

Financial Review of the Global Oil and Natural Gas Industry: 2021



Petroleum and Liquid Fuels Markets Team

May 2022

Key findings for 2021

- Brent crude oil daily average prices were \$70.95 per barrel in 2021—64% higher than 2020.
- In this study of 119 companies, the combined petroleum liquids production decreased 1% in 2021 from 2020, and natural gas production increased 5%.
- Proved and unproved reserve acquisition made up 35% of total upstream costs, the largest in the 2012–21 period.
- Finding plus lifting costs decreased 2% from 2020 to 2021.
- The energy companies reduced net debt by \$134 billion in 2021, the most for any year in the 2012–21 period.
- Refiners' earnings per barrel processed increased in 2021.

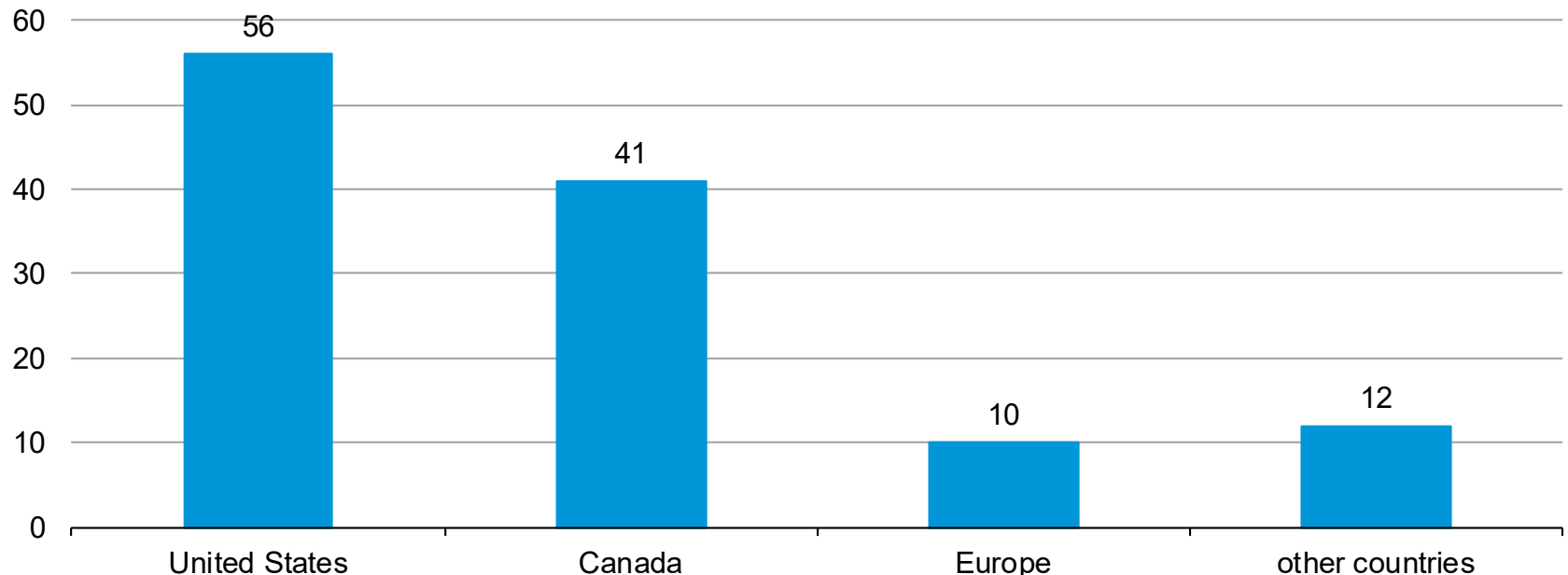
Note: The 119 upstream companies and 36 downstream companies analyzed in this study publish publicly available financial statements. A full list of the companies included and a glossary of terms begin on slide 26.

Upstream

Most company headquarters included in our study were located in the United States

Geographic distribution of global oil and natural gas company headquarters, 2021

number of companies



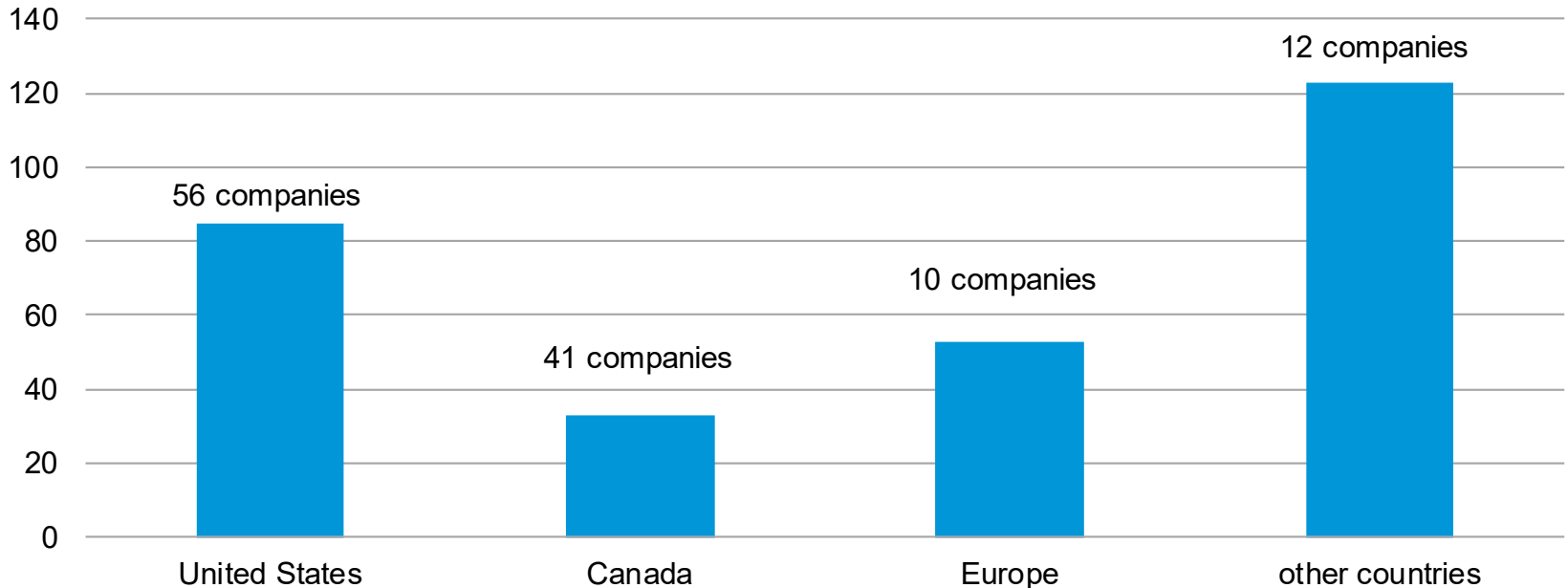
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other* includes Argentina, Brazil, Chile, China, Colombia, Mexico, Thailand, and Russia

Global oil and natural gas company proved reserves were highest in the *other countries* category

Proved reserves of global oil and natural gas companies by region of headquarters, 2021

billion barrels of oil equivalent



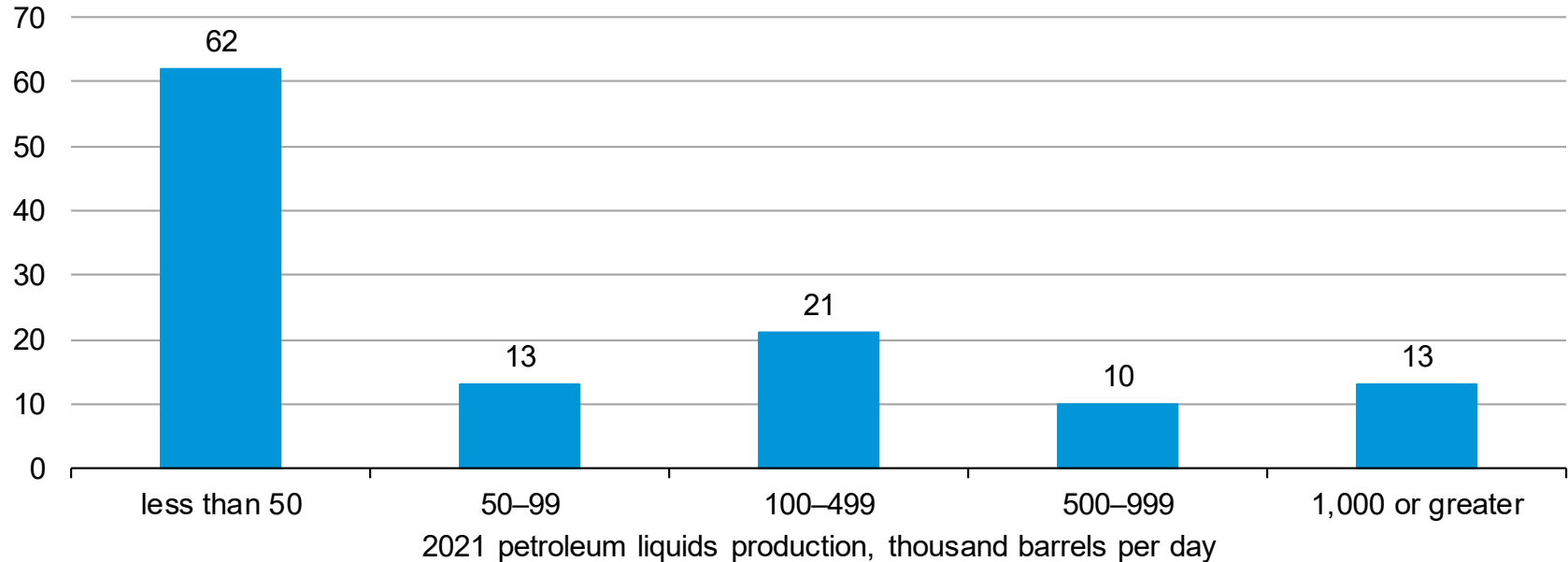
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other* includes Argentina, Brazil, Chile, China, Colombia, Mexico, Thailand, and Russia

About 52% of companies we included produced less than 50,000 barrels per day in 2021

Distribution of companies by volume of petroleum liquids produced, 2021

number of companies

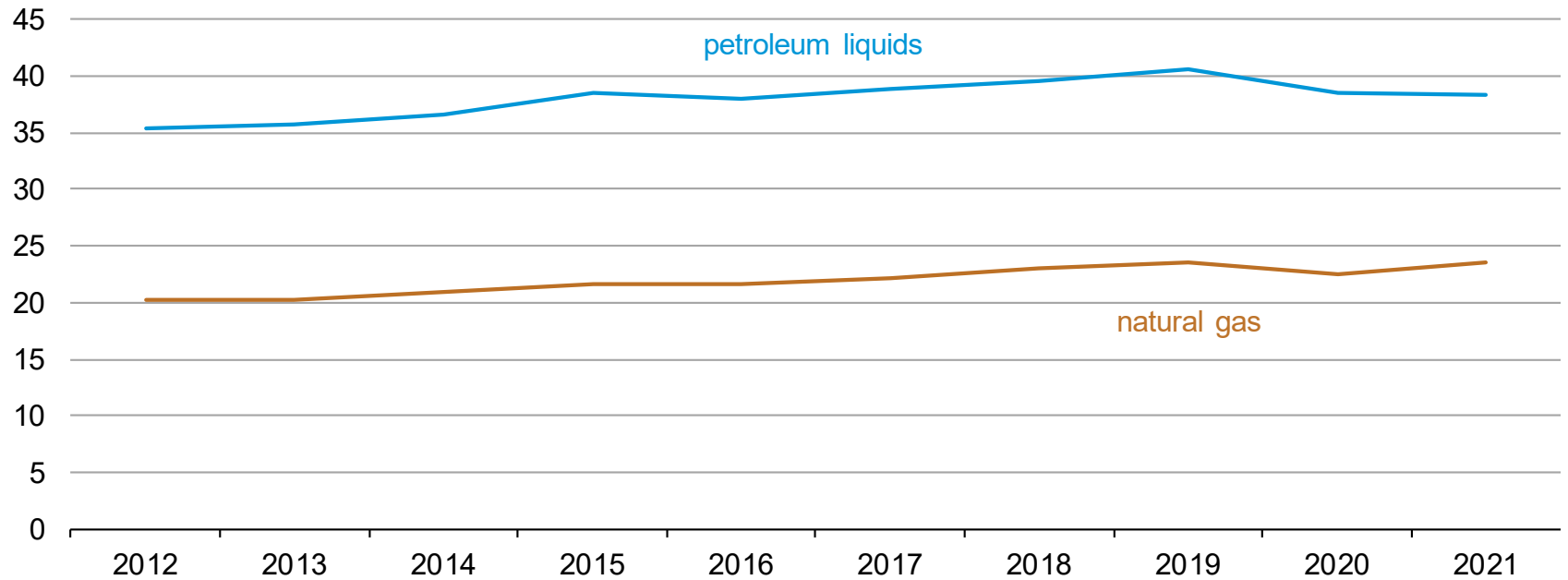


Data source: Evaluate Energy data of companies with publicly available financial statements

Production of oil declined and production of natural gas increased in 2021 compared with 2020

Petroleum liquids and natural gas production, 2012–21

million barrels of oil equivalent per day

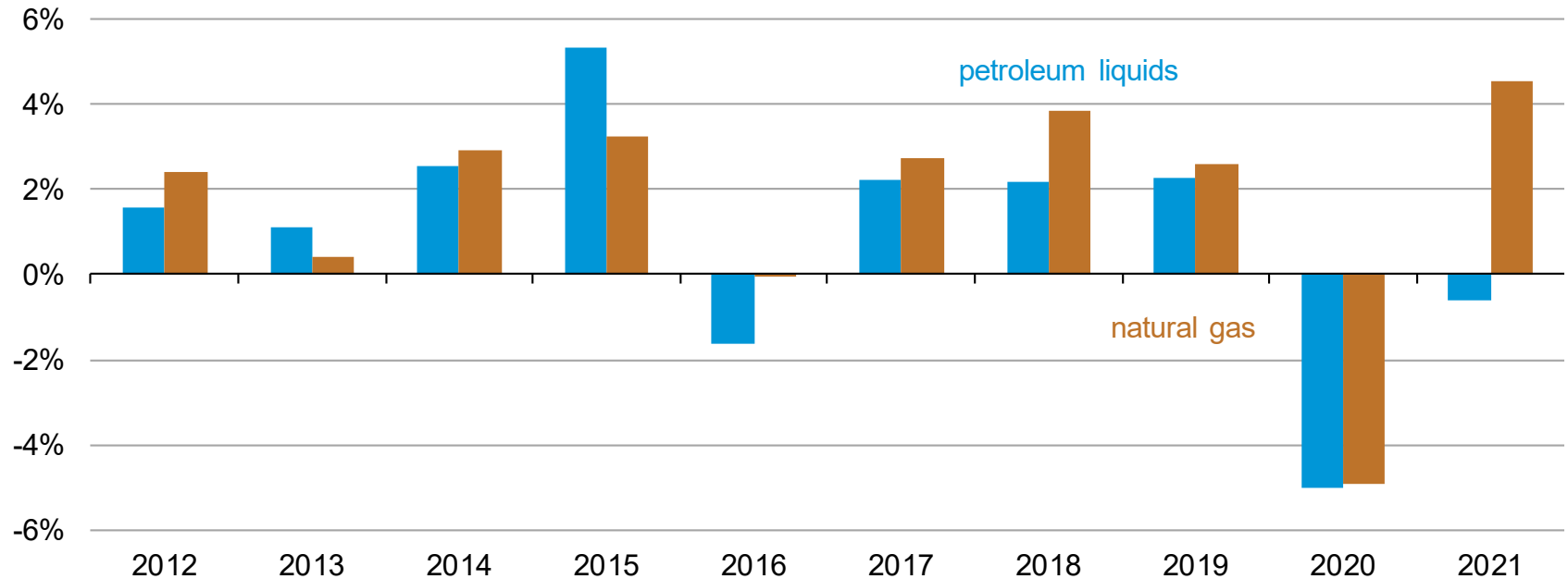


Data source: Evaluate Energy data of companies with publicly available financial statements

Petroleum liquids production decreased and natural gas production increased from 2020 to 2021

Petroleum liquids and natural gas production, 2012–21

year-over-year change

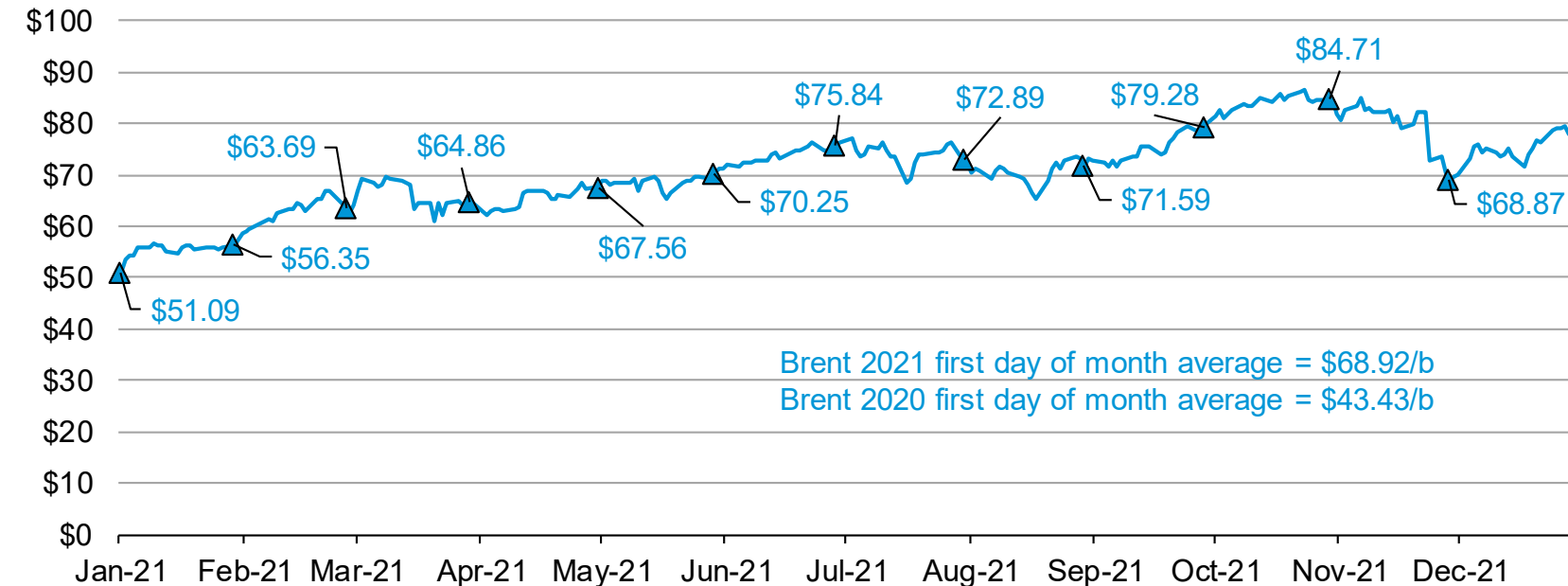


Data source: Evaluate Energy data of companies with publicly available financial statements

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 prices, 2021

dollars per barrel (b)



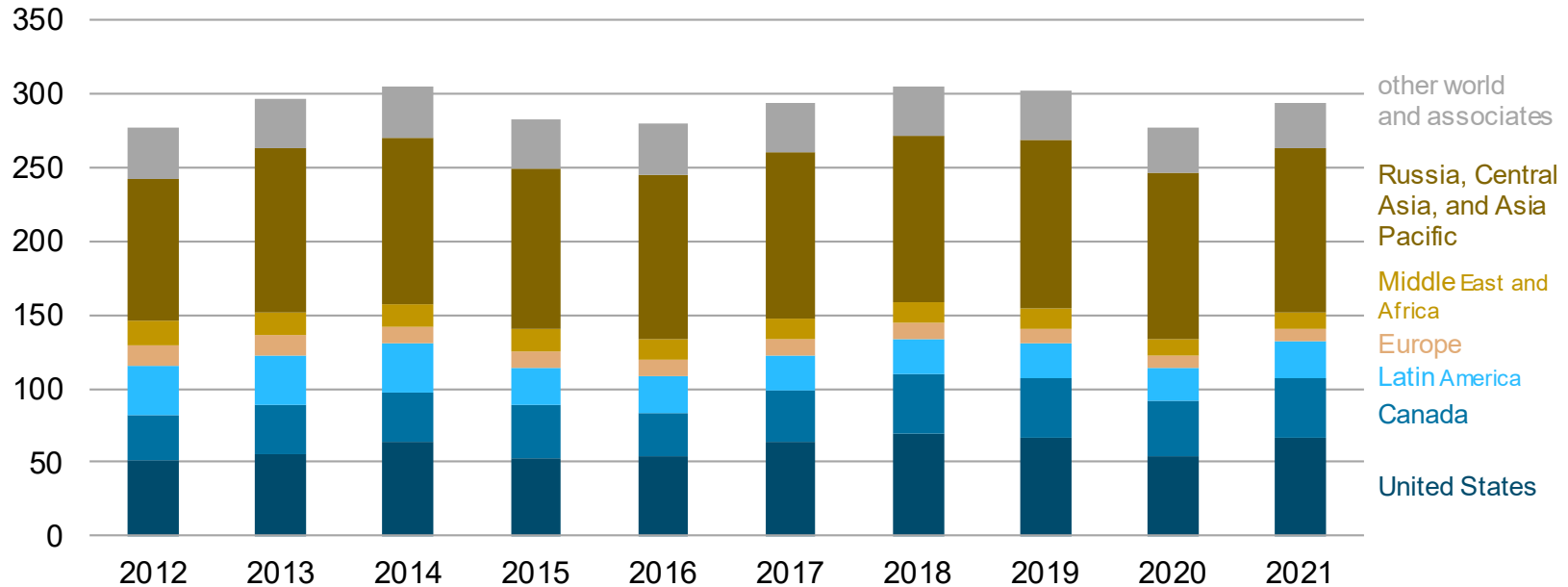
Data source: Intercontinental Exchange, Bloomberg L.P.

Note: SEC = U.S. Securities and Exchange Commission

Global proved reserves totaled 293 billion barrels of oil equivalent at the end of 2021, 6% higher than at the end of 2020

Proved reserves by region, 2012–21

billion barrels of oil equivalent



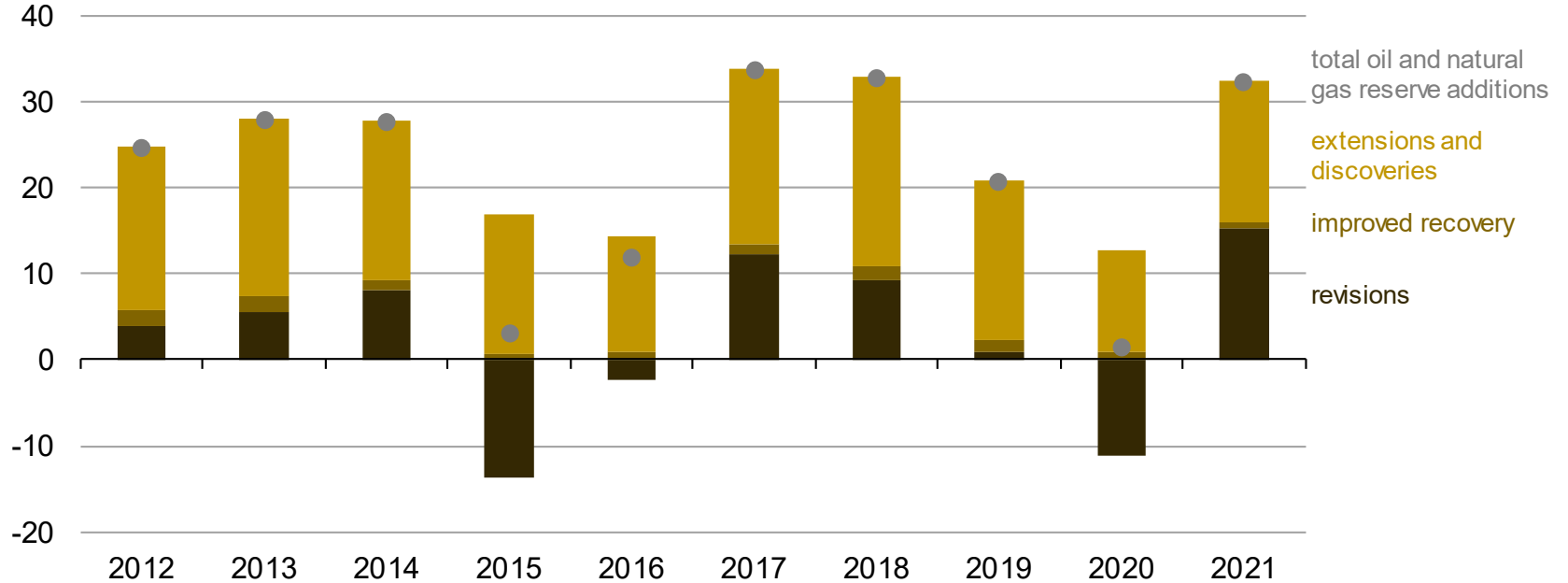
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Mergers and acquisitions between companies may affect net reserve changes for the year and comparisons between years.

Proved reserves additions for petroleum liquids and natural gas totaled 32 billion barrels in 2021

Proved reserve additions, 2012–21

billion barrels of oil equivalent

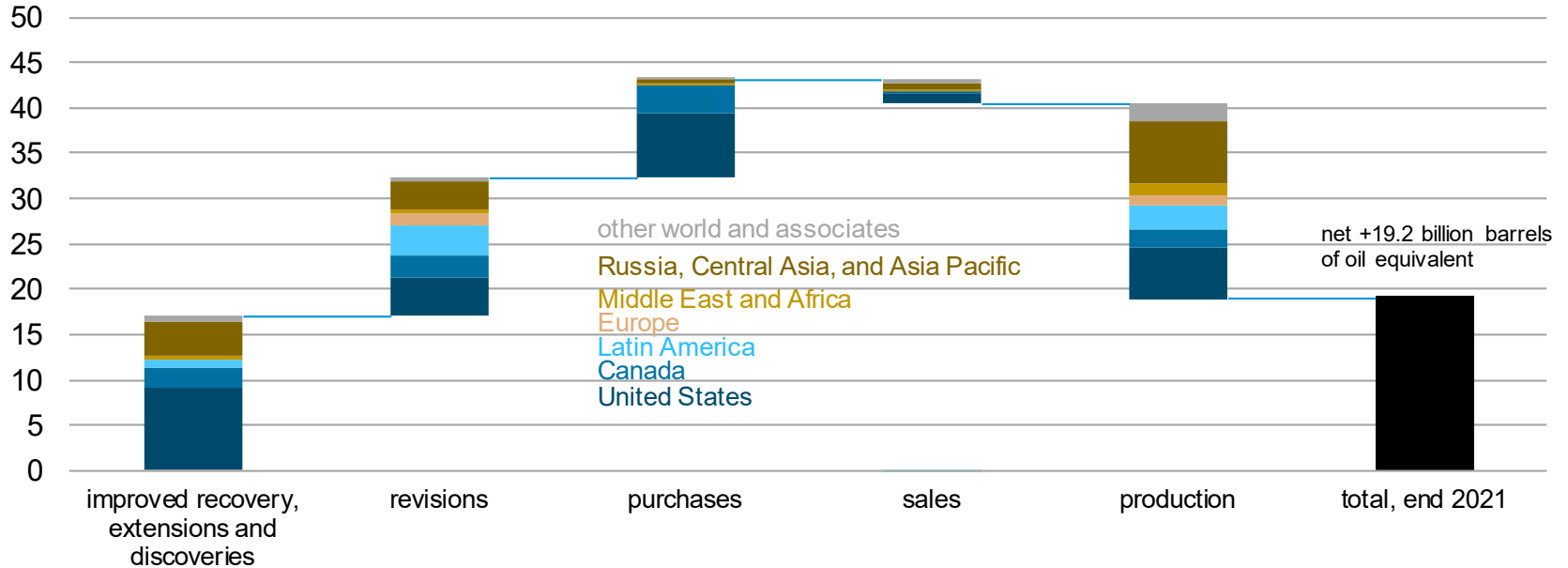


Data source: Evaluate Energy data of companies with publicly available financial statements

After net purchases and production, the companies added 19.2 billion barrels of oil equivalent to proved reserves in 2021

change in proved reserves from 2020 to 2021

billion barrels of oil equivalent



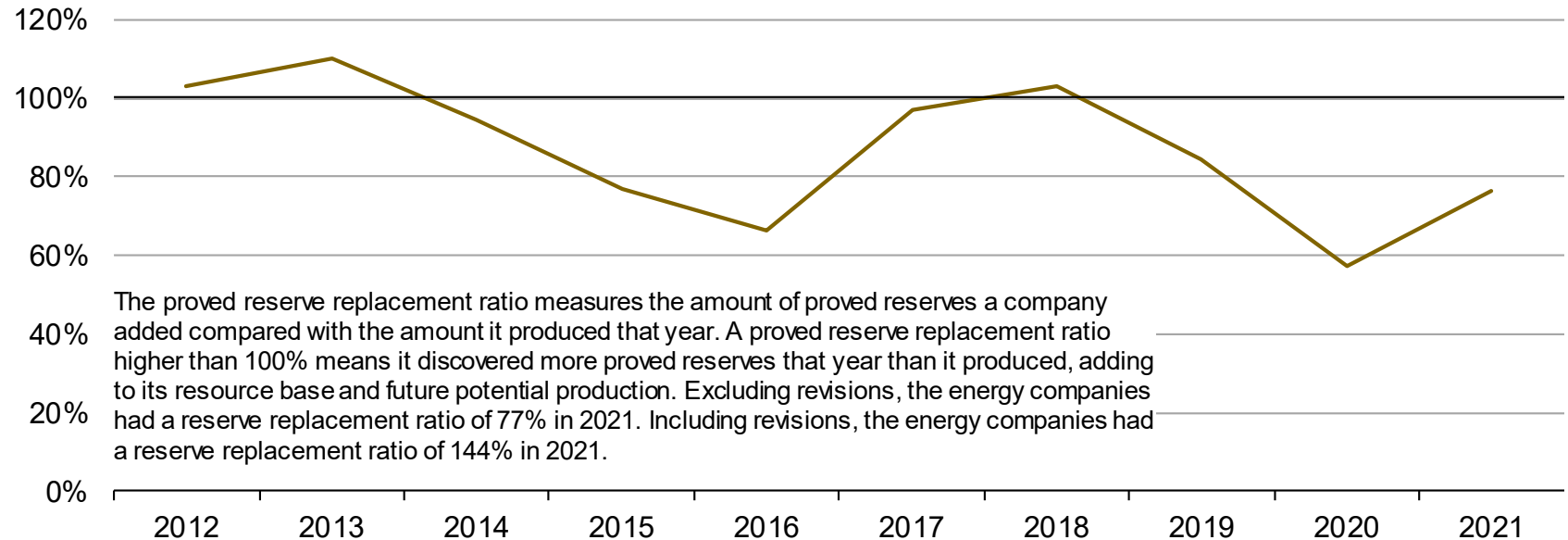
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Mergers and acquisitions between companies may affect net reserve changes for the year and comparisons between years.

Excluding revisions, the companies replaced 77% of their production through organic proved reserve additions

Proved reserve replacement ratio, 2012–21

percentage



The proved reserve replacement ratio measures the amount of proved reserves a company added compared with the amount it produced that year. A proved reserve replacement ratio higher than 100% means it discovered more proved reserves that year than it produced, adding to its resource base and future potential production. Excluding revisions, the energy companies had a reserve replacement ratio of 77% in 2021. Including revisions, the energy companies had a reserve replacement ratio of 144% in 2021.

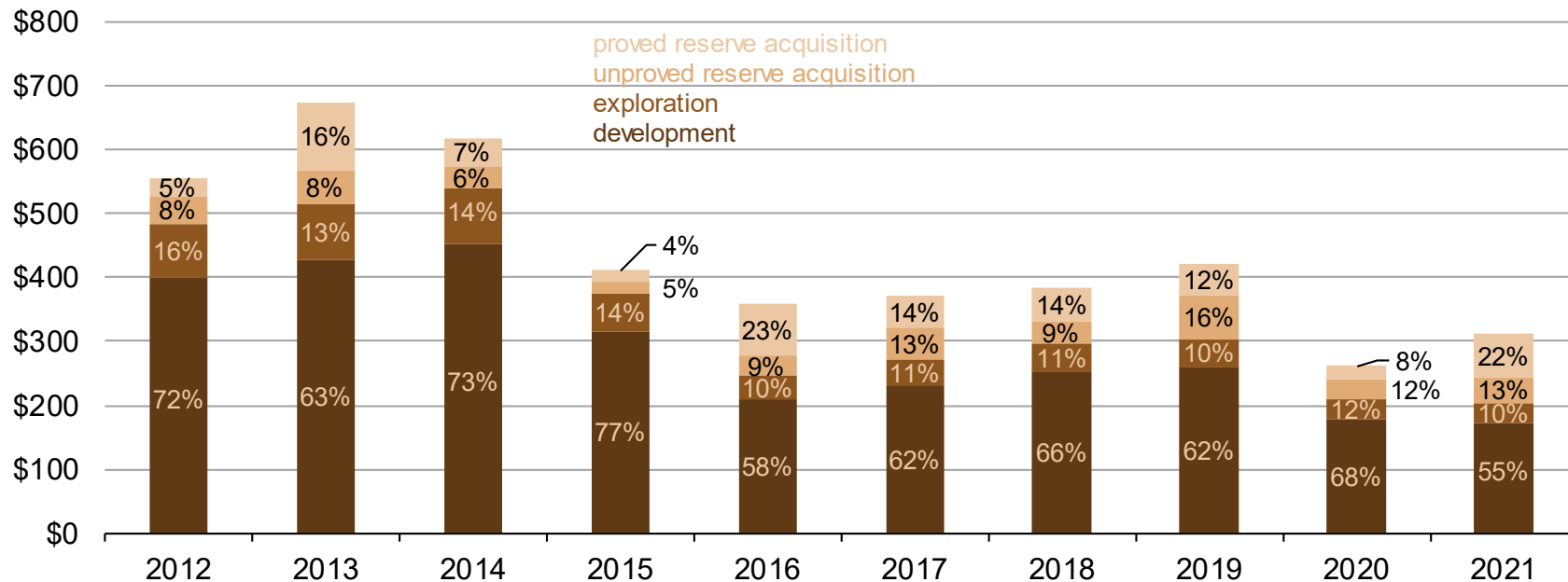
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Excludes proved reserve revisions. Organic proved reserves additions include those added through extensions and discoveries and improved recovery.

Proved and unproved reserve acquisition made up 35% of total upstream costs, the largest in the 2012–21 period

Upstream costs incurred, 2012–21

billion dollars



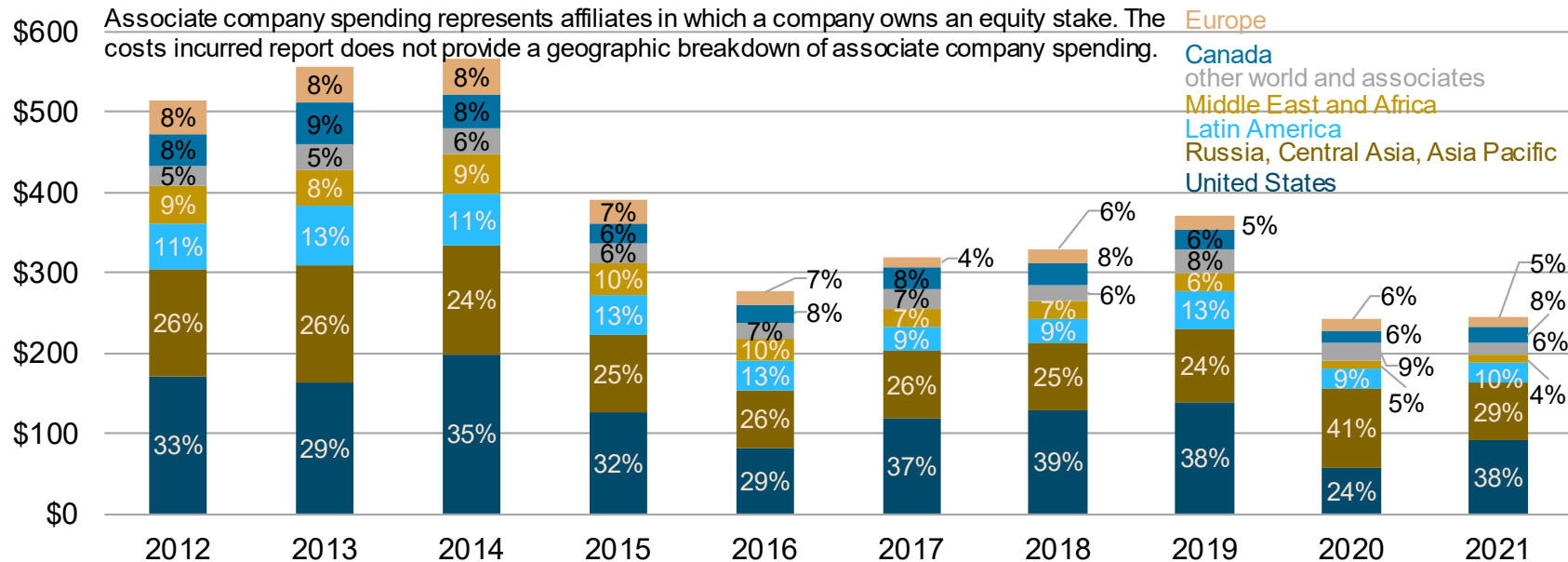
Data source: Evaluate Energy data of companies with publicly available financial statements

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

Exploration and development spending increased slightly from 2020 to 2021, 28% below the 2015–19 average

Exploration and development costs incurred, 2012–21

billion dollars



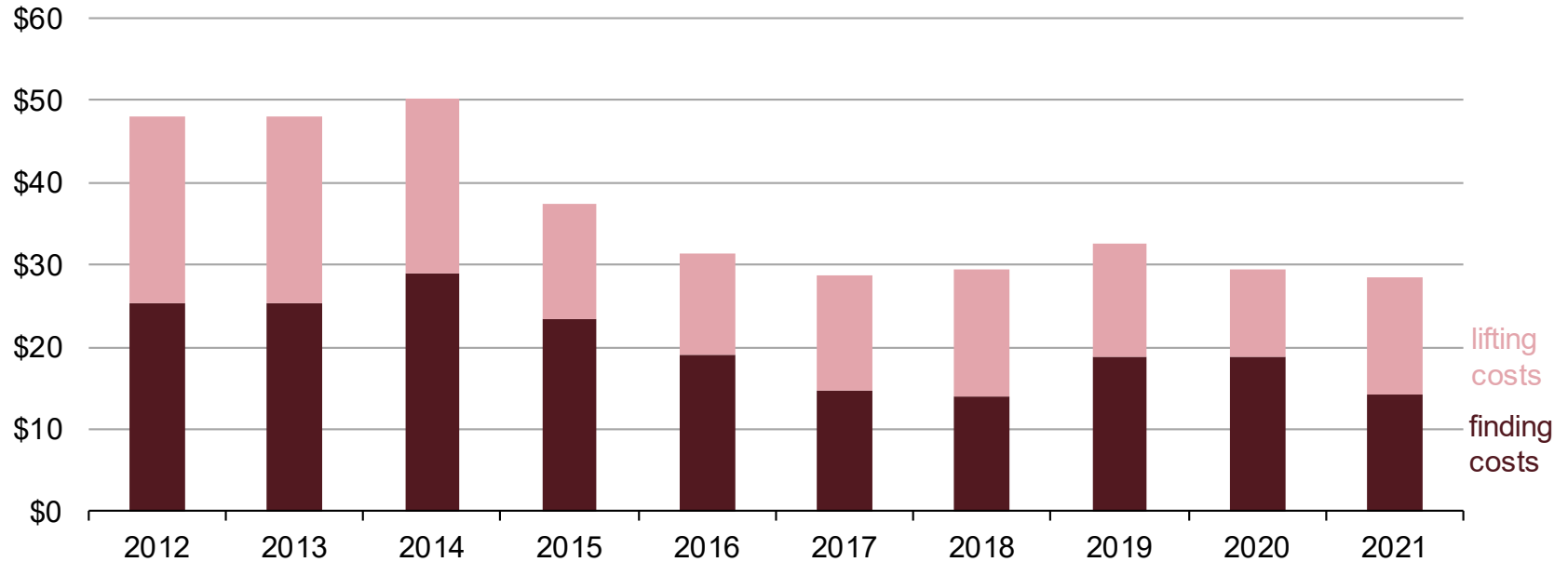
Data source: Evaluate Energy data of companies with publicly available financial statements

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

Finding plus lifting costs decreased 3% from 2020 to 2021

Finding plus lifting costs, 2012–21

dollars per barrel of oil equivalent



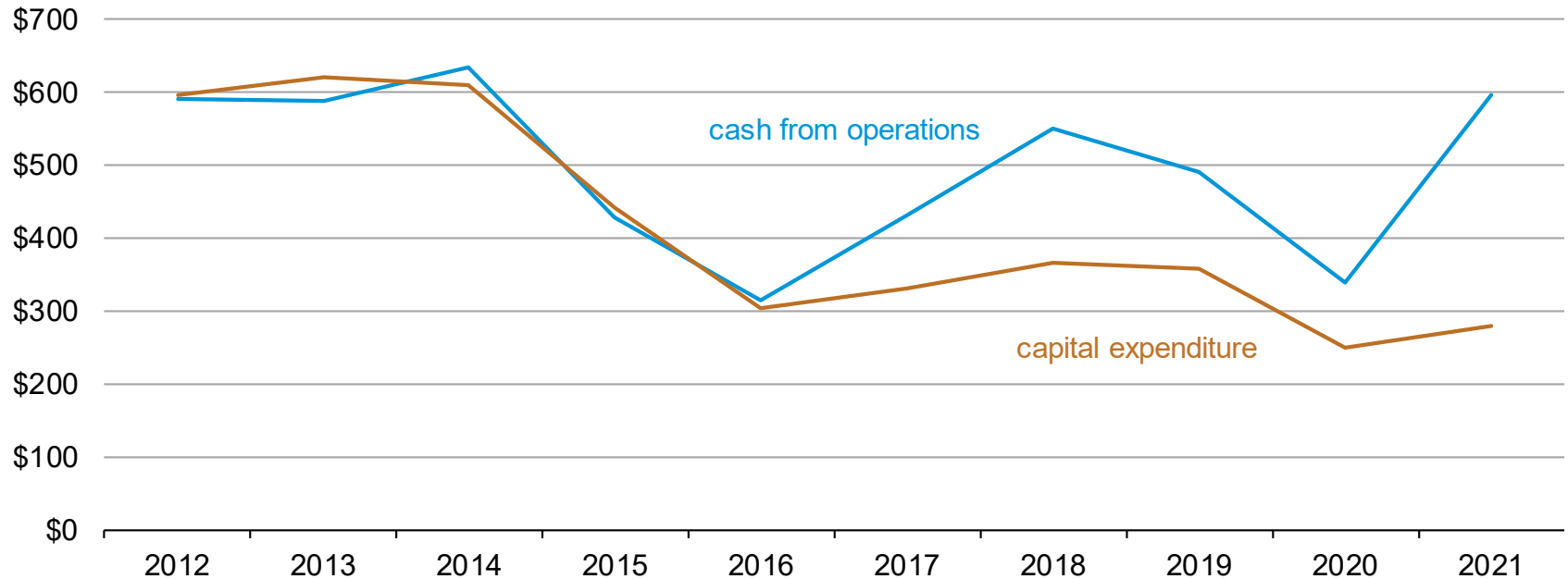
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Excludes proved reserve revisions

Cash from operations and capital expenditure increased \$259 billion and \$30 billion, respectively, from 2020 to 2021

Cash from operations and capital expenditure, 2012–21

billion dollars

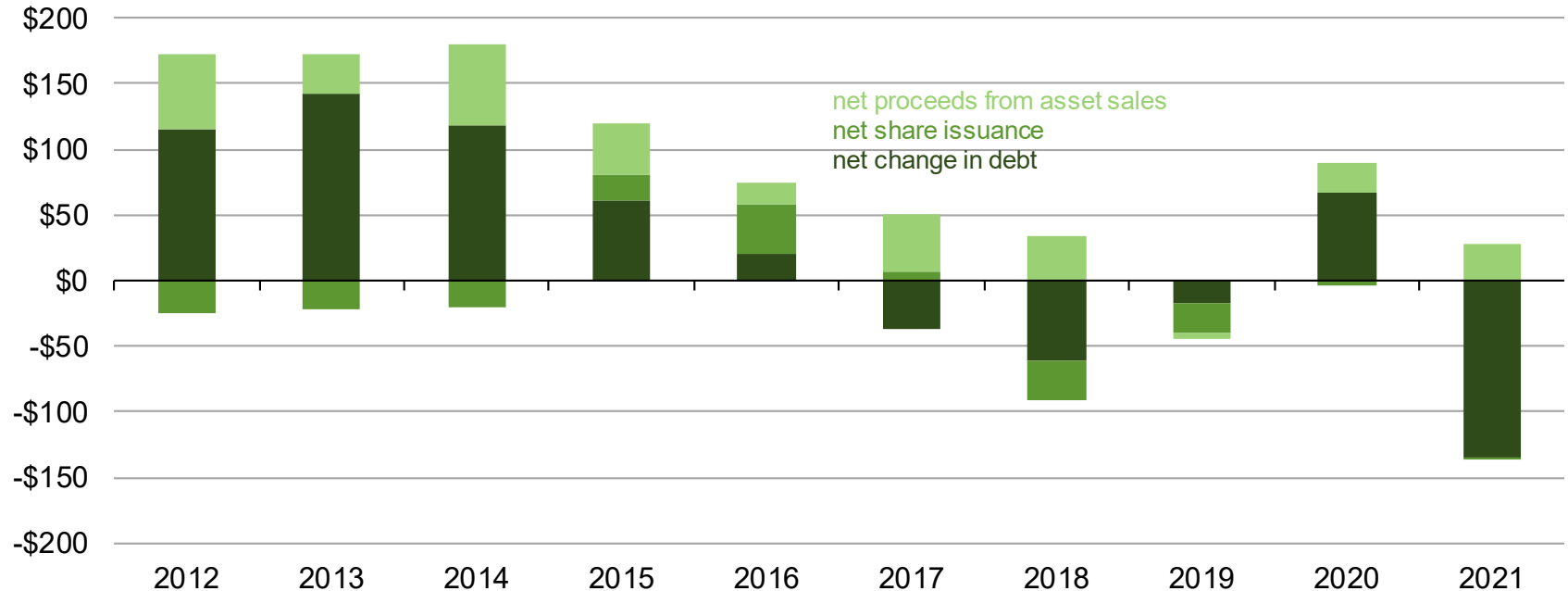


Data source: Evaluate Energy data of companies with publicly available financial statements

The companies decreased net debt by \$134 billion in 2021

Financing activities, 2012–21

billion dollars

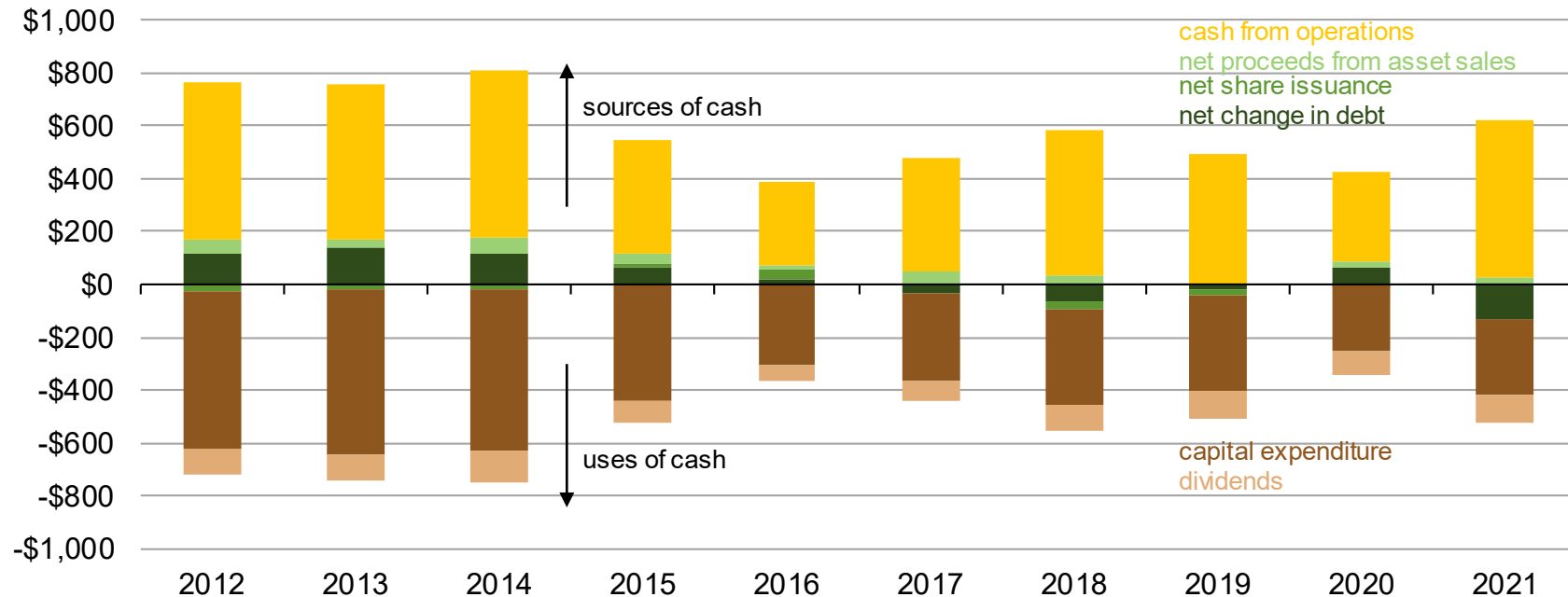


Data source: Evaluate Energy data of companies with publicly available financial statements

Reducing net debt accounted for 26% of the main uses of cash in 2021, the largest debt reduction in the 2012–21 period

Sources and uses of cash, 2012–21

billion dollars

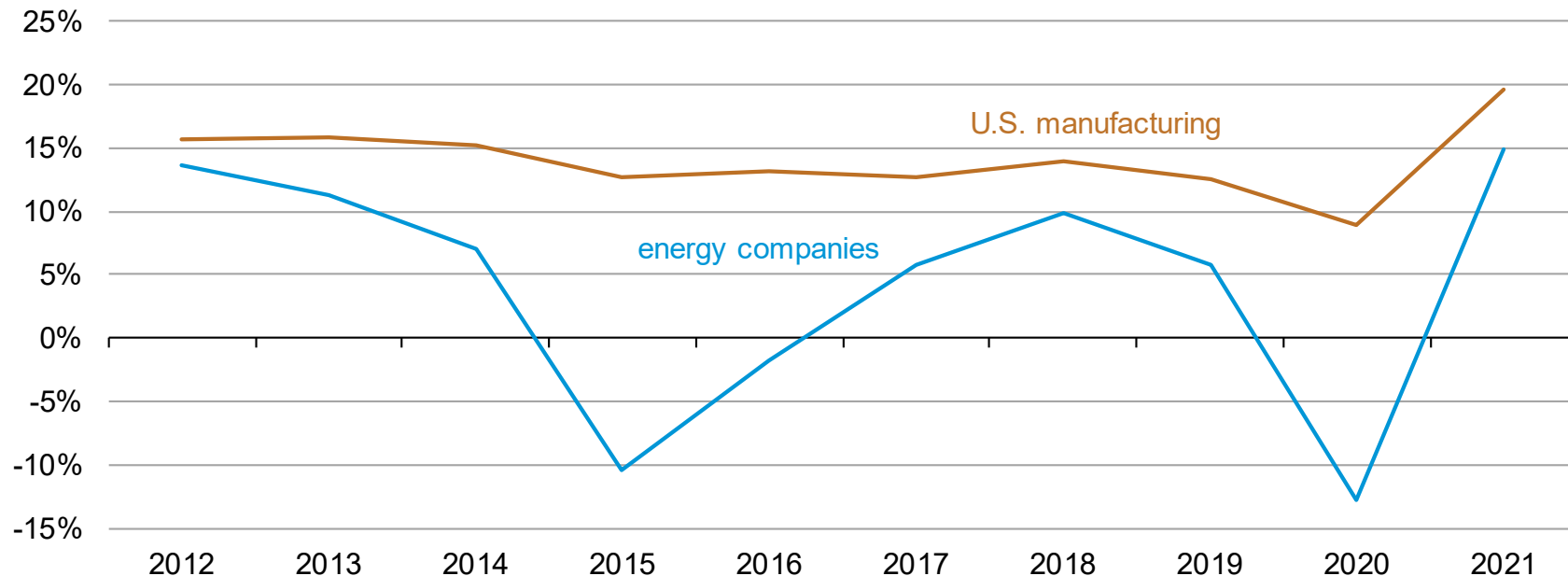


Data source: Evaluate Energy data of companies with publicly available financial statements

Return on equity for the energy companies and for U.S. manufacturing companies increased to 15% and 20%, respectively, in 2021

Return on equity, energy companies and U.S. manufacturing companies, 2012–21

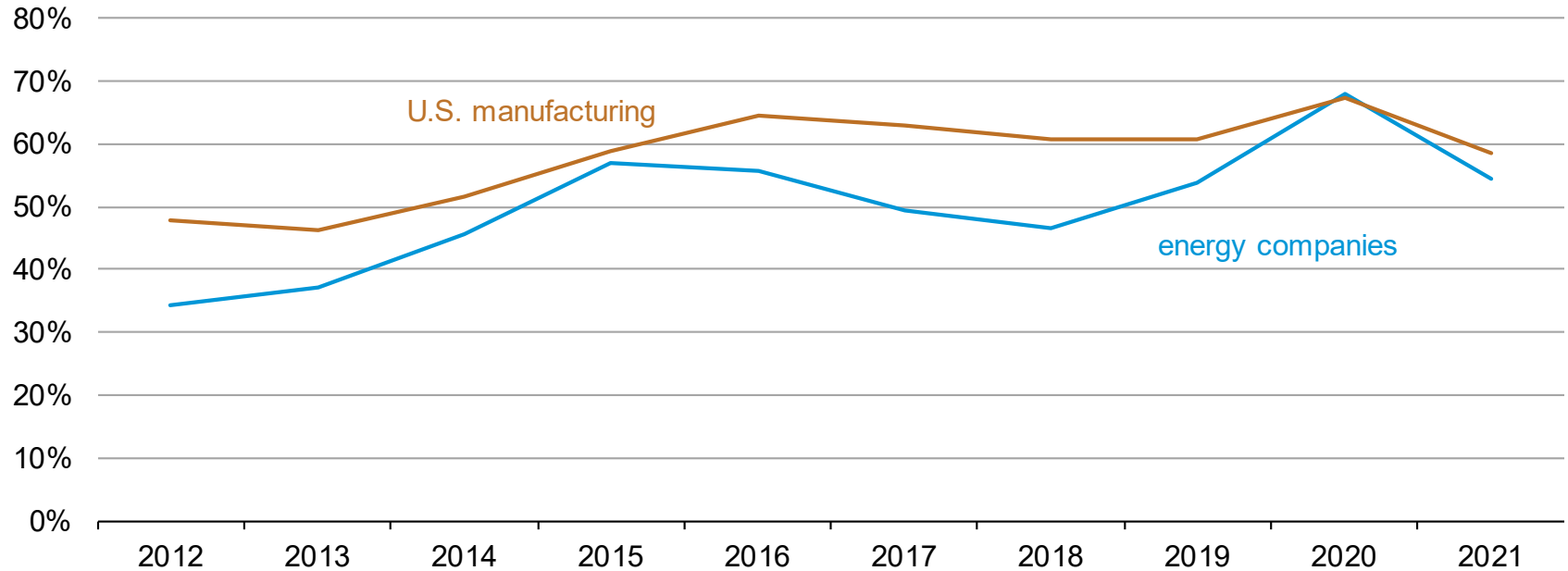
percentage



Data source: Evaluate Energy data of companies with publicly available financial statements and U.S. Census Bureau

The long-term debt-to-equity ratio decreased to 55% for the energy companies and to 59% for U.S. manufacturing companies

Long-term debt-to-equity ratio, energy companies and U.S. manufacturing companies, 2012–21
percentage



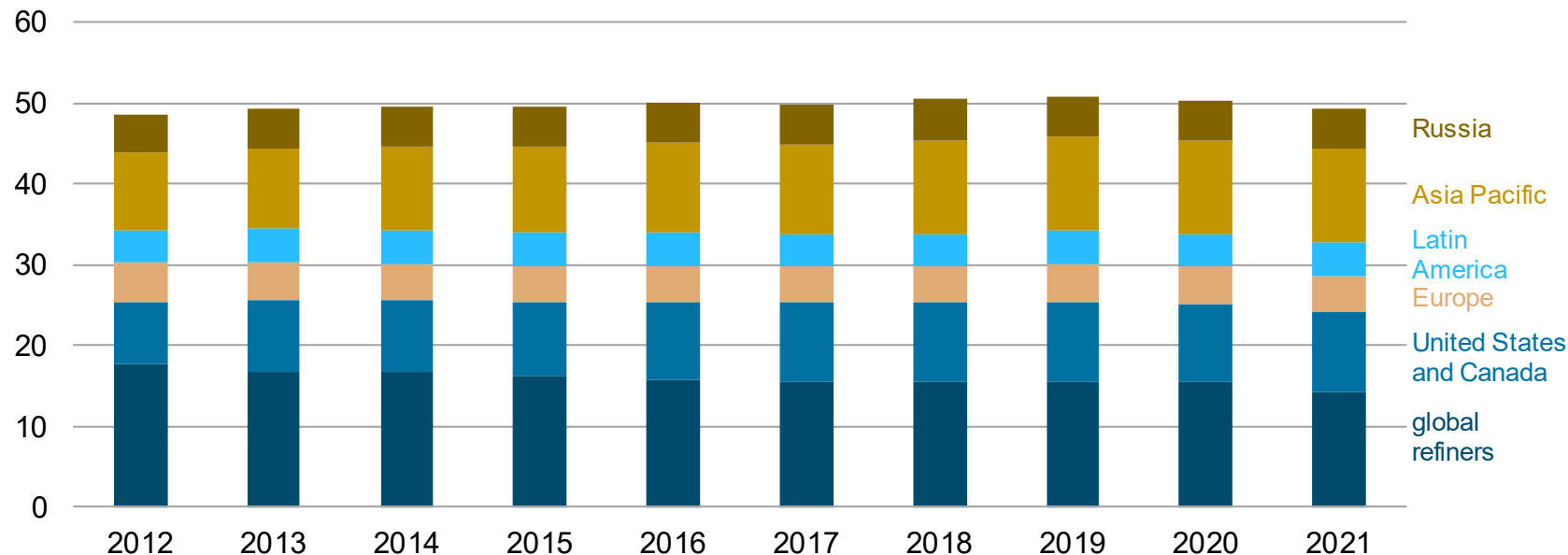
Data source: Evaluate Energy data of companies with publicly available financial statements and U.S. Census Bureau

Downstream

Global refining distillation capacity decreased from 2020 to 2021

Global refining distillation capacity by region, 2012–21

million barrels per day



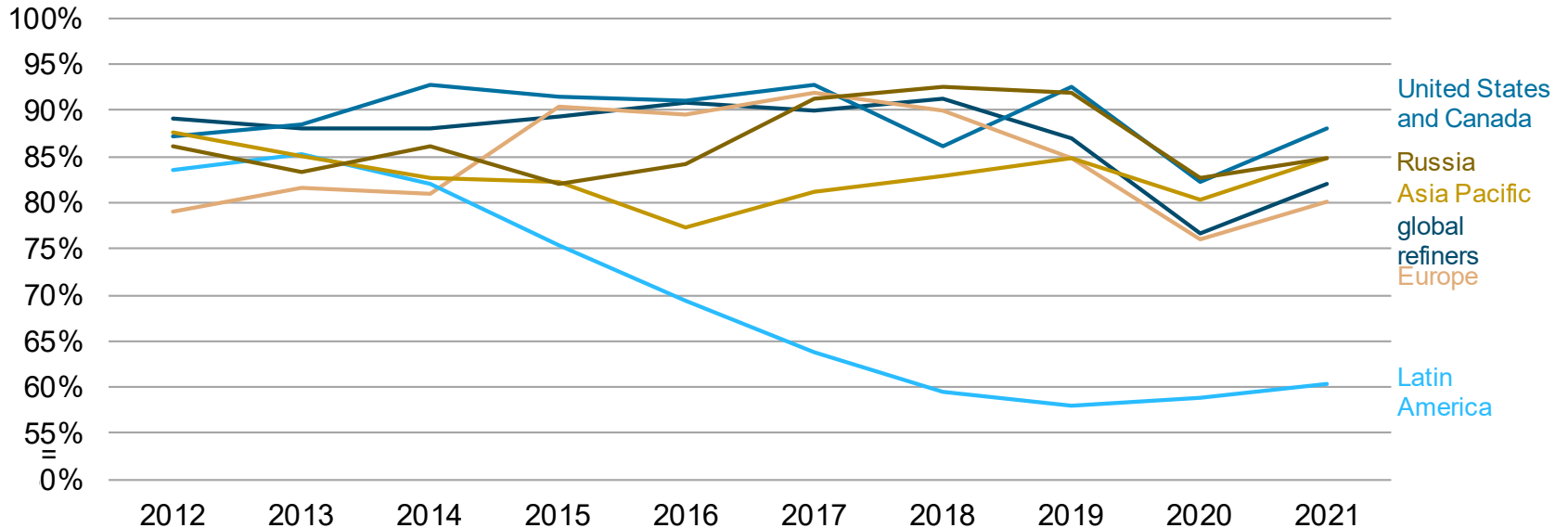
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: A global refiner is a company with refining assets in different regions of the world. Rosneft and Lukoil PJSC refining capacity data are not available for 2021; 2020 numbers are used for 2021.

Capacity utilization for all companies averaged 80% in 2021 and increased in all regions

Refining capacity utilization by region, 2012–21

percentage



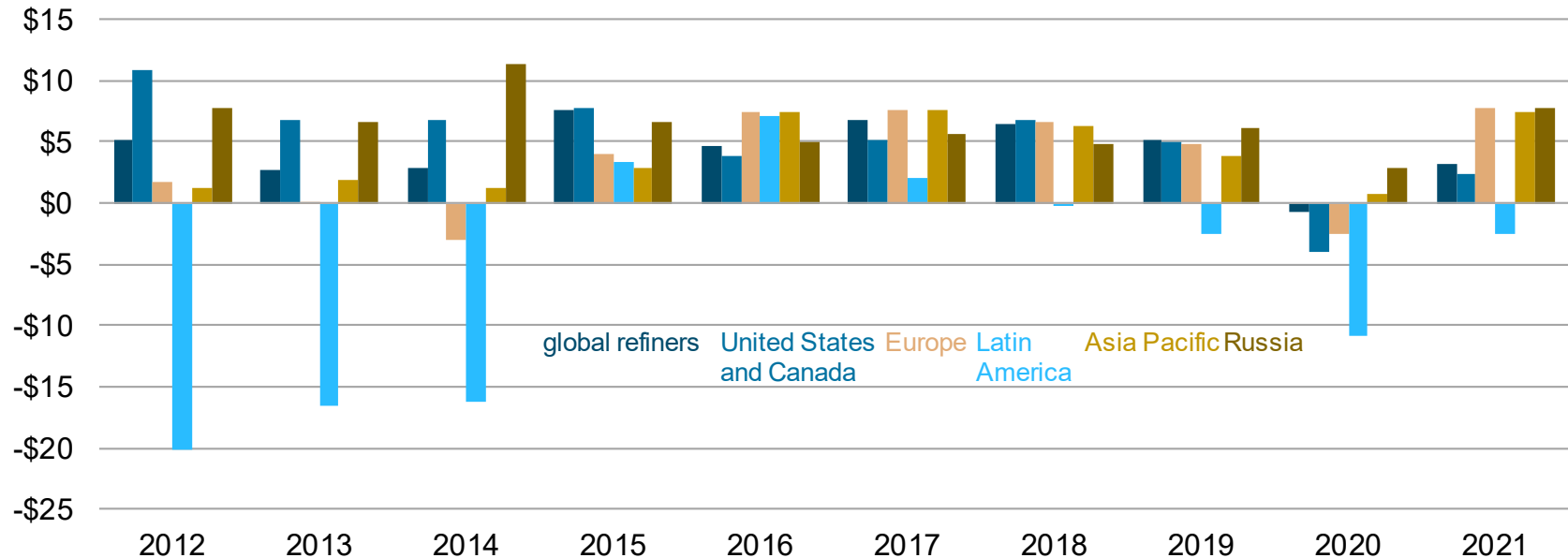
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: A global refiner is a company with refining assets in different regions of the world. Rosneft and Lukoil PJSC refining capacity data are not available for 2021, 2020 numbers are used for 2021.

Earnings per barrel processed increased for all refiners from 2020 to 2021

Refiner earnings per barrel of oil processed by region, 2012–21

dollars per barrel



Data source: Evaluate Energy data of companies with publicly available financial statements

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

Appendix: List of companies in the upstream analysis

Abraxas Petroleum Corporation	Centennial Resource Development, Inc.	Equinor ASA	Lilis Energy Inc.	Pengrowth Energy Corporation	SilverBow Resources, Inc.
Advantage Energy Ltd.	Chesapeake Energy Corp.	Erin Energy Corporation	Linn Energy	Perpetual Energy Inc.	Sinopec
Aker BP ASA	Chevron Corporation	Extraction Oil & Gas, Inc.	Lonestar Resources US, Inc.	Petrobras (IFRS US\$ Current)	SM Energy Company
Amplify Energy Corp.	Cimarex Energy Co.	ExxonMobil	Lukoil PJSC	PetroChina	Sonde Resources Corp.
Anadarko Petroleum Corp.	Civitas Resources, Inc.	FieldPoint Petroleum Corporation	Lundin Energy AB	Petrominerales Ltd.	Southwestern Energy Co.
Antero Resources Corporation	Clayton Williams Energy, Inc.	Forest Oil Corporation	Magnolia Oil & Gas Corporation	PetroQuest Energy, Inc	Spartan Delta Corp.
APA Corporation	CNOOC Ltd	Frontera Energy Corporation	Marathon Oil Corp.	PetroShale Inc.	SRC Energy Inc
Apco Oil and Gas International Inc	CNX Resources Corporation	Galp Energia	Matador Resources Company	Petrus Resources Ltd.	Stone Energy Corporation
Approach Resources Inc	Comstock Resources, Inc.	Gastar Exploration Inc.	Maverick Natural Resources, LLC	Peyto Exploration & Development Corp.	Suncor Energy Inc.
ARC Resources Ltd.	Concho Resources Inc	Gazprom Neft PJSC	MEG Energy Corp.	PHX Minerals Inc.	Surge Energy Inc.
Athabasca Oil Corporation	ConocoPhillips	GeoPark Limited	Mesquite Energy, Inc.	Pieridae Energy Limited	T-Rex Oil, Inc.
Athlon Energy Inc.	Contango Oil and Gas Company	Gran Tierra Energy Inc.	Mid-Con Energy Partners, LP	Pine Cliff Energy Ltd.	Talos Energy Inc.
Bankers Petroleum Ltd	Continental Resources, Inc.	Grizzly Energy LLC	Midstates Petroleum Company, Inc.	Pioneer Natural Resources Company	Tamarack Valley Energy Ltd.
Battalion Oil Corporation	Coterra Energy Inc.	Gulfport Energy Corporation	Montage Resources Corporation	Pipestone Energy Corp.	TNK-BP International Ltd
Baytex Energy Corp.	Crescent Point Energy Corp	Harvest Natural Resources Inc.	Murphy Oil Corporation	PTT	TotalEnergies SE
Berry Corporation	Crew Energy Inc.	Headwater Exploration Inc.	Newfield Exploration Company	QEP Resources Inc	Tourmaline Oil Corp.
BG Group	Denbury Inc.	Hess Corporation	Nexen Inc.	Range Resources Corporation	TransAtlantic Petroleum Ltd.
Birchcliff Energy Ltd.	Devon Energy Corporation	HighPoint Resources Corporation	Noble Energy Inc.	Ranger Oil Corporation	TransGlobe Energy Corporation
Black Stone Minerals LP	Diamondback Energy Inc.	Houston American Energy Corp	Northern Oil & Gas, Inc	Repsol	Triangle Petroleum Corporation
Blue Ridge Mountain Resources, Inc.	Earthstone Energy Inc.	Husky Energy Inc.	NuVista Energy Ltd.	Resolute Energy Corporation	Unit Corporation
Bonterra Energy Corp.	Ecopetrol	InPlay Oil Corp.	Oasis Petroleum Inc.	Ring Energy Inc	Vaalco Energy Inc
BP Plc.	Endeavour International Corporation	International Petroleum Corporation	Obsidian Energy Ltd.	Roan Resources Inc.	Vermilion Energy Inc.
Brazos Valley Longhorn, L.L.C.	Energen Corp	Jagged Peak Energy Inc.	Occidental Petroleum Corporation	Rosehill Operating Company, LLC	W & T Offshore
Cabot Energy Limited	Energy XXI Gulf Coast, Inc.	Jones Energy, Inc.	OMV Group	Rosetta Resources Inc.	Whitecap Resources Inc.
California Resources Corporation	Enerplus Corporation	Journey Energy Inc.	Ovintiv Inc.	Rosneft	Whiting Petroleum Corporation
Callon Petroleum	ENI	Kelt Exploration Ltd.	Paramount Resources Ltd.	Royale Energy Inc.	WPX Energy, Inc.
Camber Energy, Inc.	EOG Resources	Kiwetinohk Energy Corp.	Parex Resources Inc.	RSP Permian Inc	Yangarra Resources Ltd.
Canadian Natural Resources Limited	EP Energy Corporation	Kodiak Oil & Gas Corp.	Parsley Energy Inc.	Sabine Oil & Gas Corporation	YPF Sociedad Anonima
Cardinal Energy Ltd.	EPL Oil & Gas Inc	Kosmos Energy Ltd	PDC Energy, Inc.	SandRidge Energy, Inc.	Yuma Energy, Inc.
Carrizo Oil & Gas, Inc	Epsilon Energy Ltd.	Laredo Petroleum Inc.	PEDEVCO Corp.	Seven Generations Energy Ltd.	Yuma Energy, Inc. (Pre Davis)
Cenovus Energy Inc.	EQT Corporation	Legacy Reserves Inc.	Pemex	Shell Plc	

Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Some companies merged, split, or delisted before 2021. A total of 119 companies existed in 2021.

Appendix: List of companies in the downstream analysis

Alon USA Energy	Galp Energia	Neste Corporation	Shell Plc
Andeavor	Gazprom Neft PJSC	OMV Group	Sinopec
Blue Dolphin Energy Co	Grupa Lotos	Par Pacific Holdings, Inc.	Suncor Energy Inc.
BP Plc.	HollyFrontier Corporation	PBF Energy Inc	TNK-BP International Ltd
Calumet Specialty Products Partners, L.P.	Husky Energy Inc.	Pemex	TotalEnergies SE
Cenovus Energy Inc.	Imperial Oil Limited	Petrobras (IFRS US\$ Current)	TUPRAS
Chevron Corporation	INA Group	PetroChina	Valero Energy Corporation
CVR Energy, Inc.	Indian Oil Corporation Limited	Phillips 66	Western Refining Inc.
Delek US Holdings	Lukoil PJSC	PKN Orlen	
ENI	Marathon Petroleum Corporation	Repsol	
ExxonMobil	MOL Group	Rosneft	

Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Some companies merged, split, or delisted before 2021. A total of 36 companies existed in 2021.

Background

- The upstream analysis focuses on the financial and operating trends of 119 global oil and natural gas companies (called *the companies* or *the energy companies*) and the downstream analysis focuses on 36 companies.
- The data come from the public financial statements each company publishes, which a data service (Evaluate Energy) aggregates for ease of data analysis.
- For consistency, we kept an energy company's assets that were acquired by another company in the group in 2012 or later in the data for the previous years.
- Several charts show comparisons between energy companies and the U.S. manufacturing industry. We collected the data from the 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* is 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.
- *Reserve revisions* are changes to prior year-end proved reserve estimates, either positive or negative, resulting from new information other than an increase in proved acreage (extension). Revisions may include increases of proved reserves associated with the installation of improved recovery techniques or equipment. They also include correction of prior year arithmetical or clerical errors and adjustments to prior year-end production volumes to the extent that these alter reserves estimates.

Brief description of terms

- *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.