



# Financial Review of the Global Oil and Natural Gas Industry: 2022

*Petroleum and Liquid Fuels Markets Team*

*June 2023*

## Key findings for 2022

- Brent crude oil daily prices averaged \$99.04 per barrel in 2022—40% higher than in 2021.
- In this study of 187 companies, combined petroleum liquids production decreased less than 1% in 2022 from 2021, and natural gas production increased 4%.
- Cash from operations increased to \$810 billion in 2022, the most for any year in the 2013–22 period.
- Finding plus lifting costs increased 19% from 2021 to 2022.
- The energy companies reduced net debt by \$117 billion in 2022. They increased net share repurchases by \$95 billion in 2022, the most for any year in the 2013–22 period.
- Most refiners' earnings per barrel processed increased substantially in 2022.

Note: The 187 upstream companies and 37 downstream companies analyzed in this study publish publicly available financial statements. We removed the companies in Russia that we included in previous reports because their 2022 financial statements were not available. A full list of the companies included and a glossary of terms begin on slide 26.

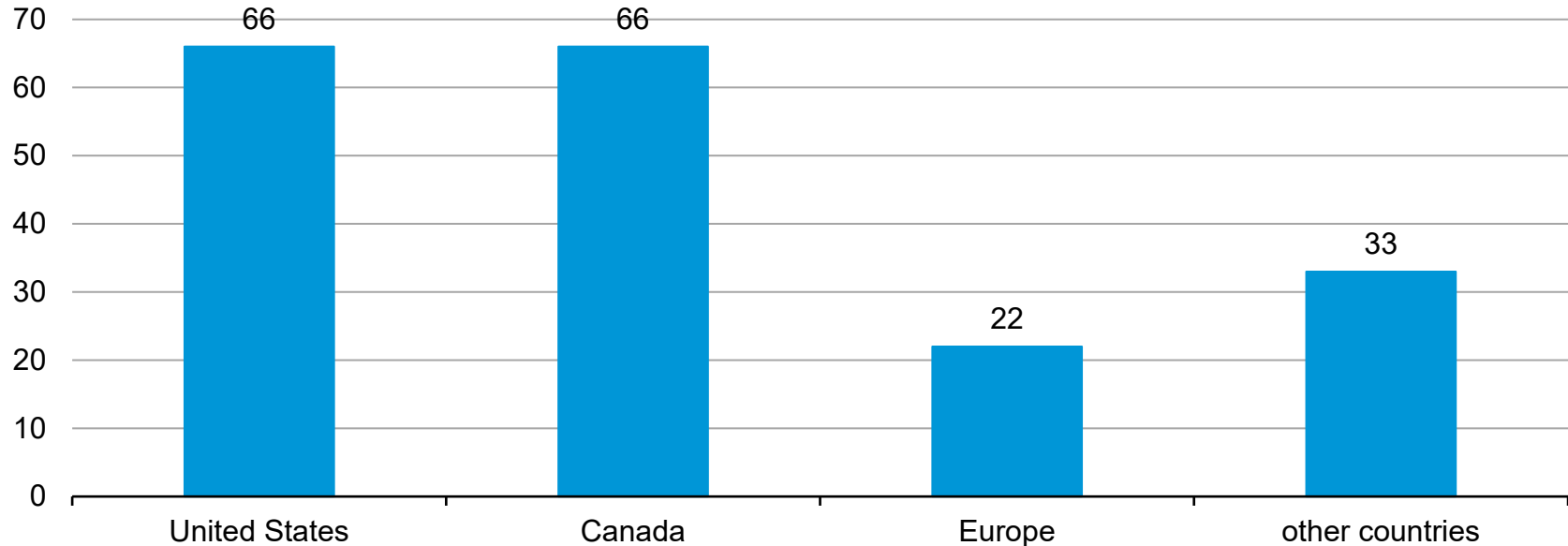


Upstream

# Most company headquarters included in our study are in the United States and Canada

## Geographic distribution of global oil and natural gas company headquarters, 2022

number of companies



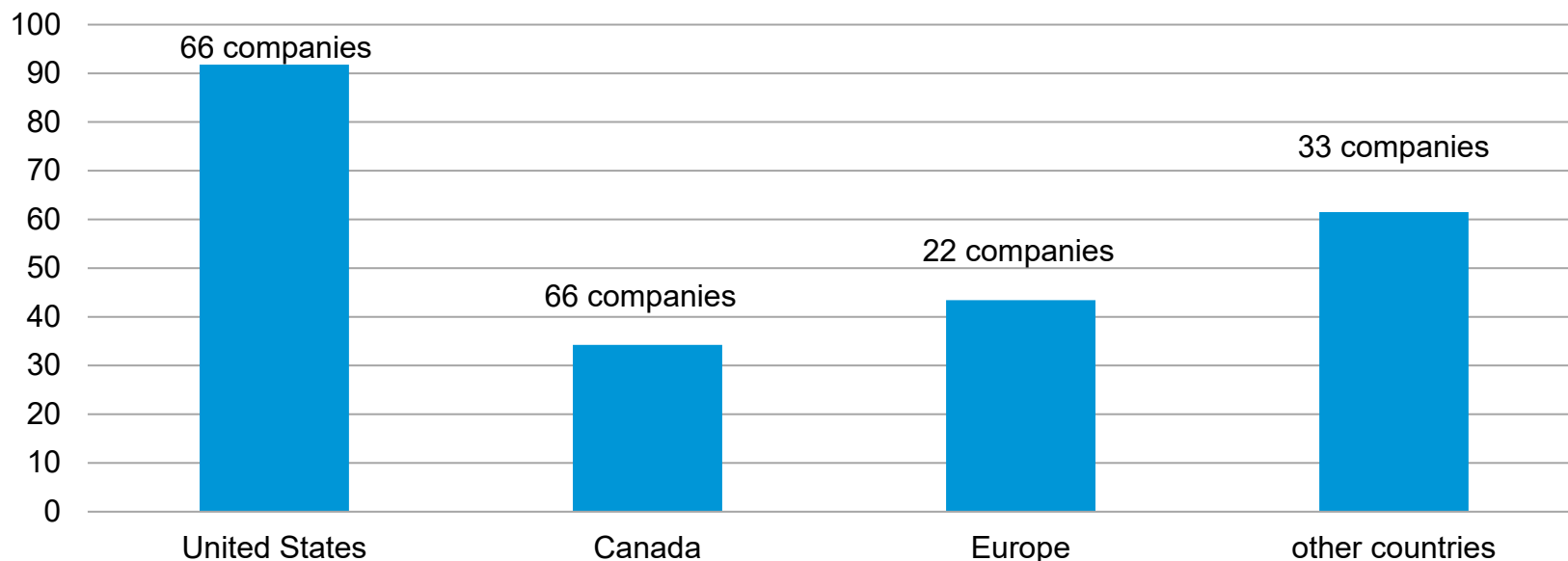
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other countries* includes Argentina, Australia, Bermuda, Brazil, Chile, China, Colombia, India, Japan, Mexico, New Zealand, Pakistan, Tanzania, and Thailand.

# Most global oil and natural gas company proved reserves were held by companies in the United States

## Proved reserves of global oil and natural gas companies by region of headquarters, 2022

billion barrels of oil equivalent



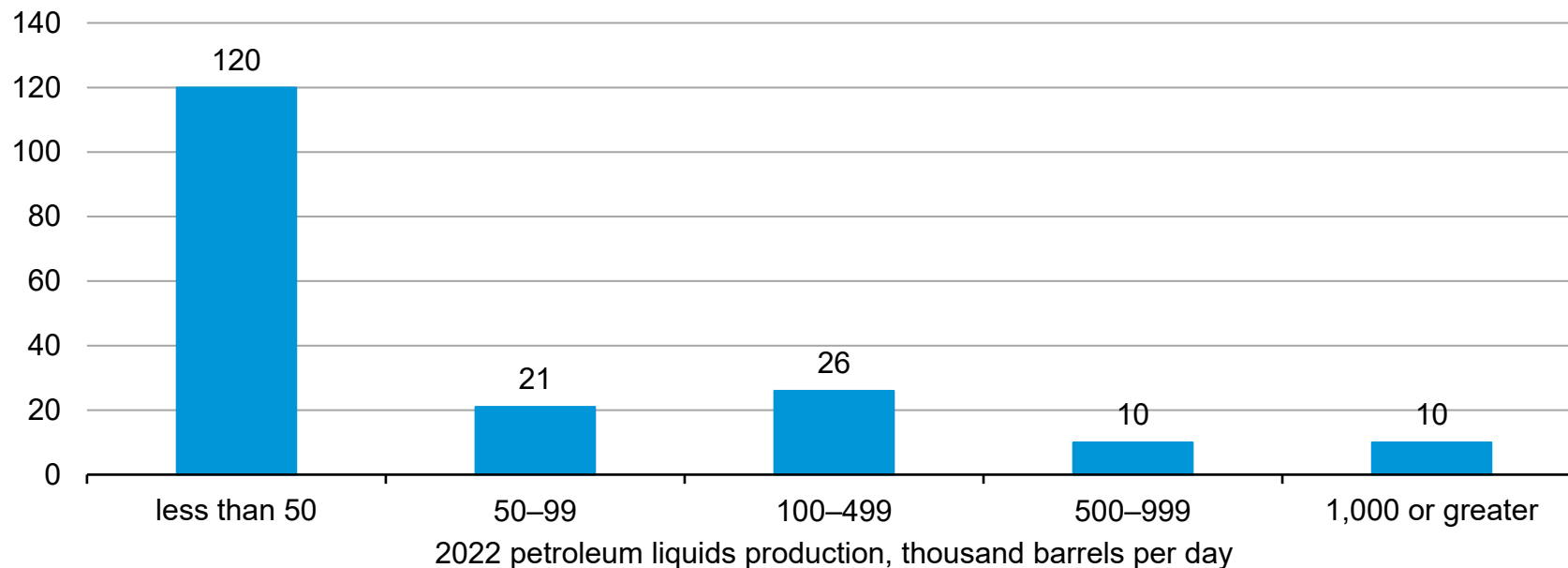
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: *Other countries* includes Argentina, Australia, Bermuda, Brazil, Chile, China, Colombia, India, Japan, Mexico, New Zealand, Pakistan, Tanzania, and Thailand.

# About 64% of companies we included produced less than 50,000 barrels per day in 2022

## Distribution of companies by volume of petroleum liquids produced, 2022

number of companies

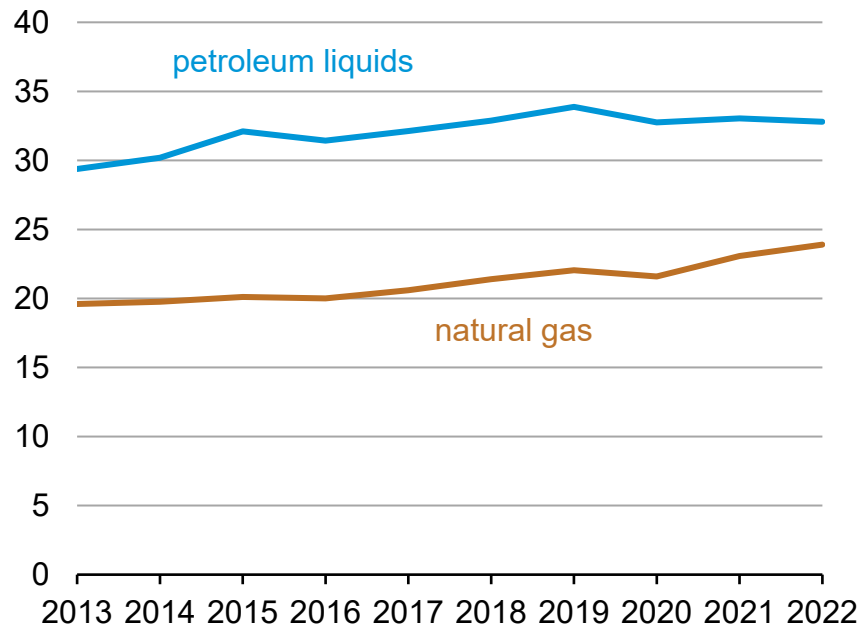


Data source: Evaluate Energy data of companies with publicly available financial statements

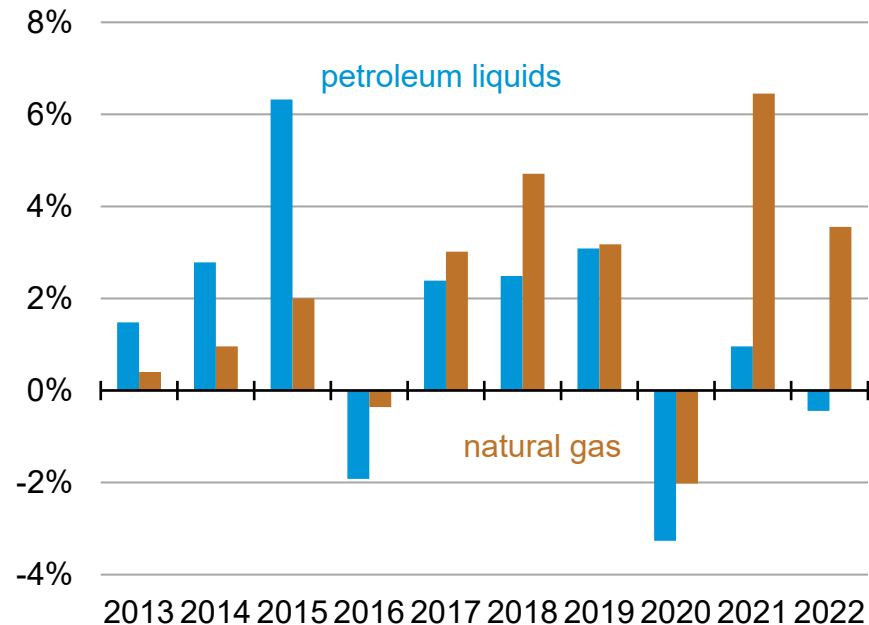
# Petroleum liquids production decreased and natural gas production increased from 2021 to 2022

## Petroleum liquids and natural gas production, 2013–22

million barrels of oil equivalent per day



year-over-year percentage change

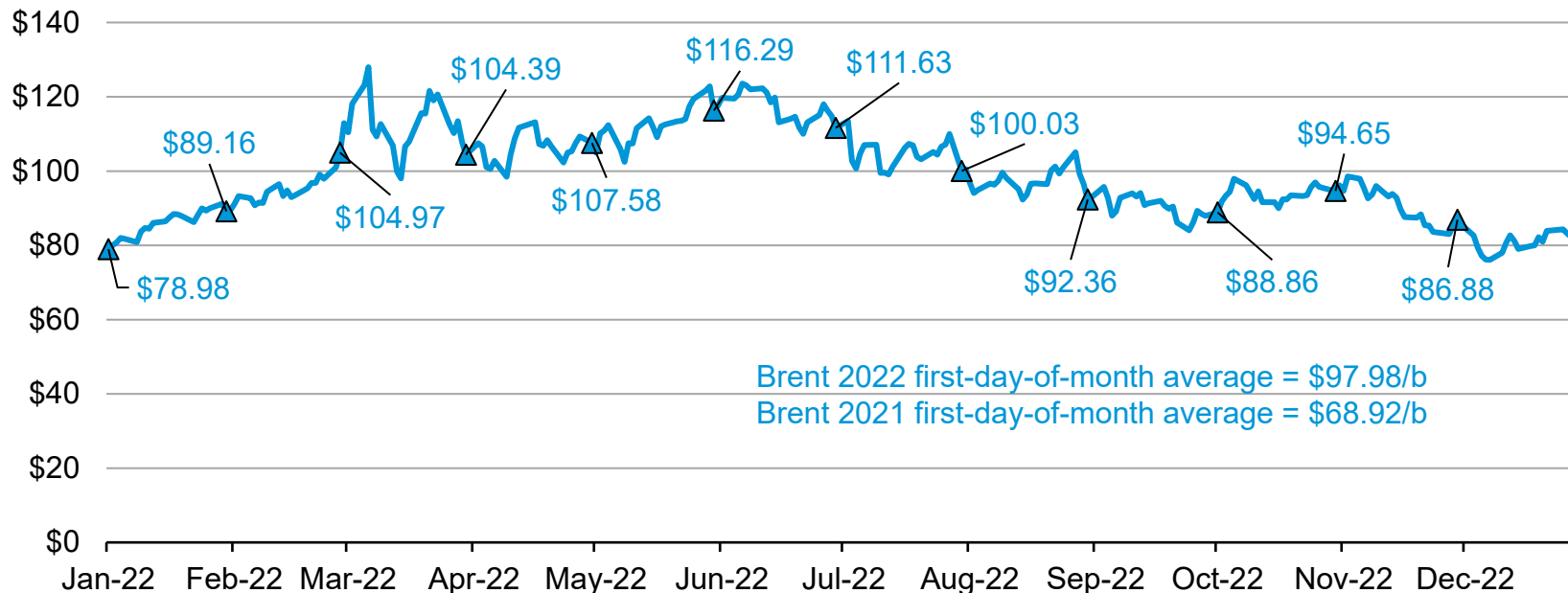


Data source: Evaluate Energy data of companies with publicly available financial statements

# 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, 2022

dollars per barrel (b)



Data source: Intercontinental Exchange, Bloomberg L.P.

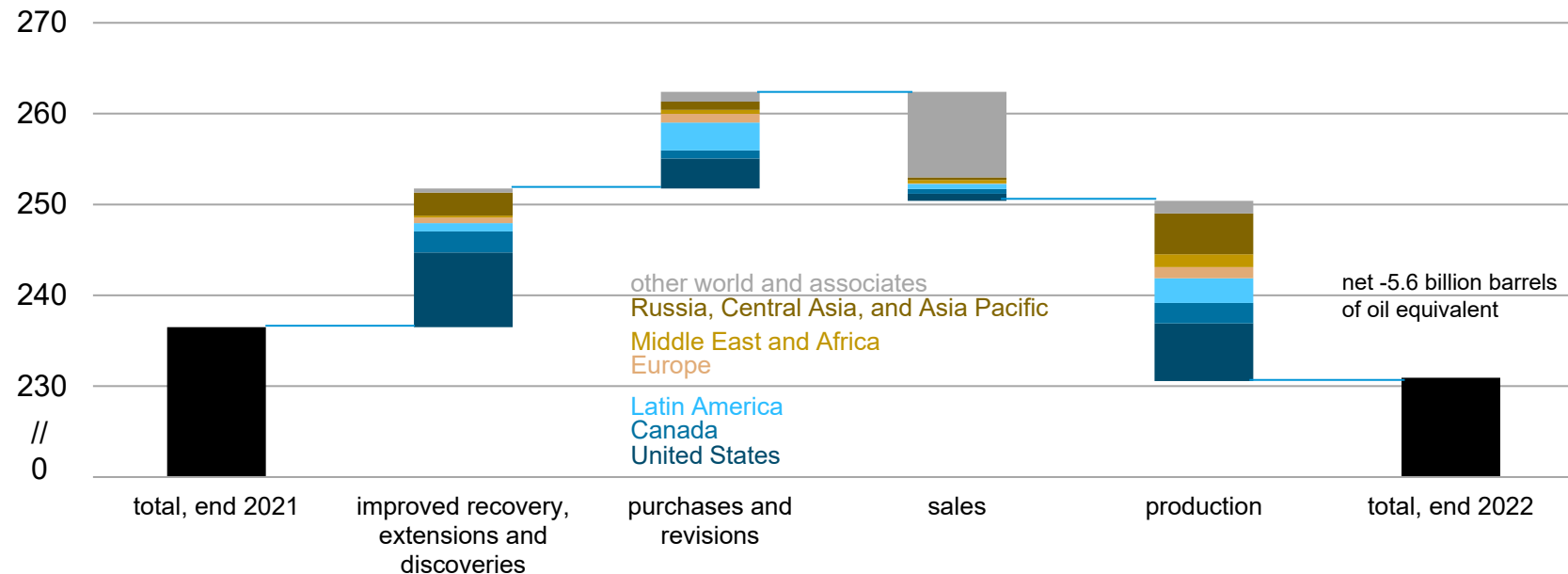
Note: SEC = U.S. Securities and Exchange Commission



# After net purchases and production, the companies subtracted 5.6 billion barrels of oil equivalent from proved reserves in 2022

## Change in proved reserves from 2021 to 2022

billion barrels of oil equivalent



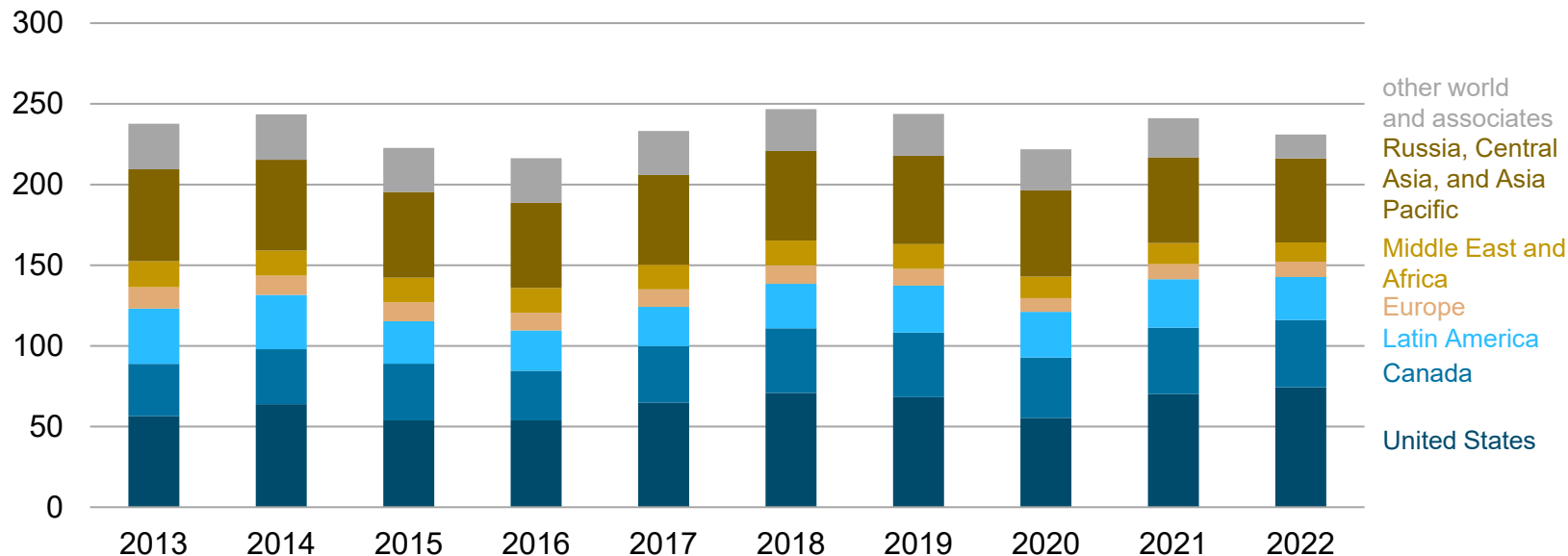
Data source: Evaluate Energy data of companies with publicly available financial statements

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

# Global proved reserves declined 4% to 231 billion barrels of oil equivalent at the end of 2022, after some companies left Russia

## Proved reserves by region, 2013–22

billion barrels of oil equivalent



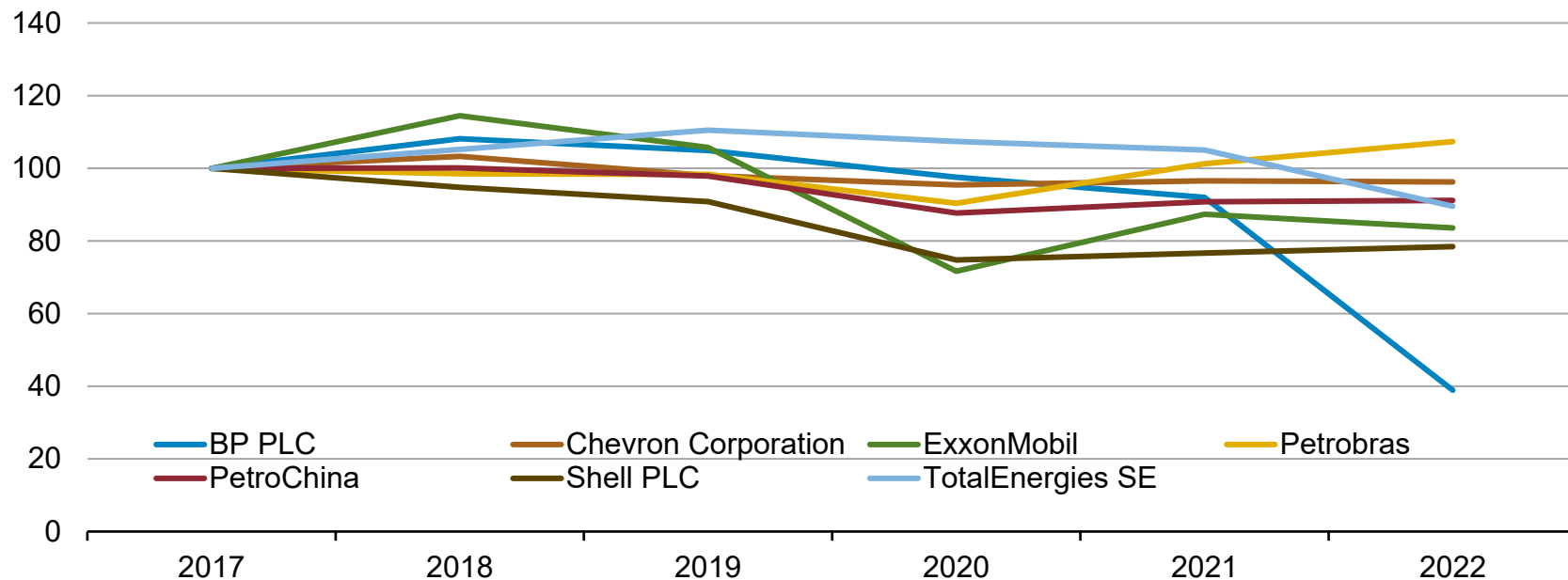
Data source: Evaluate Energy data of companies with publicly available financial statements

Note: Mergers and acquisitions between companies may affect net reserve changes for the year and comparisons between years. *Other world and associates* includes the regions outside the ones identified in this figure and reserves held by associate companies regardless of location.

# Declines in proved reserves were driven by BP and TotalEnergies divesting from assets in Russia in 2022

## Proved reserves, 2017–22

index (2017 = 100)

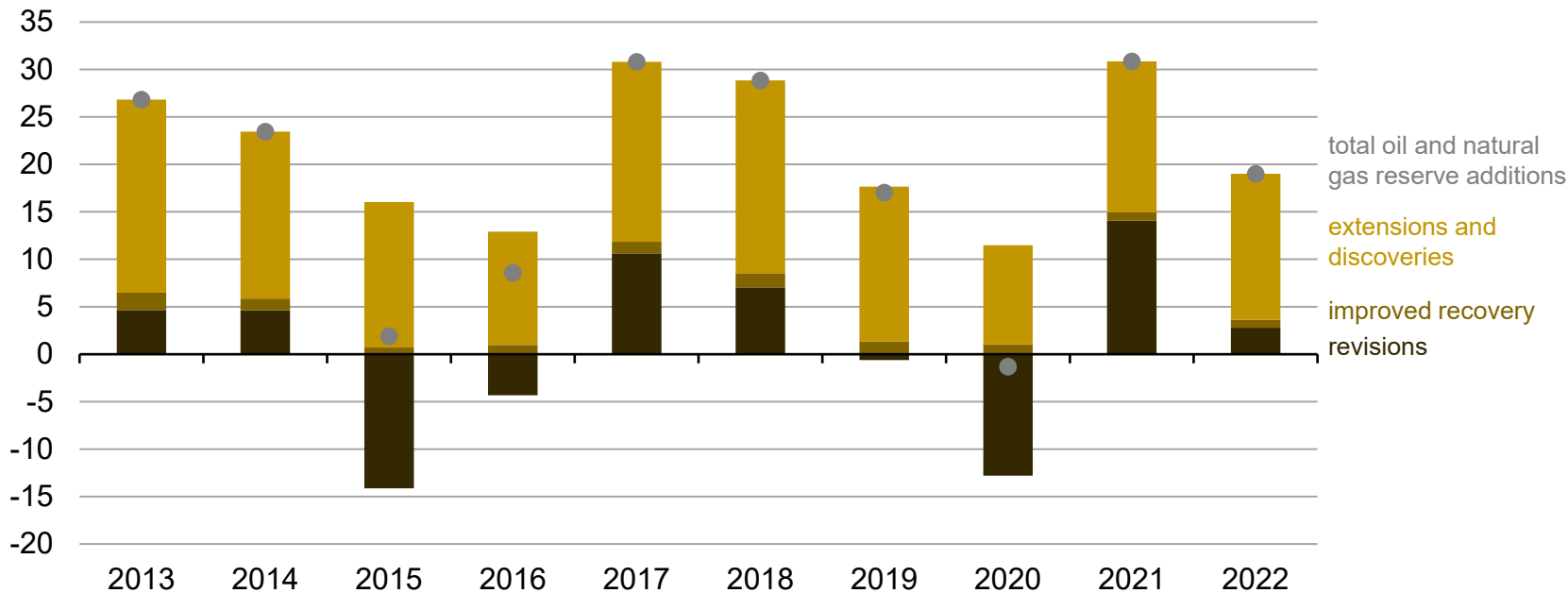


Data source: Evaluate Energy

# Proved reserves additions for petroleum liquids and natural gas totaled 19 billion barrels in 2022

## Proved reserve additions, 2013–22

billion barrels of oil equivalent

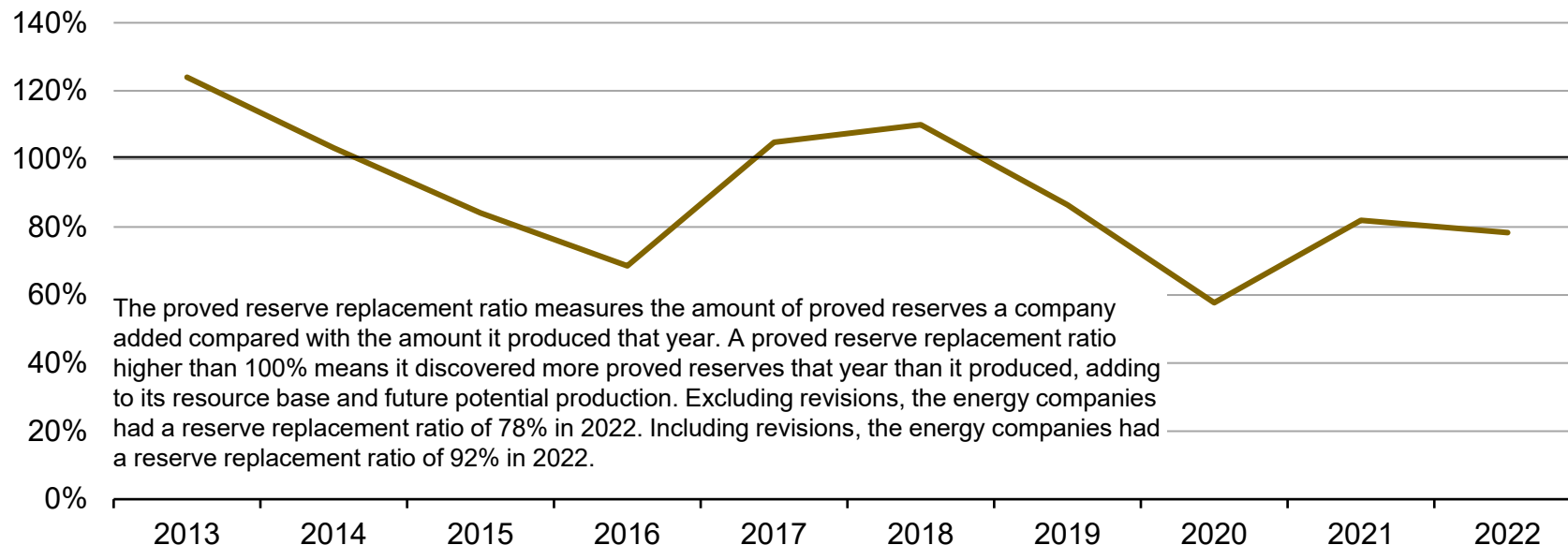


Data source: Evaluate Energy data of companies with publicly available financial statements

# Excluding revisions, the companies replaced 78% of their production through organic proved reserve additions

## Proved reserve replacement ratio, 2013–22

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 78% in 2022. Including revisions, the energy companies had a reserve replacement ratio of 92% in 2022.

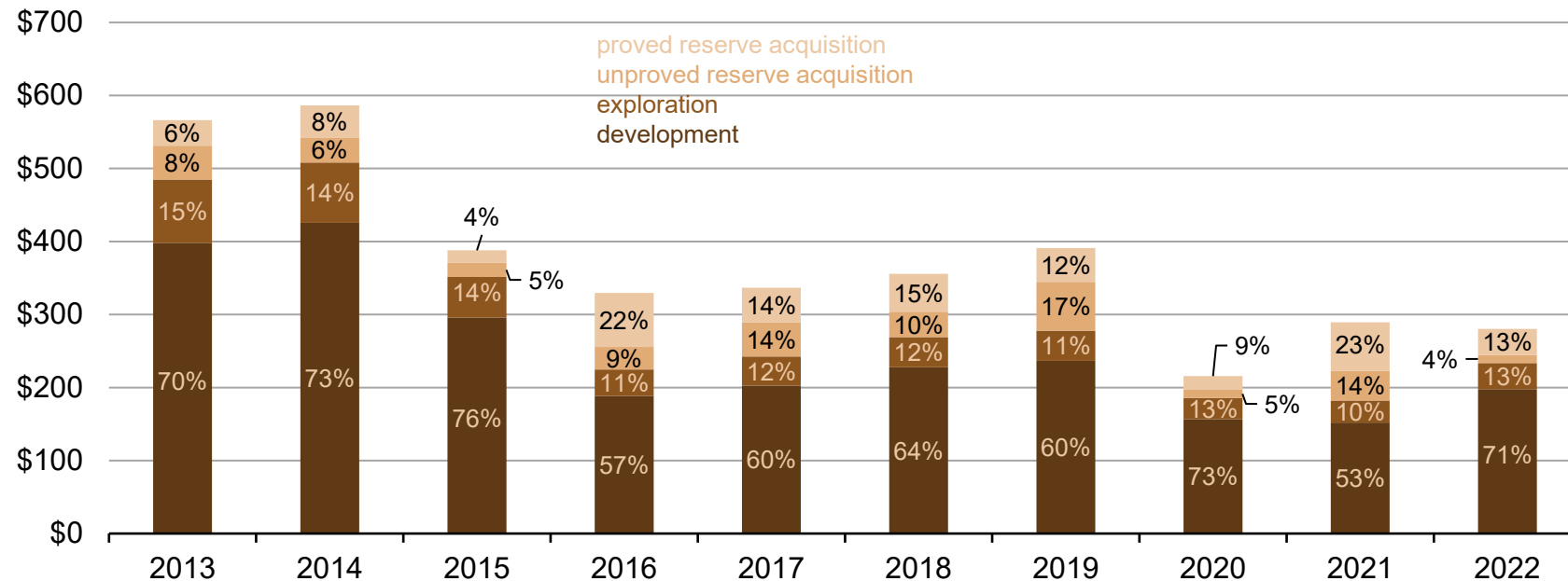
Data source: Evaluate Energy data of companies with publicly available financial statements

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

# Development costs rose by 30% from 2021 to 2022, increasing the share of overall upstream costs spent on development

## Upstream costs incurred, 2013–22

billion dollars



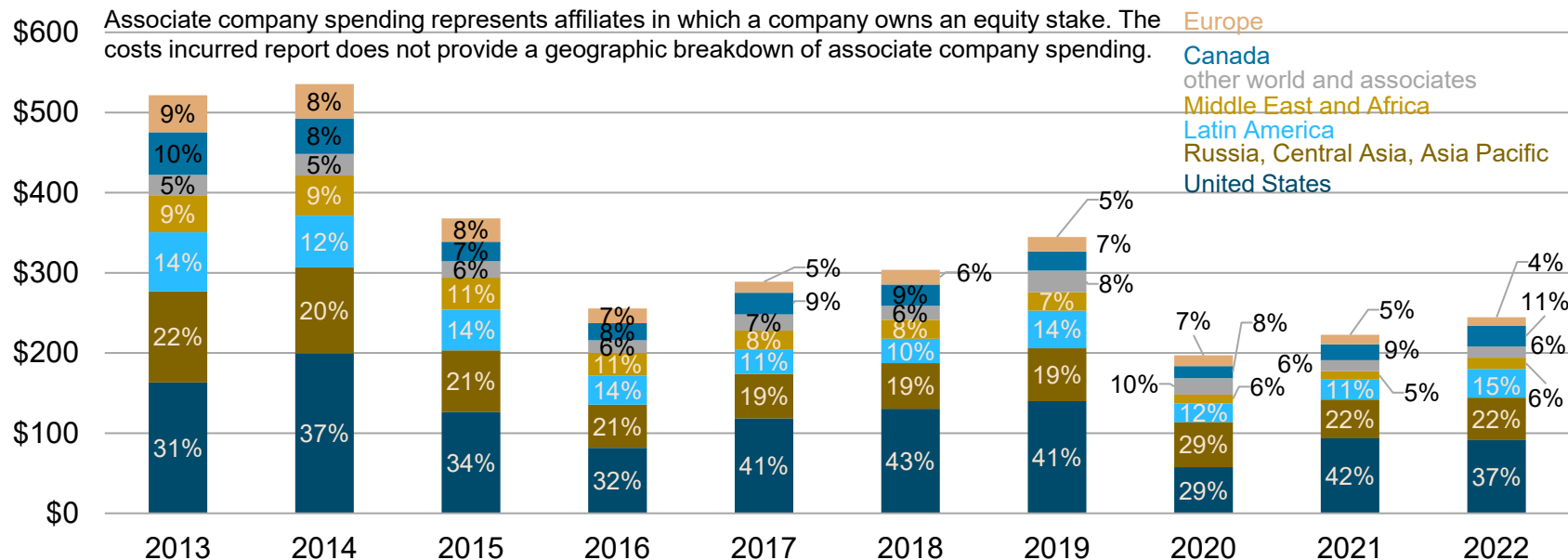
Data source: Evaluate Energy data of companies with publicly available financial statements

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

# Exploration and development spending increased from 2021 to 2022 but remained 22% below the 2015–19 average

## Exploration and development costs incurred, 2013–22

billion dollars



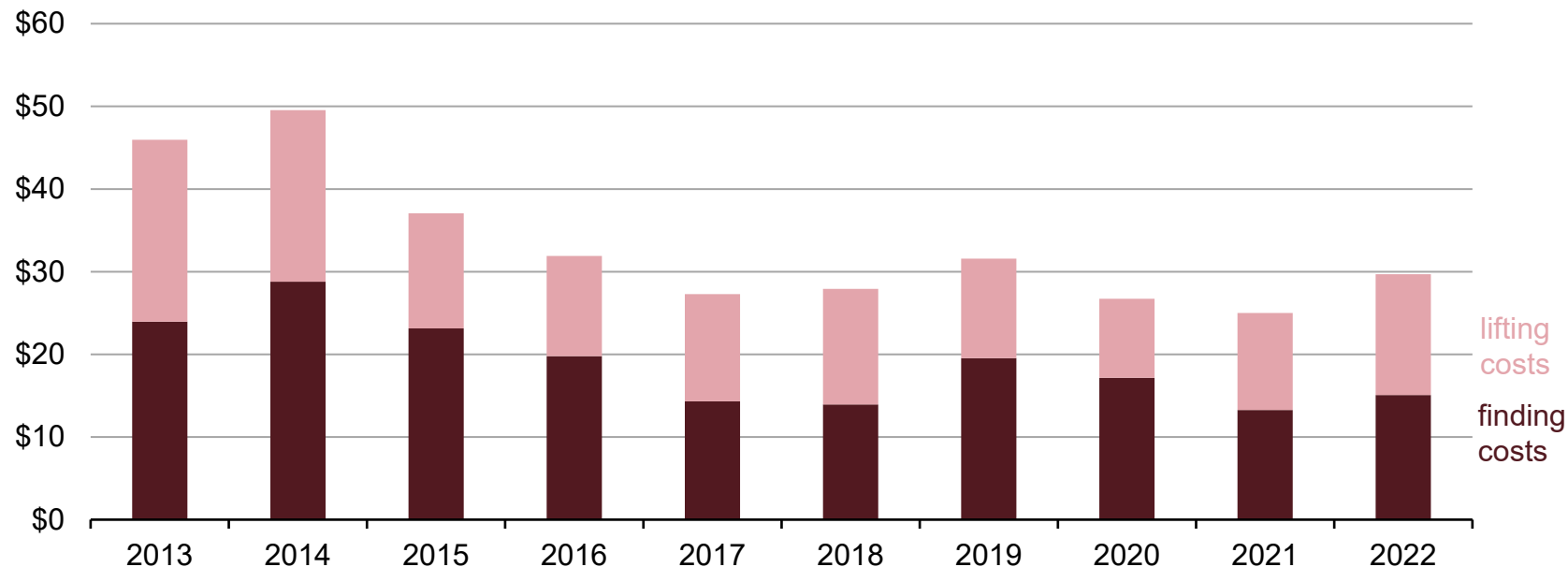
Data source: Evaluate Energy data of companies with publicly available financial statements

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 increased 19% from 2021 to 2022

### Finding plus lifting costs, 2013–22

dollars per barrel of oil equivalent



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

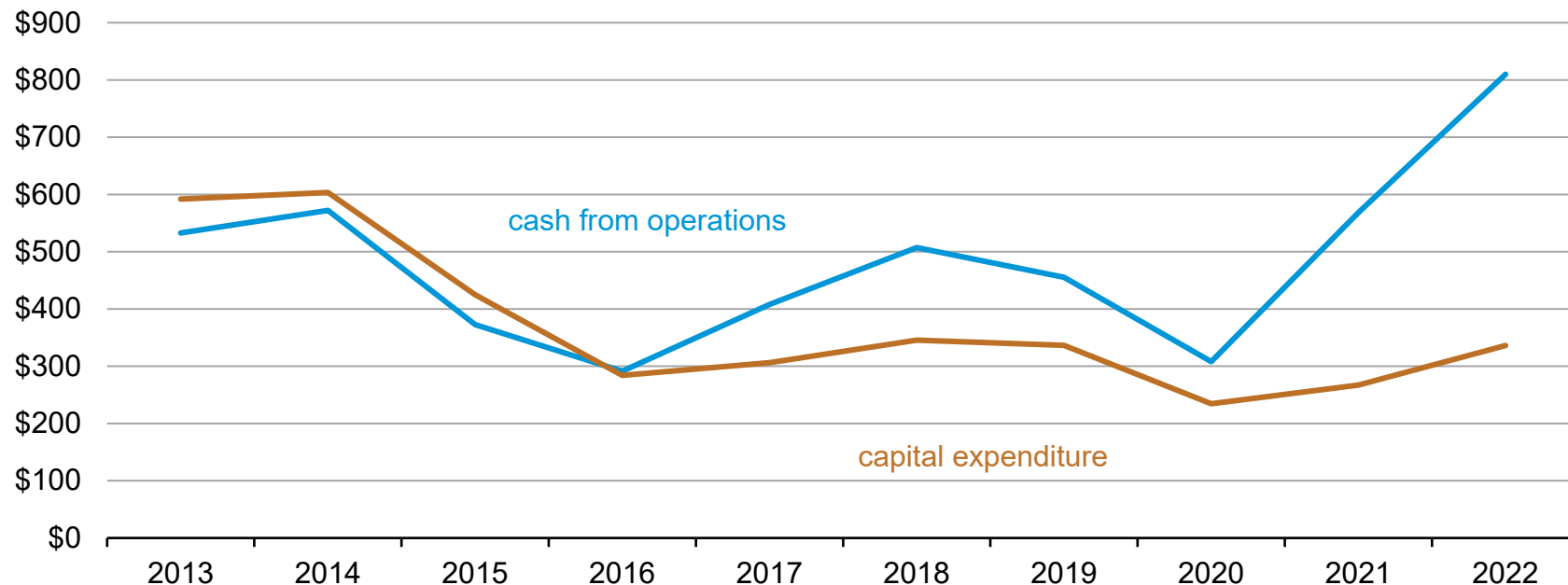
Note: Excludes proved reserve revisions.



# Cash from operations increased by \$242 billion, and capital expenditure increased by \$69 billion from 2021 to 2022

## Cash from operations and capital expenditure, 2013–22

billion dollars

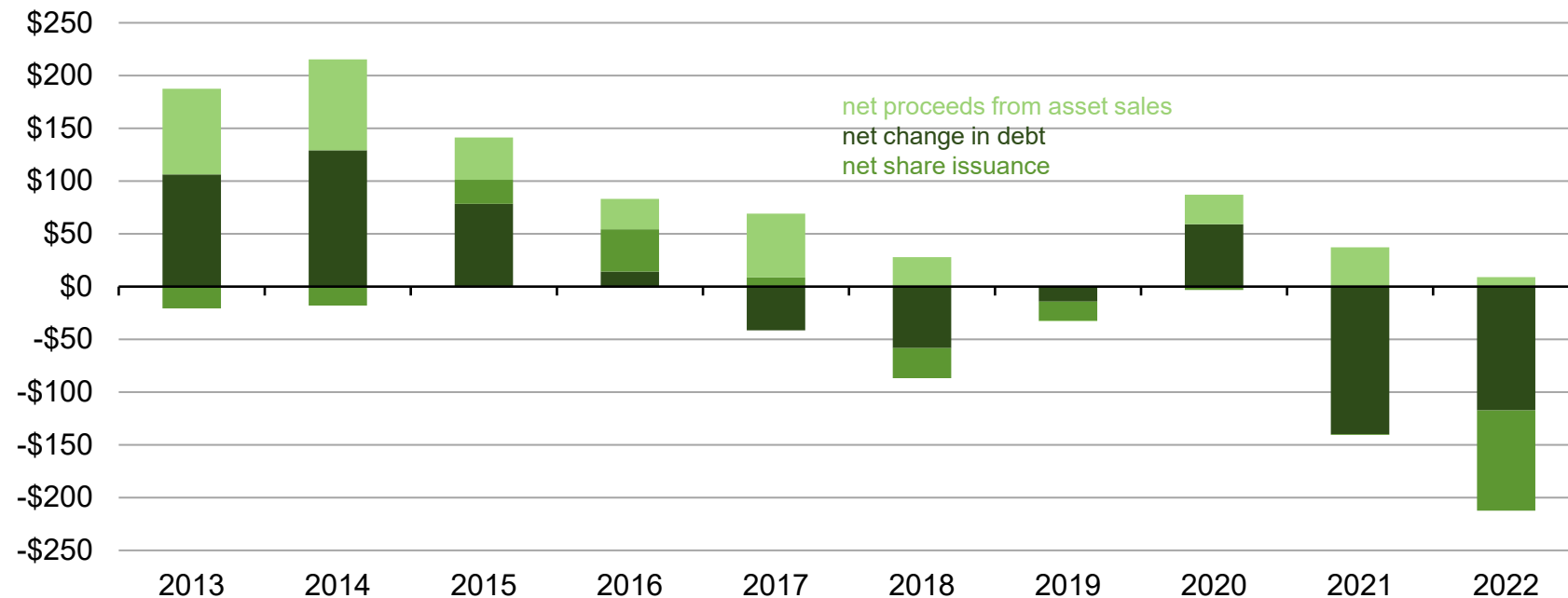


Data source: Evaluate Energy data of companies with publicly available financial statements

# The companies decreased net debt by \$117 billion and increased net share repurchases by \$95 billion in 2022

## Financing activities, 2013–22

billion dollars

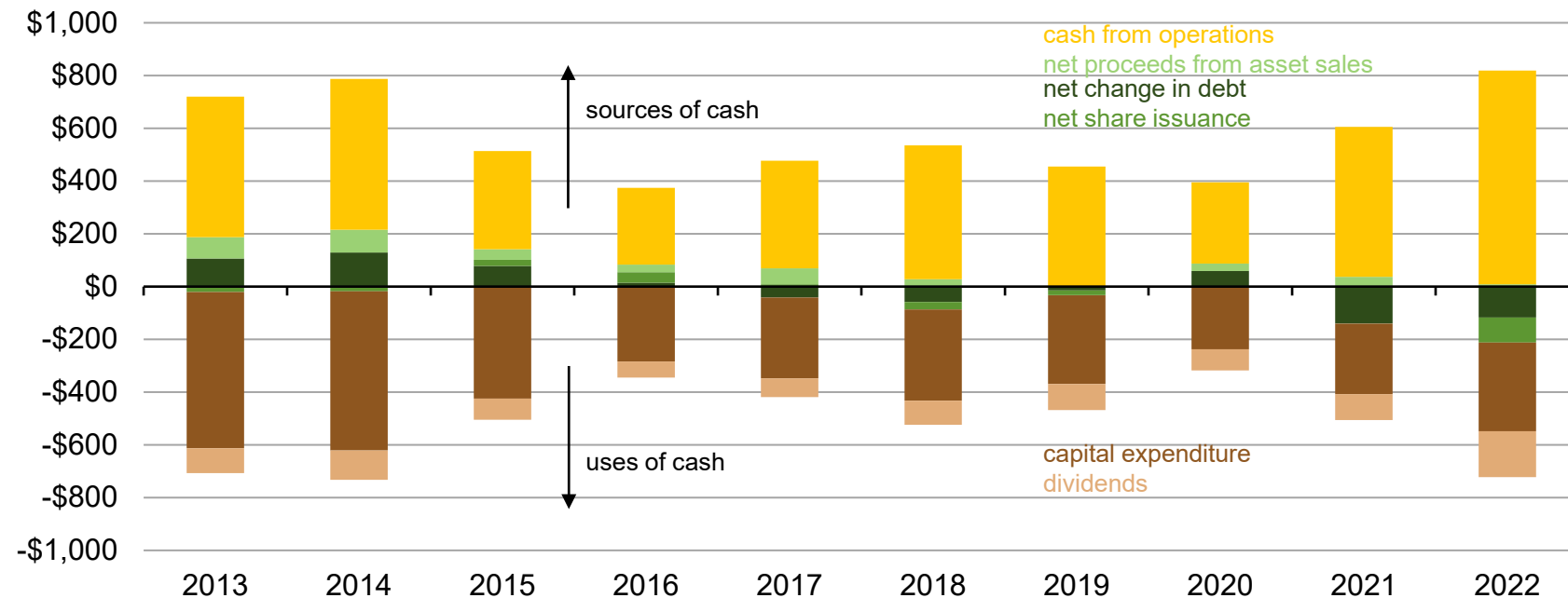


Data source: Evaluate Energy data of companies with publicly available financial statements

# Cash from operations increased to \$810 billion in 2022, the most in the 2013–22 period

## Sources and uses of cash, 2013–22

billion dollars

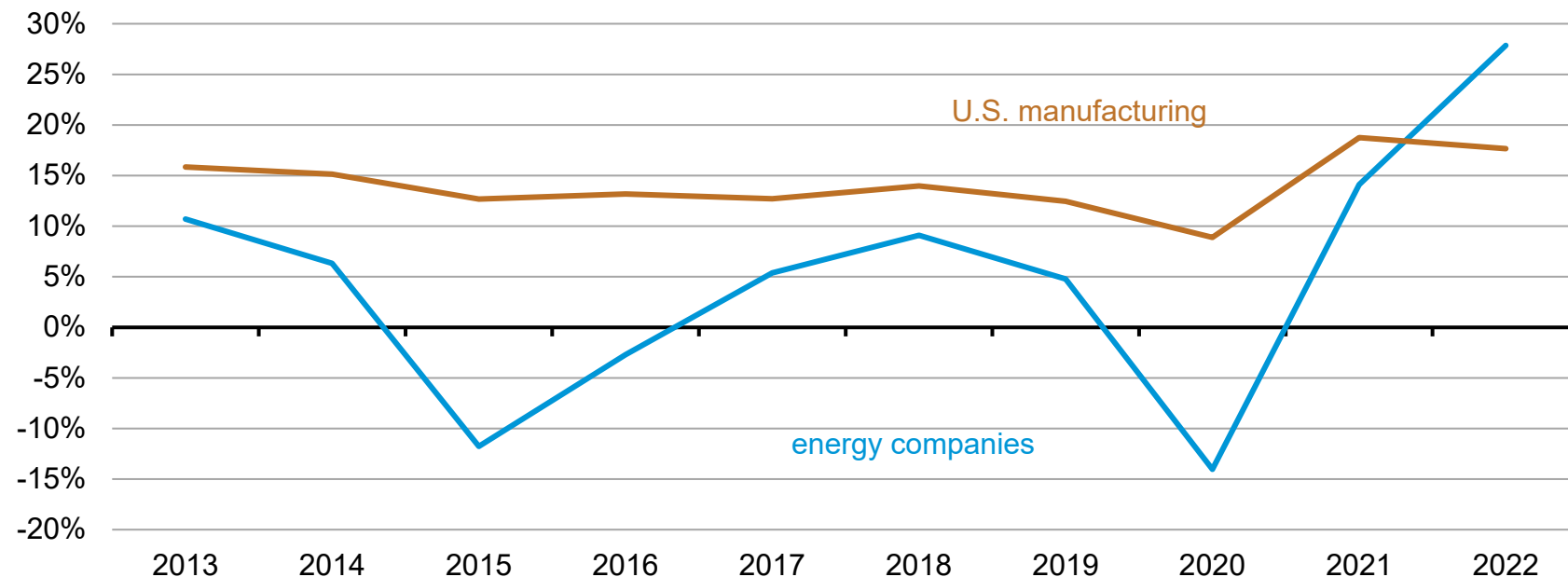


Data source: Evaluate Energy data of companies with publicly available financial statements

# Return on equity for the energy companies increased to 28%, and for U.S. manufacturing companies it decreased to 18% in 2022

Return on equity, energy companies and U.S. manufacturing companies, 2013–22

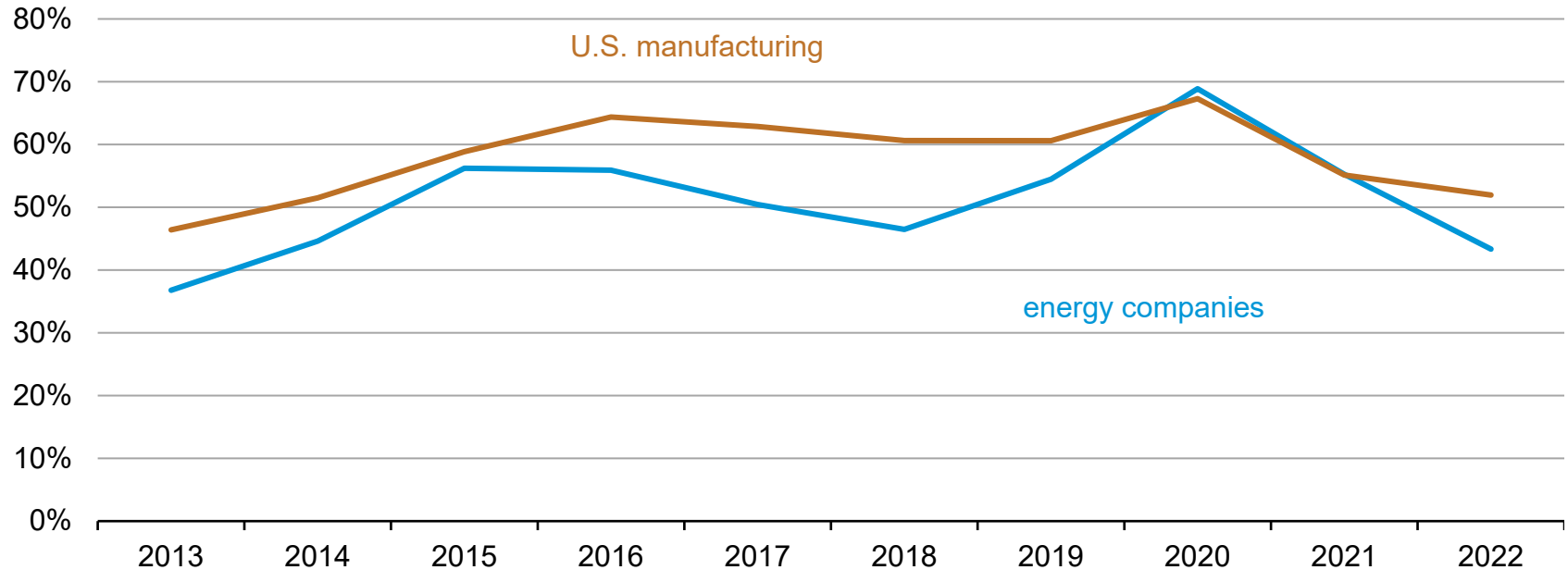
percentage



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 43% for the energy companies and to 52% for U.S. manufacturing companies

**Long-term debt-to-equity ratio, energy companies and U.S. manufacturing companies, 2013–22**  
percentage



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

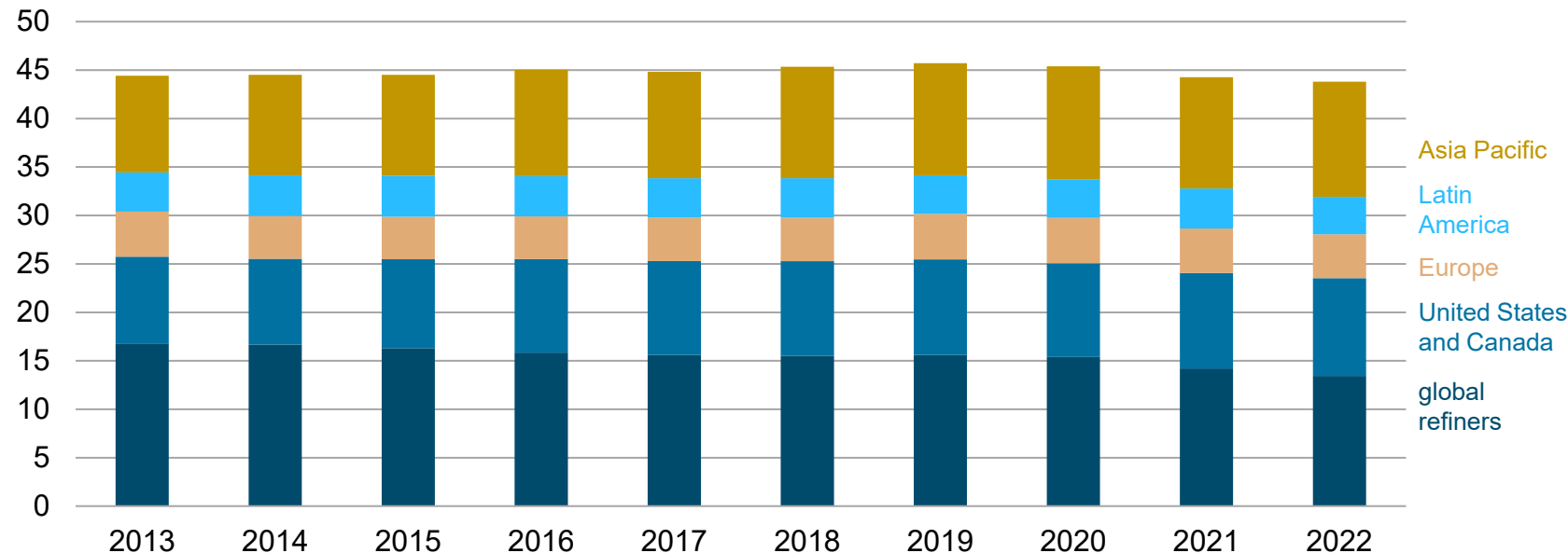


Downstream

# Among the refiners we looked at, global refining distillation capacity decreased from 2021 to 2022

## Global refining distillation capacity by region, 2013–22

million barrels per day



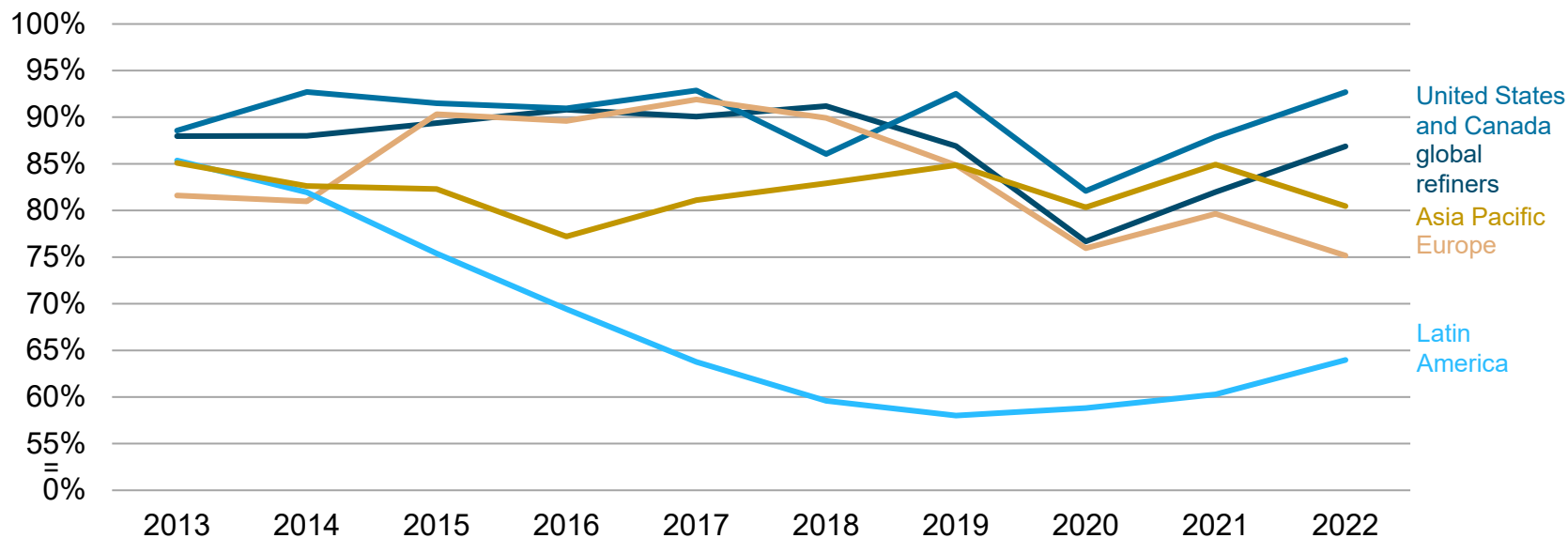
Data source: Evaluate Energy data of companies with publicly available financial statements

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

# Capacity utilization for the refiners averaged 80%, and North American refiners had the highest capacity utilization in 2022

## Refining capacity utilization by region, 2013–22

percentage



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

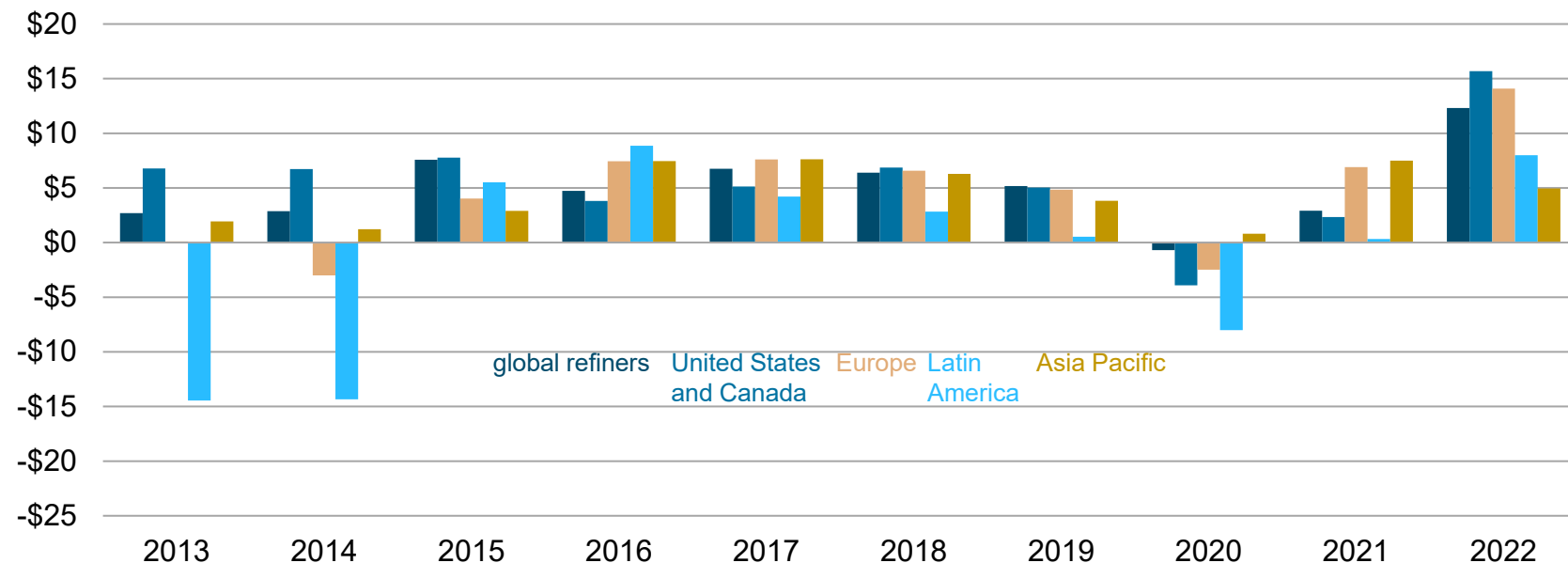
Note: A global refiner is a company with refining assets in different regions of the world.



# Earnings per barrel processed increased significantly from 2021 to 2022 for all refiners except in Asia Pacific

## Refiner earnings per barrel of oil processed by region, 2013–22

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	Chevron Corporation	ExxonMobil	Marathon Oil Corp.	PetroNor E&P ASA	Southern Energy Corp.
Advantage Energy Ltd.	Chord Energy Corporation	Forza Petroleum Limited	Matador Resources Company	PetroReconcavo S.A.	Southwestern Energy Company
Africa Oil Corp.	Civitas Resources, Inc.	Frontera Energy Corporation	Maurel & Prom SA	PetroTal Corp.	Spartan Delta Corp.
Aker BP ASA	Clearview Resources Ltd.	Galp Energia	MEG Energy Corp.	Petrus Resources Ltd.	Suncor Energy Inc.
Alvopetro Energy Ltd.	CNOOC Limited	Gear Energy Ltd.	Murphy Oil Corporation	Peyto Exploration & Development Corp.	Surge Energy Inc.
Amplify Energy Corp.	CNX Resources Corporation	Genel Energy Plc	National Fuel Gas Company	PHX Minerals Inc.	Talos Energy Inc.
Antero Resources Corporation	Compañia General de Combustibles S.A.	GeoPark Limited	New Zealand Oil & Gas Ltd.	Pieridae Energy Limited	Tamarack Valley Energy Ltd.
APA Corporation	Comstock Resources, Inc.	Gran Tierra Energy Inc.	Northern Oil & Gas, Inc	Pine Cliff Energy Ltd.	Tecpetrol S.A.
ARC Resources Ltd.	ConocoPhillips	Granite Ridge Resources, Inc.	NuVista Energy Ltd.	Pioneer Natural Resources Company	Tellurian Inc.
Arrow Exploration Corp.	Continental Resources, Inc.	Gulf Keystone Petroleum Ltd	Obsidian Energy Ltd.	Pipestone Energy Corp.	Tenaz Energy Corp.
Ascent Resources Utica Holdings, LLC	Cooper Energy Limited	Gulfport Energy Corporation	Occidental Petroleum Corporation	Prairie Provident Resources Inc.	Tethys Oil AB
Athabasca Oil Corporation	Coterra Energy Inc.	Hammerhead Energy Inc.	Oil and Gas Development Co Ltd	PrimeEnergy Resources Corporation	Tethys Petroleum Limited
Australis Oil & Gas Limited	Crescent Energy Company	Headwater Exploration Inc.	Oil India Limited	PTT Exploration and Production (PTTEP)	Topaz Energy Corp.
Barnwell Industries Inc.	Crescent Point Energy Corp	Hemisphere Energy Corporation	OKEA ASA	Questerre Energy Corporation	TotalEnergies SE
Battalion Oil Corporation	Crew Energy Inc.	Hess Corporation	OMV Group	Range Resources Corporation	Touchstone Exploration Inc.
Baytex Energy Corp.	Crown Point Energy Inc.	HighPeak Energy, Inc.	ONGC	Ranger Oil Corporation	Tourmaline Oil Corp.
Beach Energy Limited	Denbury Inc.	Horizon Oil Limited	ONGC Videsh Limited	Razor Energy Corp.	Unit Corporation
Berry Corporation	Devon Energy Corporation	IGas Energy Plc	Orca Energy Group Inc.	Repsol	United Energy Group Limited
Birchcliff Energy Ltd.	Diamondback Energy Inc.	INA Group	Orron Energy AB	Riley Exploration Permian, Inc.	Vaalco Energy Inc
Black Stone Minerals LP	Diversified Energy Company PLC	InPlay Oil Corp.	Ovintiv Inc.	Ring Energy Inc	Var Energi ASA
BlueNord ASA	DNO ASA	International Petroleum Corporation	Pakistan Petroleum Limited	ROK Resources Inc.	Vermilion Energy Inc.
Bonterra Energy Corp.	Earthstone Energy, Inc.	Japan Petroleum Exploration Co., Ltd.	Pampa Energia SA	Royale Energy Inc.	Vista Energy S.A.B. de C.V.
BP Plc.	Ecopetrol S.A.	Journey Energy Inc.	Panoro Energy ASA	Rubellite Energy Inc.	Vital Energy, Inc. (formerly Laredo)
BW Energy Limited	Empire Petroleum Corporation	Jura Energy Corporation	Paramount Resources Ltd.	SandRidge Energy, Inc.	W & T Offshore, Inc.
California Resources Corporation	Enauta Participacoes SA	JX Energy Ltd.	Parex Resources Inc.	Santos Limited	Whitecap Resources Inc.
Callon Petroleum Company	Enerplus Corporation	Karoon Energy Ltd.	PDC Energy, Inc.	Saturn Oil & Gas Inc.	Yangarra Resources Ltd.
Canacol Energy Ltd.	ENI S.p.A.	Kelt Exploration Ltd.	PEDEVCO Corp.	Shamara Petroleum Corp.	YPF Sociedad Anonima
Canadian Natural Resources Limited	EOG Resources, Inc.	Kiwitohk Energy Corp.	Pemex	Shell Plc	
Canadian Overseas Petroleum Limited	Epsilon Energy Ltd.	Kolibri Global Energy Inc.	Permian Resources Corporation	SilverBow Resources, Inc.	
Cardinal Energy Ltd.	EQT Corporation	Kosmos Energy Ltd.	Perpetual Energy Inc.	Sino Oil and Gas Holdings Limited	
Cenovus Energy Inc.	Equinor ASA	Lucero Energy Corp.	Petrobras (IFRS US\$ Current)	Sinopec Corp.	
Chesapeake Energy Corporation	Evolution Petroleum Corporation	Magnolia Oil & Gas Corporation	PetroChina Company Limited	SM Energy Company	

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

Note: Some companies merged, split, or delisted before 2022. We removed the companies in Russia that we included in previous reports because their 2022 financial statements were not available. A total of 187 companies existed in 2022.

# Appendix: List of companies in the downstream analysis

Alon USA Energy	ExxonMobil	Neste Corporation	Shell Plc
Andeavor	Galp Energia	OMV Group	Sinopec Corp.
Blue Dolphin Energy Co	Grupa Lotos	Par Pacific Holdings, Inc.	Suncor Energy Inc.
BP Plc.	HF Sinclair Corporation	PBF Energy Inc	TotalEnergies SE
Calumet Specialty Products Partners, L.P.	Husky Energy Inc.	Pemex	TUPRAS
Cenovus Energy Inc.	Imperial Oil Limited	Petrobras (IFRS US\$ Current)	Valero Energy Corporation
Chevron Corporation	INA Group	PetroChina Company Limited	Western Refining Inc.
CVR Energy, Inc.	Indian Oil Corporation Limited	Phillips 66	
Delek US Holdings	Marathon Petroleum Corporation	PKN Orlen SA	
ENI S.p.A.	MOL Group	Repsol	

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

Note: Some companies merged, split, or delisted before 2022. We removed the companies in Russia that we included in previous reports because their 2022 financial statements were not available. A total of 37 companies existed in 2022.

# Background

- The upstream analysis focuses on the financial and operating trends of 187 global oil and natural gas companies (called *the companies* or *the energy companies*), and the downstream analysis focuses on 37 companies (called *the refiners*).
- 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 2013 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.
- *Associate companies* are affiliates in which a company owns an equity stake.