

Intangibles

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Agenda

- The rise of intangibles
- Characteristics of intangibles
- Why investors should care

Tangible to Intangible Investment

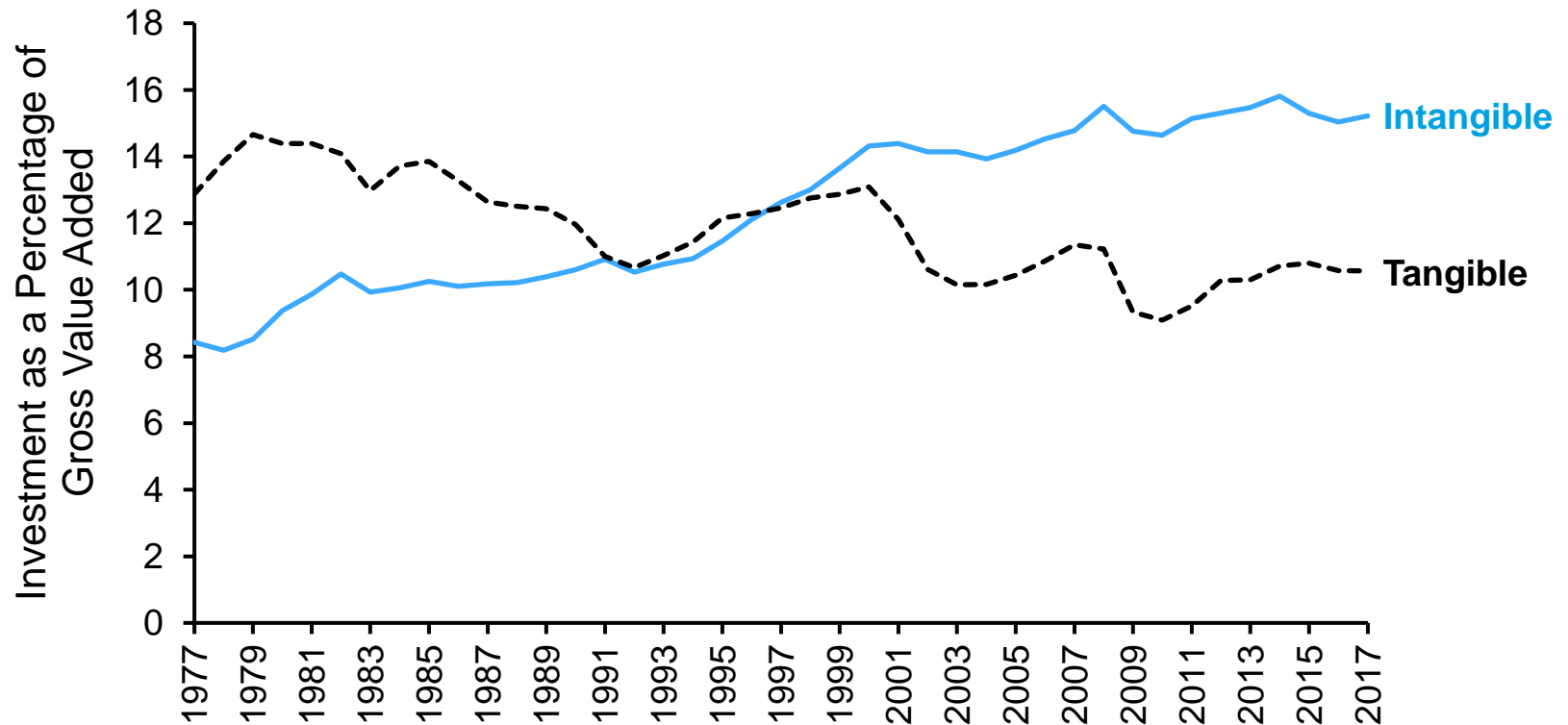
Categories of Intangible Assets

Broad category	Type of investment	Type of legal property that might be created
Computerized information	Software development	Patent, copyright, design intellectual property rights (IPR), trademark, other
	Database development	Copyright, other
Innovative property	R&D	Patents, design IPR
	Mineral exploration	Patents, other
	Creating entertaining and artistic originals	Copyright, design IPR
	Design and other product development costs	Copyright, design IPR, trademark
Economic competencies	Training	Other
	Market research and branding	Copyright, trademark
	Business process re-engineering	Patent, copyright, other

Source: Jonathan Haskel and Stian Westlake, *Capitalism Without Capital: The Rise of the Intangible Economy* (Princeton, NJ: Princeton University Press, 2017), 44.

Tangible to Intangible Investment

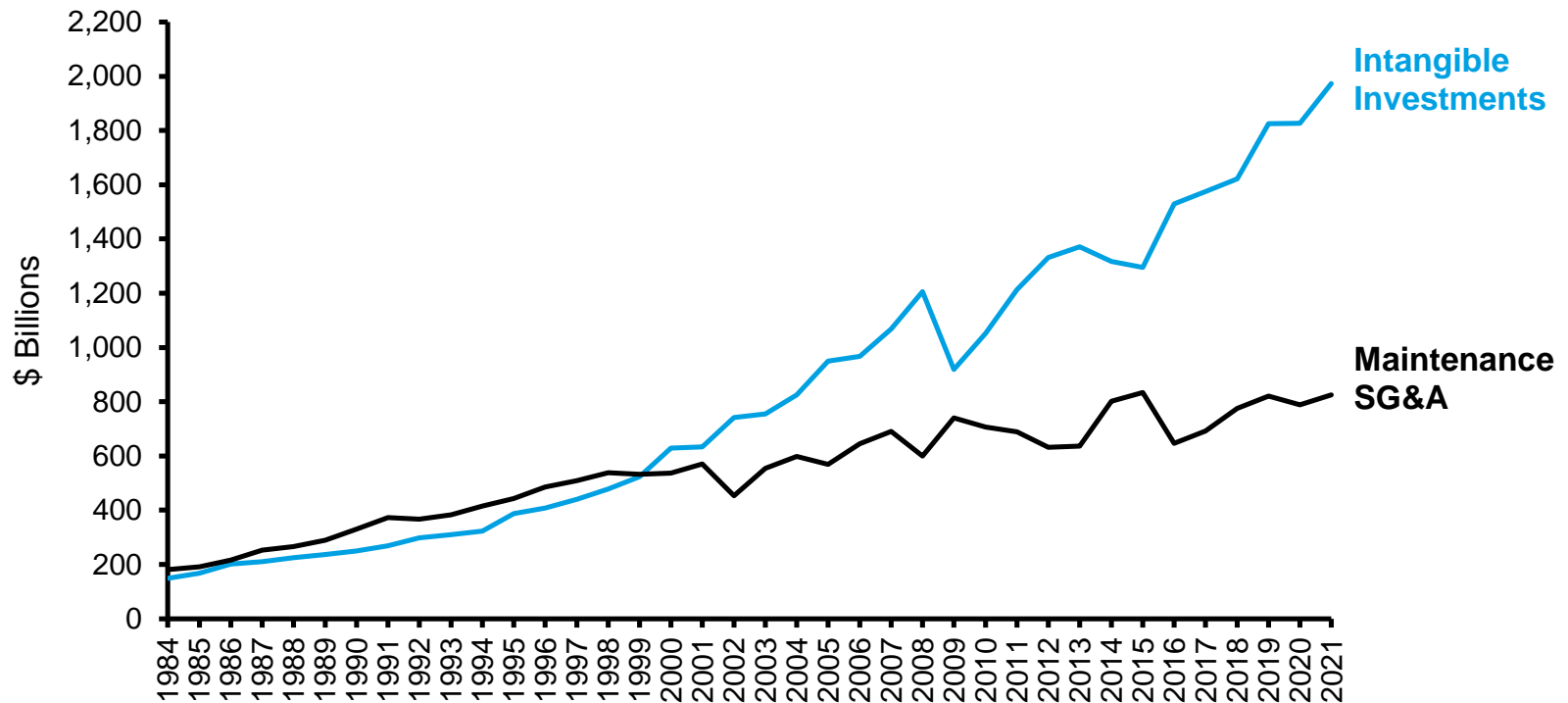
Investment Rates in Assets, as a Percentage of Private-Sector GDP



Source: Unpublished update to Corrado and Hulten (2010) using methods and sources developed in Corrado and Hao (2013) and in Corrado et al. (2016) and Corrado et al. (2017) for INTAN-Invest© and the SPINTAN project, respectively. The SPINTAN project was funded by the European Commission FP-7 grant agreement 612774.

Tangible to Intangible Investment

Components of SG&A Costs, 1984-2021

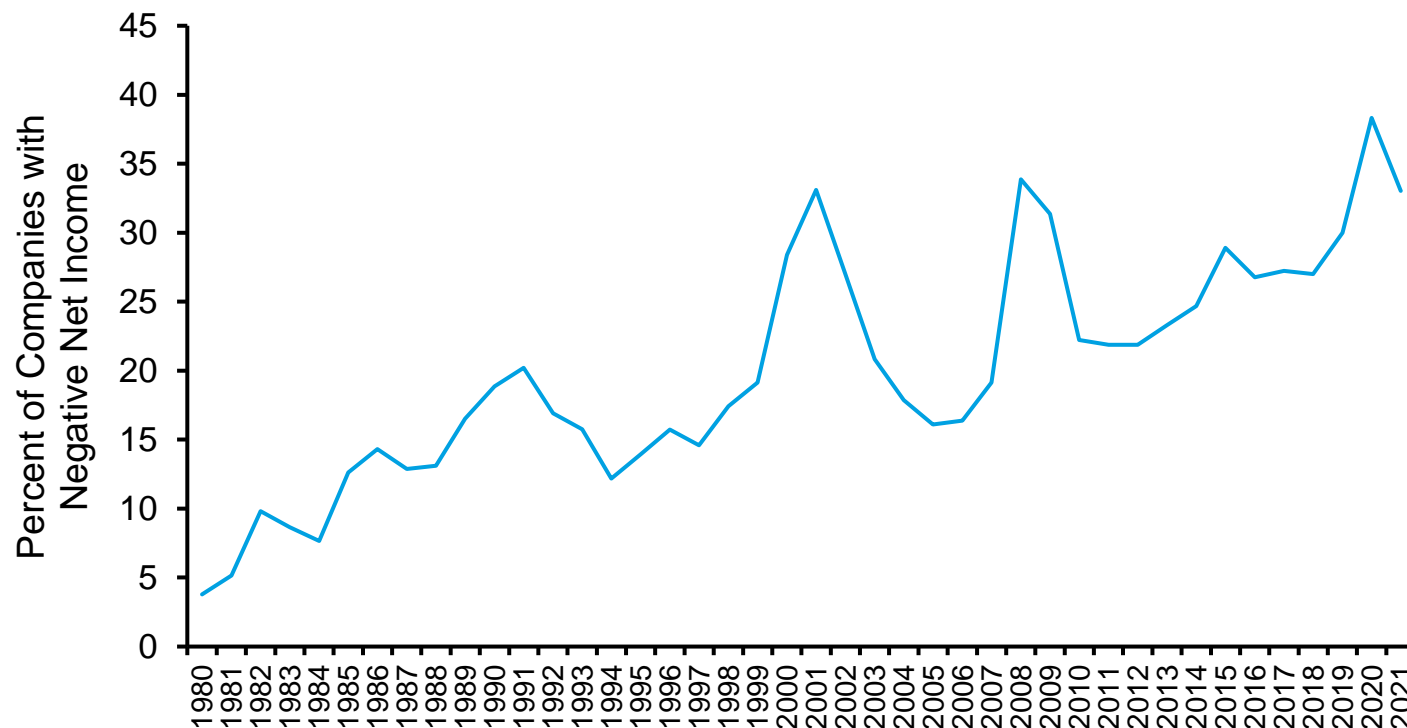


Source: FactSet; Based on Luminita Enache and Anup Srivastava, "Should Intangible Investments Be Reported Separately or Commingled with Operating Expenses? New Evidence," *Management Science*, Vol. 64, No. 7, July 2018, 3446-3468. Data extended through 2018 by Anup Srivastava. Includes estimates by Counterpoint Global.

Note: Intangible investments = R&D + Advertising + Investment Main SG&A; Maintenance SG&A = Maintenance Main SG&A.

Tangible to Intangible Investment – Means More Losses

Percent of Companies with Negative Net Income



Source: FactSet.

Note: Constituents of the Russell 3000® Index as of calendar year-end; The Russell 3000 Index measures the performance of the largest 3,000 U.S. companies representing approximately 98% of the investable U.S. equity market. The index is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and is completely reconstituted annually to ensure new and growing equities are reflected.

Microsoft's Free Cash Flow, 2021-2022

(\$ Billions)	<u>2021</u>	<u>2022</u>
Operating income (EBIT)	70	83
Amortization of intangibles	2	2
<u>Operating lease payments</u>	<u>1</u>	<u>1</u>
EBITA	73	87
Income tax provision	10	11
Deferred taxes	1	6
<u>Tax shield</u>	<u>0</u>	<u>0</u>
Cash taxes	10	17
Net Operating Profit after Taxes (NOPAT)	<u>62</u>	<u>70</u>
Change in working capital	(3)	(0)
Additions to property and equipment *	24	29
<u>Depreciation</u>	<u>10</u>	<u>12</u>
Capital expenditures, net	14	17
Acquisitions	9	22
Investment (I)	<u>20</u>	<u>38</u>
Free cash flow	<u>42</u>	<u>31</u>

Note: * = includes assets acquired under capital leases.

Source: Microsoft Corporation.

Quantifying Microsoft's Intangible Investments

Intangibles on the Income Statement, Microsoft's Fiscal 2022 Figures

Item	Amount	Percent Allocated to Intangible	Intangible Investment
Research & Development	\$24.5 billion	100	\$24.5 billion
Sales & Marketing	\$21.8	70	\$15.3
General & Administrative	\$5.9	20	\$1.2
Total	\$52.2 billion		\$41.0 billion

Source: Charles R. Hulten, "Decoding Microsoft: Intangible Capital as a Source of Company Growth," *NBER Working Paper 15799*, March 2010, Microsoft Corporation.

Reclassifying Microsoft's Intangible Investments

Without Adjustments

(\$ Billions)	2021	2022
Operating income (EBIT)	70	83
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<u>Operating lease payments</u>	<u>1</u>	<u>1</u>
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<u>Tax shield</u>	<u>0</u>	<u>0</u>
Cash taxes	10	17
Net Operating Profit after Taxes (NOPAT)	62	70
Intangible investment	36	41
<u>Amortization of intangibles</u>	<u>29</u>	<u>31</u>
Intangible investment, net	7	10
Adjusted NOPAT	<u>69</u>	<u>80</u>
Change in working capital	(3)	(0)
Additions to property and equipment *	24	29
<u>Depreciation</u>	<u>10</u>	<u>12</u>
Capital expenditures, net	14	17
Acquisitions	9	22
Investment (I)	20	38
Intangible investment	36	41
<u>Amortization of intangibles</u>	<u>29</u>	<u>31</u>
Intangible investment, net	7	10
Adjusted investment	<u>27</u>	<u>48</u>
Free cash flow	<u>42</u>	<u>31</u>

Note: * = includes assets acquired under capital leases.
Source: Microsoft Corporation.

Recalculating Microsoft's ROIC

(\$ Billions)

Operating approach (traditional)

	<u>2021</u>	<u>2022</u>
Cash *	3	4
Accounts receivable, net	38	44
Deferred income taxes	0	0
Inventories	3	4
<u>Other current assets</u>	13	17
Total current assets	57	69
<u>- NIBCLs</u>	<u>81</u>	<u>92</u>
Net working capital	(23)	(23)
Property and equipment, net	60	74
Operating lease right-of-use assets	11	13
Goodwill	50	68
Intangible assets, net	8	11
Other long-term assets	15	22
Invested capital	<u>120</u>	<u>165</u>

NOPAT	62	70
Invested capital (average)	108	143
ROIC	58%	49%

(\$ Billions)

Operating approach (with adjustments)

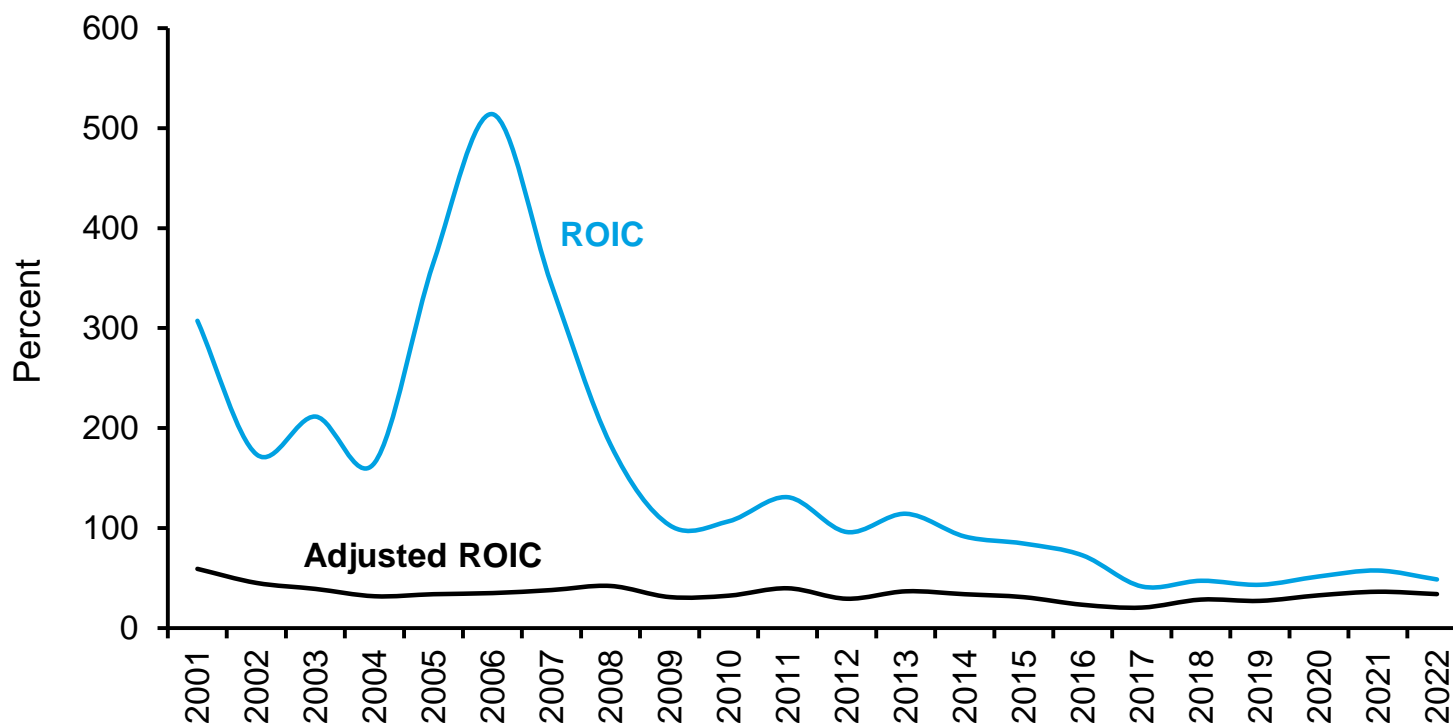
	<u>2021</u>	<u>2022</u>
Cash *	3	4
Accounts receivable, net	38	44
Deferred income taxes	0	0
Inventories	3	4
<u>Other current assets</u>	13	17
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Net working capital	(23)	(23)
Property and equipment, net	60	74
Operating lease right-of-use assets	11	13
Goodwill	50	68
Intangible assets, net	8	11
Other long-term assets	15	22
Invested capital	120	165
Capitalized intangibles, net	85	95
Adjusted invested capital	<u>206</u>	<u>260</u>

NOPAT	69	80
Invested capital (average)	190	233
ROIC	37%	34%

Source: Microsoft Corporation.

Note: * = cash = 2 percent of sales; NIBCLs is non-interest-bearing current liabilities.

Microsoft's ROIC Before and After Adjustments



Source: Microsoft and Counterpoint Global.

Note: Invested capital is the average of the current and prior year.

Characteristics of Intangible Assets – Four S's

- **Scalability:** High upfront costs but low incremental costs (drugs, software, music)
 - Network effects (ridesharing, social networks, complementary products)

“A telephone—without a connection at the other end of the line—is not even a toy or scientific instrument. It is one of the most useless things in the world. Its value depends on the connection with the other telephone—and increases with the number of connections.”

- *American Telephone and Telegraph Company (AT&T), 1908 annual report*
- **Sunkness:** Tangible assets retain more resale value due to their standardization



\$1.3 billion

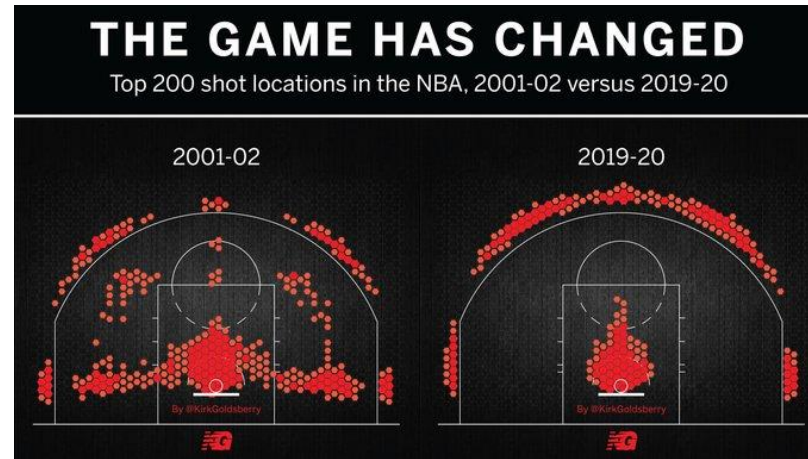


\$15 billion → \$15 million

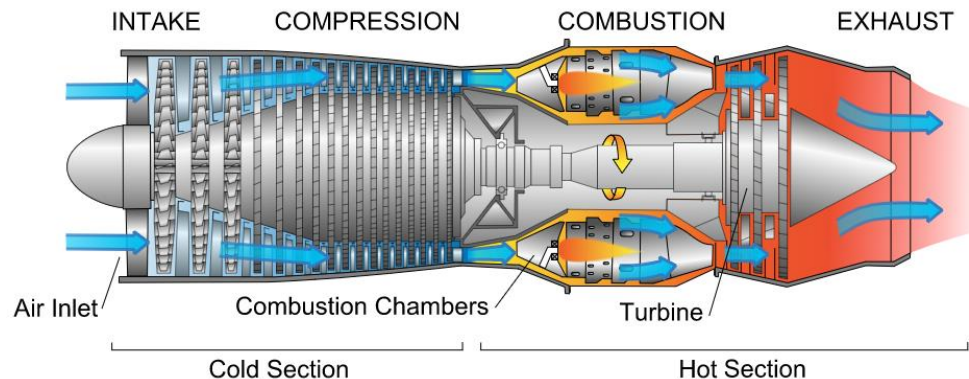
Source: Jonathan Haskel and Stian Westlake, *Capitalism Without Capital: The Rise of the Intangible Economy* (Princeton, NJ: Princeton University Press, 2017), 56-88, (left image) Chris6d / CC BY-SA (<https://creativecommons.org/licenses/by-sa/4.0>), and (right image) RadioShack.

Characteristics of Intangible Assets – Four S's

- **Spillovers:** Intangible assets are more easily imitated, but copyrights offer protection



- **Synergies:** Innovation arises from combining technologies that already exist



Source: Jonathan Haskel and Stian Westlake, *Capitalism Without Capital: The Rise of the Intangible Economy* (Princeton, NJ: Princeton University Press, 2017), 56-88, (top image) Kirk Goldsberry, and (bottom image) Jeff Dahl / CC BY-SA (<https://creativecommons.org/licenses/by-sa/4.0>).

Characteristics of Intangible Assets – Base Rates

Base Rates for Sales Growth by Industry, 1984-2020

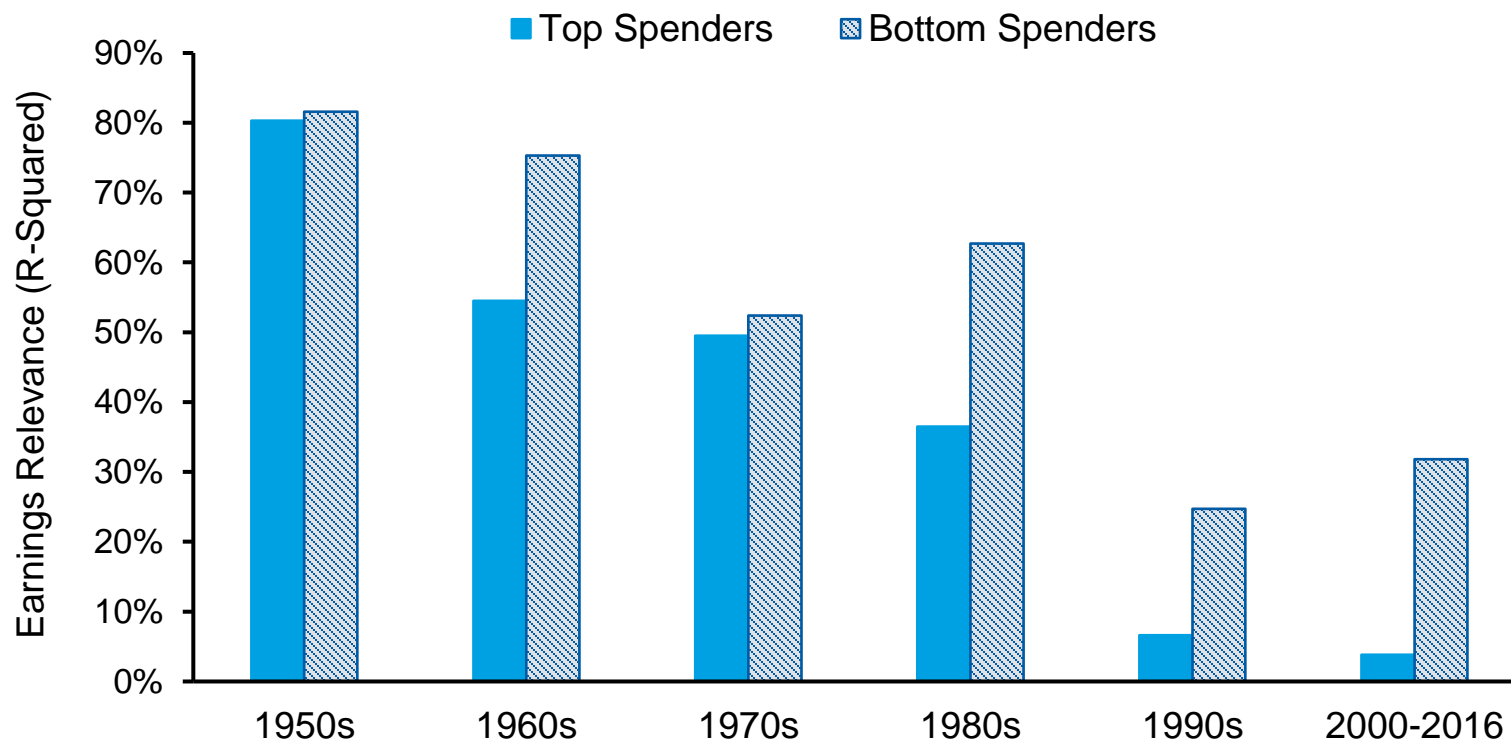
Industry	Median CAGR				Mean CAGR				Standard Deviation			
	1-yr	3-yr	5-yr	10-yr	1-yr	3-yr	5-yr	10-yr	1-yr	3-yr	5-yr	10-yr
Healthcare	11.5%	10.8%	10.4%	9.3%	52.6%	16.8%	12.6%	9.3%	406.3%	45.9%	30.6%	22.5%
Technology	9.7%	8.4%	7.9%	7.2%	15.4%	10.6%	9.0%	7.3%	49.0%	21.9%	16.5%	13.0%
All	7.4%	6.9%	6.5%	6.2%	16.6%	9.5%	8.0%	6.7%	177.3%	23.2%	16.4%	12.0%
Consumer	6.9%	6.4%	6.0%	5.9%	13.5%	8.9%	7.7%	6.6%	164.7%	18.8%	13.9%	9.5%
Manufacturing	5.4%	5.1%	5.0%	5.5%	9.3%	6.8%	6.1%	6.0%	50.4%	17.5%	13.1%	9.4%
Other	7.6%	7.3%	6.9%	6.3%	16.2%	9.6%	8.1%	6.6%	194.5%	22.5%	15.8%	12.2%

Source: Michael J. Mauboussin and Dan Callahan, "The Impact of Intangibles on Base Rates," *Consilient Observer: Counterpoint Global Insights*, June 23, 2021.

Note: Constituents of the Russell 3000 Index as of year-end; growth rates are based on nominal sales; CAGR=compound annual growth rate.

Implications for Investors – Lost Relevance

Earnings Relevance Has Declined



Source: Based on Baruch Lev, "Ending the Accounting-for-Intangibles Status Quo," *European Accounting Review*, Vol. 28, No. 4, September 2019, 717.

Implications for Investors – Distorted Earnings

High intangible intensity company

Earnings Measure	Unadjusted Margin	Adjusted Margin
EBITDA	9.1%	24.6%
Operating Profit	-0.9%	14.6%
Net Income	-16.8%	-1.3%

Low intangible intensity company

Earnings Measure	Unadjusted Margin	Adjusted Margin
EBITDA	6.7%	7.2%
Operating Profit	3.4%	4.0%
Net Income	1.0%	1.5%

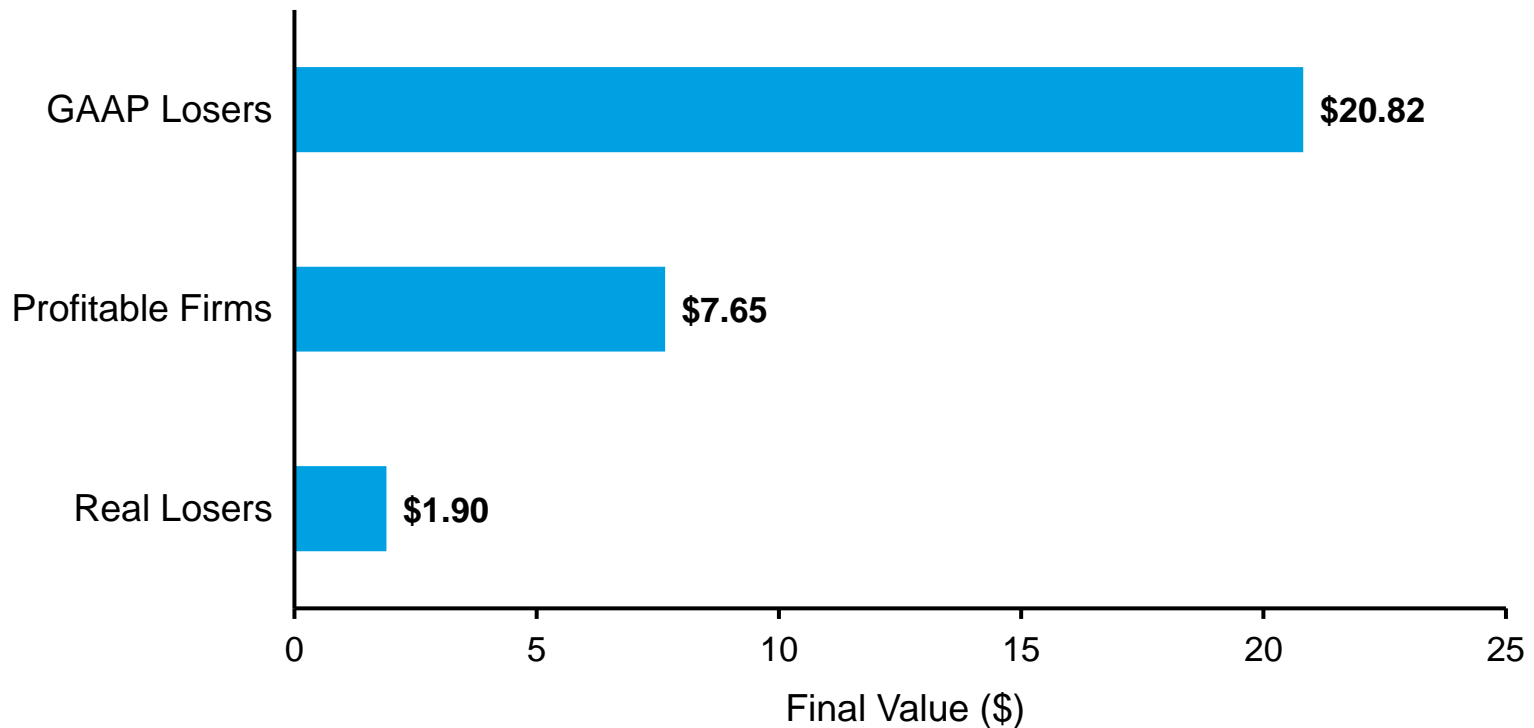
S&P 500

Earnings Measure	Unadjusted Margin	Adjusted Margin
EBITDA	21.0%	22.5%
Operating Profit	15.2%	16.7%
Net Income	12.2%	13.7%

Source: Counterpoint Global estimates for fiscal year 2021 for the two companies and calendar year 2021 for the S&P 500; Michael J. Mauboussin and Dan Callahan, "Intangibles and Earnings: Improving the Usefulness of Financial Statements," *Consilient Observer: Counterpoint Global Insights*, April 12, 2022.

Implications for Investors – All Losses Are Not Alike

Value of One Dollar Invested in Portfolios of GAAP Losers, Profitable Firms, and Real Losers, 1980-2017 (Matched Firms*)



Source: Based on Feng Gu, Baruch Lev, and Chenqi Zhu, "All Losses Are Not Alike: Real versus Accounting-Driven Reported Losses," *SSRN Working Paper*, May 2022.

Note: GAAP=Generally Accepted Accounting Principles.

* Firms matched by size, price/book, industry, and year.

Implications for Investors – Categorizing for Clarity

Recommended Adjustments

Item from Cash Flow Statement	From	To	Rationale
Stock-based compensation (SBC)	Cash flow from operating activities	Cash flow from financing activities	SBC is the sale of shares to pay employees
Principal repayment of financing obligations	Cash flow from financing activities	Cash flow from investing activities	Consolidate investments by assuming buy and lease are equivalent
Intangible investment	Cash flow from operating activities	Cash flow from investing activities	Discretionary investments are capitalized instead of expensed
Marketable securities	Cash flow from investing activities	Cash, cash equivalents, and marketable securities	When marketable securities are deemed to be the same as cash and cash equivalents

Source: Counterpoint Global.

Implications for Investors – Categorizing for Clarity

Adjustments to Amazon's Statement of Cash Flows, 2021

Cash Flow from:	Operating Activities	Investing Activities	Financing Activities
Reported total	\$46.3 billion	-\$58.2 billion	\$6.3 billion
Stock-based compensation	-12.8		12.8
Leases		-11.3	11.3
Intangible investments	60.1	-60.1	
Marketable securities		0.8	
Adjusted total	\$93.6 billion	-\$128.8 billion	\$30.4 billion

Source: Amazon.com and Counterpoint Global estimates and adjustments.

Implications for Investors – Markups

- A company is said to have market power when it can set the price of its good or service above the marginal cost
- Economists use a “markup” to measure market power

μ = Markup

θ = Production function

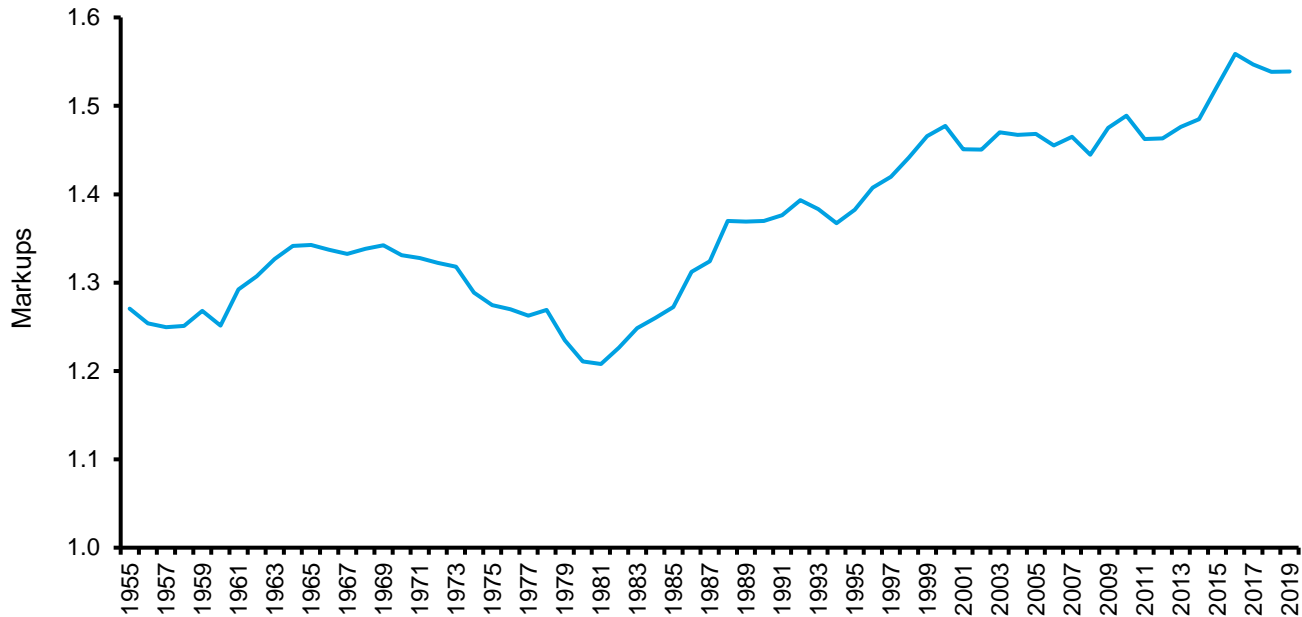
$$\mu = \theta [(price \times quantity) \div (costs \times input)]$$

- Using financial statements

$$\mu = \theta (Sales/COGS)$$

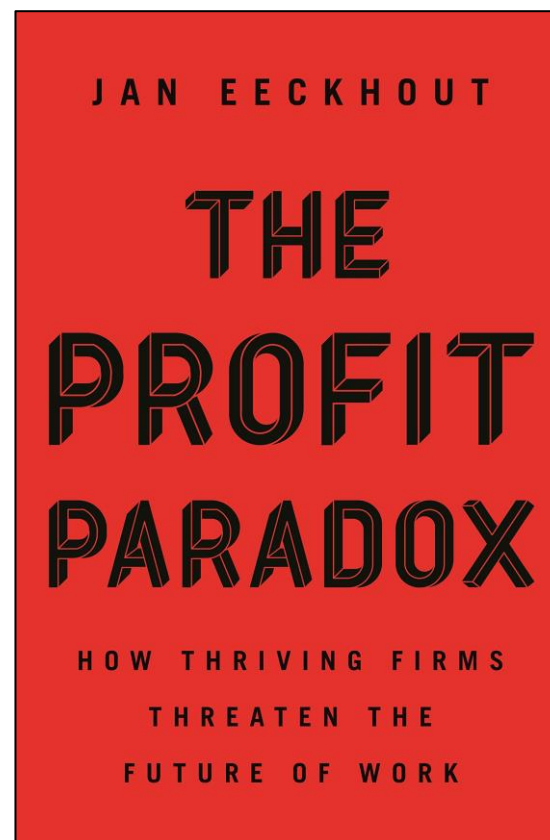
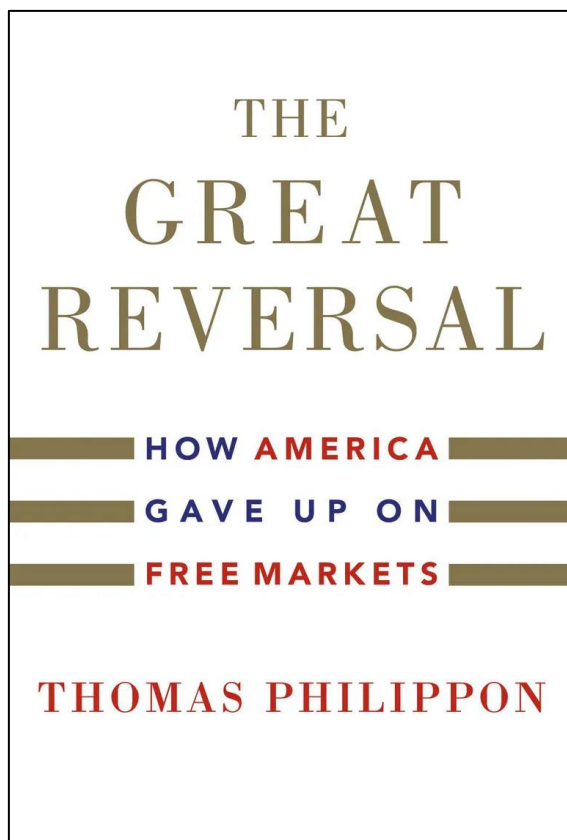
Markups Without Intangible Adjustment

Aggregate Markups in the United States, 1955-2019



Source: Jan Eeckhout, *The Profit Paradox: How Thriving Firms Threaten the Future of Work* (Princeton, NJ: Princeton University Press, 2021), 29 and www.theprofitparadox.com.

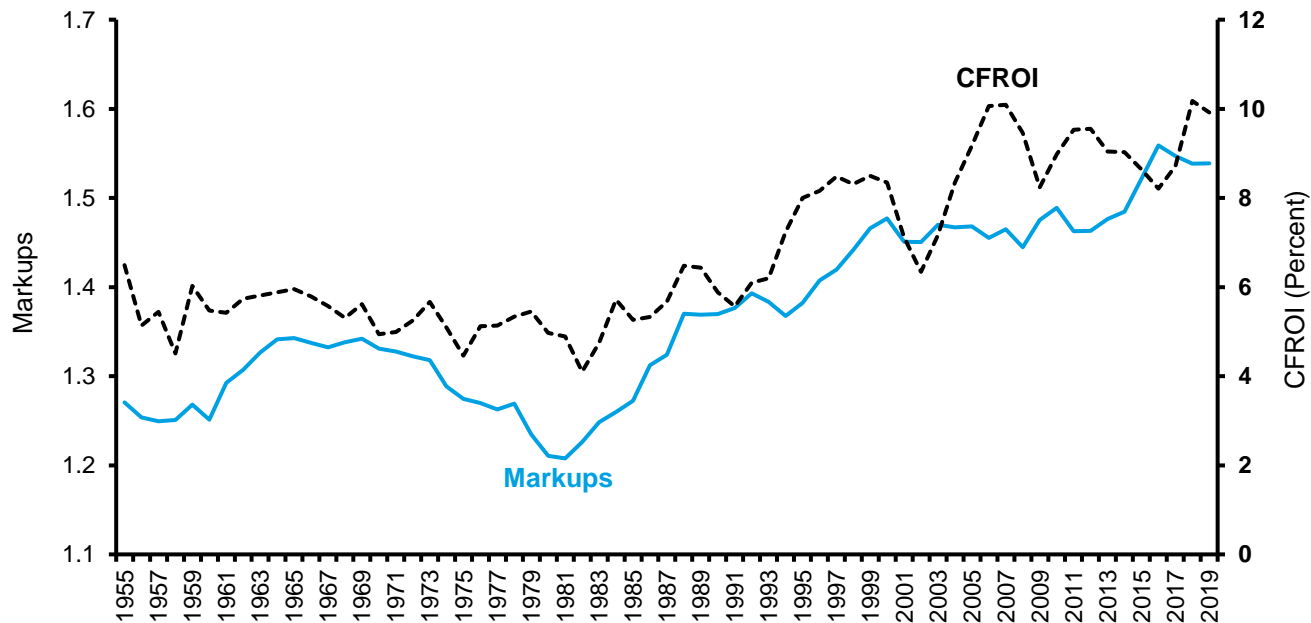
Markups Without Intangible Adjustment



Source: Thomas Philippon, *The Great Reversal: How America Gave Up on Free Markets* (Cambridge, MA: Belknap Press, 2019) and Jan Eeckhout, *The Profit Paradox: How Thriving Firms Threaten the Future of Work* (Princeton, NJ: Princeton University Press, 2021).

Markups Without Intangible Adjustment

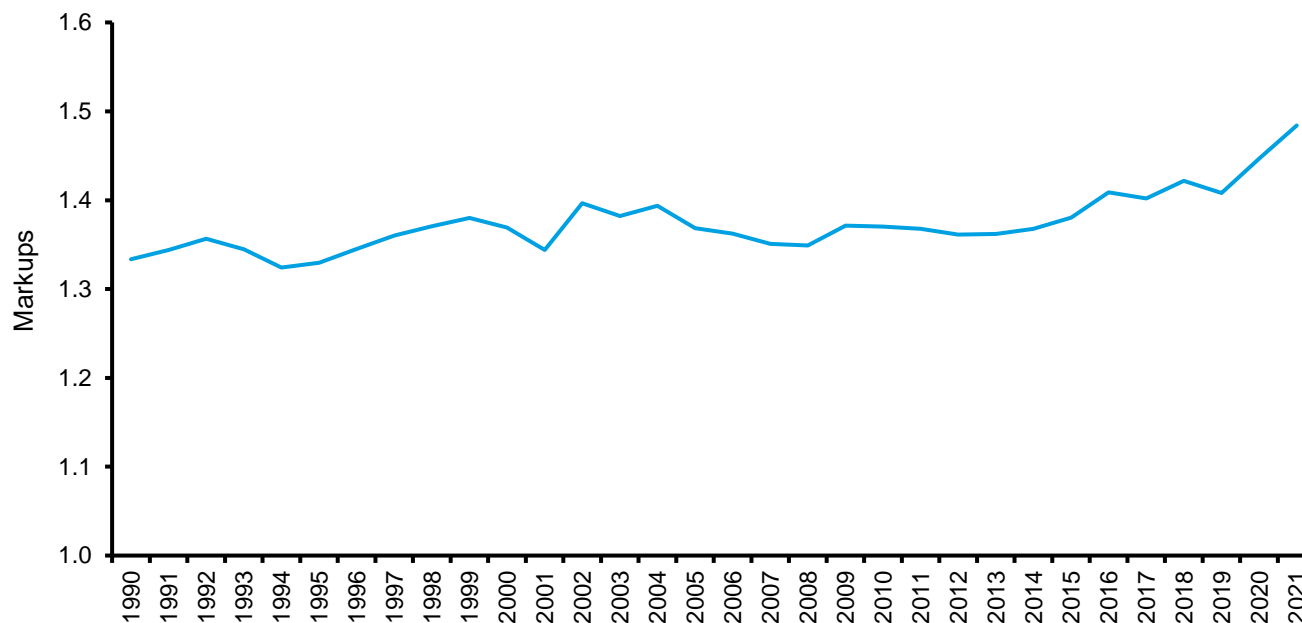
Markups and CFROI in the United States, 1955-2019



Source: Jan Eeckhout, *The Profit Paradox: How Thriving Firms Threaten the Future of Work* (Princeton, NJ: Princeton University Press, 2021), 29, www.theprofitparadox.com, and Credit Suisse HOLT.

Markups Without Intangible Adjustment

Aggregate Markups in the United States, 1990-2021

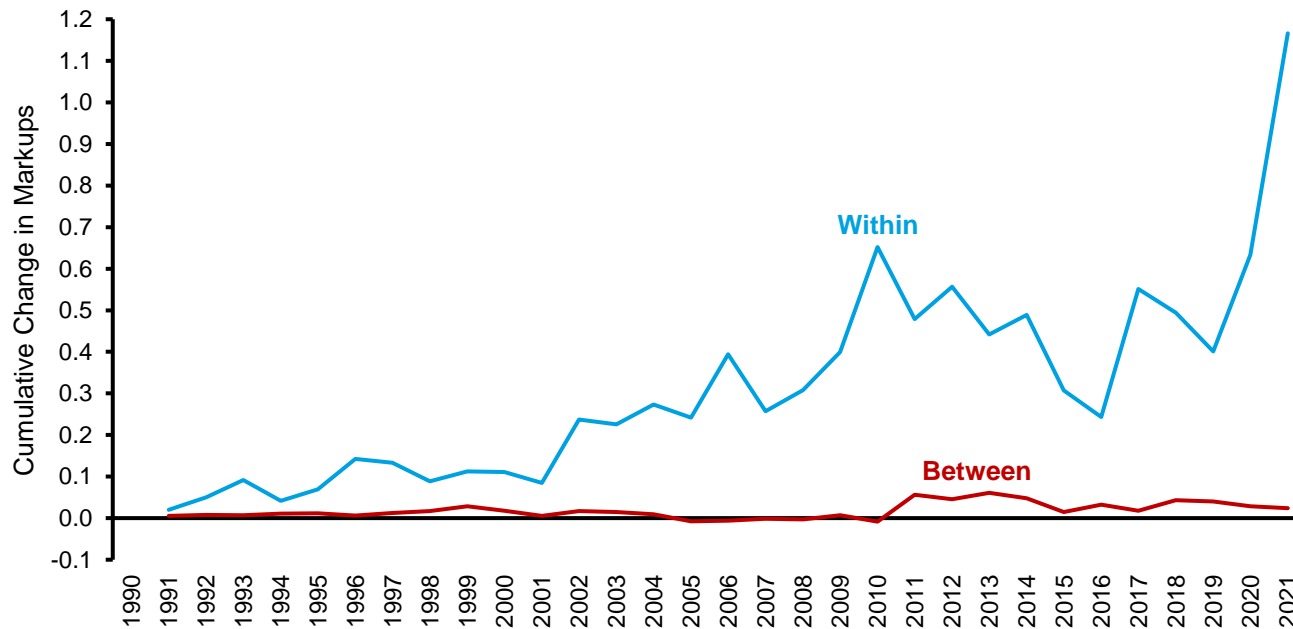


Source: FactSet and Counterpoint Global.

Note: Russell 3000 index excluding financials and real estate; minimum of \$0.1 million sales and COGS; we assume a production function of 0.85.

Markups Without Intangible Adjustment

Markup Changes Between and Within Industries, 1990-2021

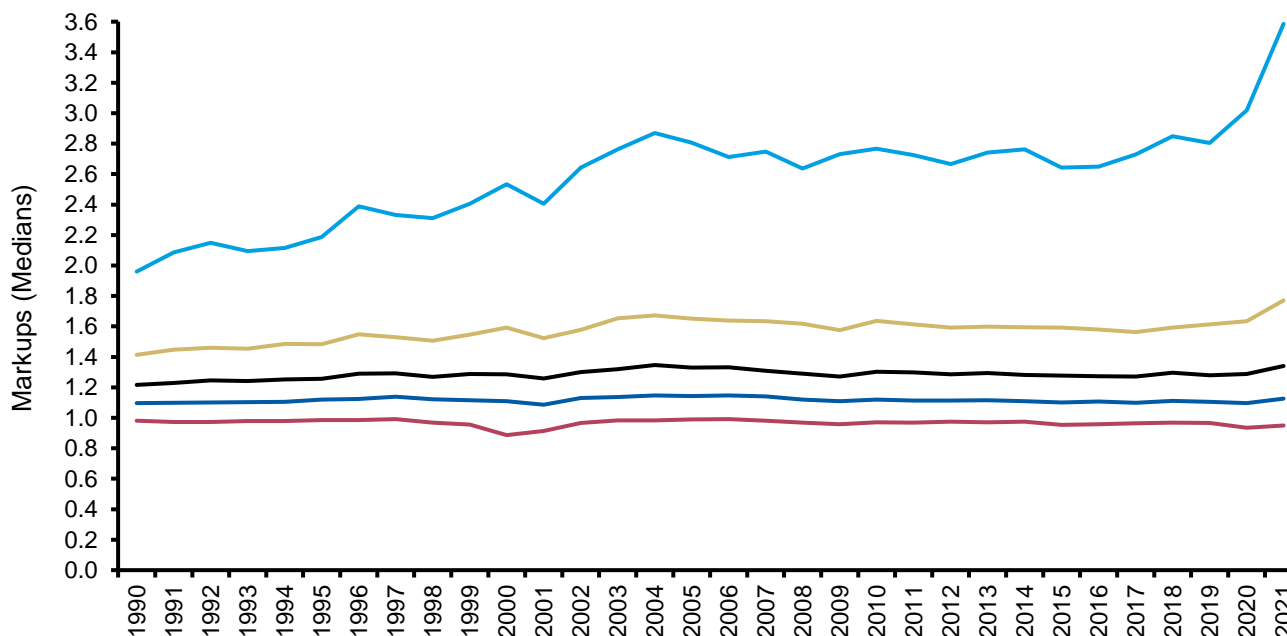


Source: FactSet and Counterpoint Global.

Note: Russell 3000 index excluding financials and real estate; minimum of \$0.1 million sales and COGS; we assume a production function of 0.85.

Markups Without Intangible Adjustment

Markups by Quintile, 1990-2021



Source: FactSet and Counterpoint Global.

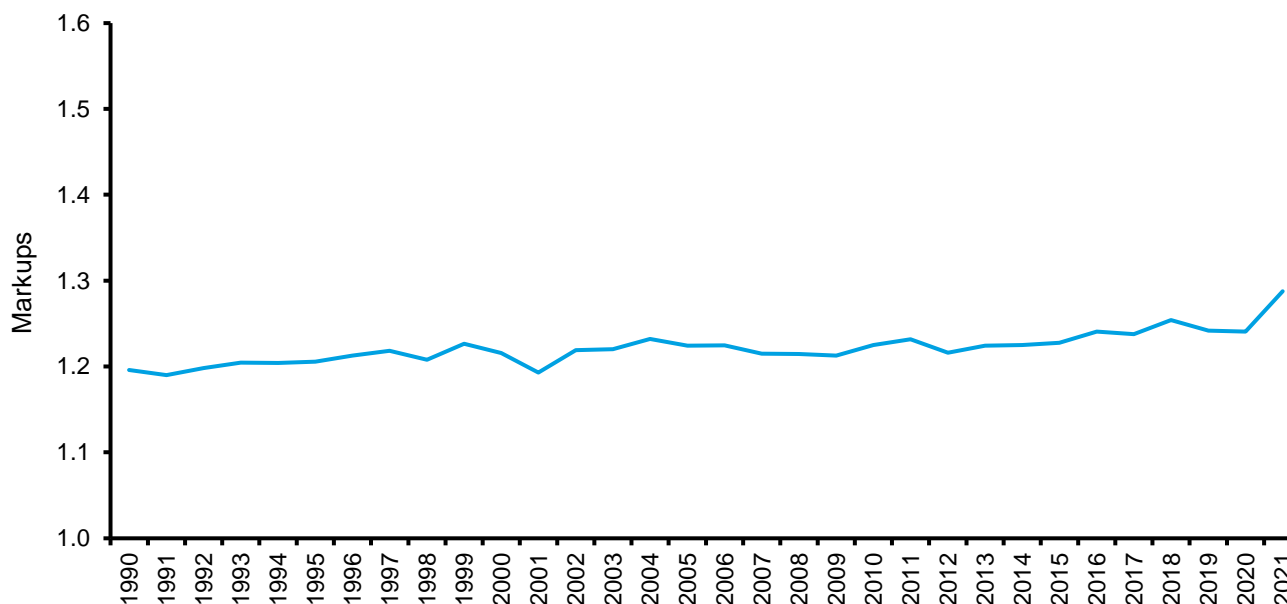
Note: Russell 3000 index excluding financials and real estate; minimum of \$0.1 million sales and COGS; we assume a production function of 0.85.

Markups With Intangible Adjustment

- This rise in intangibles suggests that input costs should include items that are reflected in selling, general, and administrative (SG&A) expense.
- While SG&A technically captures costs not directly related to production, the argument is that COGS are a declining percent of a firm's total variable cost.
- Revised markup, including intangible input:
- $\mu = \theta [\text{Sales}/(\text{COGS} + \text{SG\&A} - \text{R\&D} - 0.3(\text{SG\&A} - \text{R\&D}))]$
 - 100 percent of R&D is considered an intangible investment
 - 30 percent of SG&A less R&D is considered an investment

Markups With Intangible Adjustment

Aggregate Markups in the United States, 1990-2021

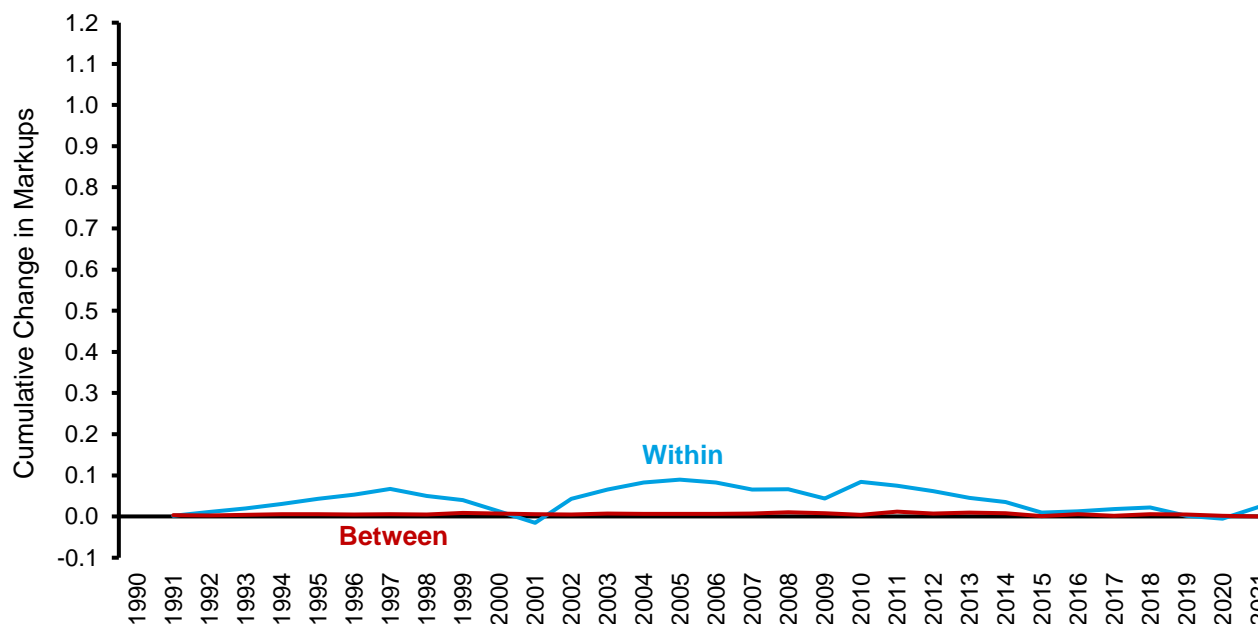


Source: FactSet and Counterpoint Global.

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Markups With Intangible Adjustment

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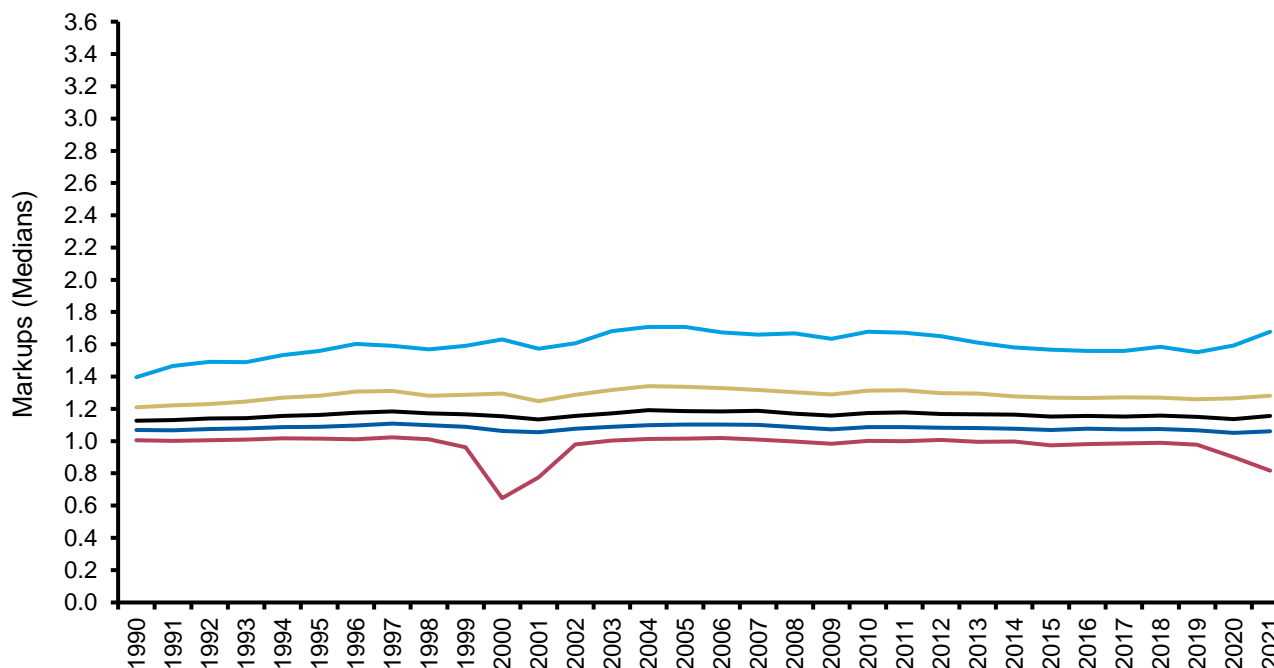


Source: FactSet and Counterpoint Global.

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Markups With Intangible Adjustment

Markups by Quintile, 1990-2021



Source: FactSet and Counterpoint Global.

Note: Russell 3000 index excluding financials and real estate; minimum of \$0.1 million sales and COGS; we assume a production function of 0.95.

Summary

- Intangible investments are more important today than they were in the past
- We need to adjust financial statements to get a clear view of investments and profits
- Intangible assets have characteristics that are different than tangible assets
- Including intangibles in calculations appears to improve the signal associated with financial statements

Intangibles

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September 2022

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