

Financial Review of the Global Oil and Natural Gas Industry 2015



Markets and Financial Analysis Team

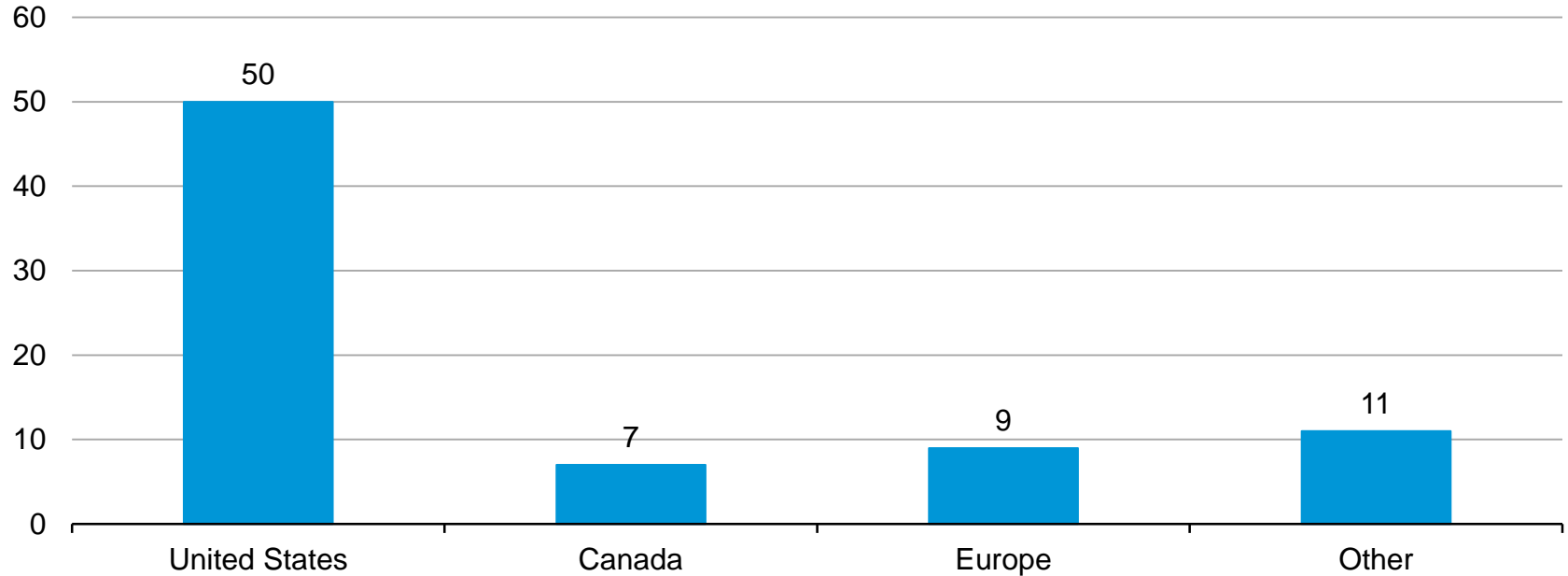
May 2016

Key findings for 2015

- Brent crude oil prices averaged \$53.60 in 2015—46% below 2014 levels—which significantly reduced cash flow for upstream companies.
- Asset write-downs reduced profits and the amount of proved reserves; proved liquids reserves declined for the first time since 2008.
- Production increased largely because of investment from past projects.
- Companies were able to access cash from capital markets and asset sales in the face of declining cash from operations.
- Capital expenditure fell below 2009 levels, and 2016 spending is likely to decline again.

Geographic distribution of global oil and natural gas companies, 2015

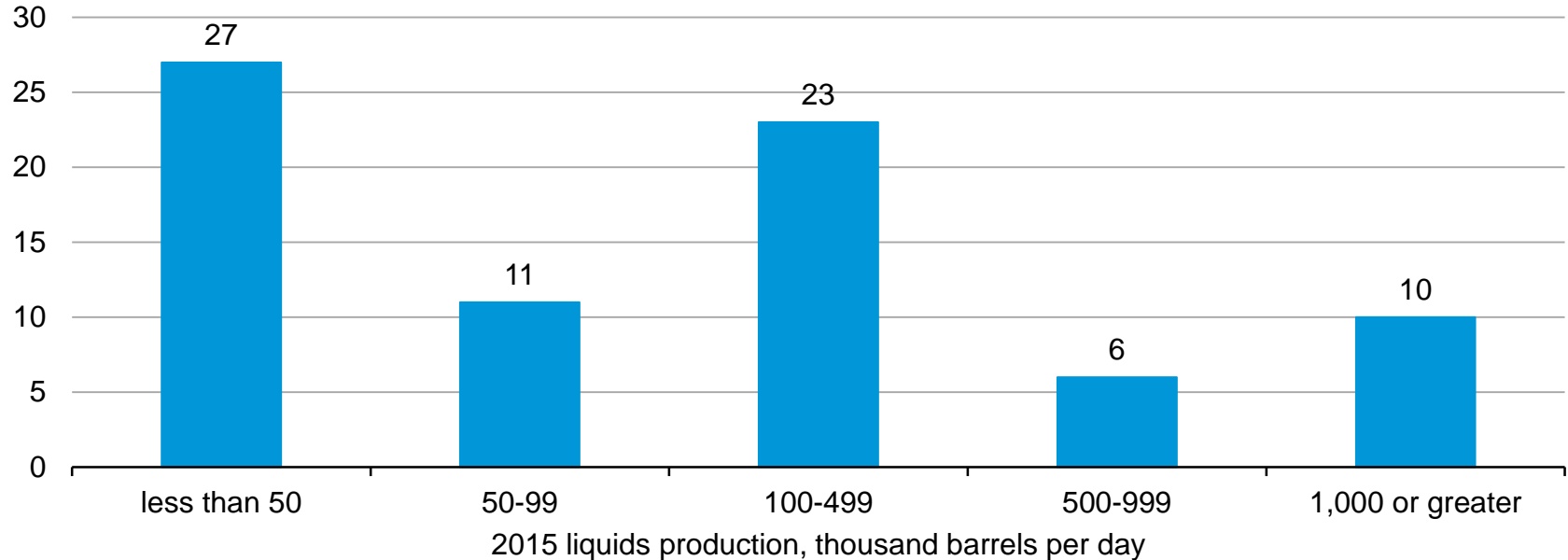
number of companies



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

Distribution of companies by production of petroleum liquids, 2015

number of companies

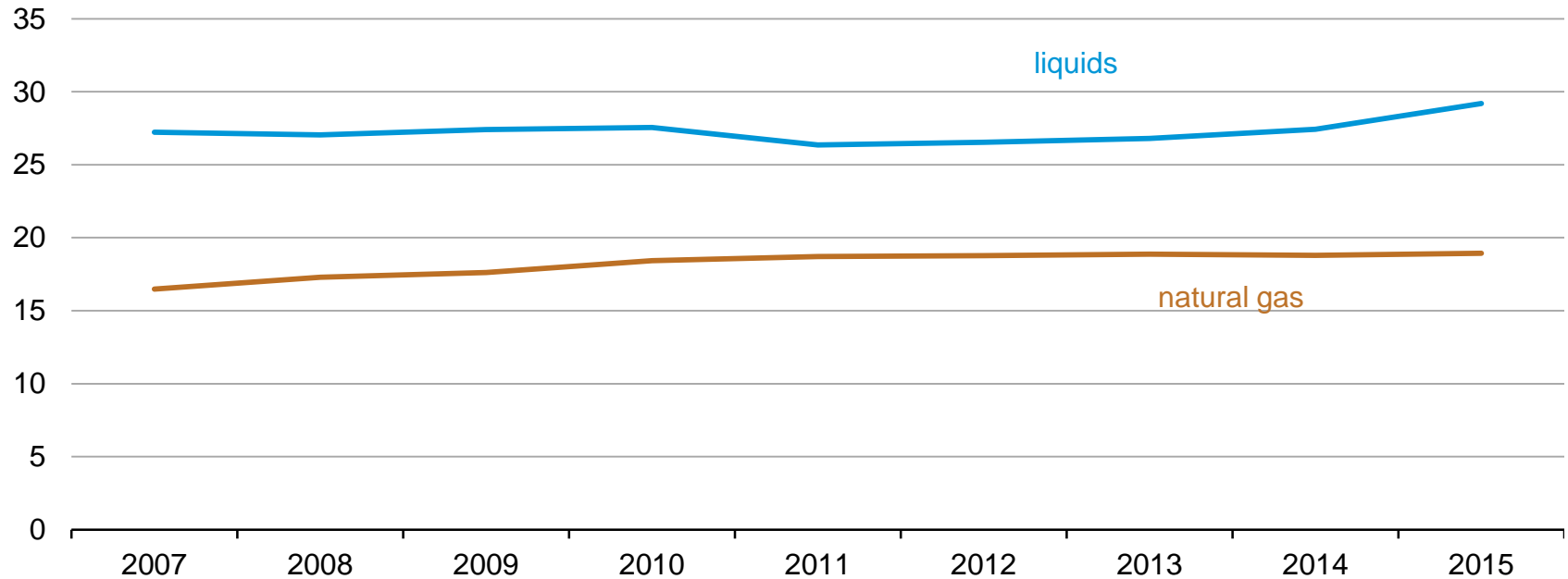


Source: U.S. Energy Information Administration, Evaluate Energy

Production from the oil and natural gas companies

oil and natural gas production

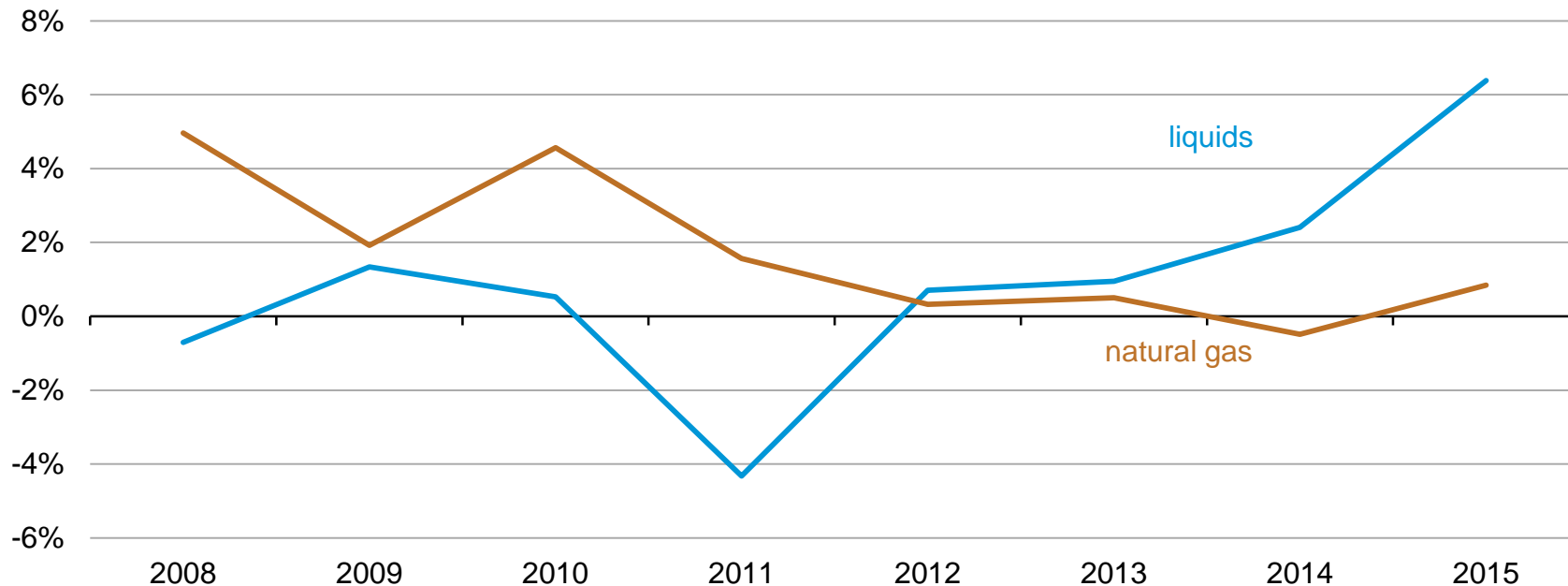
million barrels of oil equivalent per day



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

Liquids production increased 6.4% in 2015; natural gas production increased 0.8%

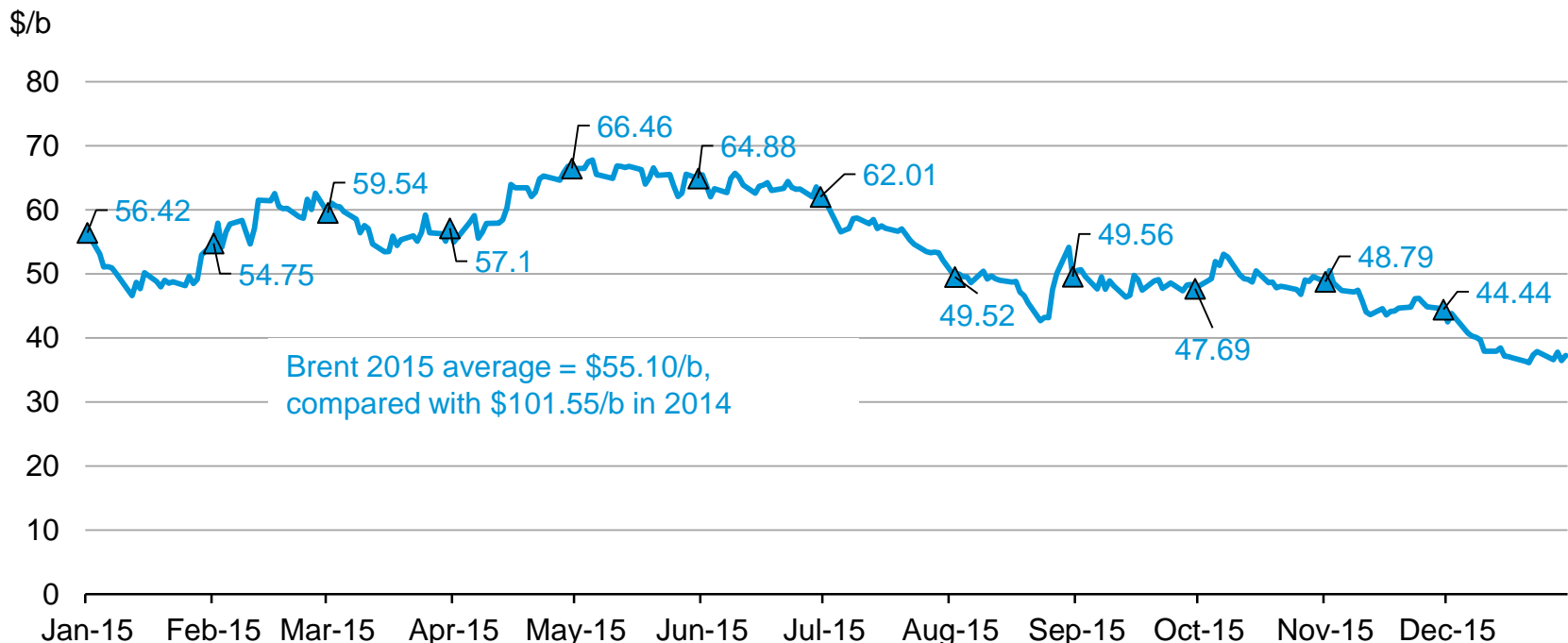
oil and natural gas production
year-over-year change



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 price



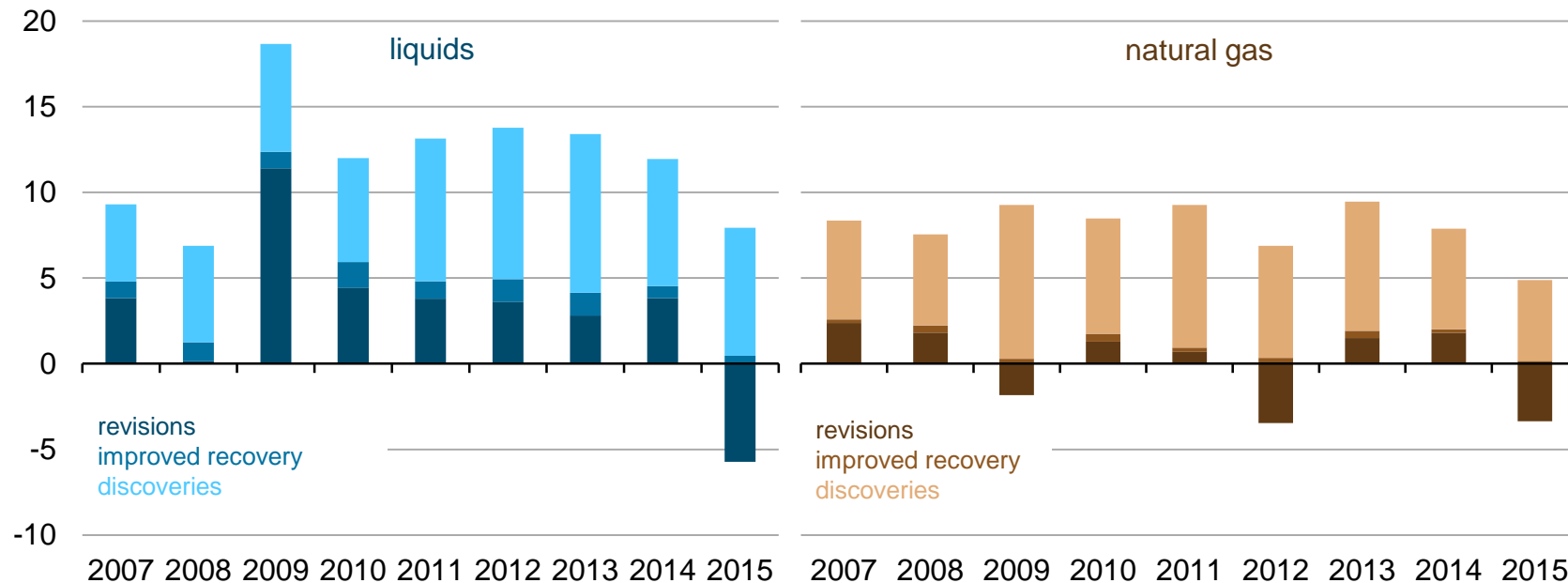
Source: U.S. Energy Information Administration, Evaluate Energy, Bloomberg

Note: SEC = Securities and Exchange Commission; b = barrel

Downward revisions in proved reserves partially offset new discoveries for liquids and natural gas

reserve additions

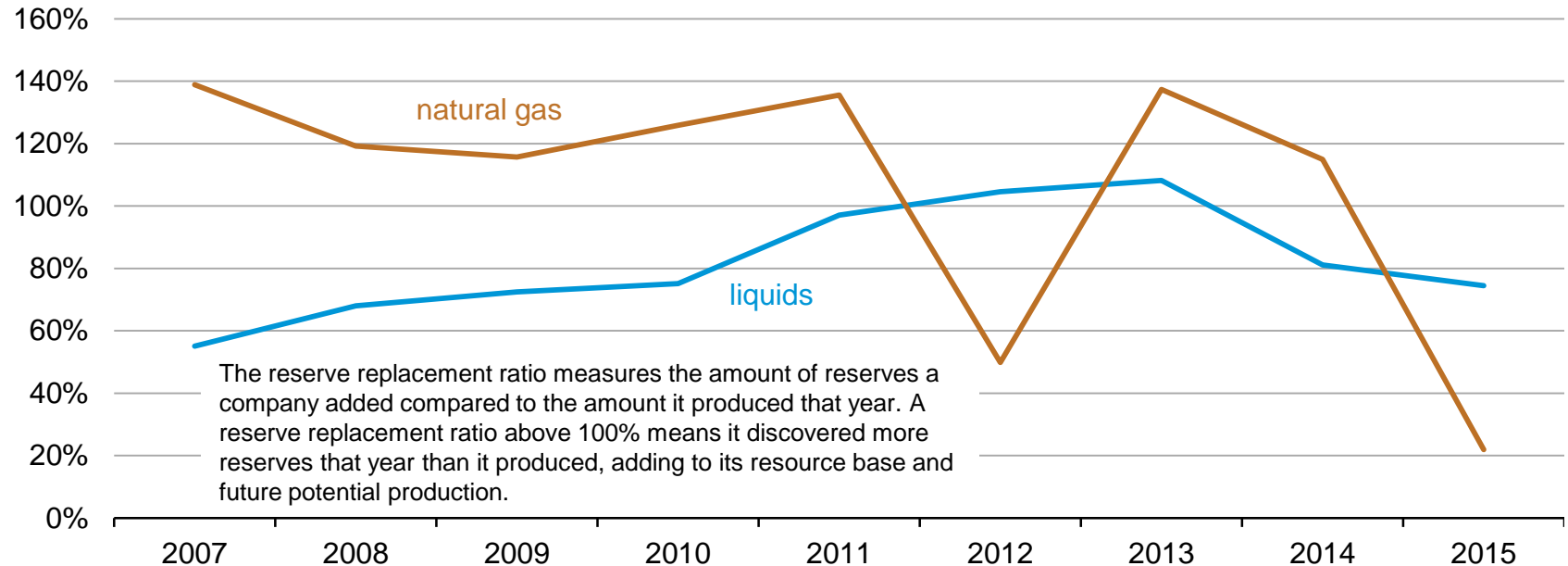
billion barrels of oil equivalent



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

The companies did not add as many reserves as they produced

reserve replacement ratio



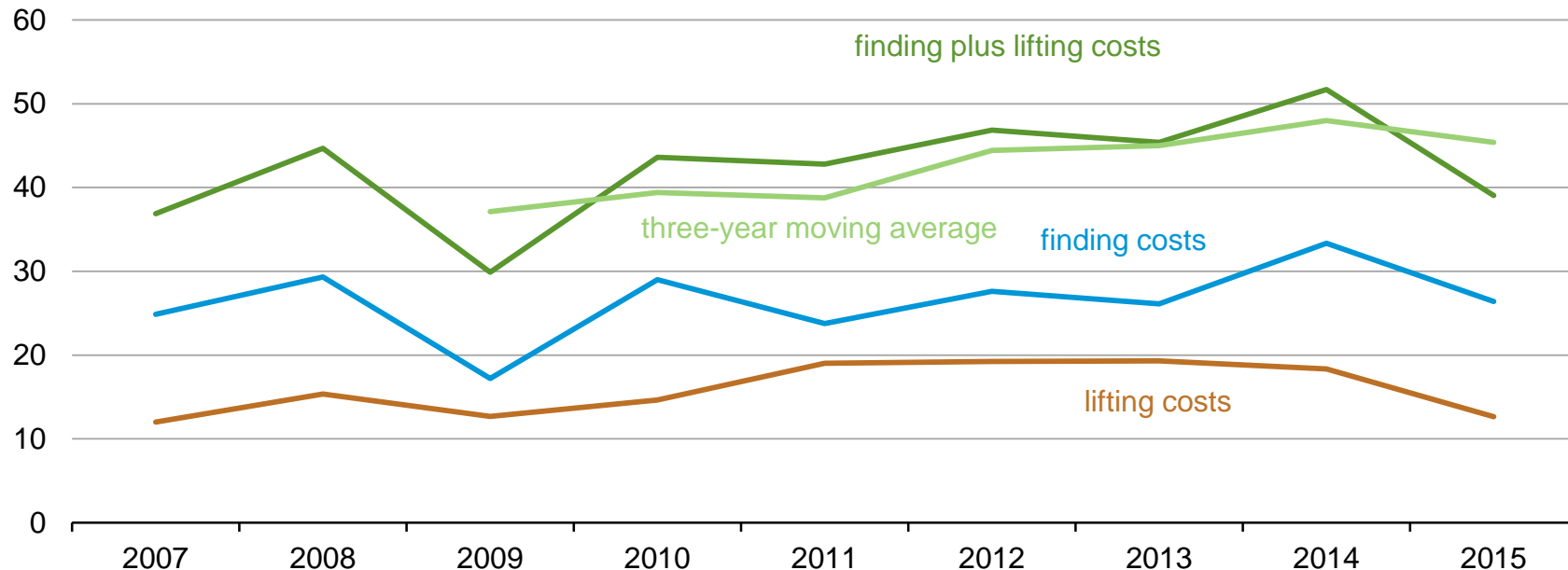
The reserve replacement ratio measures the amount of reserves a company added compared to the amount it produced that year. A reserve replacement ratio above 100% means it discovered more reserves that year than it produced, adding to its resource base and future potential production.

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

Note: Excludes reserve revisions

Excluding downward revisions of past reserves, finding and lifting costs fell \$12/boe

2015 \$/barrel of oil equivalent (boe)



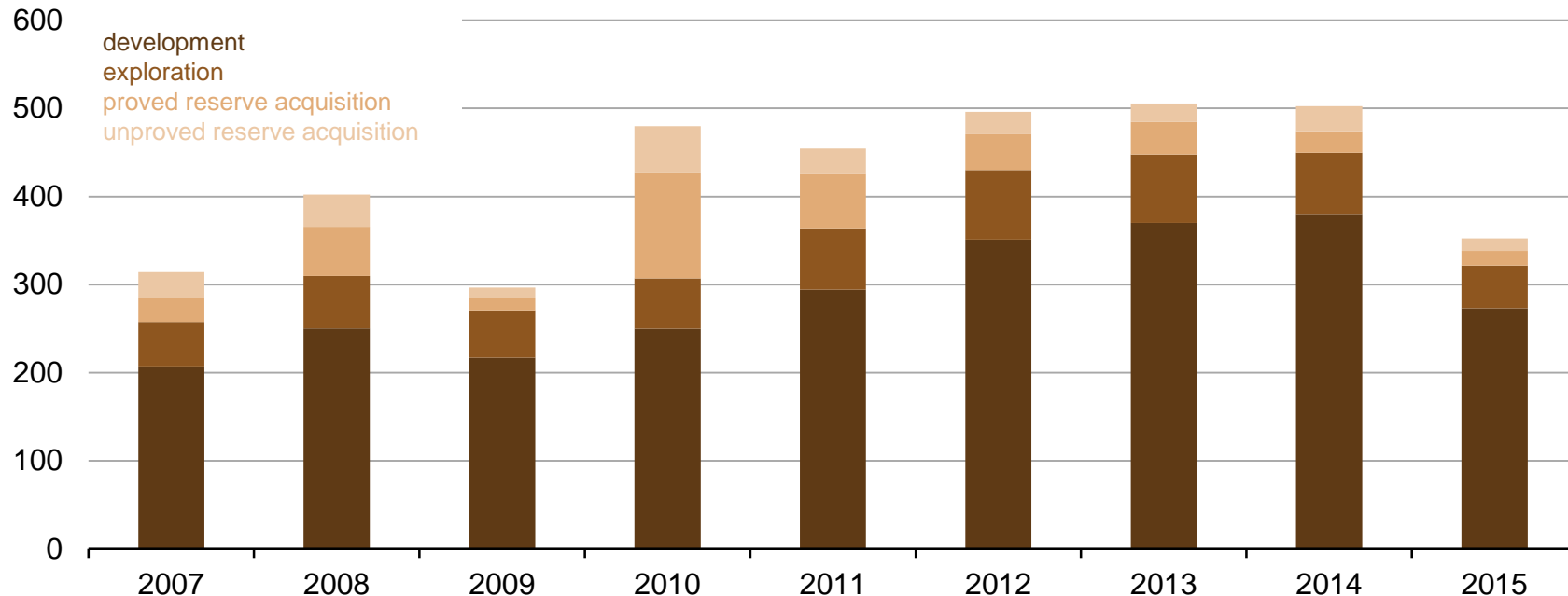
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Excludes reserve revisions

Budget reductions brought upstream spending below the level of the previous five years

upstream costs incurred

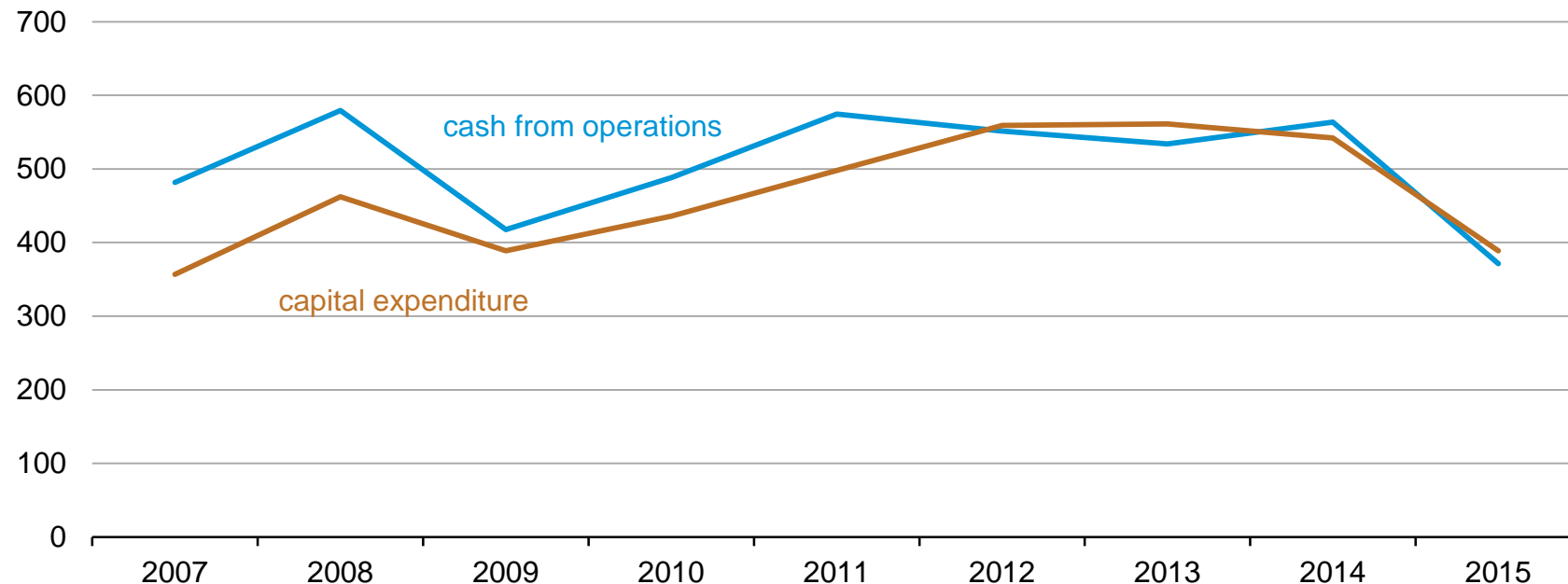
billion 2015\$



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

Capital expenditure and cash flow fell \$152 billion and \$192 billion, respectively, the largest year-over-year change in the 2007-15 period

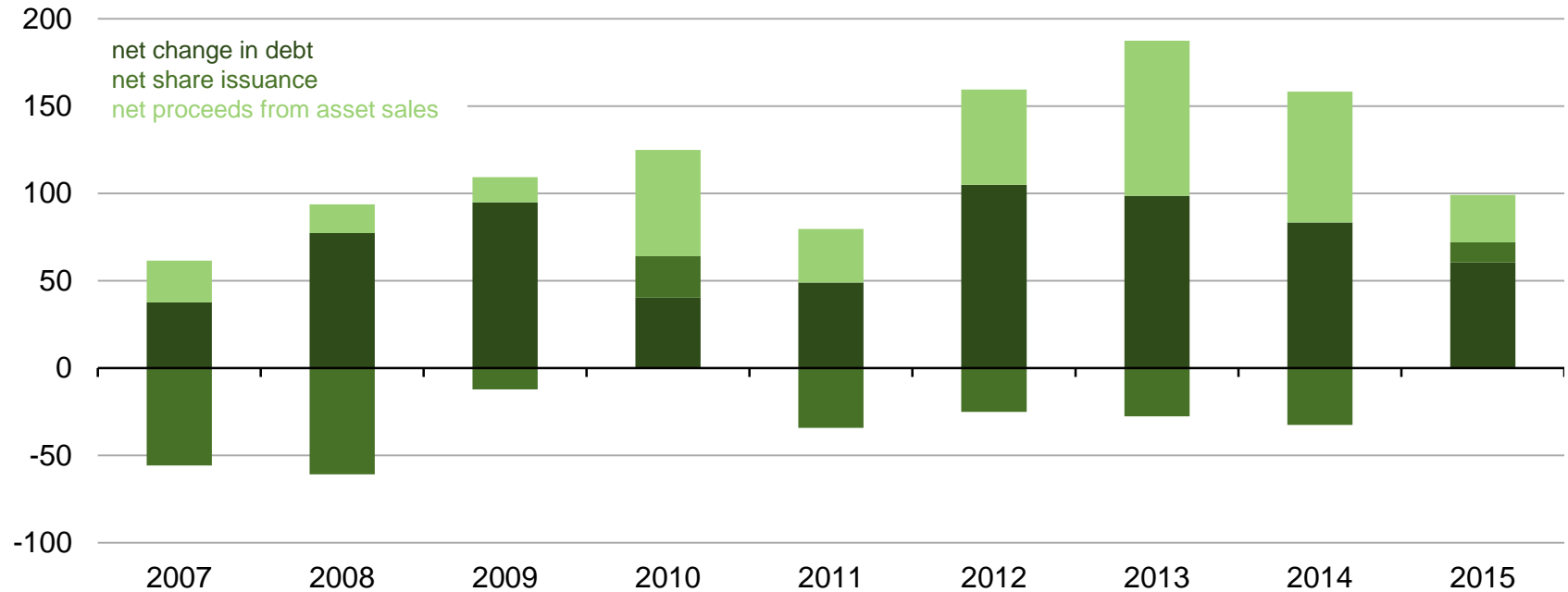
cash flow items
billion 2015\$



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

Companies were able to raise about \$100 billion by selling assets and accessing capital markets to supplement the decline in cash flow

cash flow items
billion 2015\$

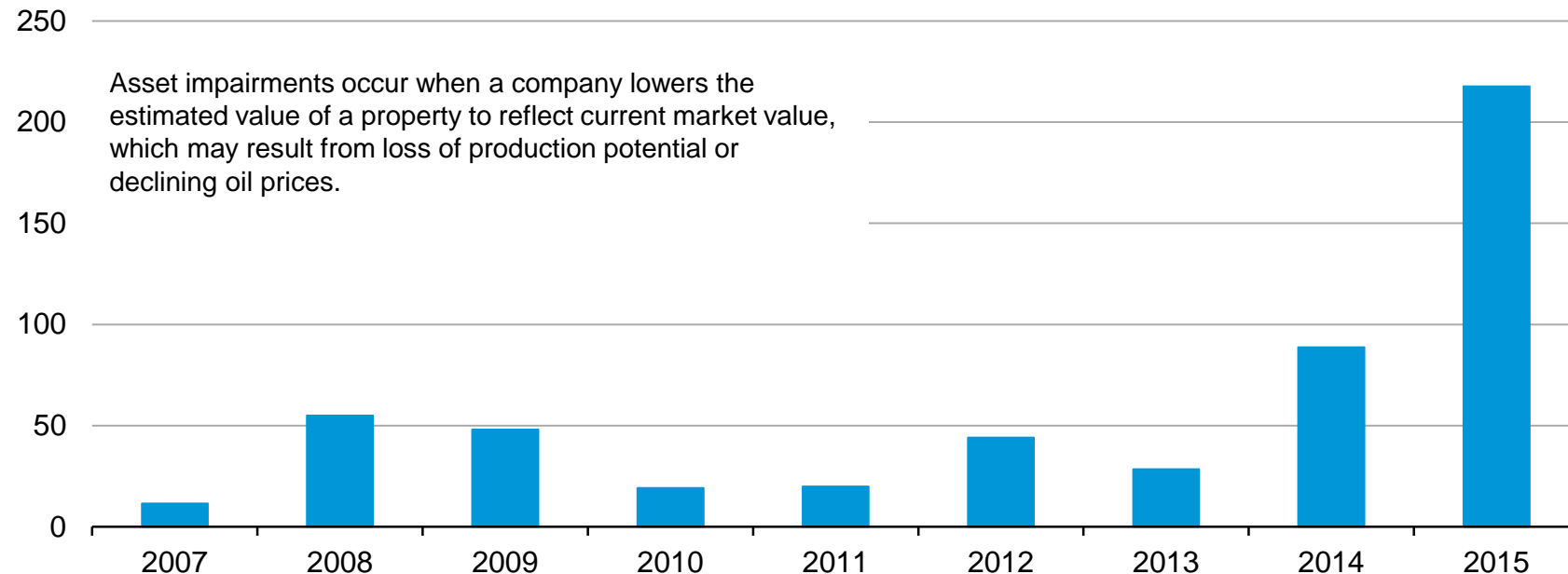


Source: U.S. Energy Information Administration, Evaluate Energy

The write-down in the value of proved reserves totaled \$217 billion in 2015, the largest since at least 2007

asset write-downs (impairment charges)

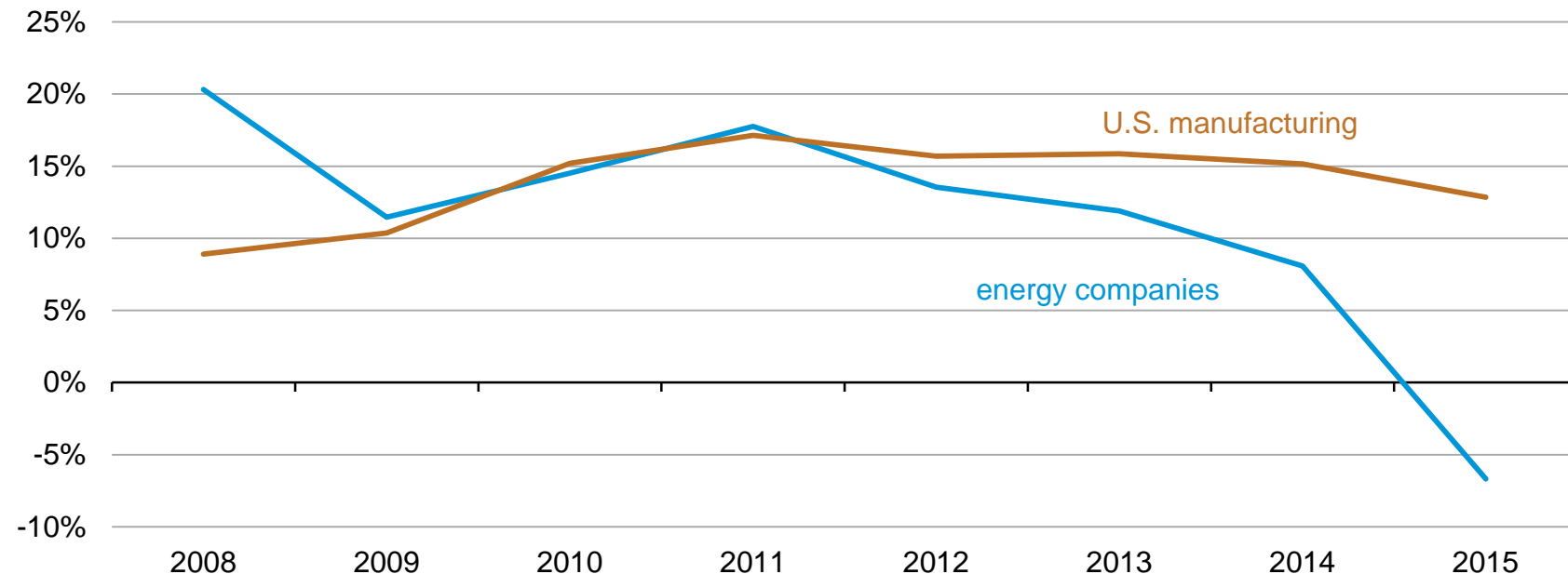
billion 2015\$



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

Losses in 2015 were 7% of shareholders' equity for the energy companies; profits for U.S. manufacturing declined to 13%

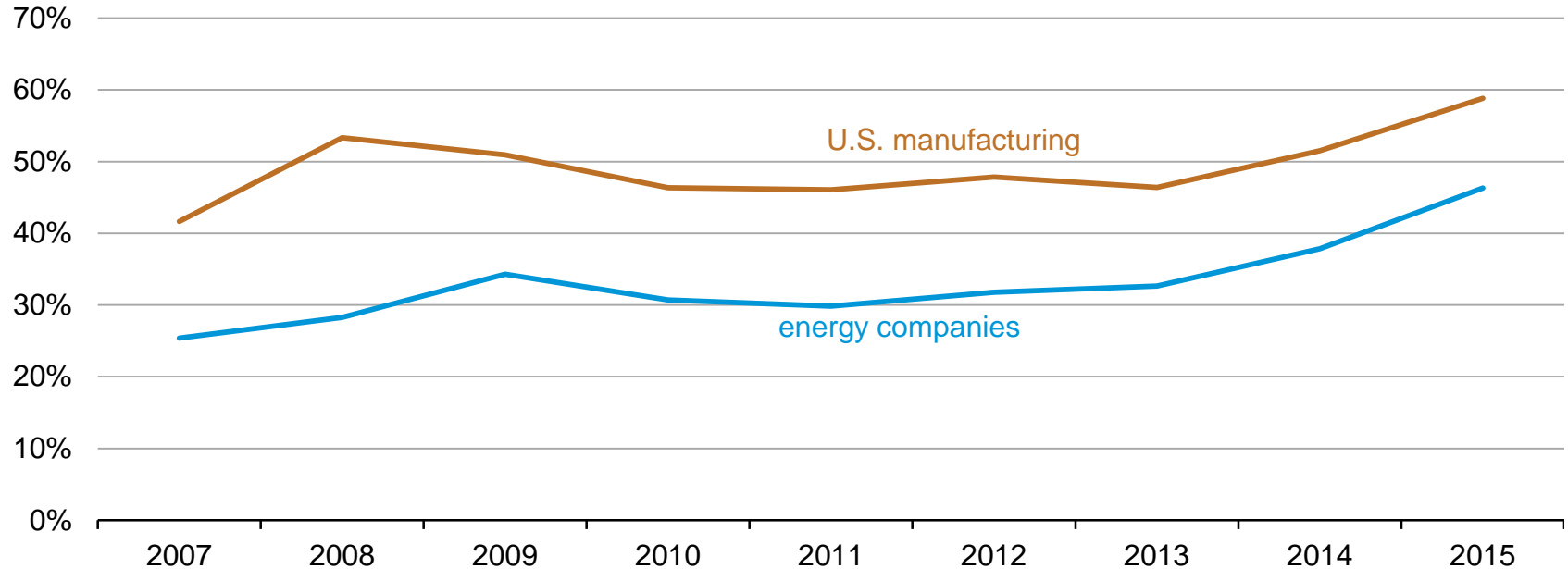
return on equity



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

The long-term debt to equity ratio increased for both manufacturing and energy companies

long-term debt to equity

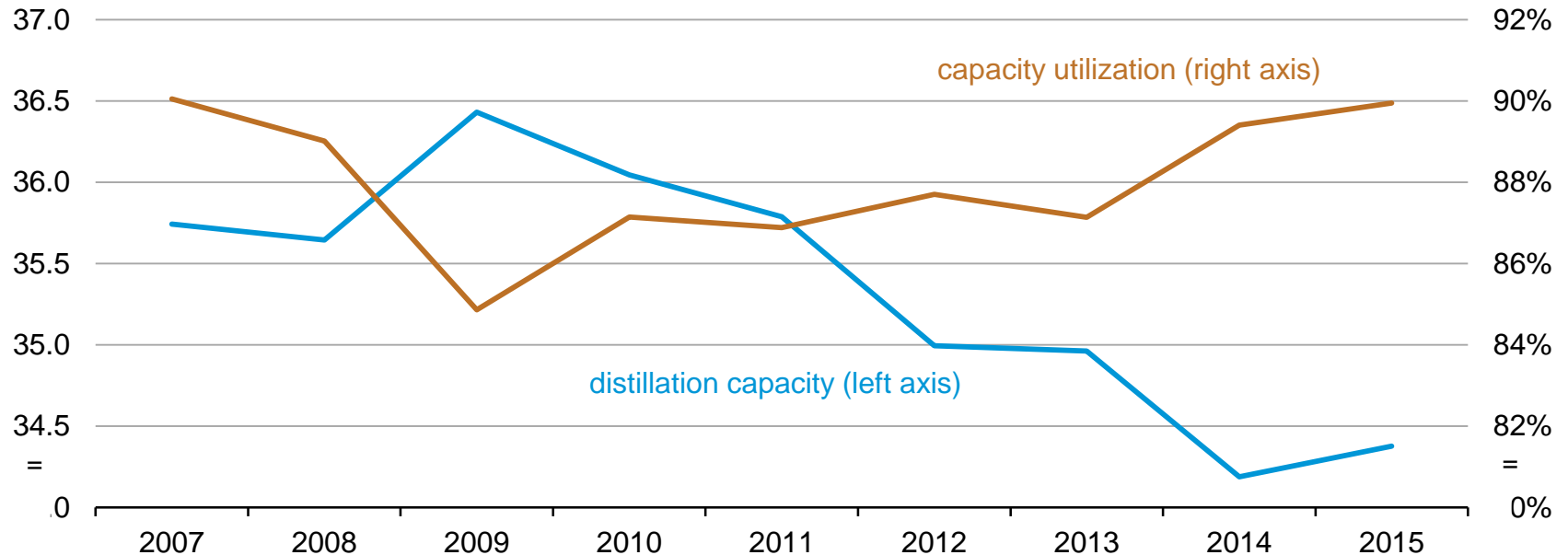


Source: U.S. Energy Information Administration, Evaluate Energy, U.S. Census Bureau

Refining

Refinery capacity utilization returned to 2007 levels, while total distillation capacity remains 1.4 million b/d lower

million barrels per day

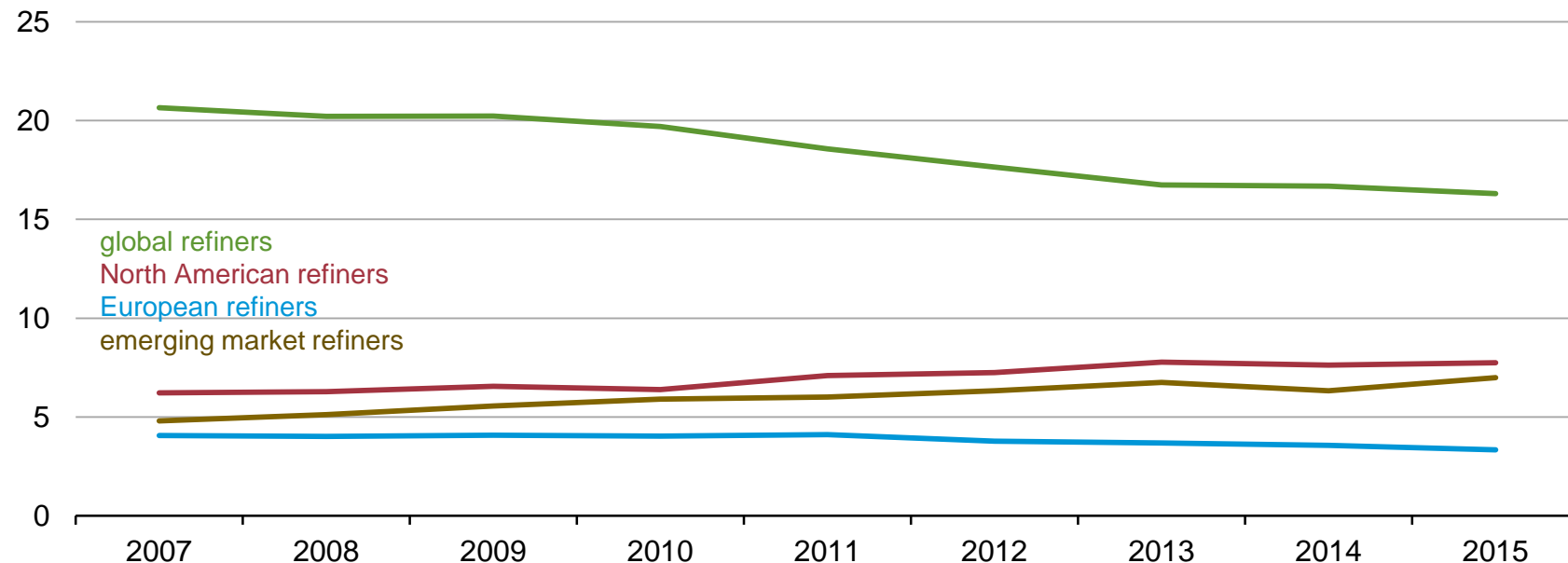


Source: U.S. Energy Information Administration, Evaluate Energy

Note: Includes 25 companies

Distillation capacity increases in China and North America offset reductions from refiners with global operations

distillation capacity by region
million barrels per day

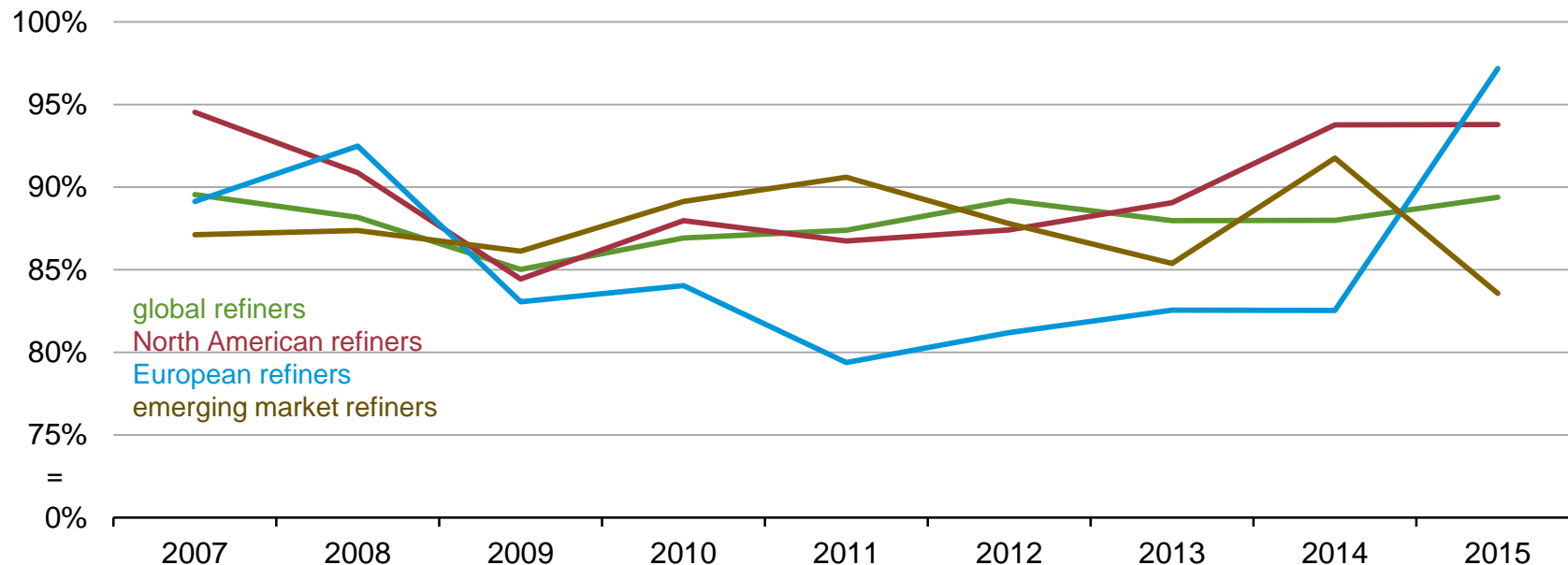


Source: U.S. Energy Information Administration, Evaluate Energy

Note: A global refiner is a company with refining assets in different regions. This chart includes 25 companies.

European refiners had the largest capacity utilization increase in 2015, by 15 percentage points

capacity utilization



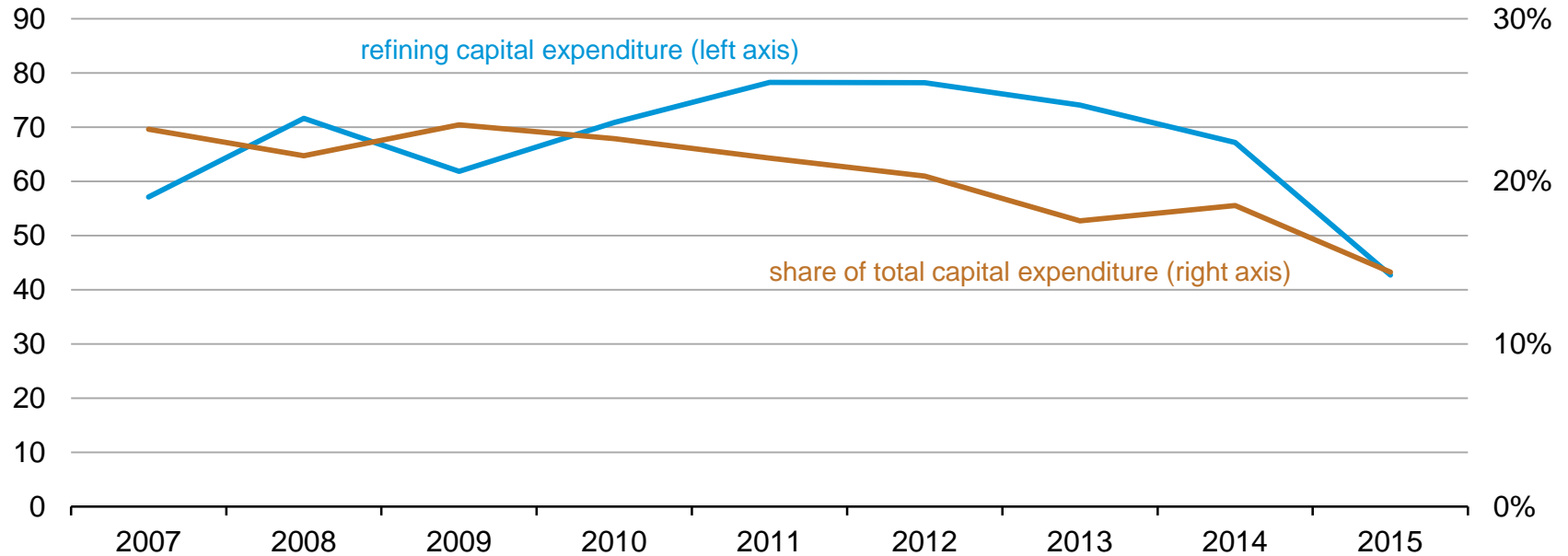
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Includes 25 companies

Refining capital expenditure fell almost \$25 billion in 2015 and comprised 14% of total capital expenditure

refining capital expenditure
billion 2015\$

share of total capital expenditure



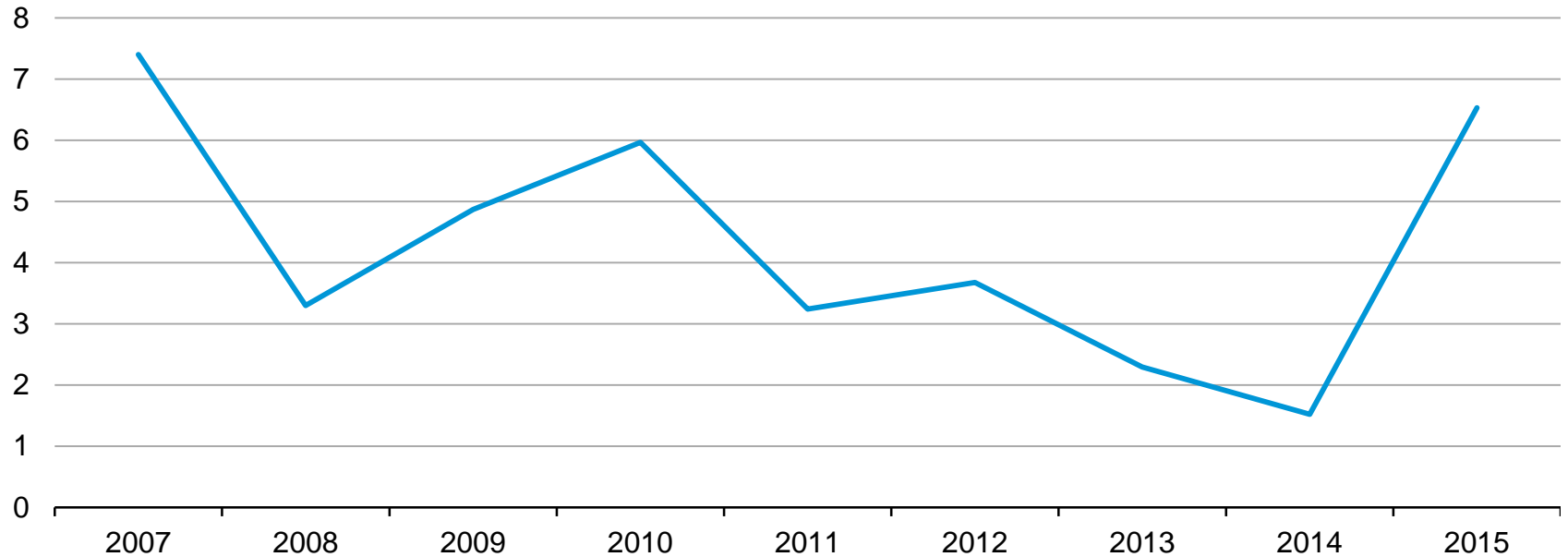
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Includes 30 companies

Refinery profits quadrupled as crack spreads increased in 2015

earnings per barrel processed

2015 \$/b



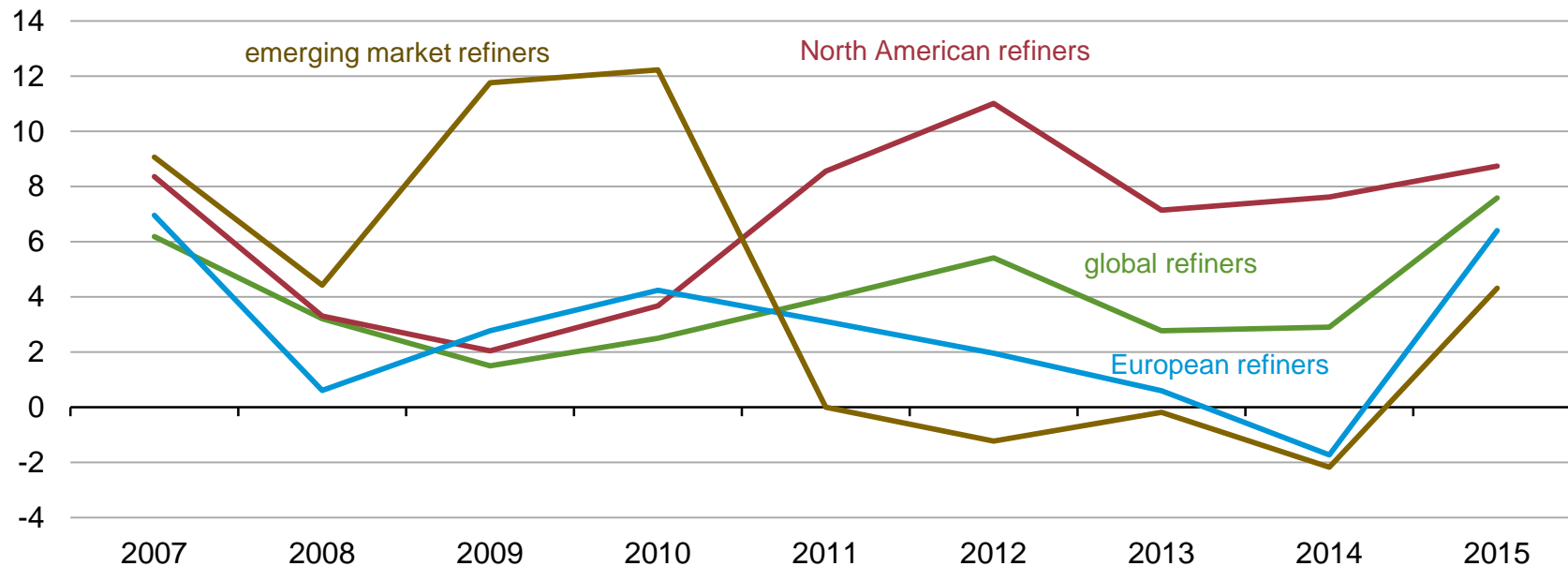
Source: U.S. Energy Information Administration, Evaluate Energy

Note: Includes 31 companies; crack spreads represent the difference between petroleum product prices and crude oil prices

While North American refiners remained the most profitable, European refiners experienced the largest increase in earnings

earnings per barrel processed

2015 \$/b



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

Note: Includes 31 companies

Appendix: List of companies in the upstream analysis

Anadarko Petroleum Corp.	Det Norske	Kosmos Energy	Petro-Canada	Statoil ASA
Apache Corporation	Devon Energy Corporation	Laredo Petroleum	Petrobras (IFRS US\$ Current)	Stone Energy
Apco Oil and Gas International Inc	Encana Corporation	Linn Energy	PetroChina	Suncor Energy Inc.
Approach Resources Inc	Energen Corp	Lukoil (IFRS)	Petrohawk Energy Corp	Swift Energy Co
Athlon Energy Inc.	Energy XXI	Magnum Hunter Resources	Petronas	Synergy Resources Corporation
ATP Oil & Gas Corp.	Enerplus Corporation	Marathon Oil Corp.	Pioneer Natural Resources Company	Total
Berry Petroleum Co.	ENI	Mariner Energy	Plains Exploration & Production	Triangle Petroleum Corporation
Bill Barrett Corporation	EOG Resources	Mitsui & Co	PTT	Unit Corp
BP Plc.	EPL Oil & Gas Inc	Murphy Oil Corporation	QEP Resources Inc	W & T Offshore
Carrizo Oil & Gas, Inc	ExxonMobil	Newfield Exploration Company	Range Resources Corp	Whiting Petroleum Corporation
Cenovus Energy Inc.	Forest Oil Corporation	Noble Energy	Repsol	WPX Energy
Chesapeake Energy Corp.	Galp Energia	Northern Oil & Gas, Inc	Rosetta Resources Inc.	XTO
Chevron Corporation	Gazprom Neft	Novatek	Royal Dutch Shell	YPF Sociedad Anonima
Cimarex Energy Co.	Goodrich Petroleum Corp	Oasis Petroleum Inc.	Sabine Oil & Gas Corporation	
Clayton Williams Energy	Gulfport Energy Corporation	Occidental Petroleum Corporation	Sanchez Energy Corp	
Comstock Resources	Halcon Resources Corporation	OMV	SandRidge Energy	
Concho Resources Inc	Hess Corp	Pacific Exploration and Production Corporation	Sasol Limited	
ConocoPhillips	Husky Energy Inc.	Parsley Energy Inc.	Sinopec	
Continental Resources	Imperial Oil Limited	PDC Energy, Inc.	SM Energy Company	
Denbury Resources Inc.	Kodiak Oil & Gas Corp.	Penn Virginia	Sonde Resources Corp.	

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

Note: Some companies merged or split before 2015. A total of 77 companies existed in 2015.

Appendix: List of companies in the downstream analysis

Alon USA Energy	Imperial Oil Limited	Phillips 66	TUPRAS
BP Plc.	Indian Oil Corp.	PKN Orlen	Unipetrol
Chevron Corporation	Lukoil (IFRS)	Repsol	Valero Energy Corporation
ConocoPhillips	Marathon Oil Corp.	Rosneft	Western Refining
Delek US Holdings	Marathon Petroleum Corporation	Royal Dutch Shell	
ENI	MOL	Sinopec	
ExxonMobil	Neste Oil	Suncor Energy Inc.	
Grupa Lotos	OMV	Tesoro Petroleum Corp.	
HollyFrontier Corp	Petrobras (IFRS US\$ Current)	TNK-BP International Ltd	
Husky Energy Inc.	PetroChina	Total	

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

Note: Some companies merged or split before 2015. A total of 31 companies existed in 2015.

Background

- This analysis focuses on the financial and operating trends of 77 global oil and natural gas companies (called the *energy 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, a company's assets that were acquired by another company in the group after 2007 were kept in the prior year data.

Brief description of terms

- Cash from operations is a measure of income.
- Capital expenditure represents cash used for property, plant, and equipment.
- Financing activities measure inflows/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 shareholders have invested.
- Market capitalization is the total value of all of a company's publicly traded shares outstanding.

Brief description of terms

- Net income (earnings) represents profit 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 loss of production potential or declining oil prices.
- The term upstream refers to crude oil exploration, production, and other operations prior to refining. The term downstream refers to refinery operations, product sales, and marketing at the wholesale and retail level.
- Several charts show comparisons between these upstream companies and the U.S. manufacturing industry, collected from U.S. Census Bureau's *Quarterly Financial Report*.