

# Oil & Gas Industry Operating Benchmarks

Operational and market capitalization data for 209 oil & gas companies

1-Jan-2022







# Version



VERSION	NOTES
2021-1.1	Initial version, dated 04.01.21
2021-2.1	Updated financial and market cap data for 06.25.21. Removed companies that merged or were taken private.
2021-3.1	Updated financial and market cap data for 11.30.21. Removed companies that merged or were taken private.
2022-1.1	Updated financial and market cap data for 01.01.22. Added companies and removed those that merged or were taken private.

**Versioning convention:** This document is versioned as follows: **YYYY.N.n**, where **YYYY** is the year, **N** is the major release number, and **n** is the minor release number. A major release includes one or more of the following: the number of companies changes; reports and analyses change; financial and market cap information are updated, and a new date is attached to the report. A minor fixes errors, including data errors, formatting errors, and inconsistencies.

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# 2022 Oil & Gas Industry Report: Key Takeaways

- The Oil & Gas industry 3-year CAGR is 1.4% (overall dollars growth). The average company 3-year CAGR is -2.2% .
- The average Oil & Gas company has gross margins of 27.5% , invests 6.2% of revenue in selling, general, and administrative expense, 0.9% in research and development, and generates 12.0% operating margin, 22.8% EBITDA margin, 11.5% free cash flow, and -12.0% return on invested capital.
- The Oil & Gas company average inventory turns is 41.8. The median is 11.7. The difference between the average and the median indicates a few outliers raise the average. The median is more in line with the industry operational structure.
- The average Oil & Gas company has 135.7% PP&E, and 16.1% in goodwill, and intangibles, all as a percentage of revenue. Goodwill and intangibles are a proxy for mergers and acquisitions; based on this measure, Oil & Gas is among the lowest industries in mergers and acquisitions. While many industries exhibit characteristics of the “intangibles economy,” Oil & Gas is still among the most asset intensive industries.
- Oil & Gas has been heavily impacted by the pandemic, with demand dropping off significantly throughout 2020; trailing twelve months (TTM) results reflect this demand trough, with profitability, cash flow and return on investment metrics all at multi-year lows.
- Oil & Gas companies with higher inventory turns tend to have significantly lower market cap multiples than companies with lower inventory turns. This is an indication that inventory turns is a poor indicator of company market performance. (Note: controlling for gross margin yields the same conclusion).
- Oil & Gas companies with higher gross margins have significantly higher market cap multiples. The same is not true for profitability and return on investment; however, this may be a temporary phenomenon caused by the impact of the pandemic.
- Historical analysis (using aggregate data and ratios) indicates the operational structure is essentially the same as it was a decade ago. This includes similar gross margins, operating margins, asset intensity, inventory turns, and cash flows. This indicates the industry has a certain physical setpoint and that there are individual winners and losers around that setpoint, but that the overall industry is not operationally performing better than it was a decade ago.
- Individual operational measures are poor statistical predictors of market cap multiple. Quartile analysis was performed to contrast the operational characteristics of market cap multiple leaders with others.
- Market cap multiple leaders have cap multiples that are 2.4X average and 14.5X laggards. Leaders have significantly higher gross margins, but do not lead in profitability or return on investment; this may be a temporary phenomenon caused by the impact of the pandemic.
- From a supply chain management perspective, data in this report supports the thesis that market leaders run their supply chains with more of a profit center mentality than a cost center mentality, which has historically been the case. This further suggests supply chain management has evolved to a sophisticated multivariate decision science, rather than a unidimensional cost management function.

# Data Set

Information on the companies and the data set used in the analysis.



# Data Set



## COMPANIES

The data set includes 209 publicly-traded Oil & Gas companies.



**209**



## REVENUE

Aggregate revenue for companies in the data set is \$4.4 trillion for the latest reporting fiscal year as of the date on the cover of this report.



**\$4.4T**



## MARKET CAPITALIZATION

Aggregate market cap for companies in the data set is \$3.4 trillion as of date on the cover of this report.



**\$3.4T**

### Notes:

1. Unless otherwise noted, all company financial data are based on trailing twelve months results as of the date on the cover of this report.
2. All market capitalizations are as of the date on the cover of this report.
3. M=million; B=billion; T=trillion.

# Data Set

## Companies included in this report

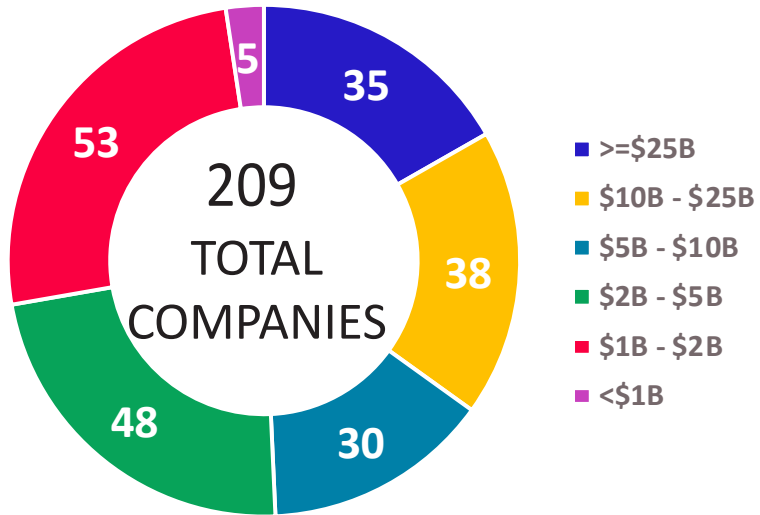


Adams Resources & Energ	Calumet Specialty Produ	Continental Resources I	Enerflex Ltd	Grupa LOTOS SA	Magellan Midstream Part	NuStar Energy LP	Phillips 66	Royal Dutch Shell PLC	Targa Resources Corp	Whitecap Resources Inc
Aker ASA	Cameco Corp	Cosan SA	Energy Transfer LP	Halliburton Co	Marathon Oil Corp	Oasis Petroleum Inc	Phillips 66 Partners LP	Saipem SpA	Tatneft PJSC	Williams Companies Inc
Aker BP ASA	Canadian Natural Resour	Coterra Energy Inc	Enerplus Corp	Hellenic Petroleum SA	Marathon Petroleum Corp	Occidental Petroleum Co	Pioneer Natural Resourc	Santos Ltd	TC Energy Corp	Wood Group (John) PLC
Aker Solutions ASA	Cenovus Energy Inc	Crescent Energy Co	Eni SpA	Helmerich & Payne Inc	Matador Resources Co	Oceaneering Internation	PJSC Lukoil	Saras SpA	TechnipFMC PLC	Woodside Petroleum Ltd
Alliance Resource Partn	ChampionX Corp	Crescent Point Energy C	EnLink Midstream LLC	Hess Corp	MEG Energy Corp	Oil Refineries Ltd	Plains All American Pip	Sasol Ltd	Teekay Corp	World Fuel Services Cor
Alpha Metallurgical Res	Cheniere Energy Inc	Crestwood Equity Partne	Enterprise Products Par	Hess Midstream LP	Mitsui & Co Ltd	OMV AG	Plains GP Holdings LP	SBM Offshore NV	Tenaris SA	Worley Ltd
Ampol Ltd	Cheniere Energy Partner	CrossAmerica Partners L	EOG Resources Inc	HollyFrontier Corp	Modec Inc	ONEOK Inc	Polish Oil and Gas Comp	Schlumberger Ltd	Thai Oil PCL	Yancoal Australia Ltd
Antero Resources Corp	Chesapeake Energy Corp	CVR Energy Inc	EQT Corp	Idemitsu Kosan Co Ltd	MOL Hungarian Oil and G	Origin Energy Ltd	Polski Koncern Naftowy	Secure Energy Services	Tidewater Midstream and	Yankuang Energy Group C
APA Corp	Chevron Corp	DCC PLC	Equinor ASA	Imperial Oil Ltd	Motor Oil (Hellas) Cori	Ovintiv Inc	ProPetro Holding Corp	Sinopec Oilfield Servic	TotalEnergies SE	YPF SA
ARC Resources Ltd	China Aviation Oil (Sin	DCP Midstream LP	Equitrans Midstream Cor	Inpex Corp	MPLX LP	Par Pacific Holdings In	PT Adaro Energy Tbk	Sinopec Shanghai Petroc	Tourmaline Oil Corp	
Arch Resources Inc	China Coal Energy Co Lt	Delek Drilling LP	Exxaro Resources Ltd	IRPC PCL	MRC Global Inc	Parkland Corp	PT AKR Corporindo Tbk	SM Energy Co	Transocean Ltd	
Baker Hughes Co	China Oil And Gas Group	Delek Group Ltd	Exxon Mobil Corp	Japan Petroleum Explora	Murphy Oil Corp	Patterson-UTI Energy In	PT Bukit Asam Tbk	SNGN Romgaz SA	Tullow Oil PLC	
Banpu PCL	China Oilfield Services	Delek US Holdings Inc	Ferrellgas Partners LP	Keyera Corp	Nabors Industries Ltd	PBF Energy Inc	PT Indo Tambangraya Meg	Southwestern Energy Co	Tupras-Turkiye Petrol R	
Baytex Energy Corp	China Petroleum & Chemi	Denbury Inc	Fugro NV	Kinder Morgan Inc	National Fuel Gas Co	PDC Energy Inc	PT Medco Energi Interna	Sprague Resources LP	Ultrapar Participacoes	
Beach Energy Ltd	China Shenhua Energy Co	Devon Energy Corp	Galp Energia SGPS SA	Koninklijke Vopak NV	Neste Corp	Peabody Energy Corp	PTT Exploration & Produ	Star Group LP	US Silica Holdings Inc	
BP PLC	CIMC Enric Holdings Ltd	Diamondback Energy Inc	Gazprom Neft PJSC	Kosmos Energy Ltd	NexTier Oilfield Soluti	Pembina Pipeline Corp	Ptt PCL	Subsea 7 SA	Valero Energy Corp	
Bristow Group Inc	CNX Resources Corp	DMCI Holdings Inc	Gazprom PJSC	Kunlun Energy Co Ltd	NGL Energy Partners LP	PetroChina Co Ltd	Range Resources Corp	Suncor Energy Inc	Valvoline Inc	
Calfrac Well Services L	Comstock Resources Inc	Ecopetrol SA	Genesis Energy LP	Laredo Petroleum Inc	NOV Inc	Petrofac Ltd	Renewable Energy Group	Sunoco LP	Vermilion Energy Inc	
California Resources Co	ConocoPhillips	Enbridge Inc	Gibson Energy Inc	Liberty Oilfield Servic	NOVATEK PJSC	Petroleo Brasileiro SA	Repsol SA	Surgutneftegas PJSC	Weatherford Internation	
Callon Petroleum Co	CONSOL Energy Inc	ENEOS Holdings Inc	Global Partners LP	Lundin Energy AB	NOW Inc	Petronas Dagangan Bhd	Rosneft Oil Co	Talos Energy Inc	Western Midstream Partn	

# Data Set

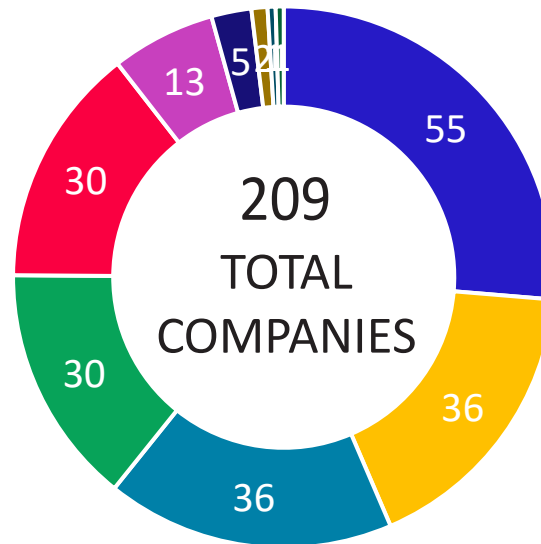
## Company distribution

### BY ANNUAL REVENUE



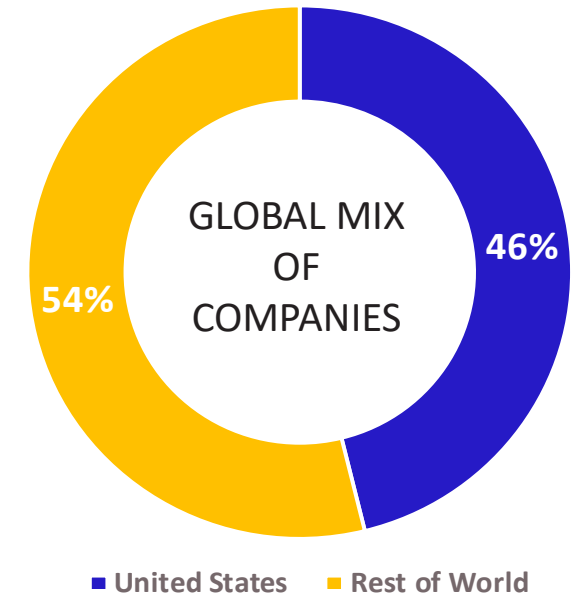
MEDIAN REVENUE = **\$4,858M**

### BY SUB-INDUSTRY



- Oil & Gas E&P
- Oil & Gas Refining & Marketing
- Oil & Gas Integrated
- Oil & Gas Equipment & Services
- Oil & Gas Midstream
- Thermal Coal
- Oil & Gas Drilling
- Conglomerates
- Coking Coal
- Uranium

### GEOGRAPHIC REGION



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# Data Set

## *Index of key variables included in this report*

*This report provides analysis of the following variables (and derivatives) for trailing twelve months (TTM) results and for the ten-year historical period.*

REVENUE	CASH	INVENTORY
GROWTH RATE	DEBT	DAYS IN PAYABLES
GROSS MARGIN	NET CASH	DAYS IN RECEIVABLES
SELLING, GENERAL, AND ADMIN	EBITDA	CASH-TO-CASH CYCLE
RESEARCH & DEVELOPMENT	EQUITY	CAPITALIZATION TO REVENUE
REVENUE PER EMPLOYEE	CAPITAL EXPENDITURES (CAPEX)	CAPITALIZATION TO EBITDA
OPERATING PROFIT	PROPERTY, PLANT, AND EQUIPMENT (PP&E, NET)	RETURN ON INVESTED CAPITAL
NET PROFIT	GOODWILL	RETURN ON ASSETS
FREE CASH FLOW	DEFERRED REVENUE	RETURN ON PHYSICAL ASSETS
STOCK COMPENSATION	REMAINING PERFORMANCE OBLIGATIONS (RPOS)	ECONOMIC PROFIT

# Data Set

## Three different analysis approaches in this analysis



APPROACH	DESCRIPTION	EXAMPLE	GOOD FOR
1. Aggregate averages	Averages are computed by adding up all numbers from all companies. For example, the gross margin for the industry would be the sum of all revenue for all companies minus the sum of all COGS for all companies (divided by the sum of all revenue for all companies).	Average Gross Margin % = $\frac{(\text{sum of all revenues minus sum of all COGS})}{\text{sum of all revenues}}$	Overall industry structure and operations; smooths outliers.
2. Averages of percentages	Averages are computed by taking the averages of all percentages for all the companies. For example, the average gross margin % is the sum of all gross margin %s for all companies divided by the number of companies.	Average Gross Margin % = $\frac{(\text{sum of all gross margin \%s})}{(\text{number of companies})}$	Comparison across companies.
3. Quartile analysis	The market cap multiples of all companies are divided into quartiles. The operating characteristics of the top quartile companies are compared to the others. Likewise, measures for each company are divided into quartiles and the average market cap multiple within each quartile is shown.	<ol style="list-style-type: none"><li>1) Isolate each quartile of market cap multiples; compare gross margin of leaders to others.</li><li>2) Isolate each quartile of gross margin; display average market cap multiple within each gross margin quartile.</li></ol>	Understanding characteristics of leaders.

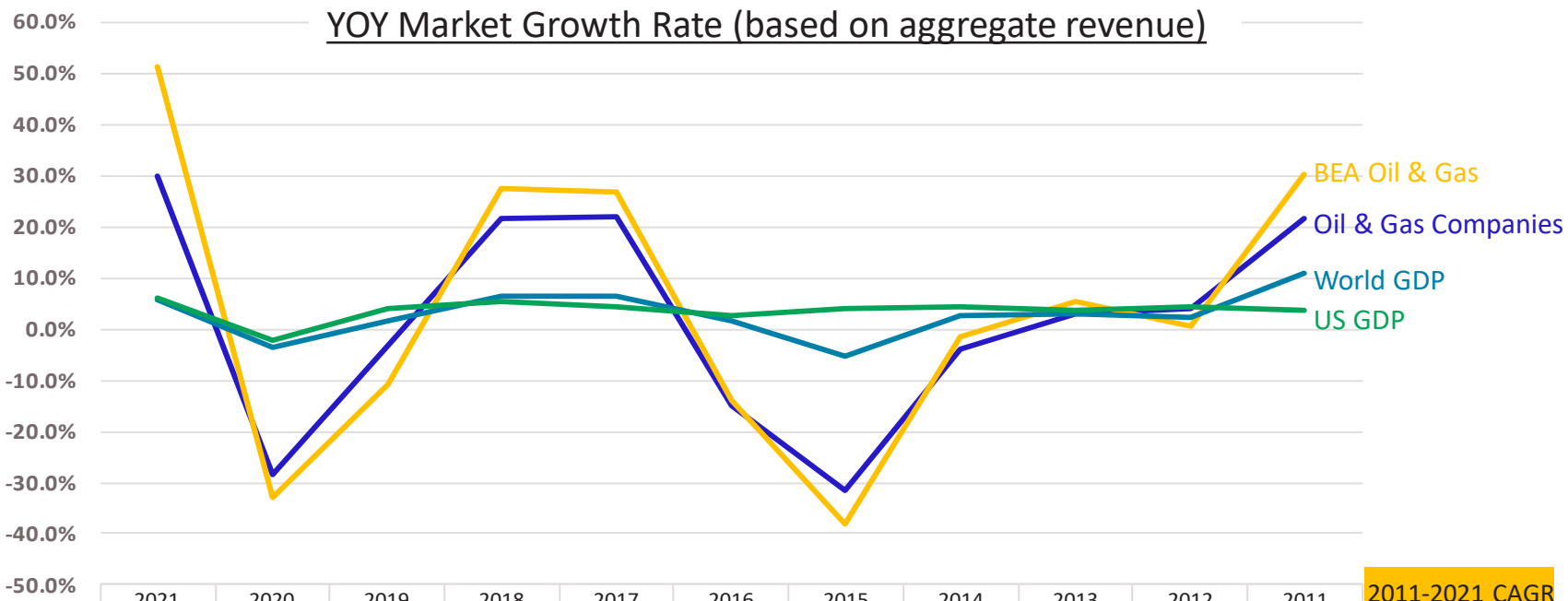
# Overall Market

Summary of the market using the companies in this report as a proxy for the overall Oil & Gas market. Charts in this section use the “aggregate averages” approach.



# Overall Market

## YOY growth rates, 2011-2021



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2011-2021 CAGR
Oil & Gas Companies	30.0%	-28.5%	-3.3%	21.5%	22.0%	-15.0%	-31.5%	-3.9%	3.1%	4.1%	21.8%	<b>1.8%</b>
BEA Oil & Gas Output	51.2%	-32.9%	-11.0%	27.7%	26.7%	-13.8%	-38.1%	-1.4%	5.4%	0.5%	30.4%	<b>0.6%</b>
World GDP (current \$)	5.9%	-3.6%	1.5%	6.3%	6.5%	1.5%	-5.3%	2.8%	2.9%	2.3%	11.1%	<b>2.8%</b>
US GDP (current \$)	6.0%	-2.3%	4.1%	5.4%	4.3%	2.7%	4.0%	4.4%	3.6%	4.2%	3.7%	<b>3.6%</b>

### NOTES & INSIGHTS

- Oil & Gas market CAGR for the decade of the 2010s was 1.8%, which is lower than the global current dollar GDP growth rate (2.8%). Yearly growth numbers for the data set follow closely BEA yearly growth numbers even though BEA numbers are for US based companies only.
- Oil & Gas growth rates fluctuate dramatically with the price of oil. Oil prices were high in the beginning of the decade and then collapsed in the middle of the decade before rebounding towards the end of the decade. 2020 numbers reflect the impact of the pandemic.

#### Notes:

- "Oil & Gas Companies" represents all companies in the data set for which there are year-over-year revenue numbers. The number of companies varies from year-to-year based on companies going public and some companies merging or being taken private as the decade progresses.
- "BEA Oil & Gas Output" growth is calculated from the US Bureau of Economic Analysis (<https://apps.bea.gov/iTable/iTable.cfm?reqid=150&step=2&isuri=1&categories=gdpkind>), GDP by Industry. Oil & Gas output as defined here is based on output of the following sub-industries: Oil and gas extraction; Petroleum and coal products. BEA updates its past numbers periodically, so past reports may not reflect the same past BEA numbers.
- World GDP and US GDP numbers are sourced from The World Bank ([data.worldbank.org](http://data.worldbank.org))
- World GDP and US GDP growth rates are based on *current* dollars. This means they have not been adjusted for inflation. *Current* numbers are used to ensure apples-to-apples comparisons with Oil & Gas market growth rates. Note that GDP growth rates are typically reported in constant dollars pegged to a certain year in order to account for the effect of price inflation. Thus, GDP growth rates commonly reported in media are typically lower than those shown here.

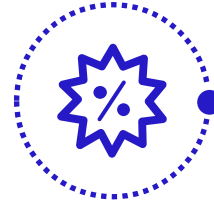
# Analysis Summary

Operational ratios based on aggregate data, TTM<sup>1</sup>



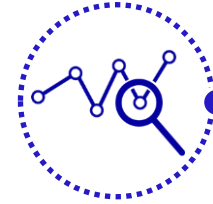
3-YEAR CAGR<sup>2</sup>

1.7%



GROSS MARGIN

22.2%



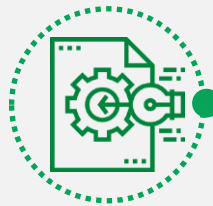
MARKET CAP<sup>3</sup>

0.8X



NET PROFIT

5.4%



R&D

0.5%



SG&A

5.0%



INVENTORY TURNS

9.5



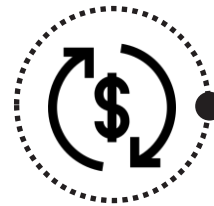
C2C (DAYS)

9.1



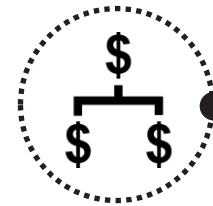
PP&E

87.6%



CAPEX

7.4%



FREE CASH FLOW

8.2%



ROIC

5.1%

## Notes:

1. All revenue and cost numbers are aggregate values for all companies for the trailing twelve months (TTM) as of the date on the cover of this report.
2. Growth rate is based on total dollars growth of the industry over the past four years.
3. Market capitalization ratio is aggregate market capitalization for all companies as of the date on the cover of this report divided by total revenue for all companies on TTM basis.

# Overall Market

## Historical key metrics based on aggregate data, 2011-Current



	METRIC	TTM	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	AVG11-21
OPERATIONS	Growth Rate (3YRCAGR)	1.7%	1.4%	0.5%	5.3%	-4.6%	-10.0%	-11.5%	-7.1%	5.3%	3.1%	4.1%	21.8%	0.8%
	Gross Margin	22.2%	22.3%	17.4%	21.5%	22.2%	21.0%	20.3%	19.3%	19.5%	20.5%	21.1%	23.5%	20.8%
	SG&A % of Revenue	5.0%	5.0%	5.9%	4.6%	4.5%	5.0%	5.9%	5.3%	4.0%	3.9%	3.9%	3.8%	4.7%
	R&D % of Revenue	0.5%	0.5%	0.6%	0.5%	0.4%	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%
	Inventory Turns (COGS/Inv)	9.5	9.6	9.6	11.1	12.1	10.3	9.4	11.9	13.8	11.5	11.4	11.4	11.1
	Days in Inventory	38.4	38.1	38.0	32.9	30.1	35.5	38.7	30.6	26.5	31.6	32.0	32.0	33.3
PROFIT & CASH FLOW	Operating Income	8.8%	8.7%	1.1%	8.4%	9.9%	7.3%	4.3%	4.8%	8.3%	9.6%	10.4%	12.6%	7.8%
	Net Profit	5.4%	5.3%	-5.9%	4.4%	6.0%	4.5%	0.7%	-1.0%	4.4%	6.4%	6.7%	8.1%	3.6%
	EBITDA	18.2%	18.4%	9.2%	16.9%	17.8%	16.6%	14.2%	11.0%	14.8%	16.5%	16.9%	18.2%	15.5%
	Operating Cash Flow	15.7%	15.9%	14.3%	13.7%	14.0%	13.4%	13.2%	14.4%	13.1%	12.3%	11.8%	12.4%	13.5%
	FCF % of Revenue	8.2%	8.4%	4.5%	4.0%	5.0%	3.9%	1.8%	1.0%	1.4%	0.5%	0.6%	1.9%	3.0%
	CAPEX % of Revenue	7.4%	7.5%	9.8%	9.7%	9.0%	9.5%	11.4%	13.4%	11.7%	11.8%	11.2%	10.5%	10.5%
	Stock Compensation	0.4%	0.4%	0.5%	0.4%	0.4%	0.5%	0.6%	0.5%	0.3%	0.4%	0.3%	0.4%	0.4%
	Days in Receivables	39.7	40.0	33.3	30.0	28.4	35.2	34.9	28.1	27.5	31.9	32.3	34.9	32.4
	Days in Payables	69.0	69.5	48.4	44.8	40.7	48.9	48.7	36.1	35.6	39.9	40.8	46.5	45.5
	Cash-to-Cash Cycle (Days)	9.1	8.5	22.9	18.2	17.8	21.8	24.8	22.7	18.4	23.6	23.5	20.3	20.2
ASSETS	Property, Plant, Equipment %	87.6%	88.6%	111.1%	85.5%	75.5%	93.0%	108.5%	89.7%	66.8%	65.1%	61.3%	55.6%	81.9%
	Cash % of Revenue	13.0%	13.1%	13.6%	8.2%	9.0%	11.2%	12.3%	10.8%	7.3%	6.8%	6.6%	6.4%	9.6%
	Debt % of Revenue	43.6%	44.0%	57.6%	38.7%	32.5%	41.0%	48.9%	40.5%	27.0%	23.8%	21.6%	19.6%	35.9%
	Goodwill and Intangibles % of Revenue	10.2%	10.4%	12.6%	10.5%	10.2%	11.5%	11.3%	8.9%	6.3%	6.2%	6.6%	6.3%	9.2%
ROI	ROA	3.4%	3.4%	-3.1%	3.1%	4.6%	2.8%	0.4%	-0.7%	4.0%	5.8%	6.3%	8.0%	3.1%
	ROIC	5.1%	5.0%	-4.5%	4.5%	6.7%	4.1%	0.5%	-1.0%	5.8%	8.6%	9.4%	12.1%	4.7%
	Return on Physical Assets	9.2%	9.0%	1.0%	9.1%	12.1%	7.2%	3.7%	5.0%	11.5%	13.3%	15.2%	20.3%	9.8%
	Economic Profit % of Revenue	0.4%	0.3%	-9.5%	0.2%	1.8%	0.2%	-4.2%	-4.9%	0.4%	2.3%	2.4%	4.2%	-0.6%
CAP	Market Cap / Revenue	0.8	0.8	1.0	0.5	0.7	0.8	1.2	1.0	0.5	0.6	0.8	0.8	0.8
	Market Cap / EBITDA	4.3	4.3	10.9	3.0	4.0	4.9	7.3	7.6	3.0	3.6	4.1	3.7	5.1

### HISTORY

	2010	2000
Growth Rate (3YRCAGR)		
Gross Margin	24.1%	31.6%
SG&A % of Revenue	5.4%	6.6%
R&D % of Revenue	0.6%	1.0%
Inventory Turns (COGS/Inv)	10.8	11.3
Days in Inventory	33.6	32.3
Operating Income	12.0%	17.5%
Net Profit	8.3%	8.1%
EBITDA	19.8%	23.1%
Operating Cash Flow	15.0%	13.5%
FCF % of Revenue	2.8%	6.2%
CAPEX % of Revenue	12.2%	7.3%
Stock Compensation	0.4%	
Days in Receivables	35.3	47.5
Days in Payables	55.8	66.0
Cash-to-Cash Cycle (Days)	13.2	13.9
Property, Plant, Equipment %	61.2%	51.8%
Cash % of Revenue	7.7%	5.6%
Debt % of Revenue	21.6%	21.8%
Goodwill and Intangibles % of Revenue	8.4%	5.5%
ROA	7.5%	8.2%
ROIC	11.1%	13.1%
Return on Physical Assets	17.7%	30.3%
Economic Profit % of Revenue	3.8%	6.7%
Market Cap / Revenue	0.9	2.3
Market Cap / EBITDA	3.9	9.9

### NOTES & INSIGHTS

- This chart shows the operational structure of the industry today and for the past decade.
- These data indicate that the operational structure of the industry has remained relatively constant for the past decade.
- This indicates that industry operates around a certain “setpoint” driven by physics and physical characteristics.
- That said, individual companies deviate significantly from the overall structural setpoint, resulting in significantly different company-level operational results (next section).
- The final three years of CAGR are one-year growth rates (due to lack of data).
- Historical numbers beyond ten years have fewer companies and need further analysis for apples-to-apples comparisons.



A background image of an industrial facility, likely a steel mill, at dusk or dawn. The sky is a mix of orange, yellow, and blue. Several tall smokestacks are visible, with one emitting a plume of white smoke. The foreground shows a fenced-in area with some buildings and streetlights. The overall scene is somewhat hazy and atmospheric.

# Analysis Summary

Charts that summarize key variables in the report. Charts in this section use the “averages of percentages” approach. In other words, it shows the averages of all percentages for all companies. (These numbers will differ from industry structural numbers in the previous section)

# Analysis Summary

## Average and median for different variables, TTM



The table below contains the average and median values for the 209 companies investigated. This shows that the average Oil & Gas company operates with a gross margin of **27.5%**, spends **6.2%** of revenue on SG&A, **0.9%** on R&D, and has inventory turns of **41.8**, operating income of **12.0%**, net income of **3.5%**, free cash flow of **11.5%**, and return on invested capital of **12.0%**.

	REVENUE (TTM)		OPERATIONS				PROFIT AND CASH			ROIC
	Annual Revenue (\$M)	3-Year CAGR	Gross Margin	SG&A	R&D	Inventory Turns	Operating Income	Net Income	Free Cash Flow	
Average	\$20,938	-2.2%	27.5%	6.2%	0.9%	41.8	12.0%	3.5%	11.5%	-12.0%
Median	\$4,858	-4.9%	23.8%	4.6%	0.5%	11.7	9.4%	2.8%	7.6%	3.0%

#### Notes:

1. TTM = trailing twelve months. All revenue and cost numbers are based on trailing twelve months results as of the date on the cover of this report. This report provides the averages of the percentages of all companies, including outliers.
2. Growth rate is based on the past four years of financial results
3. All percentage numbers are a percentage of revenue. Average is the average of all the percentages for each of the companies.



# Analysis Summary

## Average values by revenue quartile, TTM<sup>1</sup>

Market cap multiples for the highest revenue quartile are lower than other quartiles. Operating results across the revenue quartiles are poor, having been significantly negatively impacted by the global pandemic.

All numbers are averages within each quartile

	#	REVENUE (TTM)		MKT CAP	OPERATIONS				PROFIT AND CASH			ROIC
		Revenue(\$M)	3-Year CAGR	Mkt Cap/ Revenue	Gross Margin	SG&A	R&D	Inventory Turns	Operating Income	Net Income	Free Cash Flow	
Quartile 4	53	\$68,981	-4.8%	0.8	22.1%	4.5%	0.6%	15.1	10.7%	6.8%	8.9%	6.3%
Quartile 3	52	\$9,416	-1.6%	1.2	24.5%	5.9%	0.6%	33.3	12.1%	3.4%	9.5%	1.6%
Quartile 2	52	\$3,115	-2.0%	1.2	27.1%	7.0%	1.6%	85.2	7.7%	-1.9%	13.3%	-61.9%
Quartile 1	52	\$1,318	-0.2%	1.8	36.4%	7.3%	0.6%	38.6	17.5%	5.7%	14.9%	5.4%

### REVENUE QUARTILES (\$M)

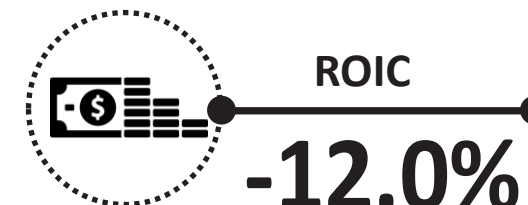
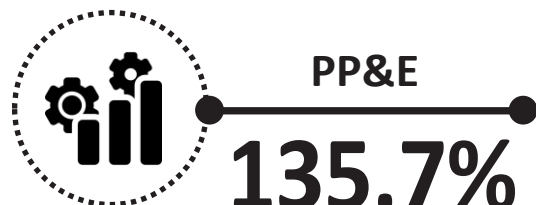
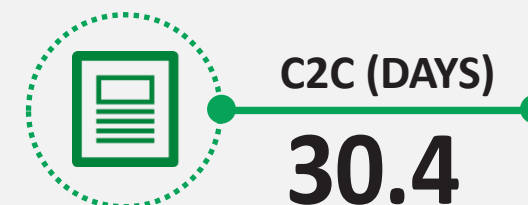
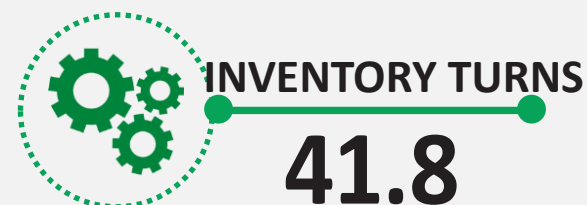
Quartile 4 >= \$15,195  
 Quartile 3 >= \$4,858, < \$15,195  
 Quartile 2 >= \$1,781, < \$4,858  
 Quartile 1 < \$1,781

### Notes:

1. TTM = trailing twelve months. All revenue and cost numbers are based on trailing twelve months results as of the date on the cover of this report. This report provides the averages of the percentages of all companies, including outliers.
2. Growth rate is based on the past four years of financial results
3. All percentage numbers are a percentage of revenue. Average is the average of all the percentages for each of the companies.

# Analysis Summary

Average numbers for the entire data set, TTM<sup>1</sup>

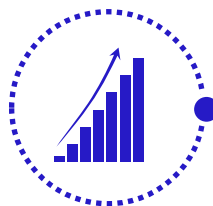


## Notes:

1. All revenue and cost numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report for all companies in the data set.
2. All ratios shown here are averages of the ratios of each company.

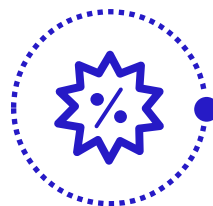
# Analysis Summary

Average numbers for the top-quartile market cap<sup>1</sup> multiple leaders



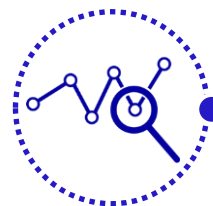
3-YEAR CAGR<sup>2</sup>

**-0.4%**



GROSS MARGIN

**45.1%**



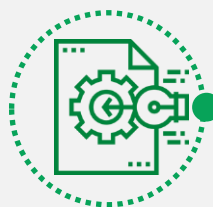
MARKET CAP

**3.1X**



NET PROFIT

**13.9%**



R&D

**1.0%**



SG&A

**7.6%**



INVENTORY TURNS

**63.7**



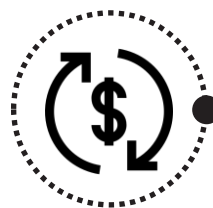
C2C (DAYS)

**21.8**



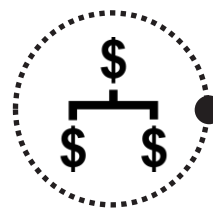
PP&E

**234.6%**



CAPEX

**19.4%**



FREE CASH FLOW

**24.2%**



ROIC

**8.7%**

## Notes:

1. All revenue and cost numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report for all companies in the top quartile of market cap multiple performance.
2. All ratios shown here are averages of the ratios of each company.

# Analysis Summary

## Key metric benchmarks and relationship to market cap multiple

Average metric value within the quartile and corresponding average market cap within the quartile

	n=209 METRIC	INDUSTRY BENCHMARKS			MARKET CAP MULTIPLE		
		Q4 AVG	MEDIAN	Q1 AVG	Q4 AVG	Q1 AVG	
OPERATIONS	3-Year CAGR	14.3%	-4.9%	-13.8%	1.6	1.1	← Gross margin is important to market performance, indicating product superiority and pricing power are paramount.
	Gross Margin	60.5%	23.8%	1.4%	2.3	0.6	
	SG&A	14.2%	4.6%	1.1%	1.6	0.9	
	R&D	2.2%	9.4%	0.1%	1.0	0.6	
PROFIT	Operating Margin	36.1%	9.4%	-8.9%	2.3	0.8	← All forms of profitability have the highest correlation with market performance.
	EBITDA Margin	64.3%	14.3%	-6.3%	2.4	0.7	
	Net Profit Margin	28.7%	2.8%	-21.4%	2.5	1.0	
CASH	Free Cash Flow	32.3%	7.6%	-3.0%	2.5	0.5	
	CAPEX % of Revenue	27.3%	6.4%	0.8%	2.4	0.4	
	PP&E (net) % of Revenue	307.2%	97.4%	21.5%	2.3	0.5	
ROI	ROIC % of Revenue	19.1%	3.0%	-74.0%	1.7	0.9	← All forms of ROI are strong indicators of market performance, at about the same level as profitability.
	ROA % of Revenue	12.1%	2.2%	-9.4%	1.8	0.9	
	ROPA % of Revenue	28.0%	10.3%	-14.3%	1.1	0.9	
	Economic Profit % of Revenue	17.2%	0.8%	-18.3%	2.1	1.3	
C2C	Inventory Turns	135.7	11.7	4.2	1.3	1.6	← Inventory turns and cash-to-cash (days) correlate little or negatively with market performance
	Payables (days)	111.4	31.2	7.5	1.6	1.2	
	Receivables (days)	149.4	38.3	22.3	1.4	0.6	
	Cash-to-Cash (days)	103.7	26.2	-48.6	1.4	1.5	

**Notes:**

1. All metric numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report. Market capitalization numbers are as of the date on the cover of this report.
2. This chart uses the averages and medians of the percentages of each company within a quartile and across the entire data set. Q4=top quartile; Q1=bottom quartile.
3. Source of all data is Calcbench and YCharts and Worldlocity analysis.

# Analysis Summary

## Market cap multiple quartile comparison

This chart compares the operating characteristics of each market cap multiple quartile in order to glean insights into what cap leaders do differently. It summarizes the difference between the top and bottom quartiles in order to draw contrasts.

VARIABLE	DATA SET	QUARTILE (AVGS WITHIN EACH CAP QUARTILE)				DIFFERENCE
	AVG	TOP (Q4)	Q3	Q2	BOTTOM (Q1)	TOP-BOTTOM
Market Cap Multiple	1.3	3.1	1.2	0.6	0.2	14.5X
1-Year Growth	-2.2%	-0.4%	-1.3%	-3.7%	-3.3%	2.9 pps
Gross Margin	27.5%	45.1%	29.8%	24.8%	10.0%	35.0 pps
SG&A	6.2%	7.6%	6.4%	6.6%	4.1%	3.5 pps
R&D	0.9%	1.0%	0.9%	0.6%	0.9%	0.1 pps
Operating Profit	12.0%	23.9%	12.8%	8.4%	2.7%	21.2 pps
Net Profit	3.5%	13.9%	5.5%	-5.6%	0.2%	13.8 pps
Inventory Turns	41.8	63.7	23.2	24.9	55.2	8.5 Turns
C2C Cycle (days)	30.4	21.8	30.2	39.2	30.6	-8.7 Days
Net Cash	-64.8%	-114.3%	-62.9%	-54.9%	-27.0%	-87.3 pps
CAPEX	10.6%	19.4%	11.7%	7.7%	3.5%	15.8 pps
Free Cash Flow	11.5%	24.2%	12.1%	7.0%	2.6%	21.6 pps
ROIC	-12.0%	8.7%	-54.7%	-4.3%	1.8%	7.0 pps
Return on Physical Assets	8.5%	12.5%	15.5%	6.8%	-1.0%	13.5 pps
Economic Profit	0.4%	4.0%	-1.0%	-0.5%	-0.8%	4.8 pps

### NOTES & INSIGHTS

- Leaders have market cap multiples that are 2.4X average, and 14.5X laggards.
- Leaders have significantly higher gross margins than laggards. Top quartile market cap performers do not perform significantly better than laggards in profitability, cash flow, and return on investment. This is likely due to the dislocation and demand trough caused by the pandemic. (Results here are shown based on trailing twelve months (TTM) performance, so they will be skewed by the impact of the pandemic).
- Paradoxically, cap leaders do not lead in inventory turns. Cap laggards are more likely to lead in inventory turns than cap leaders. This is likely because cap leaders are managing their supply chains as profit centers and cap laggards are solely focused on cost.
- All financial numbers are for the trailing twelve months as of the date on the cover of this report. All market cap numbers are as of the date on the cover of this report.

# Appendix

Additional supporting material and notes.





# Notes and Definitions

1. Primary data sources for the analysis are YCharts and Calcbench.
2. Companies included in this analysis are filtered based on available financial, operational, and market cap data. Some significant companies such as Samsung and LG have been excluded because of lack of market capitalization data from the primary data sources.
3. Free cash flow = operating cash flow minus CAPEX.
4. ROA = return on assets = net income divided by total assets.
5. ROIC = return on invested capital = net income divided by (total debt plus equity).
  1. Note: the formal definition of ROIC uses NOPAT in the numerator. Furthermore, some companies may employ their own specific definition. The results here will be close to the formal definition, but generally slightly less.
6. ROCE = return on capital employed = EBIT divided by capital employed. Capital employed = total assets minus total current liabilities.
7. ROPA = return on physical assets = operating profit divided by (PP&E (net) plus inventory).
8. Economic profit = net operating profit after taxes (NOPAT) minus weighted average cost of capital (WACC) times capital invested. Capital invested = Equity plus the non-current portion of debt. WACC is industry-specific, as publicly reported by Aswath Damodaran, NYU Stern Business School.
9. Inventory turns = COGS (end of period) divided by inventory (end of period).
10. C2C = cash-to-cash in days = days in receivables plus days in inventory minus days in payables.
11. Unless otherwise noted, all data are based on the most recent fiscal year (MRY) for each company, as reported in the SEC EDGAR database as of the date on the cover of this report.
12. Historical data is for fiscal years 2010-2020 for all companies. The number of companies grows for each year in the historical analysis, as more companies became public across the decade.
13. In the case of companies formed from mergers, the oldest company is used to designate the resultant company founding year.
14. 3-Year CAGR is based on the past four years of annual financial data.
15. Market capitalization is based on the stock prices as of the date on the cover of this report for each company. Market cap to revenue ratios are market capitalization divided by trailing twelve months (TTM) revenue through the most recently reported fiscal quarter as of the date on the cover of this report.
16. EBITDA is calculated as operating income plus depreciation and amortization.
17. Adjusted EBITDA = EBITDA minus stock compensation
18. Cash = cash, cash equivalents, and marketable securities.
19. Total debt includes short-term debt, the current portion of long-term debt, long-term debt, borrowings under credit facility, capital lease obligations, convertible notes, and deferred rent.
20. CAPEX = gross CAPEX, in other words it does not net out the sale of assets.
21. Enterprise value (EV) = market cap plus total debt minus cash.
22. Most companies allocate depreciation and amortization costs to individual cost buckets, including cost of revenue, SG&A, and R&D. Some subset of companies explicitly show depreciation and amortization costs on the income statement after the other cost buckets. No attempt was made to reallocate these costs for this subset of companies. This has the effect of understating COGS, SG&A, and R&D for those companies.
23. Individual company YOY numbers may be distorted due to mergers and acquisitions. No attempt has been made to normalize for mergers, acquisitions, and divestitures.

# Notes and Definitions

24. Aggregate inventory turns is calculated as follows: sum of all COGS for all companies in an industry divided by sum of all inventories for all companies in an industry. In a certain small number of cases, companies do not have an inventory entry on their balance sheets. In this case, to maintain consistency across calculations, inventory is assumed to be zero for those companies. This is most prevalent in service-oriented industries such as transportation and wholesale distribution, where certain companies own zero inventory. This may have the effect of slightly overstating aggregate inventory turns versus if the calculation were only done for those companies that carry inventory. (Note: in goods-producing industries, companies without COGS or without inventories have been filtered out of the analysis).





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