Tax	152.84	50.6	3.0	150.11	52.0	-1.8	120.93	56.8	-19.4	118.99	60.2	-1.6	124.06	57.6	4.3
Industry margin	39.50	13.1	-6.6	38.82	13.4	-1.7	39.15	18.4	0.8	35.82	18.1	-8.5	37.39	17.4	4.4
Italy															
Composite barrel	349.38		1.0	341.10		-2.4	249.55		-26.8	230.11		-7.8	250.63		8.9
Crude cif price	109.98	31.5	-2.0	99.09	29.1	-9.9	52.06	20.9	-47.5	42.33	18.4	-18.7	53.17	21.2	25.6
Tax	193.16	55.3	4.7	194.42	57.0	0.7	155.33	62.2	-20.1	151.61	65.9	-2.4	157.35	62.8	3.8
Industry margin	46.24	13.2	-6.3	47.59	14.0	2.9	42.16	16.9	-11.4	36.18	15.7	-14.2	40.12	16.0	10.9
United Kingdom															
Composite barrel	334.34		-2.0	336.80		0.7	270.45		-19.7	230.91		-14.6	239.77		3.8
Crude cif price	110.27	33.0	-2.1	100.07	29.7	-9.3	53.81	19.9	-46.2	44.62	19.3	-17.1	54.69	22.8	22.6
Tax	193.31	57.8	-0.8	202.10	60.0	4.6	181.55	67.1	-10.2	159.21	69.0	-12.3	154.89	64.6	-2.7
Industry margin	30.76	9.2	-9.0	34.62	10.3	12.6	35.08	13.0	1.3	27.08	11.7	-22.8	30.18	12.6	11.5
G7															
Composite barrel	263.39		-2.2	255.67		-2.9	191.12		-25.2	174.85		-8.5	190.99		9.2
Crude cif price	107.98	41.0	-2.5	98.64	38.6	-8.6	52.16	27.3	-47.1	42.37	24.2	-18.8	53.31	27.9	25.8
Tax	118.63	45.0	0.6	119.44	46.7	0.7	101.31	53.0	-15.2	98.45	56.3	-2.8	101.48	53.1	3.1
Industry margin	36.78	14.0	-9.7	37.58	14.7	2.2	37.64	19.7	0.2	34.04	19.5	-9.6	36.20	19.0	6.3
OECD															
Composite barrel	264.78		0.3	263.46		-0.5	197.41		-25.1	181.01		-8.3	199.77		10.4
Crude cif price	108.90	41.1	-2.5	99.68	37.8	-8.5	52.48	26.6	-47.4	42.73	23.6	-18.6	53.68	26.9	25.6
Tax	119.27	45.0	2.9	119.54	45.4	0.2	99.54	50.4	-16.7	97.42	53.8	-2.1	102.46	51.3	5.2
Industry margin	36.61	13.8	0.6	44.24	16.8	20.9	45.40	23.0	2.6	40.86	22.6	-10.0	43.63	21.8	6.8

Graph 8.1
Composite barrel and its components

(\$/b)



Graph 8.2
Composite barrel and its components in percentage (%)

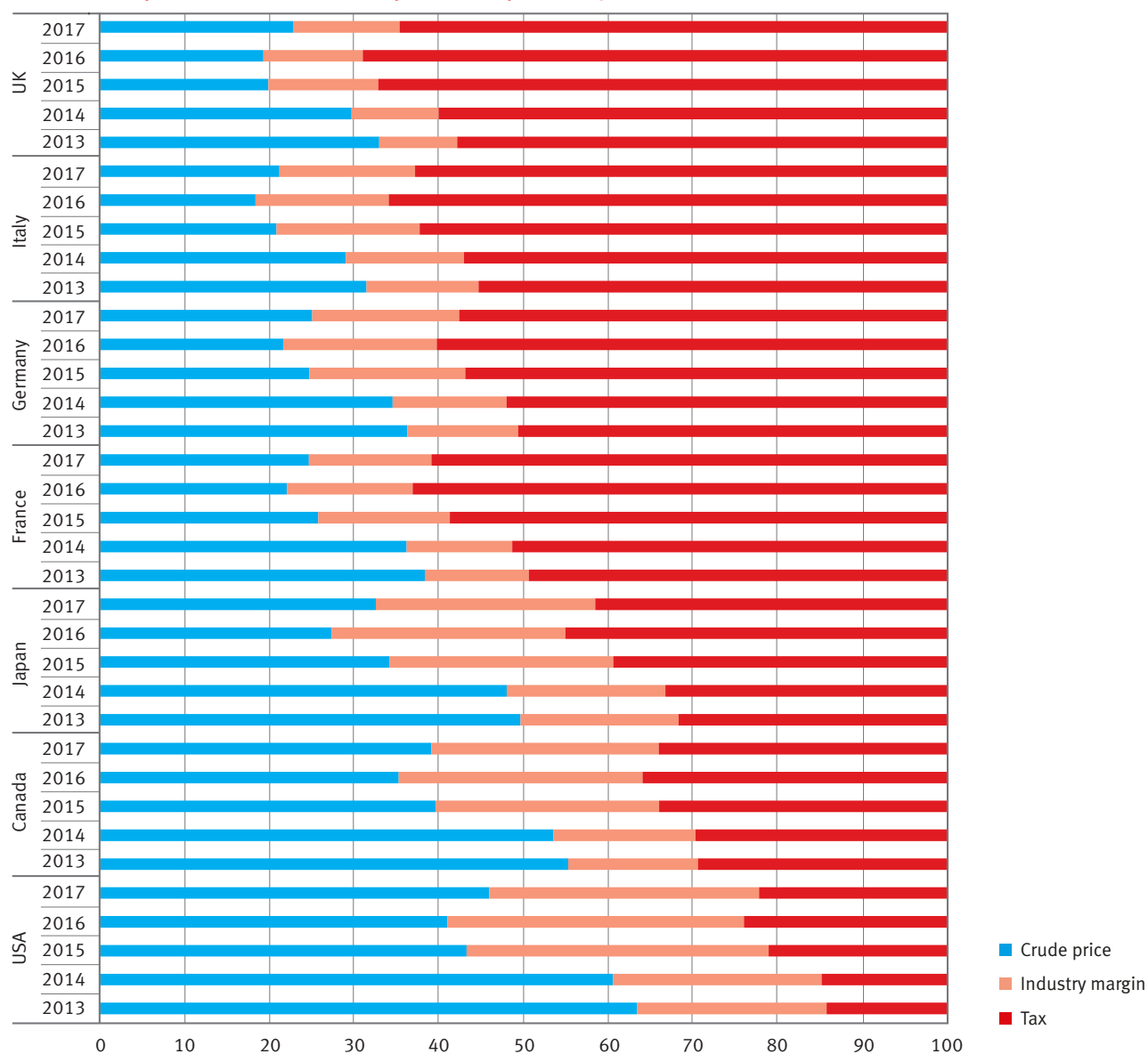


Table 8.2

Tax to CIF crude oil price ratio in major OECD oil consuming countries*(ratio)*

	2013	2014	2015	2016	2017
USA	0.22	0.24	0.49	0.58	0.48
Canada	0.53	0.55	0.86	1.02	0.87
Japan	0.64	0.69	1.15	1.65	1.27
France	1.29	1.42	2.27	2.85	2.46
Germany	1.39	1.50	2.30	2.78	2.30
Italy	1.76	1.96	2.98	3.58	2.96
UK	1.75	2.02	3.37	3.57	2.83
G7	1.10	1.21	1.94	2.32	1.90
OECD	1.10	1.20	1.90	2.28	1.91

Notes:

G7 includes Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

Table 8.3

Euro Big 4 household energy prices, 2017*(\$/toe NCV)*

	Automotive diesel	Premium unleaded 95 RON	Liquefied petroleum gas	Natural gas	Electricity
Tax	1,028.9	1,277.9	402.6	165.9	1,057.3
Non-tax	649.9	688.5	777.6	707.4	1,857.6
Total price	1,678.8	1,966.4	1,180.3	873.3	2,914.9
Tax share (%)	61.3	65.0	34.1	19.0	36.3

Notes:

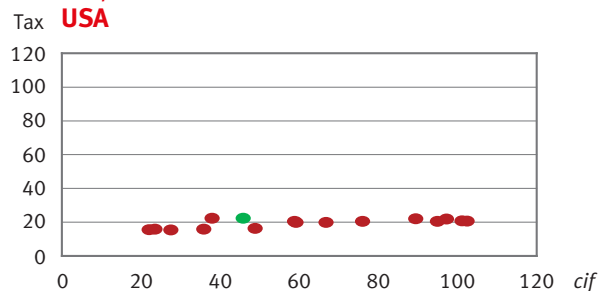
Euro Big 4 includes France, Germany, Italy and the United Kingdom.

Graphs 8.3–8.11

Tax versus CIF crude oil price for major OECD oil consuming countries, 2000–2017 (\$/b) (\$/b)

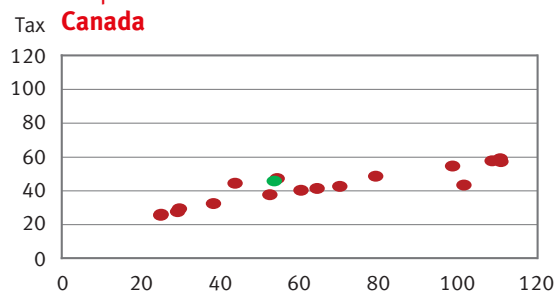
Graph 8.3

USA



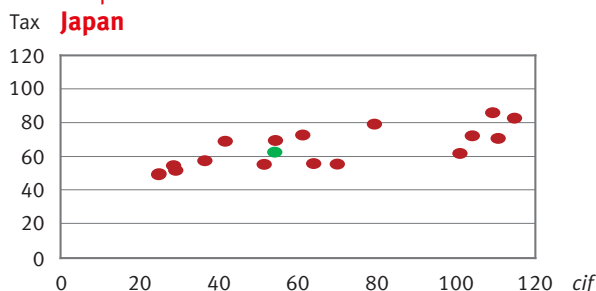
Graph 8.4

Canada



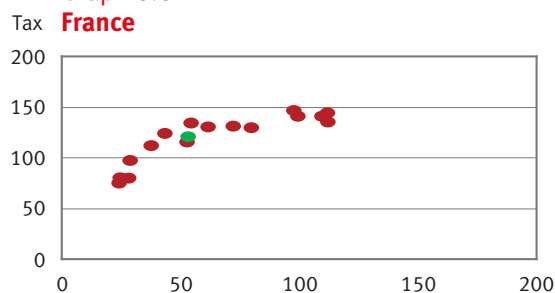
Graph 8.5

Japan



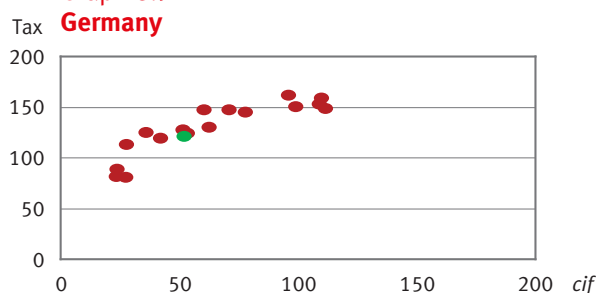
Graph 8.6

France



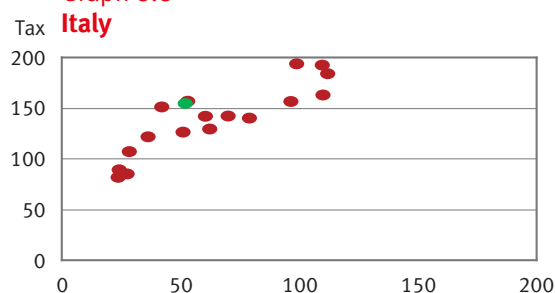
Graph 8.7

Germany



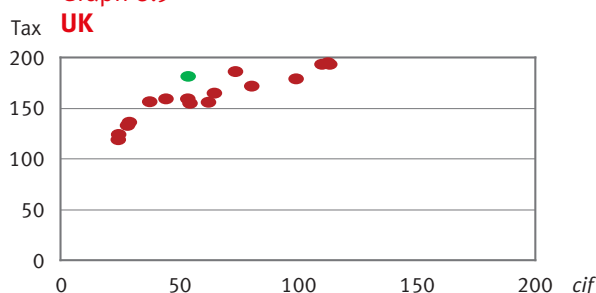
Graph 8.8

Italy



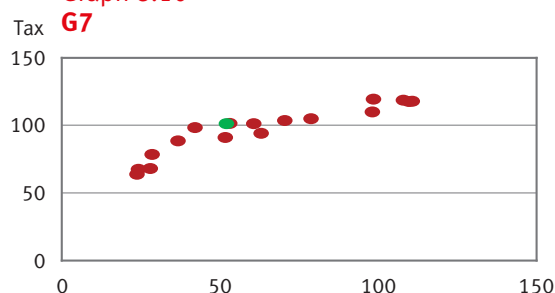
Graph 8.9

UK



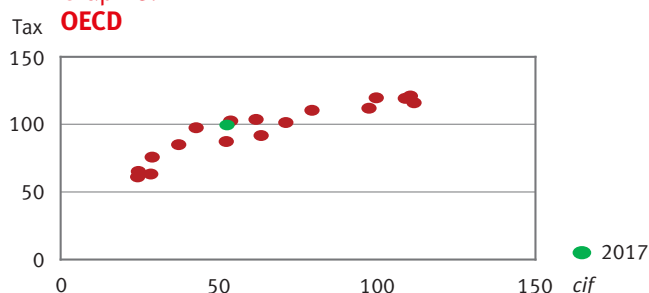
Graph 8.10

G7



Graph 8.11

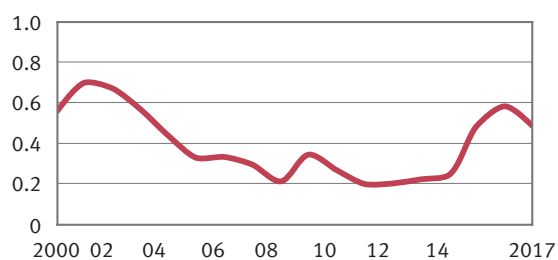
OECD



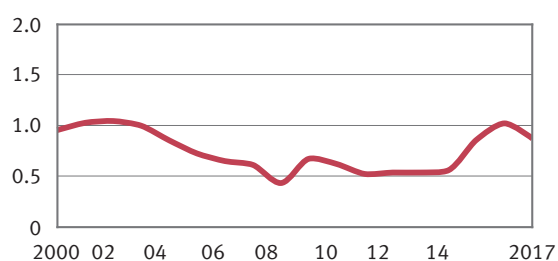
Graph 8.12–8.20

Tax to CIF crude oil price ratio for major OECD oil consuming countries *(ratio tax/cif)*

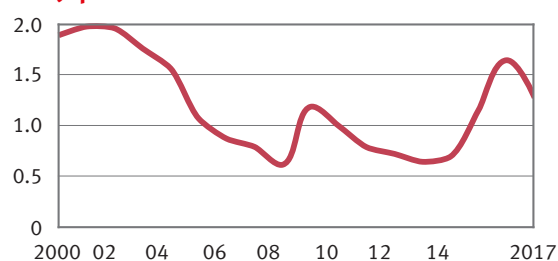
Graph 8.12

USA

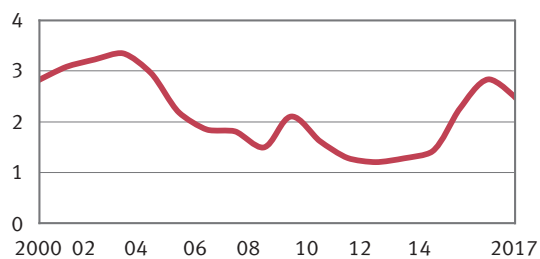
Graph 8.13

Canada

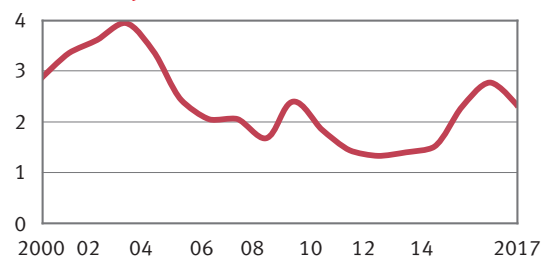
Graph 8.14

Japan

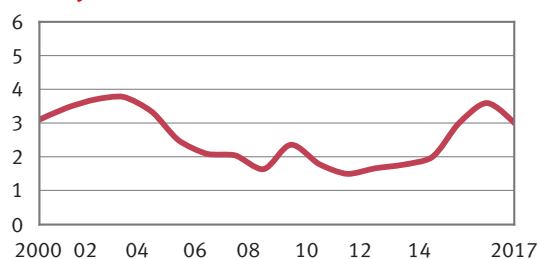
Graph 8.15

France

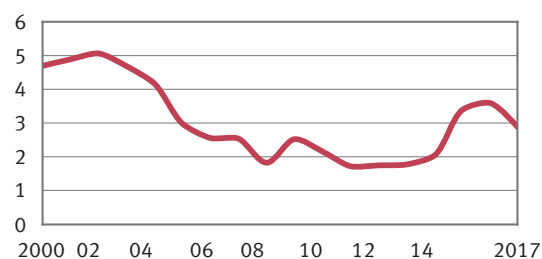
Graph 8.16

Germany

Graph 8.17

Italy

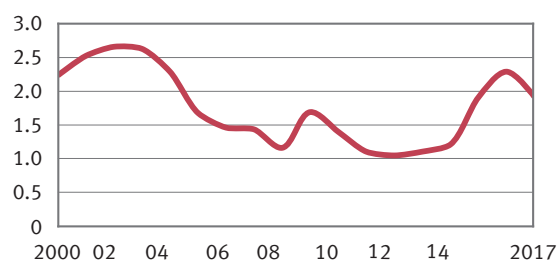
Graph 8.18

UK

Graph 8.19

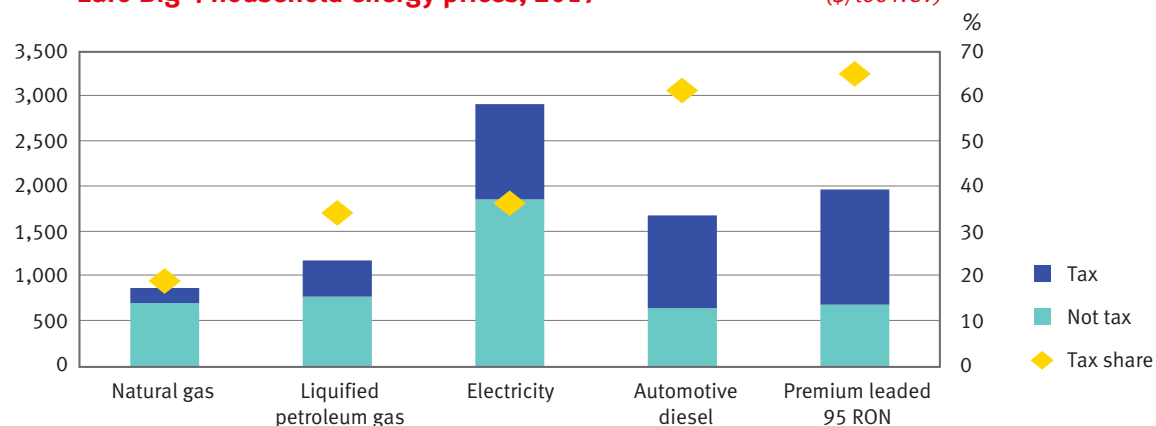
G7

Graph 8.20

OECD

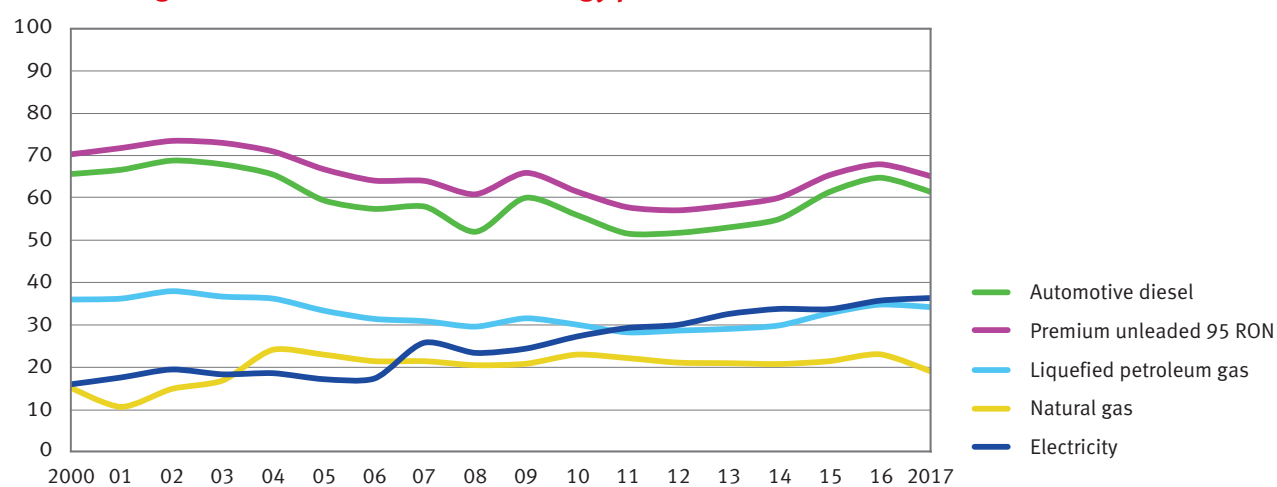
Graph 8.21
Euro Big 4 household energy prices, 2017

(\$/toe NCV)



Graph 8.22
Euro Big 4 share of tax in household energy prices

(%)





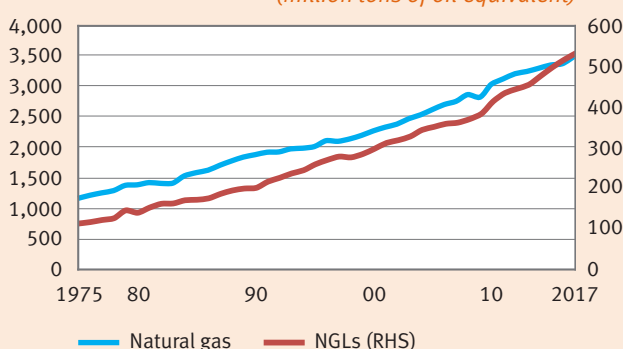
SECTION 9

Natural gas data

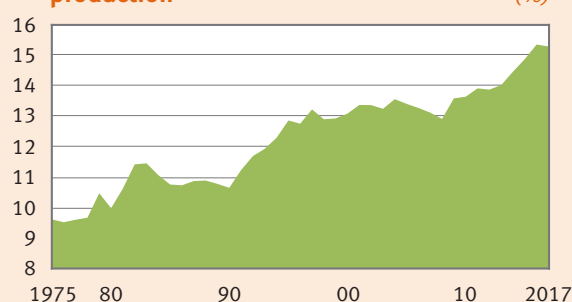
Historical trends in natural gas liquids and natural gas production

Natural gas liquids (NGLs) — which primarily consist of ethane, propane, butane, natural gasoline and other lighter liquid hydrocarbons — account for roughly 22 per cent of non-OPEC oil supply in 2017, with OPEC Member Countries (MCs) taking around 43 per cent of the overall share. The extraction of NGLs components from natural gas has become increasingly profitable during the past decade, as a result of increased usage in the industrial sector. Consequently, and in line with increasing world natural gas production, the ratio of world NGLs to natural gas production is on a rising trend — from approximately ten per cent in 1975 to 15 per cent in 2017, marking an increase on average by $b \approx 0.1$ per cent yearly. Furthermore, it is not surprising that world production of NGLs is highly correlated with the production of natural gas throughout this historical period.

Graph 1:
Total world natural gas and NGLs production
(million tons of oil equivalent)

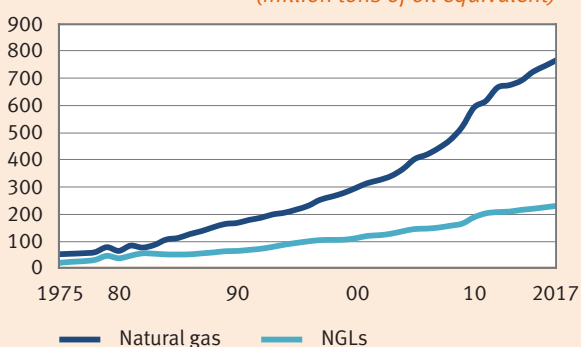


Graph 2:
Ratio¹ of total world NGLs to natural gas production
(%)

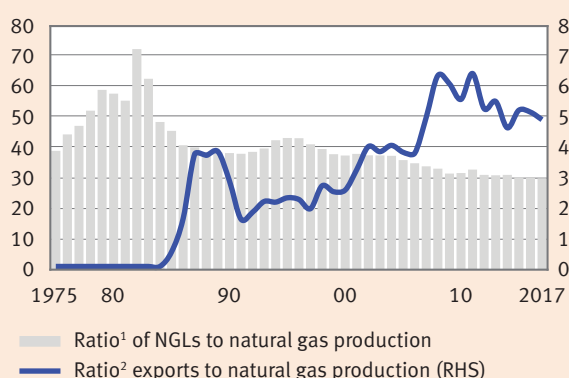


Historical natural gas and NGLs production patterns during the same time period were different for OPEC MCs, regardless of the very degree of co-evolution between the two time series. The fact that some OPEC MCs are main natural gas exporters has influenced the evolution of the ratio between NGLs and natural gas production, despite significant usage of NGLs in the industrial sector of some OPEC MCs. This ratio rose from slightly lower than 40 per cent in 1975 to slightly higher than 72 per cent in 1982 and followed a slightly declining trend thereafter to stand at a mere 30 per cent during 2017. The reasons for the decrease in the share of natural gas can be found in the rise of OPEC natural exports, as a result of improvements in the infrastructure and the continuously higher world demand for natural gas. These developments can be illustrated with the ratios of OPEC NGLs to OPEC natural gas production and OPEC natural gas exports to OPEC natural gas production. These ratios show, as expected, opposite historical developments. The declining production ratio of NGLs and natural gas co-moves with the increasing ratio of natural gas exports to natural gas production.

Graph 3:
OPEC natural gas and NGLs production
(million tons of oil equivalent)



Graph 4:
OPEC natural gas and NGLs
(%)



Notes:

- Both variables expressed in million tons of oil equivalent.
- Both variables expressed in million standard cubic metres.

Table 9.1

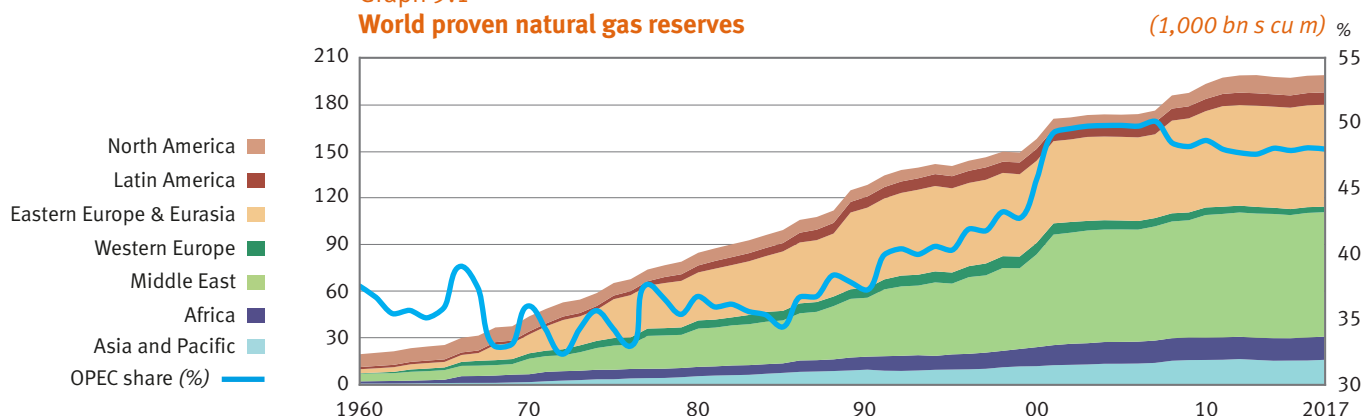
World proven natural gas reserves by country

(bn s cu m)

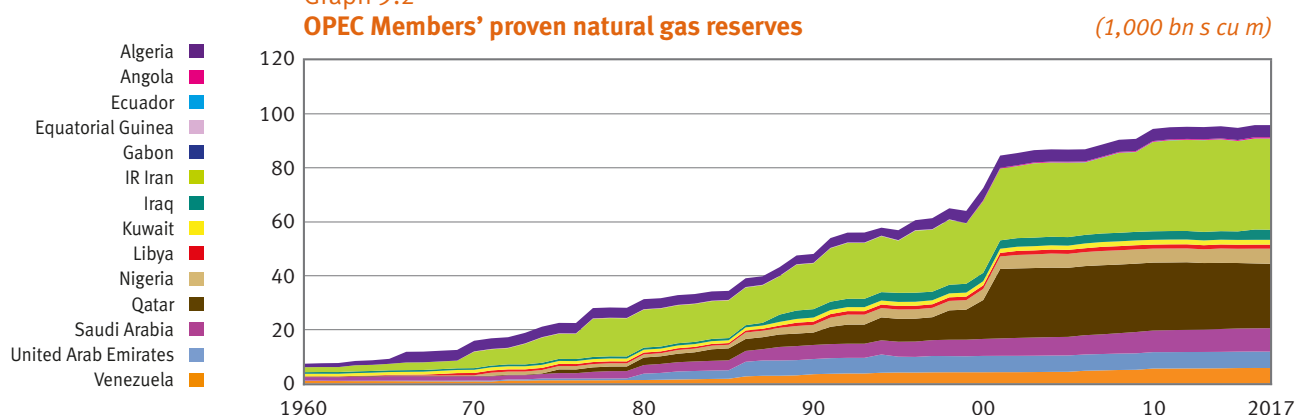
	2013	2014	2015	2016	2017	% change 17/16
North America	11,725	11,212	11,365	11,165	11,126	-0.4
Canada	1,700	2,028	2,181	2,185	2,059	-5.8
United States	10,025	9,184	9,184	8,980	9,067	1.0
Latin America	7,964	7,947	7,892	7,877	7,944	0.9
Argentina	328	332	350	361	381	5.6
Bolivia	296	300	305	310	310	-
Brazil	458	471	429	378	325	-13.9
Chile	7	7	6	5	5	-
Colombia	156	135	123	114	104	-8.4
Ecuador	6	11	11	11	11	-
Mexico	347	324	257	208	146	-29.7
Peru	426	414	399	456	513	12.5
Trinidad & Tobago	346	325	300	286	433	51.5
Venezuela	5,581	5,617	5,702	5,740	5,707	-0.6
Others	13	12	11	8	8	-
Eastern Europe and Eurasia	65,307	65,156	65,370	65,702	65,702	-
Armenia	18	18	18	18	18	-
Azerbaijan	1,300	1,292	1,284	1,277	1,277	-
Kazakhstan	1,929	1,918	1,907	1,898	1,898	-
Poland	69	63	61	58	56	-3.2
Romania	113	109	103	105	105	-
Russia	49,335	49,896	50,205	50,617	50,617	-
Turkmenistan	9,934	9,904	9,870	9,838	9,838	-
Ukraine	952	324	314	304	304	-
Uzbekistan	1,632	1,608	1,585	1,564	1,564	-
Others	25	24	24	22	24	9.0
Western Europe	4,288	4,025	3,870	3,708	3,600	-2.9
Denmark	90	88	80	77	74	-4.1
Germany	63	51	46	42	40	-5.9
Italy	56	54	49	38	27	-28.9
Netherlands	897	799	825	789	804	1.9
Norway	2,654	2,547	2,461	2,388	2,314	-3.1
United Kingdom	452	407	333	300	269	-10.4
Others	76	79	76	74	73	-0.7
Middle East	80,087	80,102	79,419	80,319	80,216	-0.1
IR Iran	34,020	34,020	33,500	33,721	33,810	0.3
Iraq	3,158	3,158	3,158	3,820	3,744	-2.0
Kuwait	1,784	1,784	1,784	1,784	1,784	-
Oman	950	950	931	884	884	-
Qatar	24,681	24,531	24,299	24,073	23,861	-0.9
Saudi Arabia	8,317	8,489	8,588	8,619	8,715	1.1
United Arab Emirates	6,091	6,091	6,091	6,091	6,091	-
Others	1,086	1,079	1,068	1,327	1,327	-
Africa	14,371	14,624	14,484	14,931	15,065	0.9
Algeria	4,504	4,504	4,504	4,504	4,504	-
Angola	275	308	316	440	422	-3.9
Cameroon	150	154	153	152	152	-
Congo	118	115	112	111	111	-
Egypt	2,185	2,186	2,086	2,221	2,221	-
Equatorial Guinea	145	145	145	145	145	-
Gabon	26	26	25	26	26	-
Libya	1,506	1,505	1,505	1,505	1,505	-
Nigeria	5,107	5,324	5,284	5,475	5,627	2.8
Others	355	357	354	353	353	-
Asia and Pacific	15,724	15,212	15,311	15,358	15,790	2.8
Australia	3,769	3,215	3,205	3,193	3,173	-0.6
Bangladesh	436	412	385	366	346	-5.4
Brunei	270	263	258	252	252	-
China	2,355	2,421	2,644	2,716	2,934	8.0
India	1,172	1,199	1,252	1,227	1,289	5.1
Indonesia	2,875	2,839	2,775	2,775	2,866	3.3
Malaysia	2,782	2,849	2,842	2,909	2,909	-
Myanmar	297	290	282	273	273	-
Pakistan	749	736	723	711	757	6.5
Thailand	238	220	207	193	180	-7.0
Vietnam	216	211	207	203	203	-
Others	565	557	531	540	607	12.4
Total world	199,467	198,279	197,712	199,060	199,444	0.2
<i>of which</i>						
OPEC	95,201	95,513	94,912	95,953	95,951	-
<i>OPEC percentage</i>	<i>47.7</i>	<i>48.2</i>	<i>48.0</i>	<i>48.2</i>	<i>48.1</i>	
OECD	20,383	20,360	18,567	18,879	18,793	-0.5
FSU	65,103	64,963	65,186	65,519	65,519	-

Notes: Figures as at year-end.

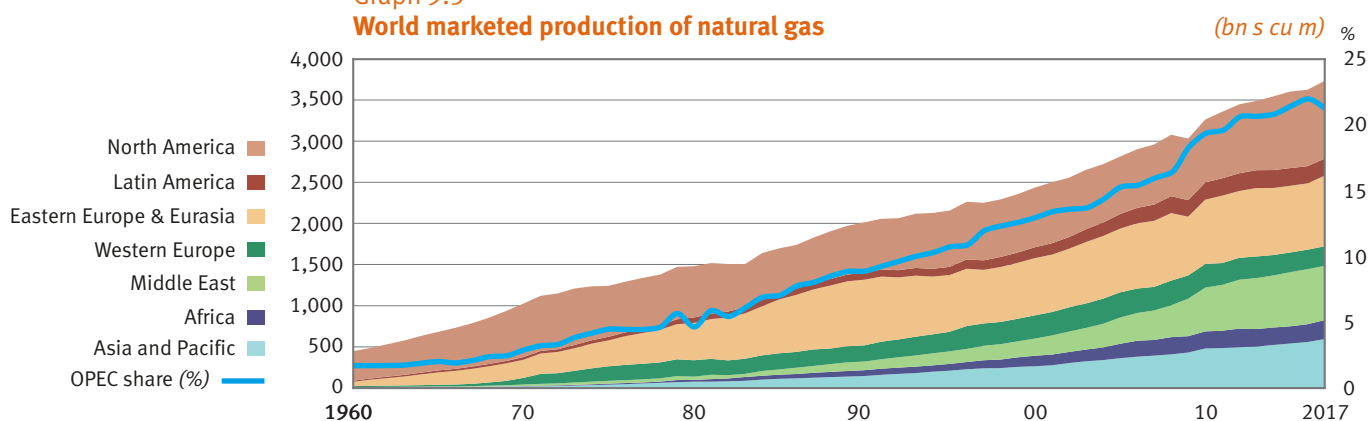
Graph 9.1
World proven natural gas reserves



Graph 9.2
OPEC Members' proven natural gas reserves



Graph 9.3
World marketed production of natural gas



Graph 9.4
OPEC Members' marketed production of natural gas

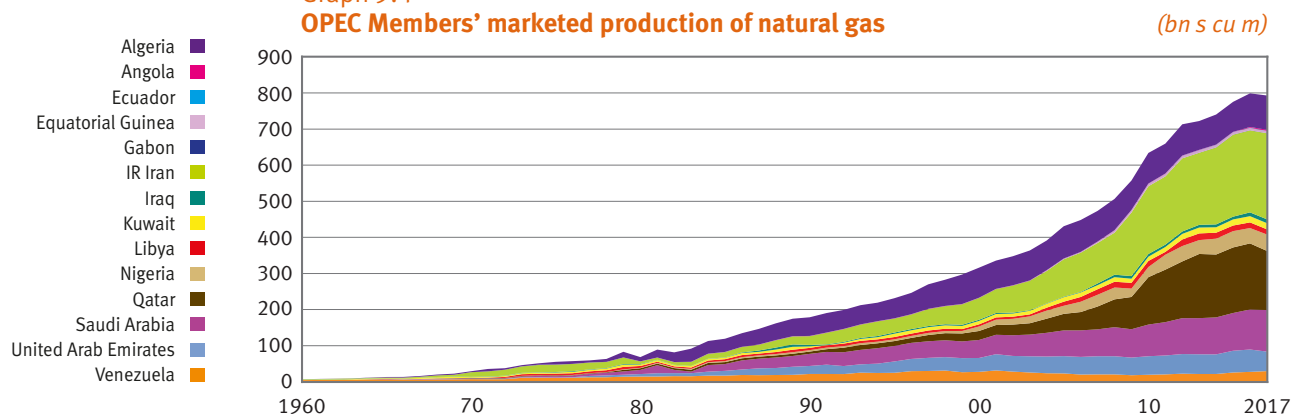


Table 9.2
Yearly and cumulative marketed natural gas production in OPEC Members

(million s cu m)

Marketed natural gas production yearly

	1960	1970	1980	1990	2000	2010	2017
Algeria	–	2,599	11,647	51,600	83,119	84,615	94,778
Angola	–	40	260	540	570	733	3,111
Ecuador	10	10	30	100	140	330	463
Equatorial Guinea	–	–	–	–	30	6,540	9,600
Gabon	7	20	70	100	80	80	407
IR Iran	960	12,881	7,138	24,200	60,240	187,357	238,003
Iraq	604	780	1,281	3,980	3,150	7,511	10,650
Kuwait	943	2,037	4,071	4,190	9,600	11,733	17,102
Libya	–	294	5,170	6,200	5,880	16,814	14,309
Nigeria	–	111	1,070	4,010	12,460	28,099	45,434
Qatar	–	1,005	4,741	6,300	24,900	131,165	163,599
Saudi Arabia	–	1,230	11,431	33,520	49,810	87,660	115,000
United Arab Emirates	–	756	6,863	22,110	38,380	51,282	54,086
Venezuela	4,958	7,710	14,805	21,966	27,801	19,728	29,793
OPEC	7,482	29,473	68,577	178,816	316,160	633,647	796,335

Cumulative marketed natural gas production up to and including year

	1960	1970	1980	1990	2000	2010	2017
Algeria	–	15,428	89,208	472,552	1,102,721	1,940,983	2,544,118
Angola	–	40	844	4,684	10,354	17,147	26,119
Ecuador	10	48	355	1,095	2,175	4,526	7,866
Equatorial Guinea	–	–	–	–	70	25,870	76,370
Gabon	7	147	2,132	3,162	4,142	5,012	7,630
IR Iran	960	33,063	203,263	353,113	790,718	1,906,280	3,401,134
Iraq	604	6,991	19,128	43,668	72,138	109,022	166,455
Kuwait	943	22,483	59,123	109,793	179,932	290,934	402,624
Libya	–	294	43,981	93,091	155,921	269,950	376,282
Nigeria	–	861	6,387	35,998	95,883	335,691	634,982
Qatar	–	2,814	23,030	78,803	237,183	821,399	2,003,252
Saudi Arabia	–	8,588	58,961	275,956	708,196	1,410,617	2,134,927
United Arab Emirates	–	2,379	30,627	178,652	491,312	967,964	1,359,545
Venezuela	4,958	69,435	184,608	363,836	628,796	862,302	1,033,010
OPEC	7,482	162,571	721,647	2,014,403	4,479,541	8,967,697	14,174,313

Table 9.3

World marketed production of natural gas by country

(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
North America	843,040	896,903	932,081	930,679	946,437	1.7
Canada	156,068	162,102	164,010	174,057	184,161	5.8
United States	686,972	734,801	768,071	756,622	762,276	0.7
Latin America	217,516	218,244	215,092	209,114	206,931	-1.0
Argentina	35,560	35,530	36,400	38,210	38,201	–
Bolivia	20,480	21,660	21,400	20,800	20,209	-2.8
Brazil	19,030	20,350	20,410	20,620	23,692	14.9
Chile	918	908	1,017	1,229	1,222	-0.6
Colombia	12,800	12,680	11,910	11,100	10,290	-7.3
Ecuador	515	578	497	530	463	-12.7
Mexico	52,423	50,510	45,984	41,227	36,216	-12.2
Peru	12,200	12,910	12,500	14,000	12,901	-7.9
Trinidad & Tobago	40,730	40,040	37,720	32,500	32,754	0.8
Venezuela	21,820	21,878	26,004	27,718	29,793	7.5
Others	1,040	1,200	1,250	1,180	1,191	0.9
Eastern Europe and Eurasia	832,906	816,021	811,601	807,202	859,498	6.5
Azerbaijan	16,700	17,500	18,000	17,500	16,920	-3.3
Kazakhstan	19,650	20,150	21,200	21,700	22,018	1.5
Poland	6,206	6,081	6,081	5,794	5,706	-1.5
Romania	10,400	10,900	10,800	9,600	10,371	8.0
Russia	627,110	601,030	594,800	599,440	649,629	8.4
Turkmenistan	72,100	80,050	83,700	79,770	80,479	0.9
Ukraine	20,160	19,510	19,000	19,418	19,900	2.5
Uzbekistan	58,080	58,490	55,700	51,630	52,112	0.9
Others	2,500	2,310	2,320	2,350	2,363	0.6
Western Europe	262,987	247,988	239,817	236,969	238,098	0.5
Denmark	4,846	4,613	4,593	4,505	4,835	7.3
Germany	11,886	10,191	8,392	7,606	6,974	-8.3
Italy	7,734	7,147	6,773	5,783	5,540	-4.2
Netherlands	86,401	72,683	54,379	50,543	43,871	-13.2
Norway	109,040	111,014	120,589	120,366	127,733	6.1
United Kingdom	38,360	38,410	41,311	41,606	41,887	0.7
Others	4,720	3,930	3,780	6,560	7,258	10.6
Middle East	620,731	633,893	659,242	670,535	660,094	-1.6
IR Iran	199,293	212,796	226,673	226,905	238,003	4.9
Iraq	7,445	7,927	7,685	10,416	10,650	2.2
Kuwait	16,311	15,029	16,909	17,291	17,102	-1.1
Oman	30,380	28,710	29,930	30,480	31,225	2.4
Qatar	177,602	174,057	181,444	182,830	163,599	-10.5
Saudi Arabia	100,030	102,380	104,450	110,860	115,000	3.7
United Arab Emirates	54,600	54,245	60,181	61,862	54,086	-12.6
Others	35,070	38,750	31,970	29,890	30,430	1.8

Table 9.3

World marketed production of natural gas by country

(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
Africa	213,407	212,763	209,542	218,727	234,702	7.3
Algeria	79,647	83,296	83,041	93,152	94,778	1.7
Angola	925	732	772	1,919	3,111	62.1
Cameroon	310	450	500	540	730	35.3
Congo	1,660	1,500	1,500	1,400	1,390	-0.7
Egypt	56,181	48,790	44,328	42,102	51,906	23.3
Equatorial Guinea	6,550	6,160	6,200	8,740	9,600	9.8
Gabon	380	550	550	551	407	-26.2
Libya	18,463	16,523	15,493	15,570	14,309	-8.1
Nigeria	38,411	43,842	45,148	42,562	45,434	6.7
Others	10,880	10,920	12,010	12,190	13,036	6.9
Asia Pacific	500,708	520,853	538,561	556,762	592,230	6.4
Australia	61,368	65,603	74,761	93,442	112,583	20.5
Bangladesh	22,800	23,800	26,800	26,300	26,420	0.5
Brunei	11,930	11,010	12,000	11,550	11,803	2.2
China	117,250	126,860	130,500	132,700	143,979	8.5
India	35,120	33,250	32,050	30,400	31,621	4.0
Indonesia	73,800	73,450	72,800	72,200	70,415	-2.5
Malaysia	64,900	65,420	63,100	64,400	71,332	10.8
Myanmar	12,320	15,140	17,500	16,800	16,301	-3.0
Pakistan	39,400	39,070	39,300	38,800	38,890	0.2
Thailand	41,750	42,090	39,800	38,900	38,194	-1.8
Vietnam	8,580	8,990	9,400	9,460	8,709	-7.9
Others	11,490	16,170	20,550	21,810	21,983	0.8
Total world	3,491,295	3,546,665	3,605,937	3,629,988	3,737,990	3.0
<i>of which</i>						
OPEC	721,992	739,992	775,048	800,908	796,335	-0.6
<i>OPEC percentage</i>	<i>20.7</i>	<i>20.9</i>	<i>21.5</i>	<i>22.1</i>	<i>21.3</i>	
OECD	1,243,577	1,285,963	1,317,766	1,328,381	1,359,826	2.4
FSU	813,910	796,830	792,500	789,560	843,507	6.8

Table 9.4
World natural gas exports by country

(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
North America	126,974	120,844	128,755	148,156	174,397	17.7
Canada	82,449	77,968	78,253	82,023	84,679	3.2
United States	44,525	42,876	50,502	66,133	89,718	35.7
Latin America	42,290	41,180	39,265	37,118	32,984	-11.1
Argentina	70	70	80	60	67	11.1
Bolivia	17,110	17,810	18,060	17,800	15,482	-13.0
Colombia	2,100	950	400	—	—	—
Mexico	30	30	30	24	19	-20.8
Peru	5,180	5,240	4,826	5,063	4,726	-6.7
Trinidad & Tobago	17,720	17,030	15,868	14,082	12,600	-10.5
Others	80	50	—	89	90	1.7
Eastern Europe and Eurasia	292,010	266,810	265,600	275,962	282,077	2.2
Azerbaijan	7,680	7,770	7,320	7,620	7,691	0.9
Kazakhstan	11,440	10,840	12,290	12,480	13,507	8.2
Russia	218,730	193,900	197,740	208,042	212,486	2.1
Turkmenistan	41,270	45,000	40,300	37,700	39,001	3.4
Uzbekistan	10,410	8,050	7,550	10,120	9,392	-7.2
Others	2,480	1,250	400	—	—	—
Western Europe	224,249	228,118	236,686	240,944	245,199	1.8
Belgium	13,060	13,220	17,080	21,173	24,261	14.6
Denmark	2,236	2,085	2,191	2,114	2,235	5.7
France	5,027	7,078	5,468	3,717	6,038	62.4
Germany	13,890	20,100	26,360	27,530	26,692	-3.0
Italy	226	237	220	212	271	27.8
Netherlands	66,668	58,661	50,962	56,597	48,017	-15.2
Norway	106,596	106,759	114,200	114,373	122,485	7.1
Spain	5,832	8,224	5,047	3,984	2,876	-27.8
United Kingdom	9,754	10,844	14,243	10,300	11,347	10.2
Others	960	910	915	945	977	3.4
Middle East	165,361	163,578	163,510	162,734	164,827	1.3
IR Iran	9,307	8,360	8,541	8,567	12,927	50.9
Oman	11,280	10,270	9,999	10,643	11,145	4.7
Qatar	122,874	122,628	129,877	130,324	128,645	-1.3
United Arab Emirates	12,590	13,520	13,200	13,200	12,109	-8.3
Others	9,310	8,800	1,892	—	—	—
Africa	91,051	85,239	83,596	98,195	105,655	7.6
Algeria	46,708	44,190	43,419	53,974	53,891	-0.2
Angola	517	—	—	1,149	517	-55.0
Egypt	4,960	720	—	666	700	5.1
Equatorial Guinea	5,090	4,790	5,010	8,635	9,556	10.7
Libya	5,513	4,962	4,664	4,664	4,470	-4.2
Nigeria	24,543	26,778	26,704	25,147	32,511	29.3
Others	3,720	3,800	3,800	3,960	4,010	1.3
Asia and Pacific	118,352	123,230	137,703	155,356	173,094	11.4
Australia	33,452	32,390	39,499	58,683	74,735	27.4
Brunei	9,240	7,820	8,520	8,459	8,592	1.6
Indonesia	31,620	31,730	30,286	30,422	29,812	-2.0
Malaysia	35,350	34,870	34,992	34,173	36,778	7.6
Myanmar	8,690	11,700	13,910	12,800	12,201	-4.7
Others	—	4,720	10,497	10,818	10,976	1.5
Total world	1,060,287	1,029,000	1,055,114	1,118,464	1,178,232	5.3
<i>of which</i>						
OPEC	227,142	225,228	231,414	245,659	254,627	3.7
<i>OPEC percentage</i>	<i>21.4</i>	<i>21.9</i>	<i>21.9</i>	<i>22.0</i>	<i>21.6</i>	
OECD	364,470	361,180	388,216	437,214	475,700	8.8
FSU	289,530	265,560	265,200	275,960	282,803	2.5

Notes:

Data may include re-exports and natural gas in transit.

Table 9.5
World natural gas imports by country

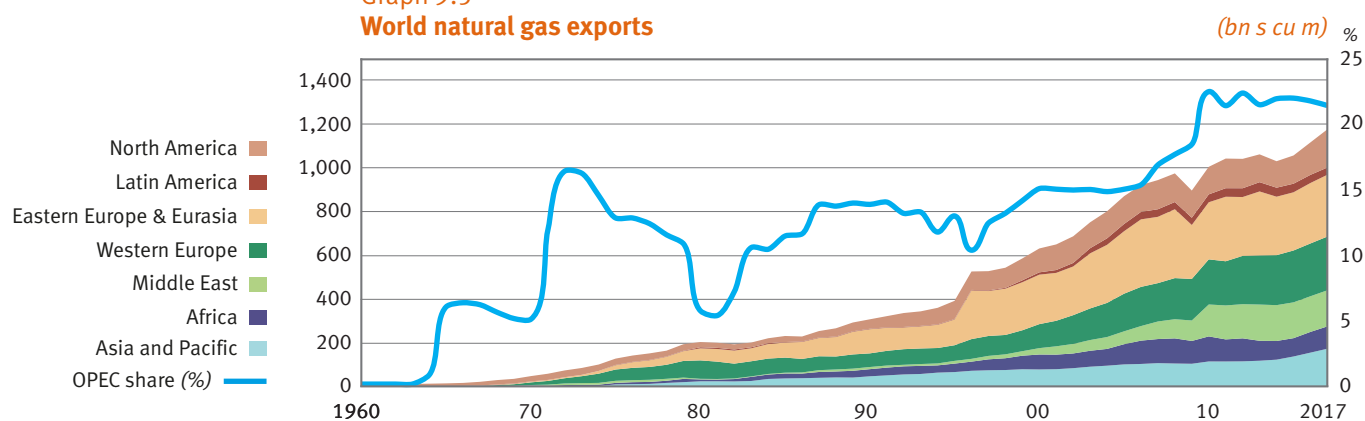
(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
North America	108,349	98,218	96,592	105,812	110,347	4.3
Canada	26,699	21,890	19,627	20,679	24,260	17.3
United States	81,650	76,328	76,965	85,133	86,087	1.1
Latin America	55,540	55,903	56,715	54,228	47,254	-12.9
Argentina	11,750	11,230	10,667	11,573	12,178	5.2
Brazil	16,770	17,480	18,981	13,381	10,774	-19.5
Chile	3,778	3,715	3,494	4,380	4,375	-0.1
Mexico	18,531	19,698	20,393	23,341	18,353	-21.4
Venezuela	1,821	950	400	-	-	-
Others	2,890	2,830	2,780	1,554	1,574	1.3
Eastern Europe and Eurasia	127,620	112,040	98,820	95,588	103,954	8.8
Belarus	18,570	18,420	17,300	17,200	17,500	1.7
Hungary	6,130	7,100	5,510	6,250	9,259	48.1
Kazakhstan	5,280	4,840	4,700	5,230	5,134	-1.8
Poland	12,690	12,000	10,916	12,498	12,714	1.7
Russia	28,010	24,150	18,000	15,910	15,686	-1.4
Ukraine	26,080	19,200	16,520	11,100	13,619	22.7
Others	30,860	26,330	25,874	27,399	30,042	9.6
Western Europe	432,659	416,482	453,396	483,395	513,768	6.3
Austria	6,390	7,800	6,040	7,400	8,212	11.0
Belgium	31,850	29,780	34,977	39,431	42,739	8.4
France	47,873	45,134	44,711	46,444	48,260	3.9
Germany	96,200	92,550	103,040	112,200	114,089	1.7
Italy	61,953	55,758	61,200	65,285	69,622	6.6
Netherlands	15,560	16,470	26,061	29,467	33,443	13.5
Spain	35,399	36,383	32,391	32,405	34,622	6.8
Turkey	45,270	49,262	48,427	46,352	55,121	18.9
United Kingdom	48,944	43,405	45,062	48,457	47,623	-1.7
Others	43,220	39,940	51,487	55,954	60,038	7.3
Middle East	41,573	35,597	44,492	47,698	43,869	-8.0
IR Iran	5,329	4,422	9,015	9,246	4,731	-48.8
Iraq	-	-	-	-	1,456	-
Jordan	1,180	300	2,373	4,449	4,499	1.1
Kuwait	3,517	3,025	3,852	4,311	4,781	10.9
Oman	1,950	1,970	1,988	1,974	1,972	-0.1
United Arab Emirates	29,047	25,800	27,100	27,479	26,030	-5.3
Others	550	80	164	238	400	68.1
Africa	7,635	8,290	11,978	18,122	16,841	-7.1
Egypt	-	-	3,608	9,742	8,001	-17.9
Morocco	1,055	1,000	1,000	1,050	1,040	-1.0
South Africa	3,720	3,800	3,800	3,960	4,077	3.0
Tunisia	2,260	2,890	2,970	3,270	3,614	10.5
Others	600	600	600	100	109	8.6
Asia and Pacific	296,011	304,579	301,442	320,779	350,388	9.2
Australia	6,466	6,282	7,279	6,921	6,200	-10.4
China	51,240	57,650	59,645	72,815	90,874	24.8
India	17,380	18,550	18,673	24,686	27,570	11.7
Japan	125,098	127,521	122,534	120,073	120,501	0.4
Malaysia	3,260	4,630	3,266	2,167	2,600	20.0
Pakistan	-	-	1,372	4,460	5,200	16.6
Singapore	11,960	12,390	12,373	12,812	13,374	4.4
South Korea	53,157	49,086	43,428	44,171	48,651	10.1
Thailand	10,360	10,480	13,487	12,758	14,107	10.6
Others	17,090	17,990	19,385	19,917	21,311	7.0
Total world	1,061,752	1,022,819	1,051,457	1,107,501	1,169,580	5.6
<i>of which</i>						
OPEC	39,714	34,197	40,367	41,037	36,998	-9.8
<i>OPEC percentage</i>	3.7	3.3	3.8	3.7	3.2	
OECD	756,070	727,290	751,926	797,755	838,246	5.1
FSU	85,040	73,470	62,910	55,830	58,652	5.1

Notes:

Data may include re-exports and natural gas in transit.

Graph 9.5
World natural gas exports



Graph 9.6
World natural gas imports

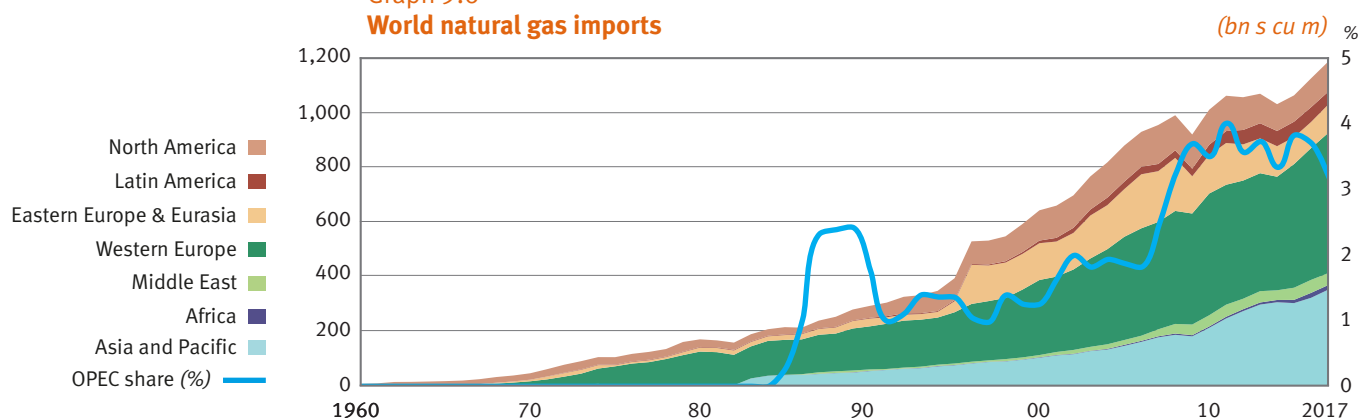


Table 9.6

World natural gas demand by country

(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
North America	844,840	857,551	875,487	890,237	891,504	0.1
Canada	104,210	104,510	104,027	111,934	124,429	11.2
United States	740,630	753,041	771,460	778,303	767,075	-1.4
Latin America	230,741	233,863	230,521	223,339	217,145	-2.8
Argentina	47,240	46,690	46,987	49,723	50,309	1.2
Bolivia	3,370	3,850	3,340	3,000	2,997	-0.1
Brazil	35,720	37,780	39,391	33,912	34,708	2.3
Chile	4,674	4,646	4,779	5,323	5,396	1.4
Colombia	10,700	11,730	11,510	11,177	10,416	-6.8
Ecuador	515	578	497	530	461	-13.1
Mexico	70,919	70,169	66,349	64,544	54,550	-15.5
Peru	7,020	7,670	7,674	8,937	7,737	-13.4
Trinidad & Tobago	23,010	23,010	21,852	18,418	20,259	10.0
Venezuela	23,643	23,720	24,076	23,715	26,204	10.5
Others	3,930	4,020	4,067	4,060	4,109	1.2
Eastern Europe and Eurasia	665,936	657,615	644,167	625,261	663,108	6.1
Azerbaijan	9,470	10,030	10,880	10,180	8,324	-18.2
Hungary	9,284	8,390	9,017	9,717	10,450	7.5
Kazakhstan	13,490	14,150	13,610	14,450	14,672	1.5
Poland	18,312	17,835	18,196	19,108	20,381	6.7
Romania	12,250	11,400	10,970	10,990	12,550	14.2
Russia	436,390	431,280	415,060	407,308	436,878	7.3
Turkmenistan	30,830	35,050	43,400	42,070	43,355	3.1
Ukraine	46,240	38,710	35,520	30,518	33,907	11.1
Uzbekistan	47,950	50,440	48,150	41,510	43,060	3.7
Others	41,720	40,330	39,364	39,409	39,531	0.3
Western Europe	486,306	436,401	452,950	481,344	505,137	4.9
Austria	8,531	7,752	8,334	8,746	9,494	8.6
Belgium	17,742	15,558	16,778	17,019	17,265	1.4
France	43,314	36,279	38,788	42,699	42,874	0.4
Germany	90,923	77,611	81,292	89,133	92,010	3.2
Italy	70,057	61,912	67,524	70,914	75,150	6.0
Netherlands	46,520	40,277	40,139	42,032	46,438	10.5
Spain	29,908	27,094	27,861	28,558	31,007	8.6
Turkey	45,640	48,829	47,829	46,471	53,598	15.3
United Kingdom	77,361	70,809	72,174	81,236	79,562	-2.1
Others	56,310	50,280	52,231	54,536	57,739	5.9
Middle East	435,583	459,109	481,657	492,429	543,299	10.3
Bahrain	14,690	16,010	16,170	16,000	16,607	3.8
IR Iran	157,337	174,600	184,900	188,598	231,103	22.5
Iraq	5,992	6,839	6,868	9,101	9,457	3.9
Kuwait	16,884	18,490	20,761	21,602	21,067	-2.5

Table 9.6
World natural gas demand by country

(million s cu m)

	2013	2014	2015	2016	2017	% change 17/16
Middle East (cont'd)						
Oman	21,050	20,410	21,921	21,807	21,950	0.7
Qatar	41,120	40,500	38,400	38,592	38,347	-0.6
Saudi Arabia	100,030	102,380	104,450	106,852	115,000	7.6
United Arab Emirates	66,699	66,500	72,700	71,799	71,596	-0.3
Others	11,780	13,380	15,487	18,077	18,172	0.5
Africa	129,996	129,450	131,945	135,293	138,324	2.2
Algeria	36,655	37,498	39,019	39,546	40,373	2.1
Angola	925	732	770	770	780	1.3
Egypt	51,940	48,080	47,958	51,175	58,742	14.8
Equatorial Guinea	1,460	1,370	1,190	1,180	1,191	1.0
Gabon	380	550	550	551	579	5.1
Libya	6,488	5,940	5,934	5,893	5,250	-10.9
Nigeria	15,693	18,370	18,445	18,168	12,795	-29.6
South Africa	4,900	4,750	4,900	4,960	4,951	-0.2
Tunisia	4,110	4,590	4,570	4,670	5,100	9.2
Others	7,445	7,570	8,610	8,380	8,563	2.2
Asia Pacific	674,061	697,971	700,057	723,101	755,913	4.5
Australia	34,382	39,495	42,541	41,680	44,048	5.7
Bangladesh	22,800	23,800	26,800	26,300	26,398	0.4
Brunei	2,690	3,190	3,480	3,091	3,222	4.2
China	168,490	184,510	190,145	205,515	235,282	14.5
India	52,500	51,800	50,453	55,011	56,828	3.3
Indonesia	42,180	41,720	42,514	41,778	40,531	-3.0
Japan	125,081	127,682	123,080	122,321	121,377	-0.8
Malaysia	32,810	35,180	31,374	32,394	31,476	-2.8
Myanmar	3,630	3,440	3,590	4,000	4,090	2.3
New Zealand	4,784	5,257	5,000	5,049	5,175	2.5
Pakistan	39,400	39,070	40,672	43,260	45,421	5.0
South Korea	52,264	47,587	42,979	45,530	45,185	-0.8
Thailand	52,110	52,570	53,287	51,658	51,246	-0.8
Vietnam	8,580	8,990	9,400	9,460	8,690	-8.1
Others	32,360	33,680	34,741	36,055	36,945	2.5
Total world	3,467,463	3,471,961	3,516,785	3,571,003	3,714,429	4.0
<i>of which</i>						
OPEC	473,823	498,068	518,560	526,897	574,203	9.0
<i>OPEC percentage</i>	<i>13.7</i>	<i>14.3</i>	<i>14.7</i>	<i>14.8</i>	<i>15.5</i>	
OECD	1,649,145	1,613,242	1,639,921	1,686,745	1,703,646	1.0
FSU	609,420	604,740	590,210	569,430	605,053	6.3

Table 9.7

World LNG carrier fleet by size*(1,000 cu m)*

	2013		2014		2015		2016		2017	
	no	capacity	no	capacity	no	capacity	no	capacity	no	capacity
up to 19,999	20	199	23	208	23	208	23	208	24	222
20,000–39,999	3	94	1	23	1	23	5	137	7	192
40,000–59,999	–	–	–	–	–	–	–	–	–	–
60,000–99,999	14	1,070	13	982	11	839	9	684	9	684
100,000 and over	335	51,860	349	54,138	380	59,200	406	63,548	434	68,430
Total world	372	53,223	386	55,351	415	60,270	443	64,577	474	69,528

Notes:

Figures as at year-end.



General notes

Definitions

Barrels per calendar day (b/cd): the total number of barrels processed in a refinery within 24 hours, reflecting all operational limitations (eg routine inspections, maintenance, repairs etc).

Barrels per stream day (b/sd): the number of barrels of input that a refining facility can process within 24 hours, operating at full capacity under optimal crude and product slate conditions.

Completion: the installation of permanent equipment for the production of oil or gas.

Composite barrel: a consumption weighted average of retail prices (including taxes) of the main groups of refined petroleum products.

Crude oil: a mixture of hydrocarbons that exists in a liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. For statistical purposes, volumes reported as crude oil include:

- liquids technically defined as crude oil;
- small amounts of hydrocarbons that exist in the gaseous phase in natural underground reservoirs, but which are liquid at atmospheric pressure after being recovered from oil well (casing head) gas in lease separators;
- small amounts of non-hydrocarbons produced with the oil;
- very heavy and extra-heavy crude oils with viscosity less than 10,000 mPa-s (centipoises) at original reservoir conditions.

Distillates: middle distillate type of hydrocarbons; includes products similar to number one and number two heating oils and diesel fuels. These products are used for space heating, diesel engine fuel and electrical power generation.

Dry hole: a well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Exports of petroleum products: excludes international air and marine bunkers.

Gasoline: a mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in internal combustion engines; includes gasoline used in aviation.

Geneva I agreement: agreement of January 1972 between some OPEC Member Countries and the major international oil companies, which had the effect of establishing an index for quarterly adjustments of posted crude oil prices on the basis of the arithmetic average of the deviations of the exchange rates of nine major currencies against the US dollar. This was modified to an import-weighted index in 1978, accounting for exchange rates and inflation rate. The present 'modified Geneva I + US dollar' currency basket includes the US dollar, the Euro, the Japanese yen, the UK pound and the Swiss franc.

Kerosene: medium hydrocarbon distillates in the 150° to 280° C distillation range and used as a heating fuel as well as for certain types of internal combustion engines; includes jet fuel, which is a fuel of naphtha or of kerosene type, suitable for commercial or military purposes in aircraft turbine engines.

Natural gas liquids (NGLs): those reservoir gases liquefied at the surface in lease separators, field facilities or gas processing plants. NGLs consist of field condensates and natural gas plant products such as ethane, pentane, propane, butane and natural gasoline.

Natural gas: a mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in the gaseous phase or in solution with oil in natural underground reservoirs at reservoir conditions. The natural gas volumes refer to Standard Conditions of 60° F, 14.73 psia (15.6° C, 760 mm/Hg).

Gross production: the total flow of natural gas from oil and gas reservoirs of associated-dissolved and non-associated gas.

Marketed production: corresponds to gross production, minus the volumes of gas flared or re-injected into fields, minus the shrinkage.

Re-injection: the total volume of natural gas produced from oil and gas completions, processed through gas-processing plants and field facilities, and used for gas lift, gas injection and cycling operations.

Shrinkage: volume shrinkage due to purification and/or extraction of natural gas liquids, gas used as input to GTL plants, lease separators and plant own consumption and any other losses caused by spillage, evaporation, etc.

Non-conventional oil: includes synthetic crude oil from tar sands, oil shale, etc, liquids derived from coal liquefaction (CTL) and gas liquefaction (GTL), hydrogen and emulsified oils (eg Orimulsion), non-hydrocarbon compounds added to or blended with a product to modify fuel properties (octane, cetane, cold properties, etc) of substances like alcohols (methanol, ethanol), ethers (such as MTBE (methyl tertiary butyl ether), ETBE (ethyl tertiary butyl ether), TAME (tertiary amyl methyl ether) or esters (eg rapeseed or dimethylester, etc) and chemical compounds such as TML (tetramethyl lead) or TEL (tetraethyl lead) and detergents.

Oil demand: inland delivery, including refinery fuels and losses, as well as products from gas plants, including international air and marine bunkers as well as direct crude burning.

Oil or gas well: a well completed for the production of oil or gas from one or more zones or reservoirs.

Oil supply: consists of crude oil natural gas liquids and non-conventional oil production.

OPEC Basket: the OPEC Reference Basket (ORB) price was introduced on January 1, 1987. Up to June 15, 2005, it was the arithmetic average of seven selected crudes. These were: Saharan Blend (Algeria); Minas (Indonesia); Bonny Light (Nigeria); Arab Light (Saudi Arabia); Dubai (United Arab Emirates); Tia Juana Light (Venezuela); and Isthmus (Mexico). Mexico is not a Member of OPEC. As of June 16, 2005, the ORB is calculated as a production-weighted average of the OPEC Basket of crudes. These are: Saharan Blend (Algeria); Girassol (Angola, as of January 2007); Oriente (Ecuador, as of October 19, 2007); Zafiro (Equatorial Guinea, as of May 25, 2017); Rabi Light (Gabon, as of July 1, 2016); Iran Heavy (IR Iran); Basrah Light (Iraq); Kuwait Export (Kuwait); Ess Sider (Libya); Bonny Light (Nigeria); Qatar Marine (Qatar); Arab Light (Saudi Arabia); Murban (United Arab Emirates); and Merey (Venezuela).

Output of petroleum products: the total amount of petroleum products produced from refinery input in a given period, excluding refinery fuels.

Petroleum products: products obtained from the processing of crude oil, unfinished oils, NGLs and other hydrocarbon compounds. These include aviation gasoline, motor gasoline, naphtha, kerosene, jet fuel, distillate fuel oil, residual fuel oil, liquefied petroleum gas, lubricants, paraffin wax, petroleum coke, asphalt and other products.

Proven crude oil reserves: the estimated quantities of all liquids statistically defined as crude oil. They consist of those quantities of crude oil which by analysis of geoscience and engineering data can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods and government regulations (*source: SPE — Petroleum Resources Management System*).

Proven natural gas reserves: are the estimated quantities of all hydrocarbons statistically defined as natural gas. They consist of those quantities of natural gas (associated and non-associated) which by analysis of geoscience and engineering data can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operation methods and government regulations (*source: SPE — Petroleum Resources Management System*).

Refinery capacity (charge): the input (feed) capacity of the refinery processing facilities.

Refinery capacity (operable): the maximum amount of input to atmospheric distillation units that can be processed in an average 24-hour period.

Refinery throughput: oil input to atmospheric distillation unit.

Residual fuel oil: fuels obtained as liquid still bottoms from the distillation of crude used alone or in blends with heavy liquids from other refinery process operations. These are used for the generation of electric power, space heating, vessel bunkering and various industrial purposes.

Rig: a derrick complete with engine-house and other equipment necessary for drilling oil and gas wells.

Well (exploratory and development): a hole drilled for the purpose of finding or producing crude oil or natural gas, or providing services related to the production of crude oil and natural gas.

Country groupings

(OPEC Member Countries are shown in bold.)

North America: Canada, Greenland, St Pierre and Miquelon, United States.

Latin America: Antigua, Argentina, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, British Virgin Islands, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, **Ecuador**, El Salvador, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama (including Panama Canal Zone), Paraguay, Peru, Puerto Rico, St Kitts-Nevis-Anguilla, St Lucia, St Vincent, Suriname, Trinidad & Tobago, Turks and Caicos Islands, United States Virgin Islands, Uruguay, **Venezuela** and Other Latin America.

Eastern Europe and Eurasia: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Western Europe: Austria, Belgium, Bosnia and Herzegovina, Cyprus, Croatia, Denmark (including Faroe Islands), Finland, France (including Andorra and Monaco), Germany, Gibraltar, Greece, Iceland, Ireland, Italy (including San Marino and the Holy See), Luxembourg, Malta, Montenegro, Netherlands, Norway (including Svalbard and Jan Mayen Islands), Portugal, Serbia, Slovenia, Spain (including Canary Islands), Sweden, Switzerland (including Liechtenstein), Former Yugoslav Republic of Macedonia, Turkey, United Kingdom and Other Western Europe.

Middle East: Bahrain, **Islamic Republic of Iran**, **Iraq**, Jordan, **Kuwait**, Lebanon, Oman, **Qatar**, **Saudi Arabia**, Syrian Arab Republic, **United Arab Emirates** (Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, Umm al-Qaiwain), Yemen and Other Middle East.

Africa: **Algeria**, **Angola**, Benin, Botswana, British Indian Ocean Territory, Burkina Faso, Burundi, Cameroon (United Republic of), Cape Verde, Central African Republic, Chad, Comoros, Congo (Republic of the), Congo (Democratic Republic of the), Djibouti, Egypt, **Equatorial Guinea**, Eritrea, Ethiopia, **Gabon**, Gambia (The), Ghana, Guinea, Guinea-Bissau, Côte d'Ivoire, Kenya, Lesotho, Liberia, **Libya**, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, **Nigeria**, Reunion, Rwanda, St Helena, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudans (including South Sudan and Sudan), Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia and Zimbabwe.

Asia and Pacific: Afghanistan, American Samoa, Antarctica, Australia, Bangladesh, Bhutan, Brunei, Cambodia, Canton and Enderbury Islands, People's Republic of China (PRC), Hong Kong Special Administrative Regions (SAR of the PRC), Macau SAR of the PRC, Christmas Island, Cocos (Keeling) Islands, Cook Islands, Fiji, French Polynesia, Guam, India, Indonesia, Japan, Johnston Island, Kiribati, Korea (Democratic People's Republic of), Korea (Republic of), Lao People's Democratic Republic, Malaysia, Maldives, Midway Islands, Mongolia, Myanmar, Nauru, Nepal, New Caledonia, New Zealand, Niue, Norfolk Island, Pacific Islands (Trust Territory), Pakistan, Papua New Guinea, Philippines, Pitcairn Island, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Tokelau, Tonga, Tuvalu, Vanuatu, Vietnam, Wake Island, Wallis, Futuna Islands and Other Asia and Pacific.

Economic organizations

Organization of the Petroleum Exporting Countries (OPEC) — Members: Algeria (1969), Angola (2007), Ecuador (reactivated membership in 2007), Equatorial Guinea (2017), Gabon (rejoined OPEC in 2016), the Islamic Republic of Iran (1960), Iraq (1960), Kuwait (1960), Libya (1962), Nigeria (1971), Qatar (1961), Saudi Arabia (1960), United Arab Emirates (1967), Venezuela (1960).

Organization for Economic Co-operation and Development (OECD) — Members: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States and Other OECD.

Former Soviet Union (FSU): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Abbreviations

Symbols:

na Not available.

nap Not applicable.

– Zero, nil or negligible.

Currencies:

\$	US dollar	XAF	Central African Franc (Gabon and Equatorial Guinea)	NGN	Nigerian naira
€	Euro			QAR	Qatari riyal
DZD	Algerian dinar	IRR	Iranian rial	SAR	Saudi Arabian riyal
AOA	Angolan new kwanza	IQD	Iraqi dinar	AED	United Arab Emirates dirham
\$	Ecuador	KWD	Kuwaiti dinar	VEF	Venezuelan bolivar fuerte
		LYD	Libyan dinar		

Miscellaneous:

b	barrel(s)	dwt	deadweight tonnage	m b	million barrels
b/d	barrels per day	fob	free on board	NCV	net calorific value
b/cd	barrels per calendar day	ft	feet	NCF	non-conventional
b/sd	barrels per stream day	GDP	gross domestic product	NOC	national oil company
b/yr	barrels per year	GTL	gas to liquids	NGLs	natural gas liquids
b	billion	LHS	left-hand side	RHS	right-hand side
bn b	billion barrels	LNG	liquefied natural gas	s cu m	standard cubic metres
cif	cost, insurance and freight	LPG	liquefied petroleum gas	t	tonne
cu m	cubic metres	m	million		

Rounding: In all tables totals may not add up due to independent rounding.

Selected oil companies

ADCO	Abu Dhabi Company for Onshore Oil Operations	NIOC	National Iranian Oil Company
ADMA	Abu Dhabi Marine Areas	NNPC	Nigerian National Petroleum Corporation
ADMA-OPCO	Abu Dhabi Marine Operating Company	NOC	National Oil Corporation (Libya)
ADNOC	Abu Dhabi National Oil Company	NODCO	National Oil Distribution Company (Qatar)
ADOC	Abu Dhabi Oil Company	NPHR	New Port Harcourt Refinery
Agip	Agip SpA	Oasis	Oasis Oil Company of the Libya, Inc
Agoco	Arabian Gulf Oil Company (Libya)	Occidental	Occidental Petroleum Corporation
Amerada Hess	Amerada Hess Corporation	OMV	OMV Aktiengesellschaft
AOC	Arabian Oil Company	PDVSA	Petroleos de Venezuela SA
Aramco	Saudi Arabian Oil Company (Saudi Aramco)	Pertamina	Perusahaan Pertambangan Minyak Dan Gas Bumi Negara
Arco	Atlantic Richfield Company	Petroecuador	National oil company of Ecuador
Asamera	Asamera Oil	Petroindustrial	Refinery operations company of Ecuador
Ashland	Ashland Oil	Petromer Trend	Petromer Trend Corporation
BP	BP plc	Petromin	General Petroleum and Mineral Organization of Saudi Arabia
Braspetro	Petrobras Internacional SA	Petroproduccion	Exploration and production oil company of Ecuador
Brega Marketing	Brega Petroleum Marketing Company	Phillips	Phillips Petroleum Company
Buttes	Buttes Gas & Oil Company	PPMC	Pipeline and Products Marketing Company (Nigeria)
Calasiatic	Calasiatic Petroleum Company	QGPC	Qatar General Petroleum Corporation (now Qatar Petroleum)
Caltex (PT)	PT Caltex Pacific Indonesia	Royal Dutch/Shell	Royal Dutch Petroleum Company, The Netherlands, and Shell Transport and Trading Co, UK
ChevronTexaco	ChevronTexaco Corporation	Sonangol	Sociedade Nacional de Combustíveis de Angola
Conoco	Continental Oil Company	Sonatrach	Société Nationale de Transport et de Commercialisation des Hydrocarbures
Corpoven	Corpoven SA	Stancal	Standard Oil Company of California
DPC	Dubai Petroleum Company	PT Stanvac	PT Stanvac Indonesia
EGPC	Egyptian General Petroleum Corporation	Tenneco	Tenneco Incorporated
ExxonMobil	ExxonMobil Corporation	Tesoro	Tesoro Indonesia Petroleum Corporation
GASCO	Abu Dhabi Onshore Gas Company	Topco	Texas Overseas Petroleum Company
Getty	Getty Oil Corporation	Total	Total
GOC	Gabon Oil Company	Union Oil	Union Oil Company of California
Gulf	Gulf Oil Corporation	VOO	Veba Oil Operations (Libya)
Hispanoil	Hispanica de Petroleos SA	Waha Oil	Waha Oil Company (Libya)
INOC	Iraq National Oil Company	Wintershall	Wintershall AG
Inpex	Indonesia Petroleum Ltd	WRPC	Warri Refinery & Petrochemical Company
JORC	Jeddah Oil Refinery Company	Zadco	Zakum Development Company
KRPC	Kaduna Refinery & Petrochemical Company	ZOC	Zueitina Oil Company (Libya)
KNPC	Kuwait National Petroleum Company KSC		
KOC	Kuwait Oil Company KSC		
Lagoven	Lagoven SA		
Maraven	Maraven SA		
Maxus	Maxus Energy Corporation		
Mobil	Mobil Oil Corporation		
NIGC	National Iranian Gas Company		

Major sources

Direct communications to the OPEC Secretariat	Canadian Energy Research Institute
American Petroleum Institute (API)	Cedigaz, Natural Gas in the World
Arab Oil & Gas	Centre for Global Energy Studies
Asia Pacific Economic Cooperation (APEC)	China: National Bureau of Statistics
Baker Hughes	China: National Petroleum Corporation
Bloomberg	Central Bank reports
BP Statistical Review of World Energy	Clarkson Research Studies: The Liquid Gas Carrier Register
Brazil: Ministry of Mines and Energy	De Golyer & MacNaughton: Twentieth Century Petroleum Statistics
Brazil: National Agency of Petroleum, Natural Gas and Biofuels	Eastern Bloc Research, CIS and East European Energy Databook
Business Monitor International	Economic Intelligence Unit (EIU): country reports and database
Cambridge Energy Research Associates	Energy Detente
Canadian Association of Petroleum Producers	Energy Information Administration, US Department of Energy
Canada: National Energy Board	

Eurostat	OECD/IEA: Energy Statistics of OECD countries
Fearnleys, Annual Review	OECD/IEA: Quarterly Energy Prices and Taxes
Financial Times: Oil and Gas International Yearbook	OECD: International Trade by Commodities Statistics
Galbraith's Weekly Tanker Fixtures Report	Oil & Gas Journal
Gas Exporting Countries Forum (GECF)	Oil and Energy Trends: Annual Statistical Review
Haver Analytics	Oil Bulletin Petrolier
IHS Global Insight	Organización Latinoamericana de Energia (OLADE)
IHS Cambridge Energy Research Associates (HIS CERA)	Organization of Arab Petroleum Exporting Countries (OAPEC)
India: Ministry of Petroleum & Natural Gas	Petrobras
Institute Français du Pétrole (IFP): The World Gas Industry	Petroleum Argus
Institute of Energy Economics, Japan (IEEJ)	Petroleum Economist
International Energy Agency (IEA): Energy Prices and Taxes; Energy Statistics and Balances; Monthly Oil/Gas Data Services	Petroleum Intelligence Weekly (PIW)
IEA Monthly Oil Data Service (MODS)	Petrologistics
International Monetary Fund (IMF): International Financial Statistics, World Economic Outlook Database, Direction of Trade Statistics	Petrostrategies
Japan: Ministry of Economy, Trade and Industry	Platts
Joint Organizations Data Initiative	PIRA
KPLER	Port of Fujairah
Middle East Economic Survey	Port of Rotterdam
National Energy Administration of the People's Republic of China (NEA)	Reuters
National and international oil companies' reports	Rystad Energy
National statistical publications	Secretariat's estimates
National Westminster Bank	Simpson Spence & Young: World Oil Tanker Trends
Norway: Ministry of Petroleum and Energy	Society of Petroleum Engineers (SPE): Petroleum Resources Management System
NYMEX	United Nations: Energy Statistics Yearbook; Monthly Bulletin of Statistics
OECD: Trade by Commodities	United Nations: National Account Statistics
OECD/IEA: Energy Balances of non-OECD countries	Wood Mackenzie
OECD/IEA: Energy Balances of OECD countries	World Bank: World Development Indicators
OECD/IEA: Energy Statistics of non-OECD countries	World LPG Gas Association
	World Oil
	World Petroleum Trends

Conversion factors

Crude oil

Standard factors	Metric tonne	Long ton	Barrels	Cubic metres (kilolitres)
Metric tonne	1	0.984	7.33	1.165
Long ton	1.016	1	7.45	1.128
Barrels	0.136	0.134	1	0.159
Cubic metres (kilolitres)	0.858	0.887	6.289	1

By country (b/tonne)

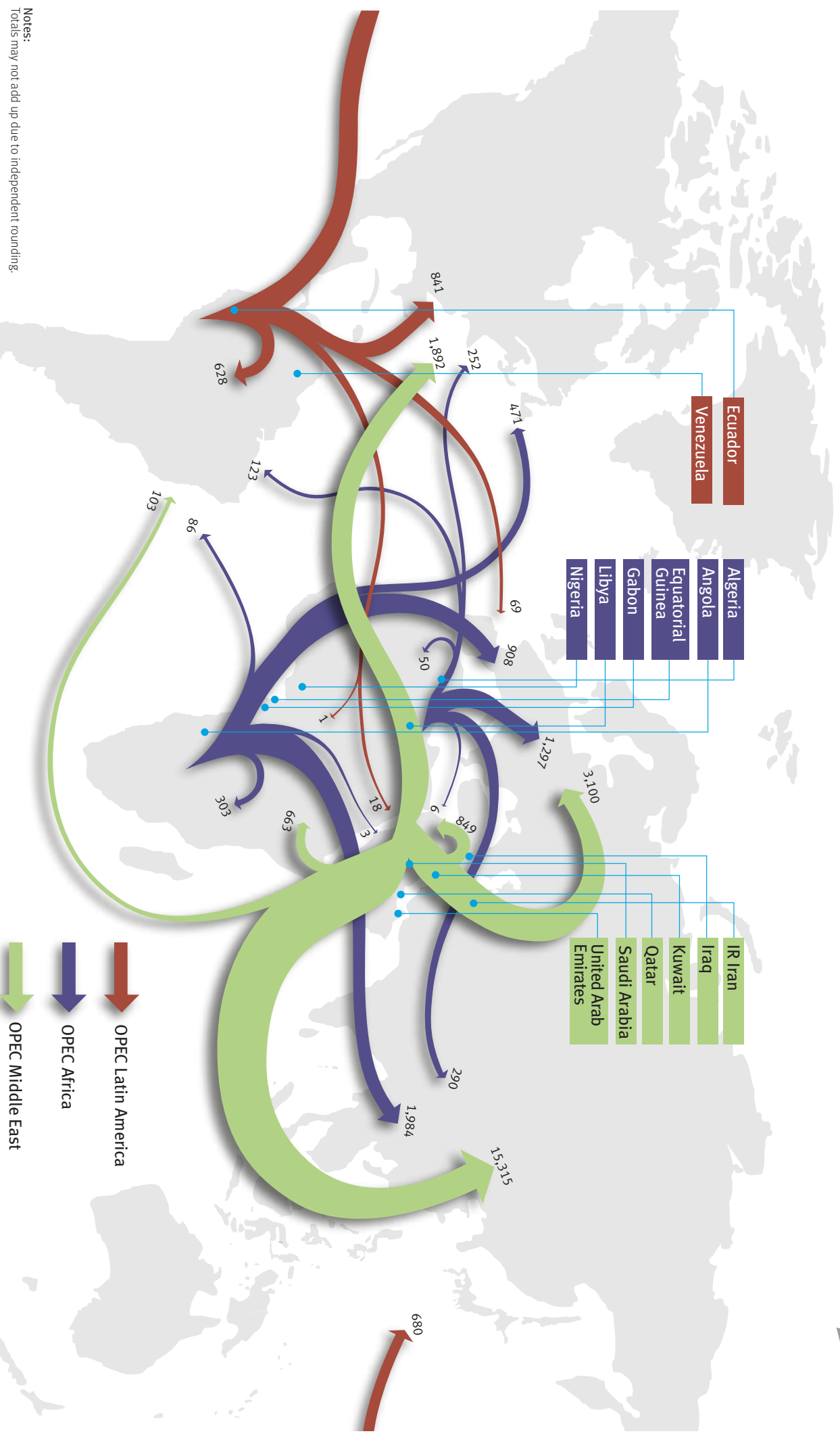
Algeria	8.05153
Angola	7.12980
Ecuador	6.90632
Equatorial Guinea	7.18425
Gabon	7.60013
IR Iran	7.38161
Iraq	7.37905
Kuwait	7.27604
Libya	7.57006
Nigeria	7.36997
Qatar	7.32850
Saudi Arabia	7.32271
United Arab Emirates	7.56491
Venezuela	6.68816
OPEC	7.33358

Petroleum products (b/tonne)

Gasoline	8.4998
Kerosene	7.7652
Distillates	7.2296
Residuals	6.6208

Major OPEC Members' flows of crude and refined oil (1,000 b/d) 2017

Notes:
Totals may not add up due to independent rounding.





OPEC
Helferstorferstrasse 17, A-1010 Vienna, Austria
www.opec.org