

Financial Review of the Global Oil and Natural Gas Industry: 2017



Markets and Financial Analysis Team

May 2018

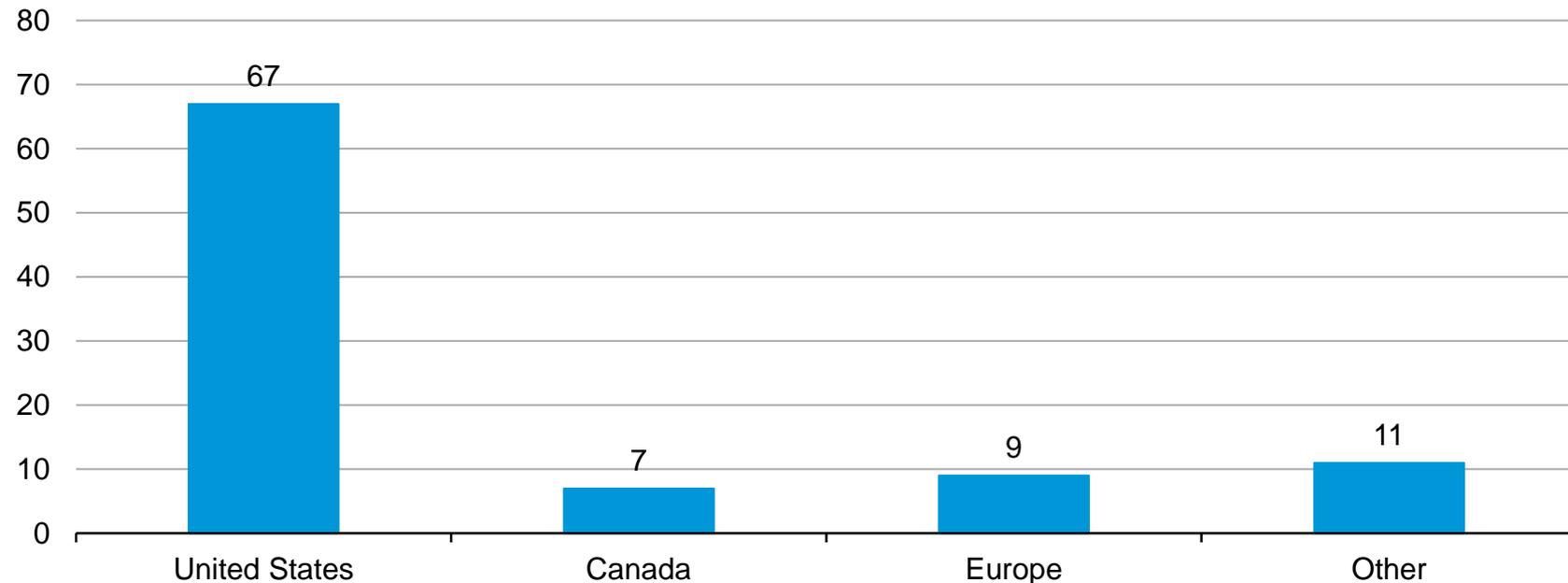
Key findings for 2017

- Brent crude oil daily average prices were \$54.75 per barrel in 2017—21% higher than 2016 levels
- Excluding proved reserve acquisitions, upstream costs incurred increased from 2016 levels but remained lower than 2008–15 levels
- Proved reserves additions in 2017 approached the highest levels in the 2008–17 period
- Finding plus lifting costs fell to \$29 dollars per barrel of oil equivalent in 2017, the lowest level in the 2008–17 period
- The energy companies reduced debt in 2017, the first year in the 2008–17 period
- Refiners with global refining assets reduced distillation capacity for the eighth consecutive year

Upstream

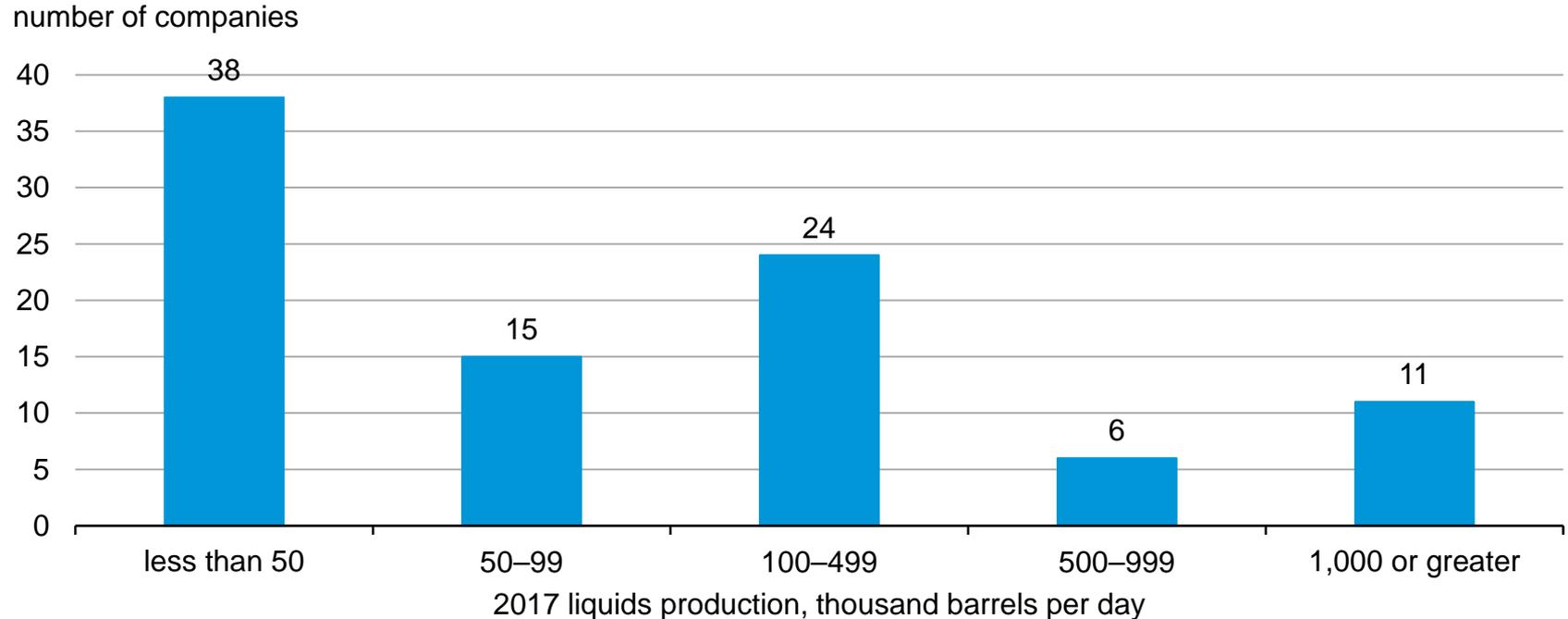
Geographic distribution of global oil and natural gas companies, 2017

number of companies



Source: U.S. Energy Information Administration, Evaluate Energy

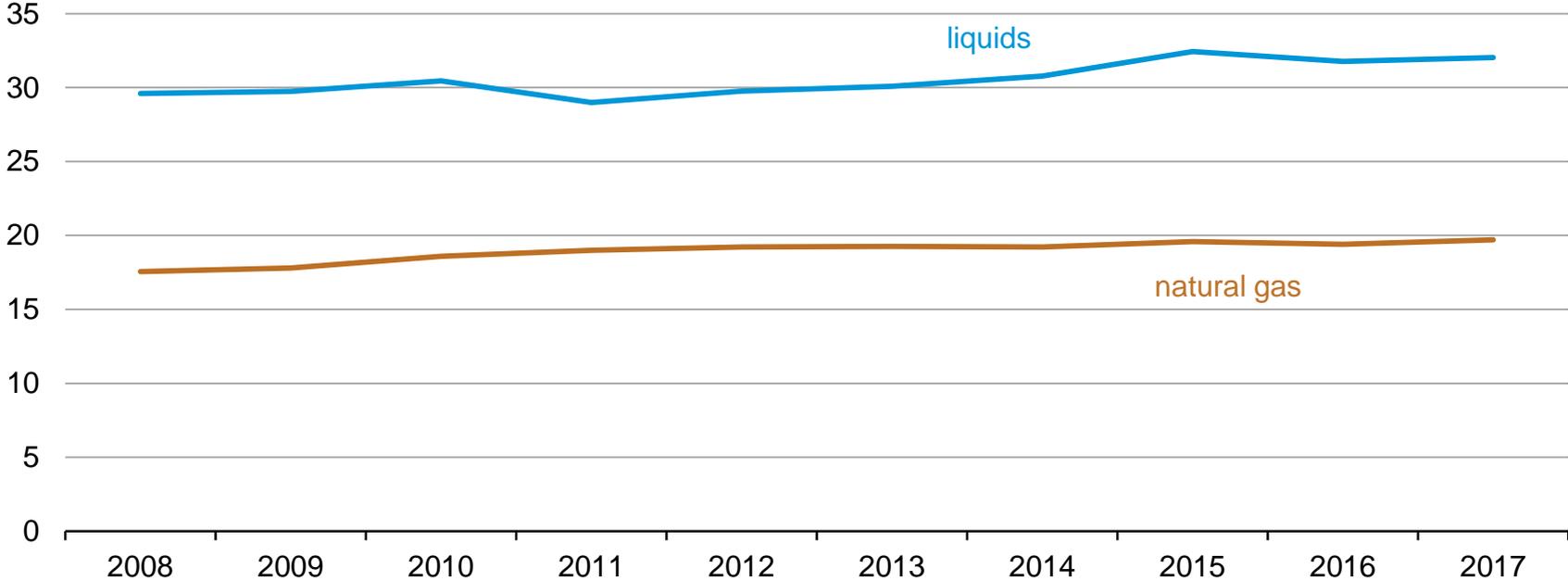
Distribution of companies by volume of petroleum liquids produced, 2017



Source: U.S. Energy Information Administration, Evaluate Energy

Production from oil and natural gas companies

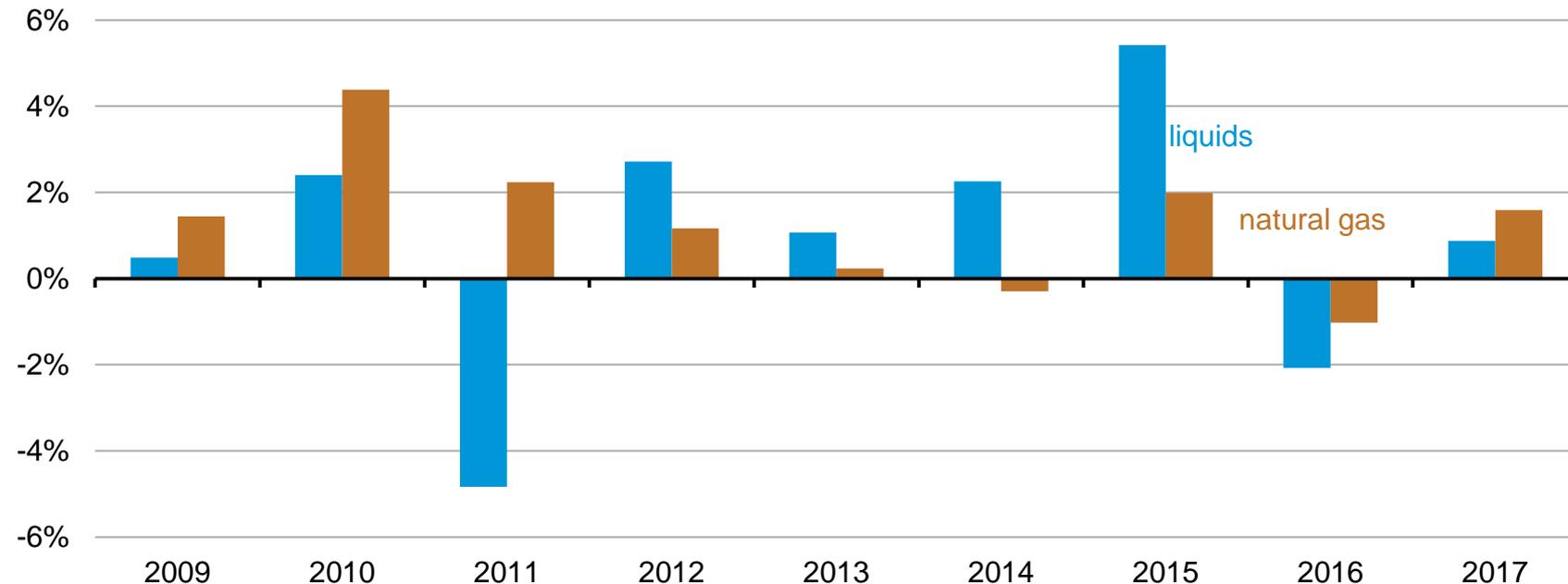
oil and natural gas production
million barrels of oil equivalent per day



Source: U.S. Energy Information Administration, Evaluate Energy

Liquids and natural gas production increased from 2016 to 2017

oil and natural gas production
year-over-year change

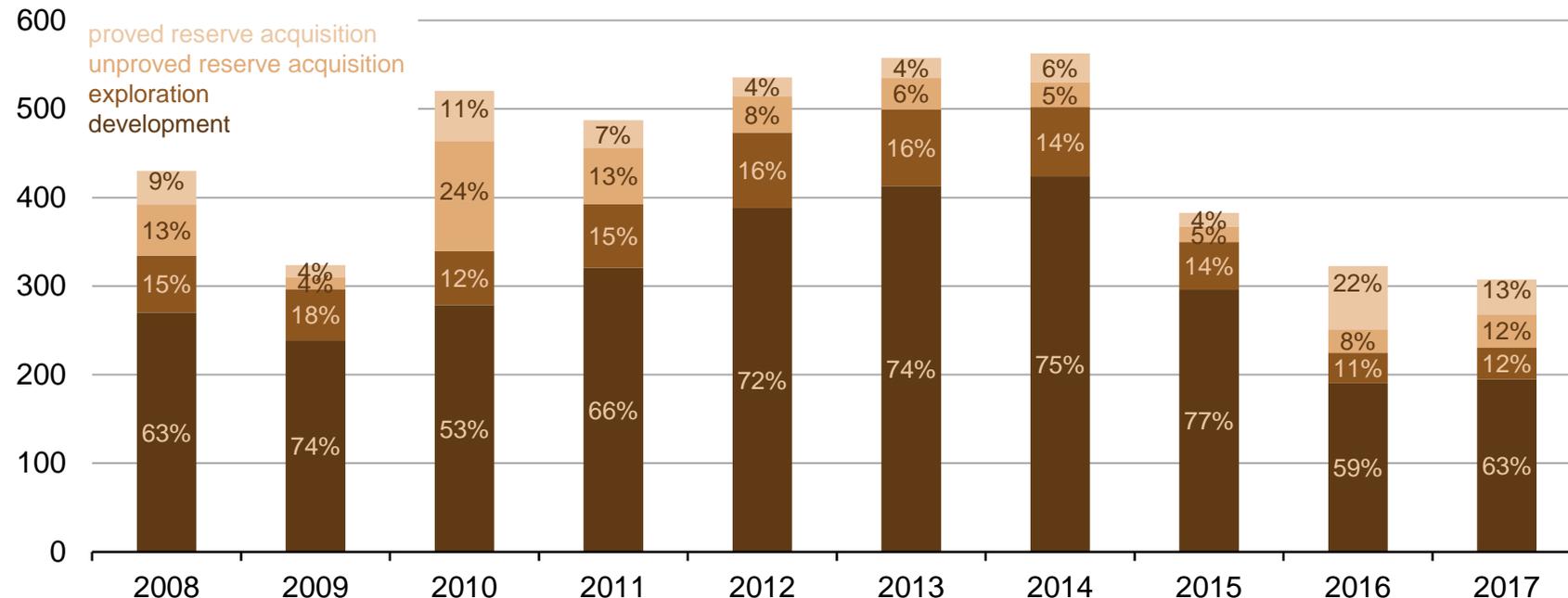


Source: U.S. Energy Information Administration, Evaluate Energy

Excluding proved reserve acquisitions, upstream costs incurred increased from 2016 levels but were lower than 2008–15 levels

upstream costs incurred

billion 2017\$



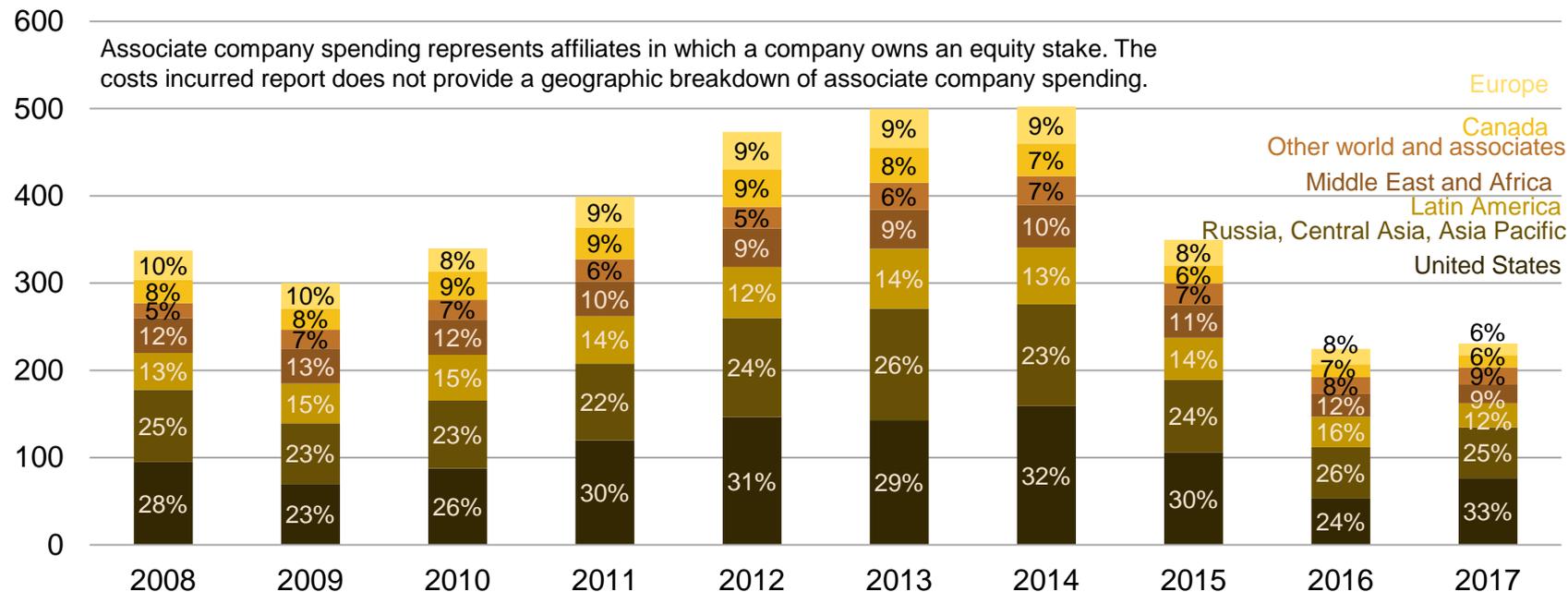
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Percentages are shares of total upstream costs. Percentages may not sum to 100% because of rounding.

The United States had the largest share of spending on exploration and development in the 2008–17 period

exploration and development costs incurred

billion 2017\$

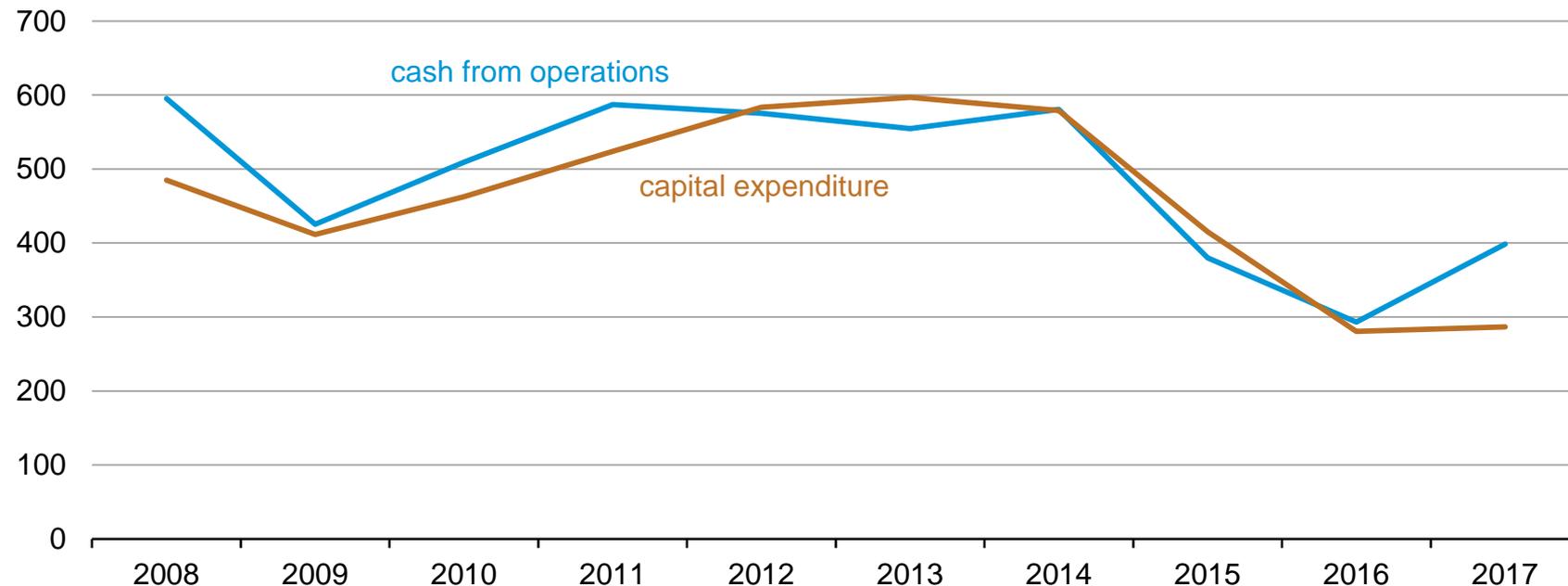


Source: U.S. Energy Information Administration, Evaluate Energy

Note: Percentages are shares of global exploration and development costs incurred. Percentages may not sum to 100% because of rounding.

Capital expenditure and cash flow increased \$6 billion and \$106 billion, respectively, in 2017

cash flow items
billion 2017\$

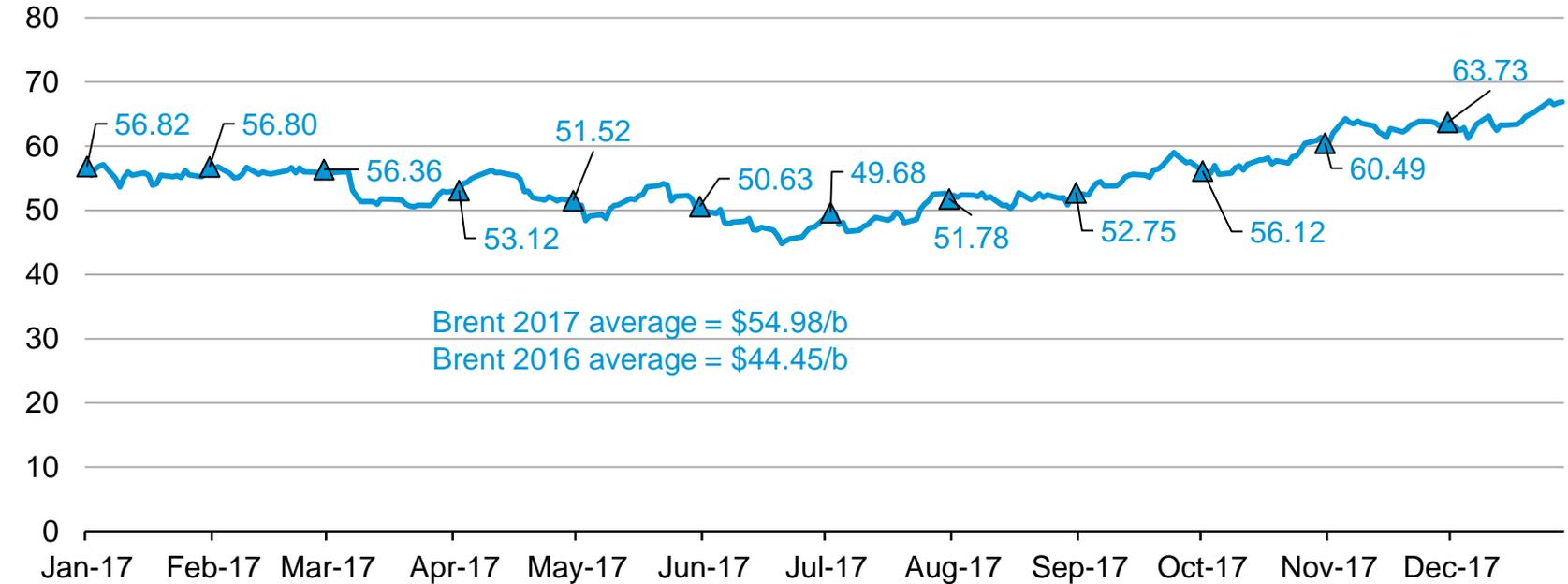


Source: U.S. Energy Information Administration, Evaluate Energy

The SEC requires companies to value proved reserves based on an average of the prices on the first day of each month

Brent crude oil front-month futures price

\$/b



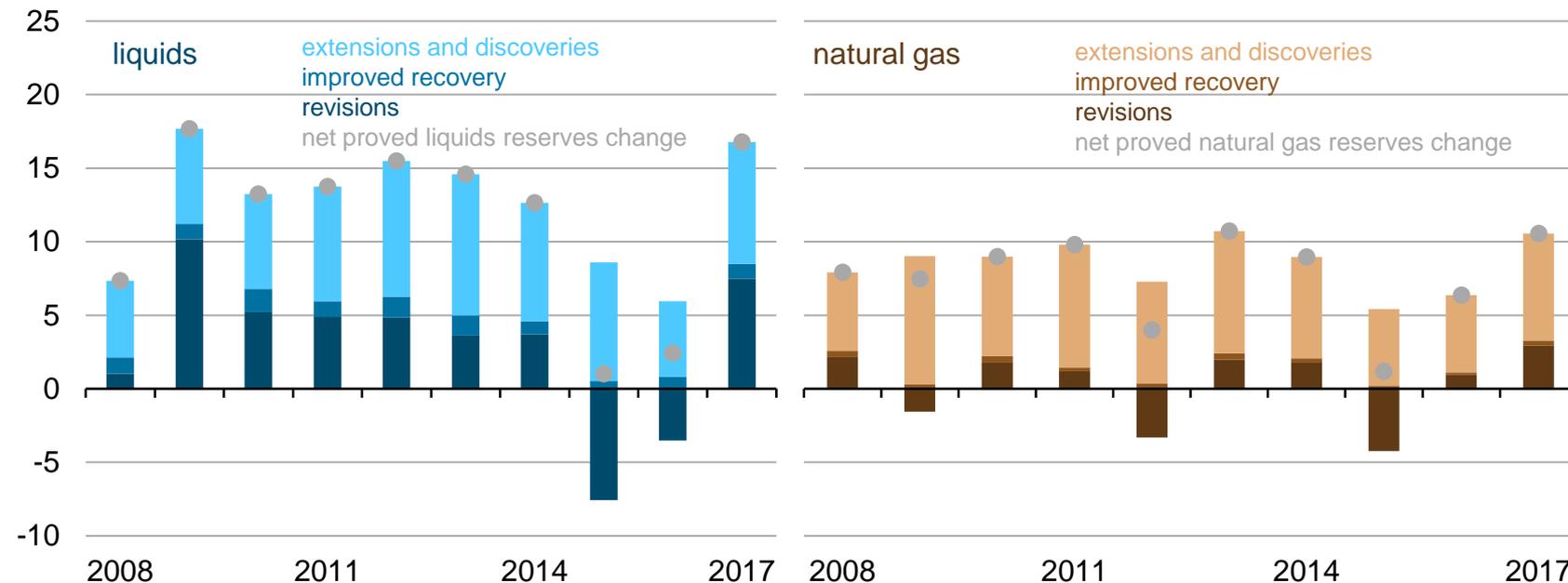
Source: U.S. Energy Information Administration, Evaluate Energy, Bloomberg L.P.

Note: Securities and Exchange Commission (SEC); barrel (b)

Net proved reserves additions for liquids and natural gas were near 10-year highs in 2017

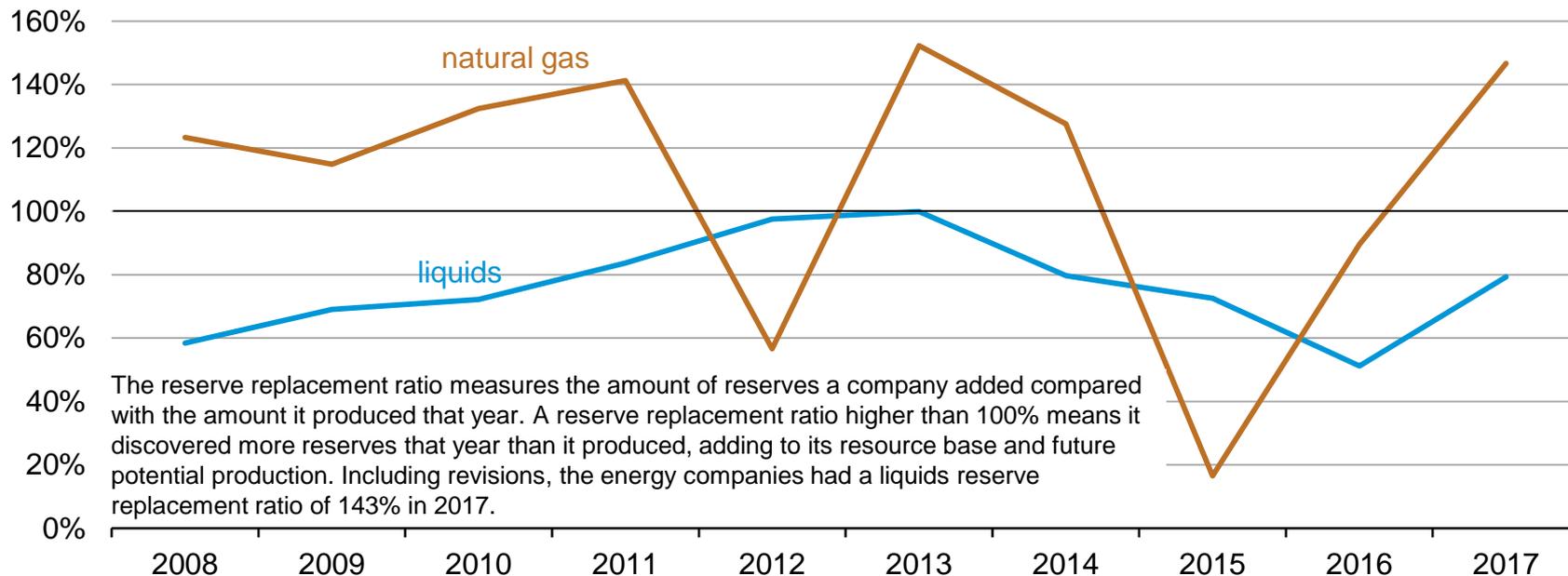
reserve additions

billion barrels of oil equivalent



Source: U.S. Energy Information Administration, Evaluate Energy

Excluding revisions, the 2017 liquids reserve replacement ratio increased from 2016 but remained lower than 100%



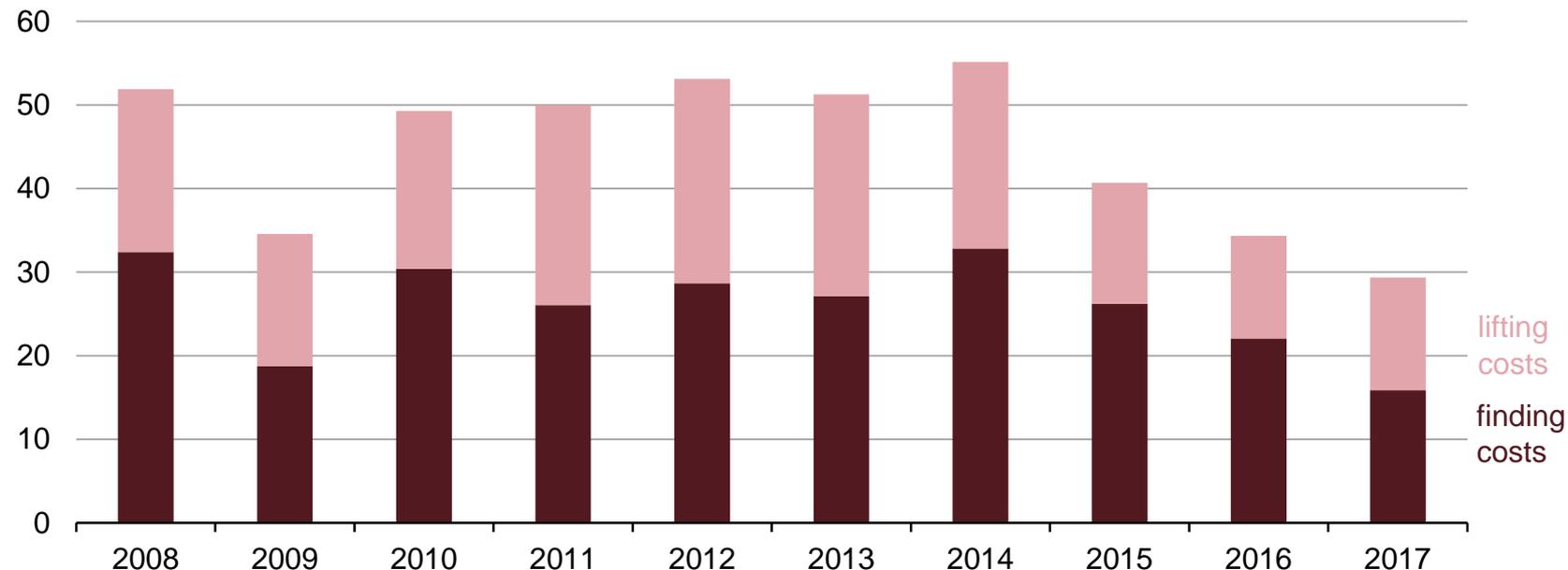
The reserve replacement ratio measures the amount of reserves a company added compared with the amount it produced that year. A reserve replacement ratio higher than 100% means it discovered more reserves that year than it produced, adding to its resource base and future potential production. Including revisions, the energy companies had a liquids reserve replacement ratio of 143% in 2017.

Source: U.S. Energy Information Administration, Evaluate Energy

Note: Excludes reserve revisions

Finding and lifting costs fell to \$29 per barrel of oil equivalent, the lowest in the 2008–17 period

2017 \$/barrel of oil equivalent (boe)



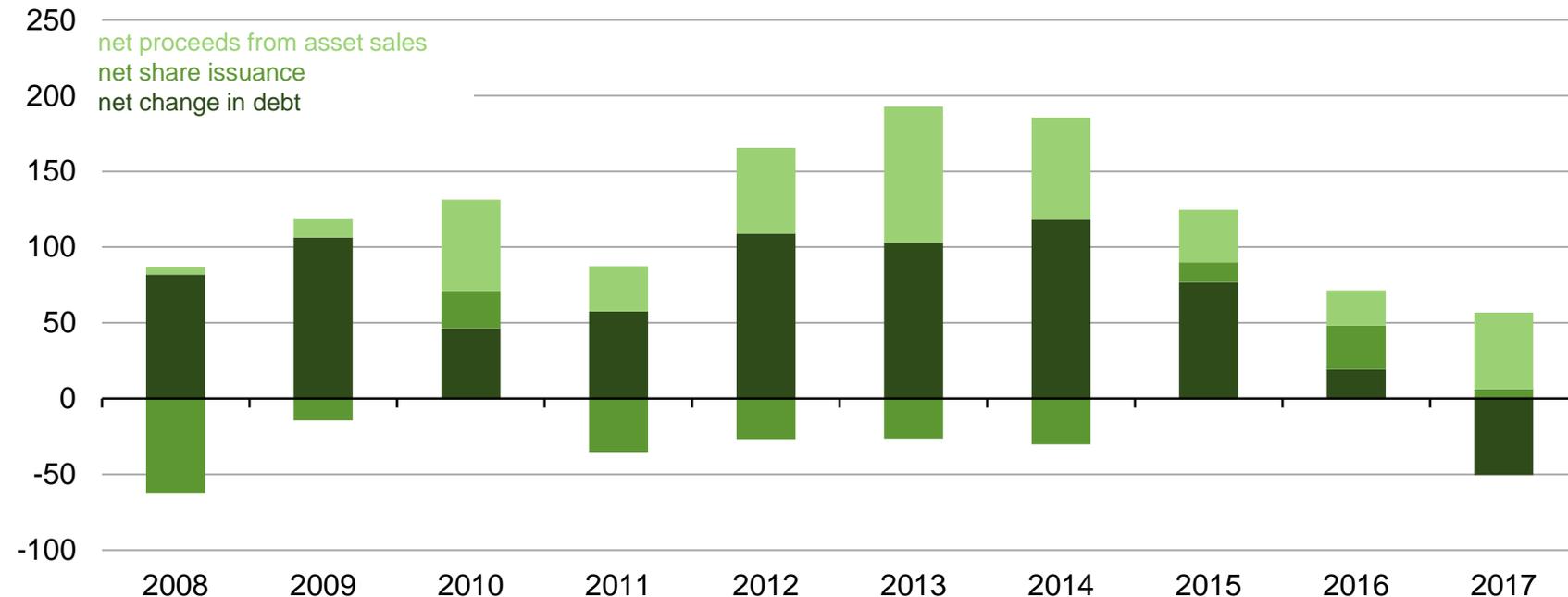
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Excludes reserve revisions

During the 2008–17 period, companies reduced debt for the first time in 2017

cash flow items

billion 2017\$

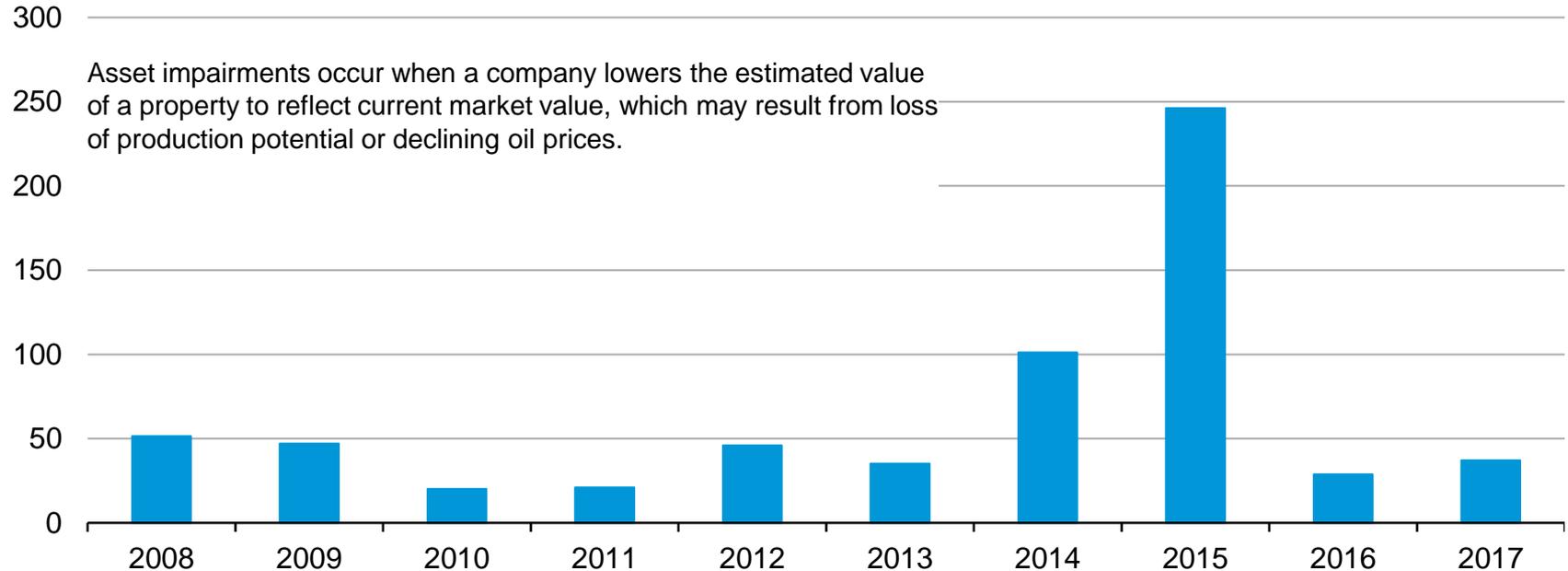


Source: U.S. Energy Information Administration, Evaluate Energy

Asset impairments increased to \$37 billion in 2017

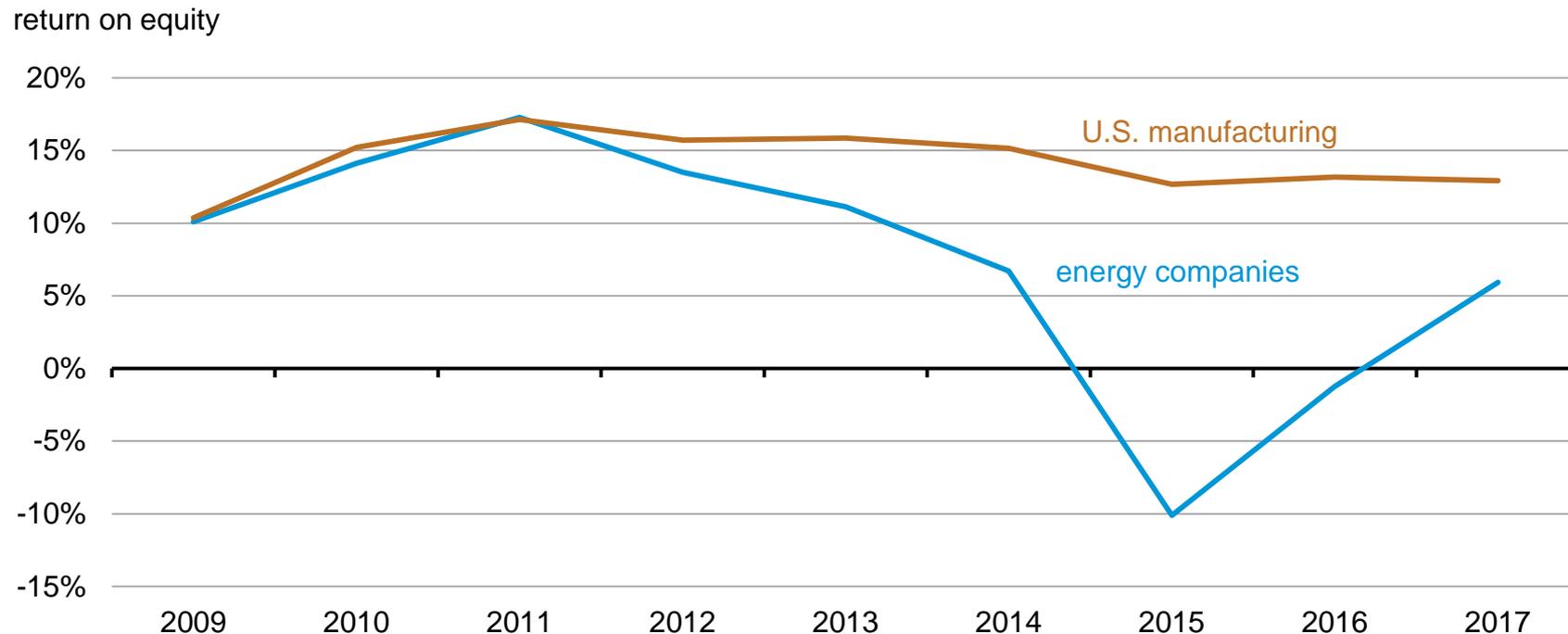
asset write-downs (impairment charges)

billion 2017\$



Source: U.S. Energy Information Administration, Evaluate Energy

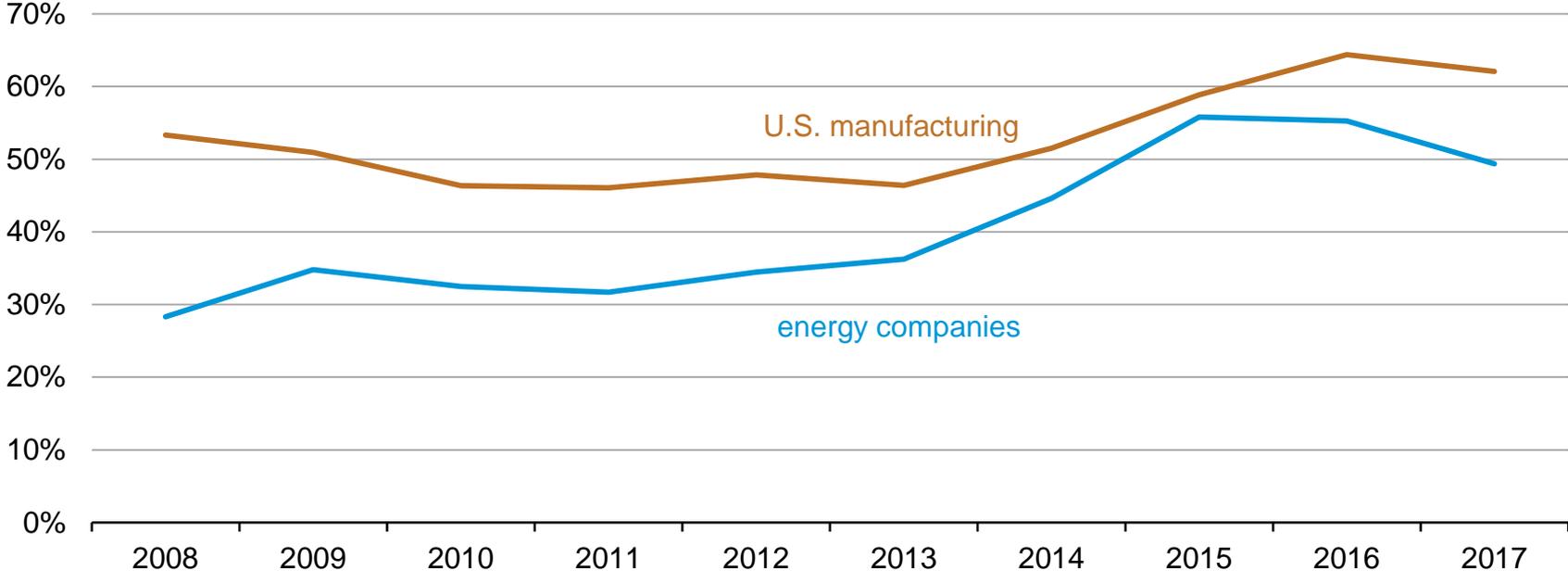
The return on equity for energy companies increased to 6%; the return for U.S. manufacturing was 14%



Source: U.S. Energy Information Administration, Evaluate Energy, U.S. Census Bureau

The long-term debt-to-equity ratio fell to 49% for the energy companies and to 62% for U.S. manufacturing companies

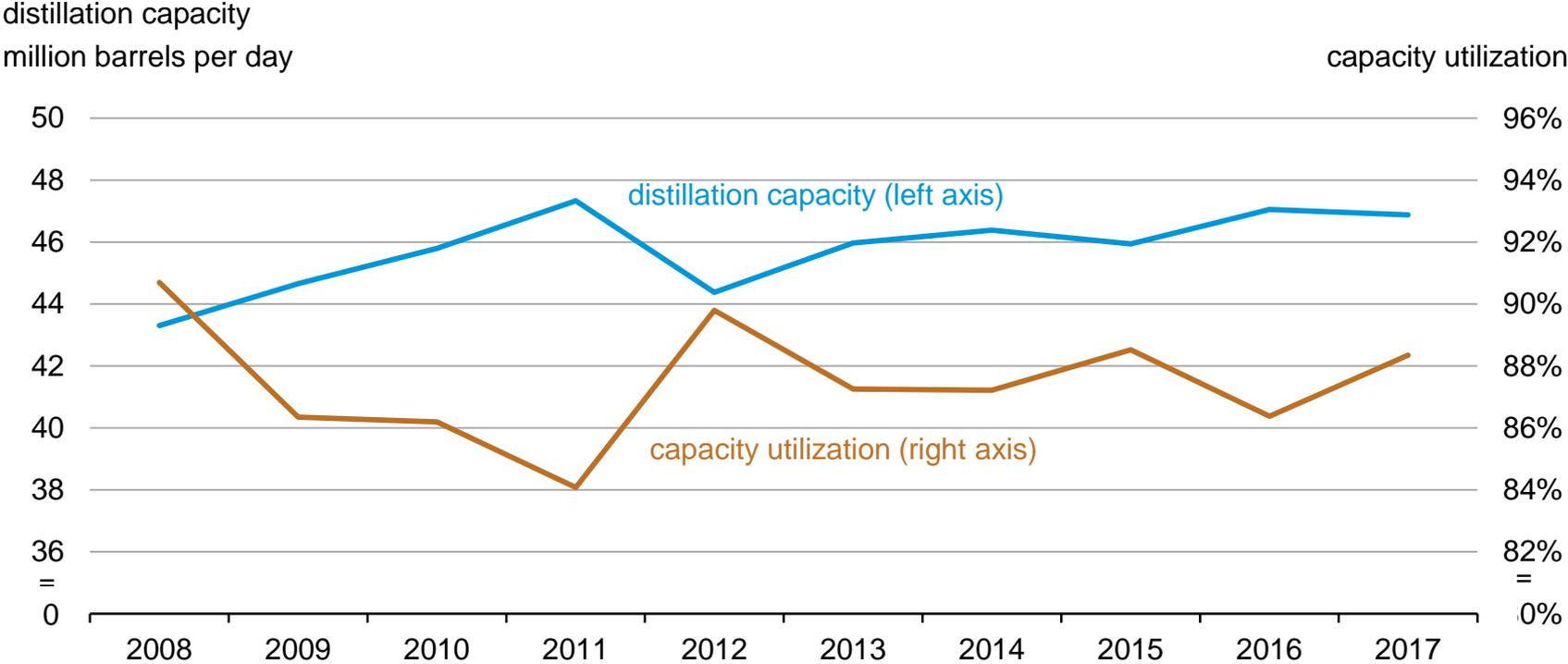
long-term debt-to-equity ratio



Source: U.S. Energy Information Administration, Evaluate Energy, U.S. Census Bureau

Downstream

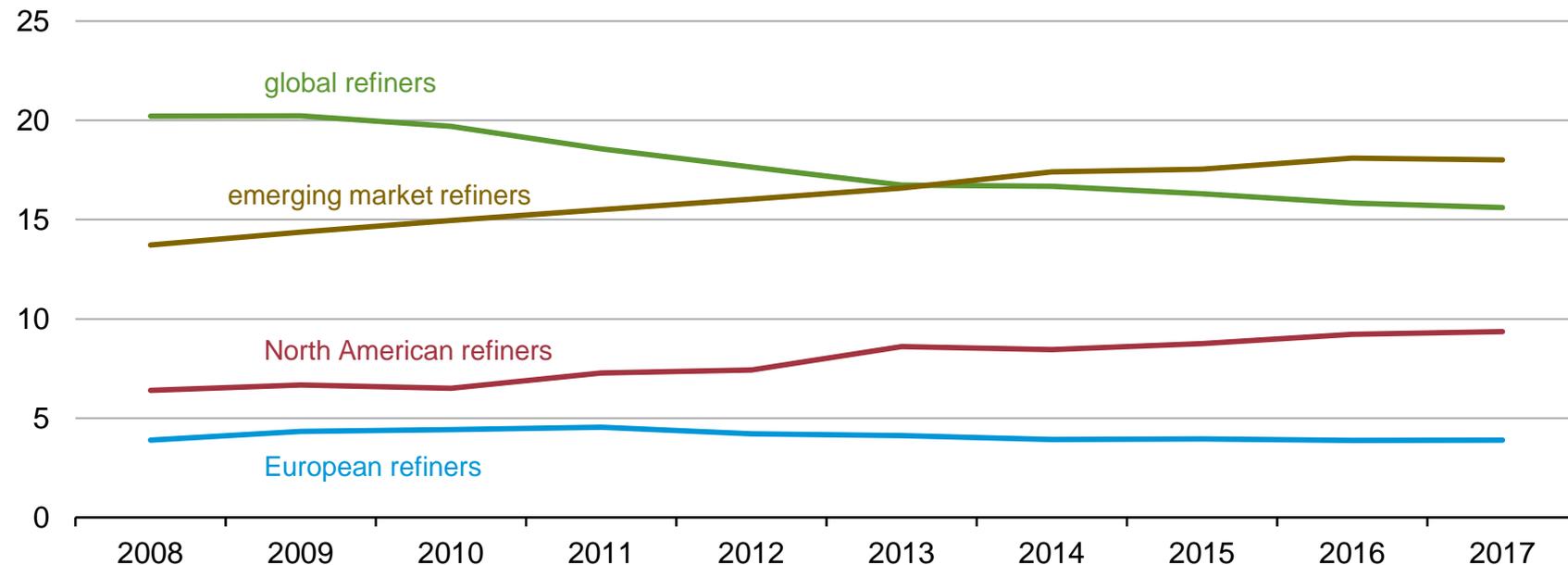
Refining distillation capacity declined slightly in 2017



Source: U.S. Energy Information Administration, Evaluate Energy

Refiners with global refining assets reduced distillation capacity for the eighth consecutive year

distillation capacity by region
million barrels per day

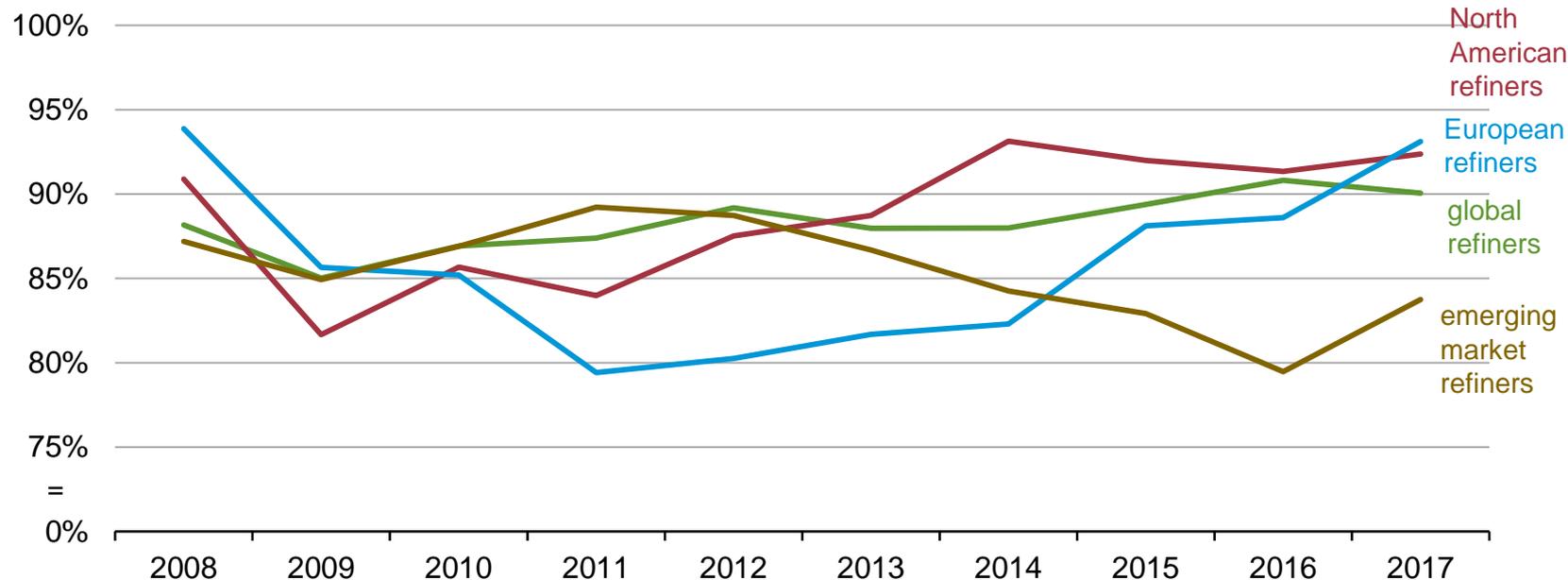


Source: U.S. Energy Information Administration, Evaluate Energy

Note: A global refiner is a company with refining assets in different regions.

European refiners had the highest capacity utilization in 2017

capacity utilization

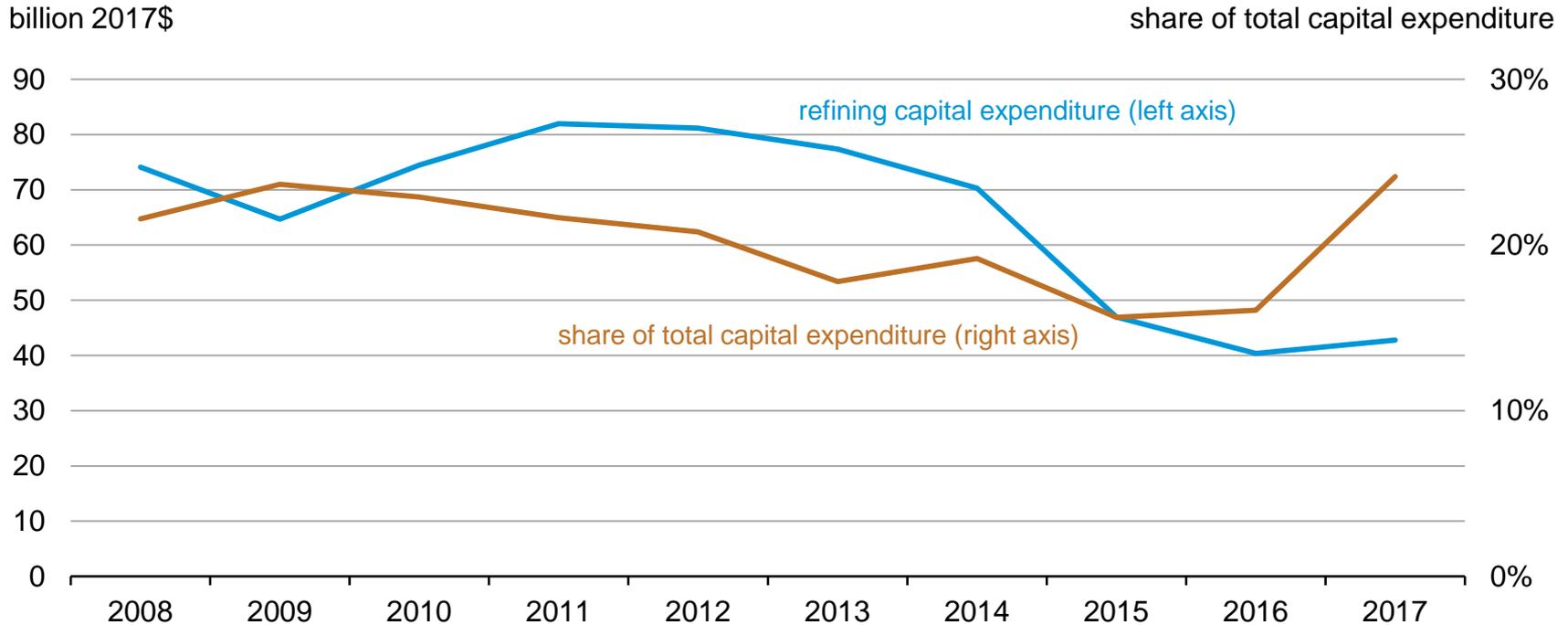


Source: U.S. Energy Information Administration, Evaluate Energy

Note: A global refiner is a company with refining assets in different regions.

Refining capital expenditure increased slightly in 2017

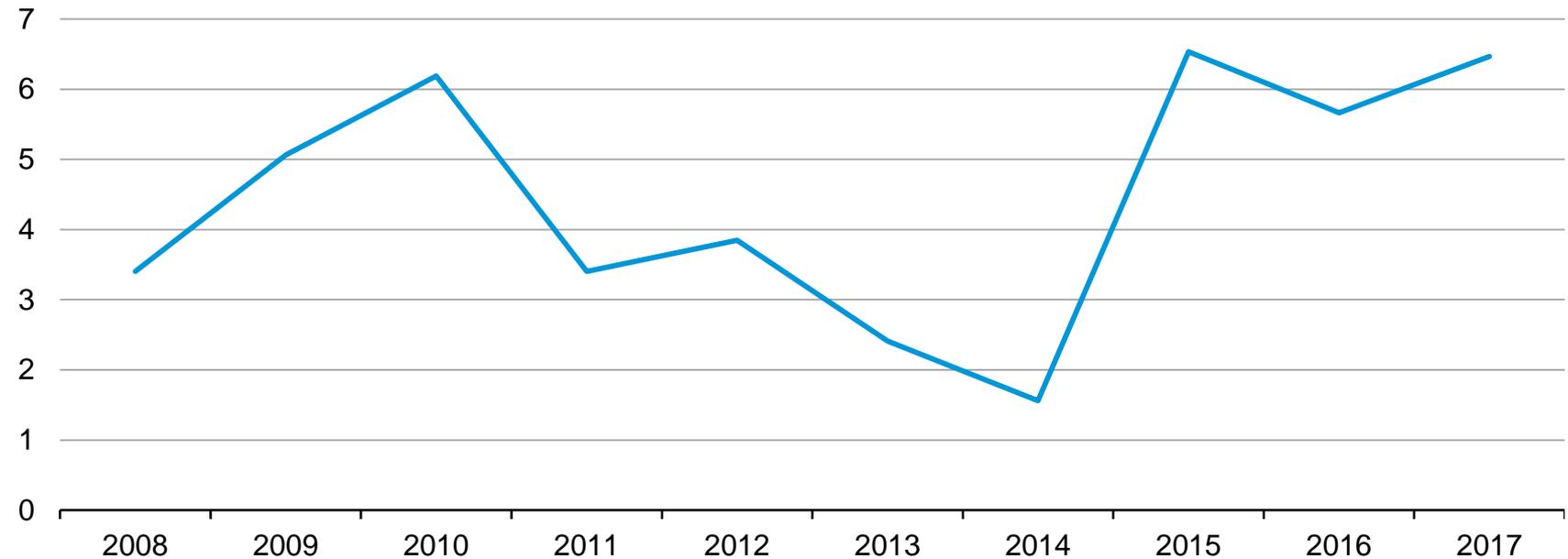
refining capital expenditure
billion 2017\$



Source: U.S. Energy Information Administration, Evaluate Energy

Earnings per barrel processed approached the highest levels in the 2008–17 period

earnings per barrel processed
2017 \$/b

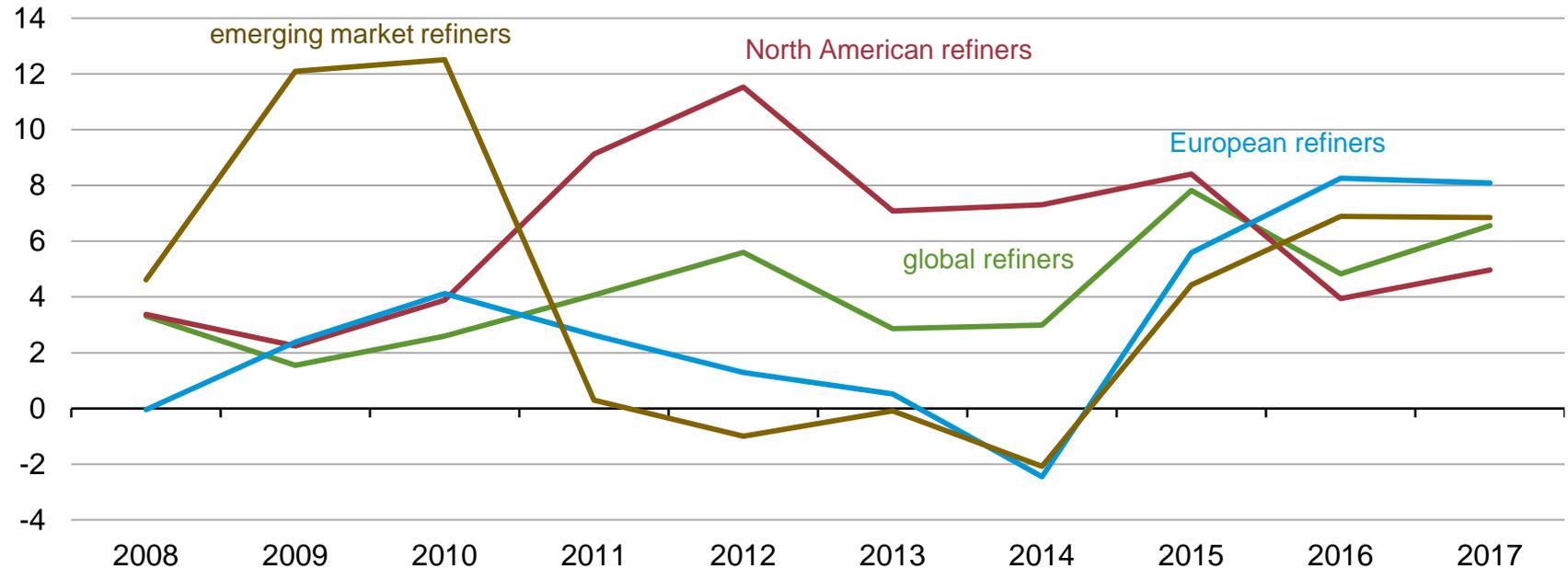


Source: U.S. Energy Information Administration, Evaluate Energy

European refiners had the largest earnings per barrel processed among the refinery group for the second consecutive year

earnings per barrel processed

2017 \$/b



Source: U.S. Energy Information Administration, Evaluate Energy

Note: A global refiner is a company with refining assets in different regions.

Appendix: List of companies in the upstream analysis

Abraxas Petroleum Corporation	Cimarex Energy Co.	Extraction Oil & Gas, Inc.	Lilis Energy Inc.	Petro-Canada	Stone Energy Corporation
Aker BP ASA	Clayton Williams Energy, Inc.	ExxonMobil	Linn Energy	Petrobras (IFRS US\$ Current)	Suncor Energy Inc.
Anadarko Petroleum Corp.	Comstock Resources	Forest Oil Corporation	Lonestar Resources US, Inc.	PetroChina	T-Rex Oil, Inc.
Antero Resources Corporation	Concho Resources Inc	Frontera Energy Corporation	Lukoil (IFRS)	Pioneer Natural Resources Comp: Total	
Apache Corporation	ConocoPhillips	Galp Energia	Marathon Oil Corp.	PTT	Triangle Petroleum Corporation
Apco Oil and Gas International Inc	Contango Oil and Gas Company	Gazprom Neft	Mariner Energy	QEP Resources Inc	Unit Corp
Approach Resources Inc	Continental Resources	Goodrich Petroleum Corporation	Mid-Con Energy Partners, LP	Range Resources Corporation	Vanguard Natural Resources, Inc.
Athlon Energy Inc.	Denbury Resources Inc.	Gulfport Energy Corporation	Murphy Oil Corporation	Repsol	W & T Offshore
ATP Oil & Gas Corp.	Devon Energy Corporation	Halcon Resources Corporation	Newfield Exploration Company	Ring Energy Inc	Whiting Petroleum Corporation
Berry Petroleum Company LLC	Earthstone Energy Inc.	Harvest Natural Resources Inc.	Noble Energy	Rosetta Resources Inc.	WildHorse Resource Development Corporation
BG Group	Ecopetrol	Hess Corp	Northern Oil & Gas, Inc	Royal Dutch Shell	WPX Energy, Inc.
Blue Ridge Mountain Resources, Inc.	Encana Corporation	HighPoint Resources Corporation	Novatek	Sabine Oil & Gas Corporation	XTO
BP Plc.	Energen Corp	Houston American Energy Corp	Oasis Petroleum Inc.	Sanchez Energy Corp	YPF Sociedad Anonima
California Resources Corporation	Energy XXI Gulf Coast, Inc.	Husky Energy Inc.	Occidental Petroleum Corporation	SandRidge Energy, Inc.	Yuma Energy, Inc. (Pre Davis)
Canadian Natural Resources Limited	Enerplus Corporation	Isramco, Inc	OMV	Sasol Limited	
Carrizo Oil & Gas, Inc	ENI	Jagged Peak Energy Inc.	Parsley Energy Inc.	SilverBow Resources, Inc.	
Cenovus Energy Inc.	EOG Resources	Kodiak Oil & Gas Corp.	PDC Energy, Inc.	Sinopec	
Centennial Resource Development, Inc.	EPL Oil & Gas Inc	Kosmos Energy	PEDEVCO Corp.	SM Energy Company	
Chesapeake Energy Corp.	Equinor ASA	Laredo Petroleum	Pemex	Sonde Resources Corp.	
Chevron Corporation	Erin Energy Corporation	Legacy Reserves LP	Penn Virginia Corporation	SRC Energy Inc	

Source: U.S. Energy Information Administration, Evaluate Energy

Note: Some companies merged, split, or de-listed before 2017. A total of 94 companies existed in 2017.

Appendix: List of companies in the downstream analysis

North American refiners
global refiners

European refiners
emerging market refiners

Alon USA Energy
Andeavor
Blue Dolphin Energy Co
BP Plc.
Chevron Corporation
ConocoPhillips
CVR Energy
Delek US Holdings
ENI
ExxonMobil

Galp Energia
Grupa Lotos
HollyFrontier Corp
Husky Energy Inc.
Imperial Oil Limited
Indian Oil Corporation Limited
Lukoil (IFRS)
Marathon Oil Corp.
Marathon Petroleum Corporation
MOL

Neste Corporation
OMV
Par Pacific Holdings, Inc.
PBF Energy Inc
Petrobras (IFRS US\$ Current)
PetroChina
Phillips 66
PKN Orlen
Repsol
Rosneft

Royal Dutch Shell
Sinopec
Suncor Energy Inc.
TNK-BP International Ltd
Total
TUPRAS
Unipetrol
Valero Energy Corporation
Western Refining Inc.

Source: U.S. Energy Information Administration, Evaluate Energy

Note: Some companies merged, split, or de-listed before 2017. A total of 34 companies existed in 2017.

Background

- The upstream analysis focuses on the financial and operating trends of 94 global oil and natural gas companies (called *energy companies*), and the downstream analysis focuses on 34 companies
- The data come from the public financial statements each company submits to the U.S. Securities and Exchange Commission, which a data service (Evaluate Energy) aggregates for ease of data analysis
- For consistency, an energy company's assets that were acquired by another company in the group in 2008 or later were kept in the prior-year data
- Several charts show comparisons between energy companies and the U.S. manufacturing industry, collected from U.S. Census Bureau's *Quarterly Financial Report*

Brief description of terms

- *Cash from operations* is a measure of income from the company's regular business activities
- *Capital expenditure* represents cash used to purchase property, plant, and equipment
- *Financing activities* measure inflows and outflows in debt or equity markets, including dividends, share issuance or repurchases, and debt issuance or repayments
- *Return on equity* is a measure of the profit a company earns on money that shareholders have invested
- *Market capitalization* is the total value of a company's outstanding, publicly traded shares

Brief description of terms

- *Net income* represents profits after taxes and depreciation
- *Asset impairments* occur when a company lowers the estimated value of a property to reflect current market value, which may result from the loss of production potential or a decline in oil prices
- *Upstream activities* refers to crude oil exploration, production, and other operations that occur before refining
- *Downstream activities* refers to refinery operations, product sales, and marketing at the wholesale and retail levels