

# The role of intangible assets in explaining the investment-profit puzzle

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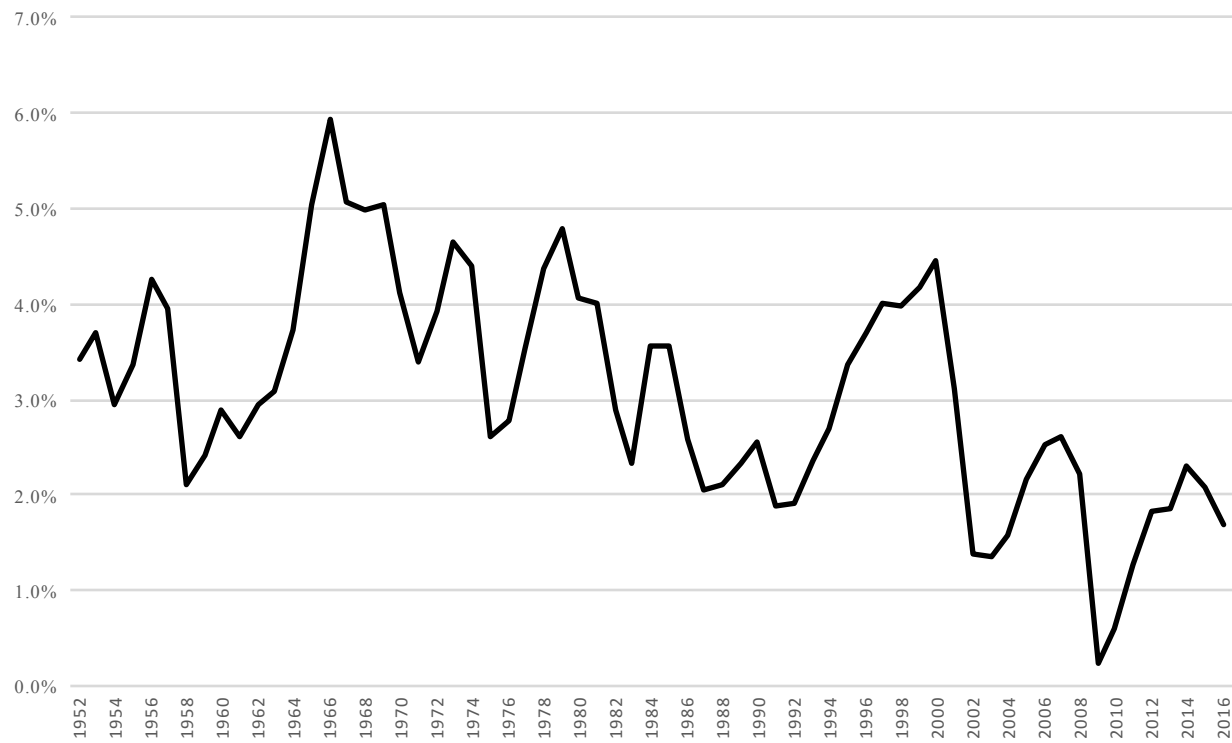


# INVESTMENT-PROFIT PUZZLE

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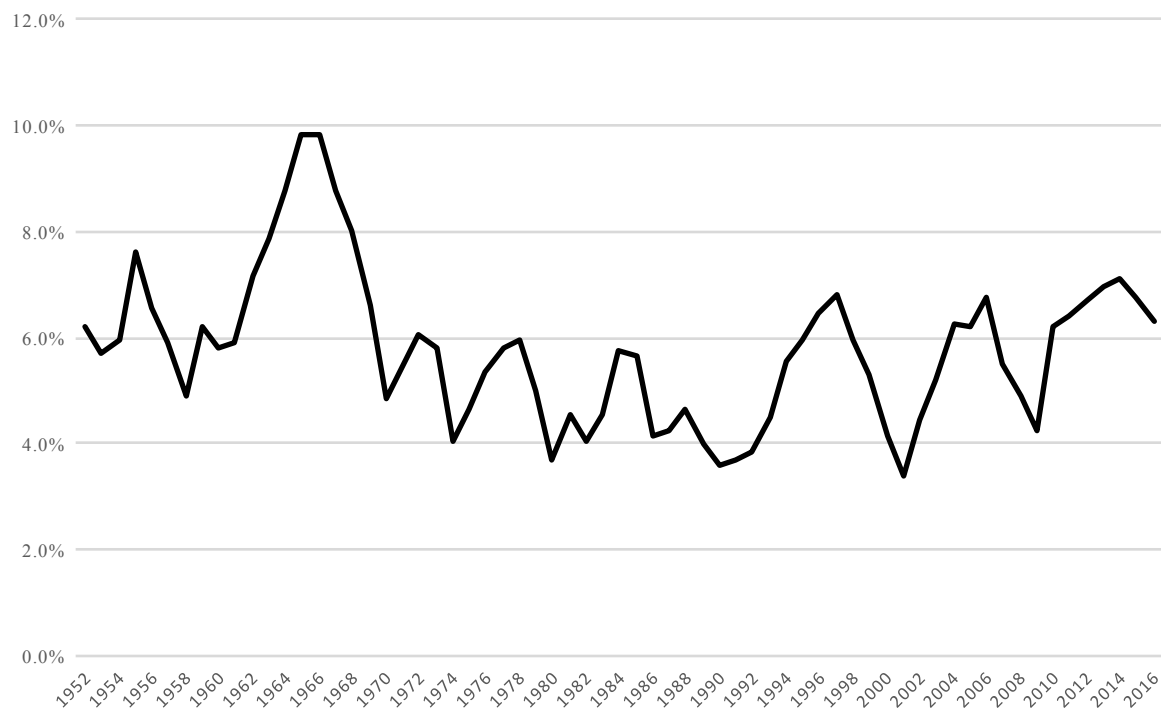
1. RATE OF CAPITAL ACCUMULATION
2. PROFIT RATE
3. INVESTMENT – PROFIT RATIO

# NFC RATE OF CAPITAL ACCUMULATION

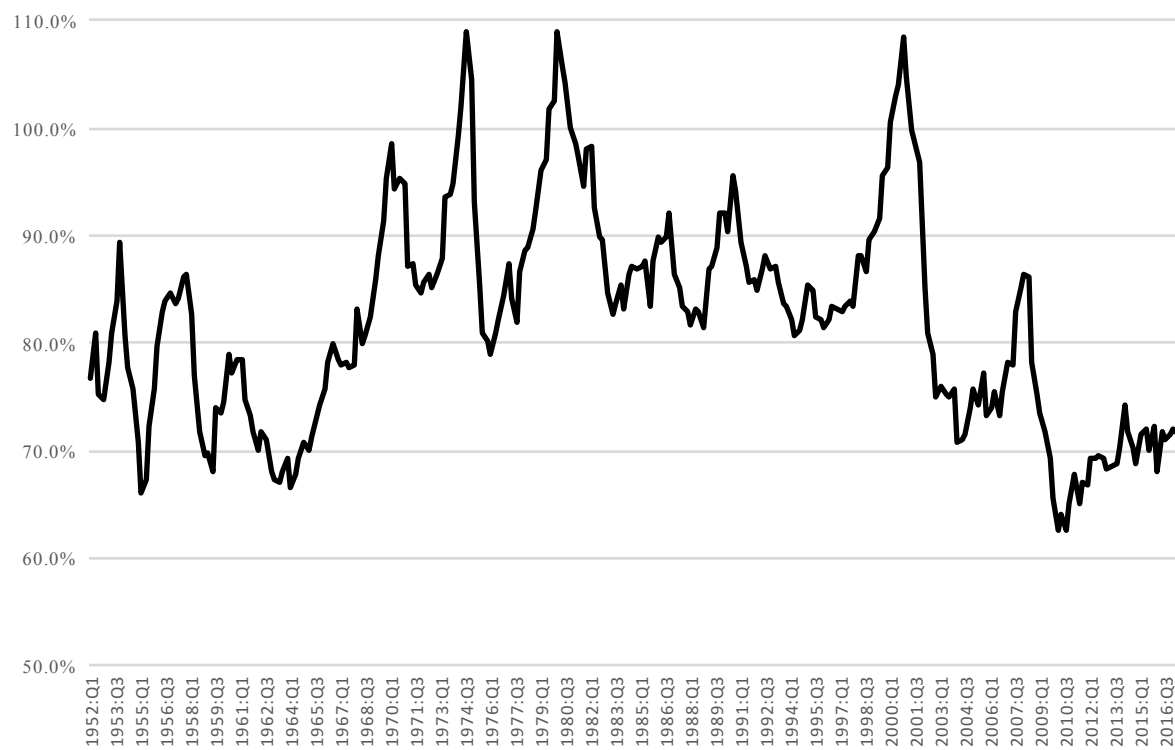


# NFC PROFIT RATE

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# INVESTMENT TO CASH FLOW



# PROFIT-INVESTMENT LINK

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1. PROFITS AS AN INDICATOR OF EXPECTED PROFITS
2. PROFITS AS A SOURCE OF FUNDS
3. INVESTMENT GENERATING FURTHER PROFITS

# WEAKENING LINK

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## 1. FINANCIALIZATION

1. Crotty (2003), Stockhammer (2004) and Orhangazi (2008)

## 2. GLOBALIZATION (OFFSHORING)

1. Milberg and Winkler (2010, 2013)

## 3. THIS PAPER: ADD ANOTHER LAYER – THE ROLE OF INTANGIBLE ASSETS

# WHAT ARE INTANGIBLE ASSETS?

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## 1. INTANGIBLES – DEFINITION

1. “identifiable non-monetary asset[s] without physical substance” that have “probable future economic benefits to an entity”
2. brandnames, trademarks, patents, copyrights, design and licenses, computerized information, customer relationships, and other abstract forms of assets

## 2. MEASUREMENT PROBLEMS

1. “their impossibility to be measured according to traditional accounting standards”

## 3. LITERATURE

1. Nakamura (2008): market value of intangible assets exceeded the value of tangible assets in the US by 2006.
2. Corrado *et al.* (2006), Corrado (2009), and Corrado *et al.* (2012): proportion of corporate market value accounted for by intangible assets dominate the value of many leading global corporations and intangible assets represent over 90 percent of corporate value for many high-technology and pharmaceutical firms.
3. Zeller (2008): a significant increase in patents in the US starting in the late 1980s. While 76,748 patents were granted in 1985, this number increased to 107,124 in 1991 and to 221,437 in 2002



# INTANGIBLE ASSETS AND PROFITS AND INVESTMENT

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1. INTANGIBLES AND MARKET STRUCTURES
  1. ABSOLUTE MONOPOLIZATION
  2. BARRIERS TO ENTRY
  3. MARKET POWER
  4. ARTIFICIAL SCARCITY

# 1. ABSOLUTE MONOPOLIZATION

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1. This is well-recognized, especially in the case of pharmaceuticals, where patents give pharmaceutical firms monopoly rights in the production of the patented products.
2. The most extreme case of this is when new fields such as DNA sequences, specific upstream knowledge portions in the field of monoclonal antibodies or genetic databases of certain populations are patented
3. While it is clear that these monopoly rights give firms the ability to charge high prices and hence contribute to higher profits, there is an ongoing debate on their impact on investment, especially investment in research and development.

## 2. BARRIERS TO ENTRY

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1. especially for high-technology and telecommunications firms, the inherent intensity of intangible assets also serves as high barriers to entry
2. The skills necessary to deal with courts and lawyers involve a high initial set-up cost. If legal fighting skills are costly, deterrence requires even more time and more resources to become effective: a tough reputation (to be endowed with the skills and the financial resources necessary to challenge competitors' IPR claims) entails an even higher set-up cost. Thus the so-called knowledge economy produces an evident *paradox*: the non-rival nature of knowledge, which could in principle favor small (even worker-managed) firms, is used to create artificial economies of size that make the cheap acquisition and the defence of property rights possible only for big business (Pagano 2014: 1421).

### 3. MARKET POWER

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1. the emergence of global value chains and the widening of outsourcing and offshoring practices made intangible assets such as brandnames, trademarks, design and licenses, trade secrets as well as patents and copyrights very important for manufacturing firms
2. “manufacturers without factories” (e.g. Nike, Apple), or “retailers with ‘contract’ factories” (e.g. Ikea, Walmart).
3. Offshoring significantly decreases the domestic investment needs of the firms, while intangibles enable them have some degree of market control and pricing power, leading to high profits without investment.

## 4. ARTIFICIAL SCARCITY

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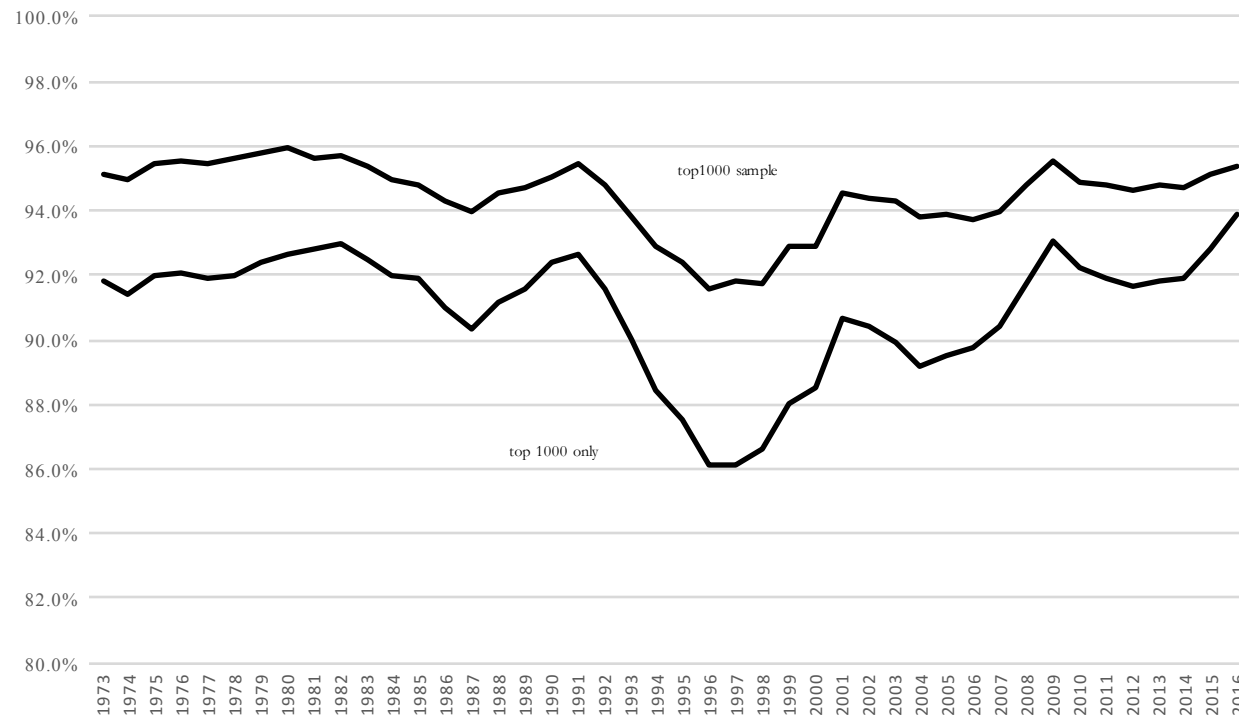
1. intangible assets serve to generate artificial scarcity for products that have reproduction costs tending to zero
2. In the case of commodities usually referred to as “information commodities,” or “cognitive commodities,” such as software, the production of the first unit involves high costs of production, but the costs of reproduction tend to zero and identical products can be easily produced by others without having to spend the original costs for the production of the first unit
3. Intellectual property rights in the form of copyrights and patents generate artificial scarcity for these products and prevent their reproduction; usually together with technical barriers such as non-accessible source codes or copy protection of computer programs

# SAMPLE

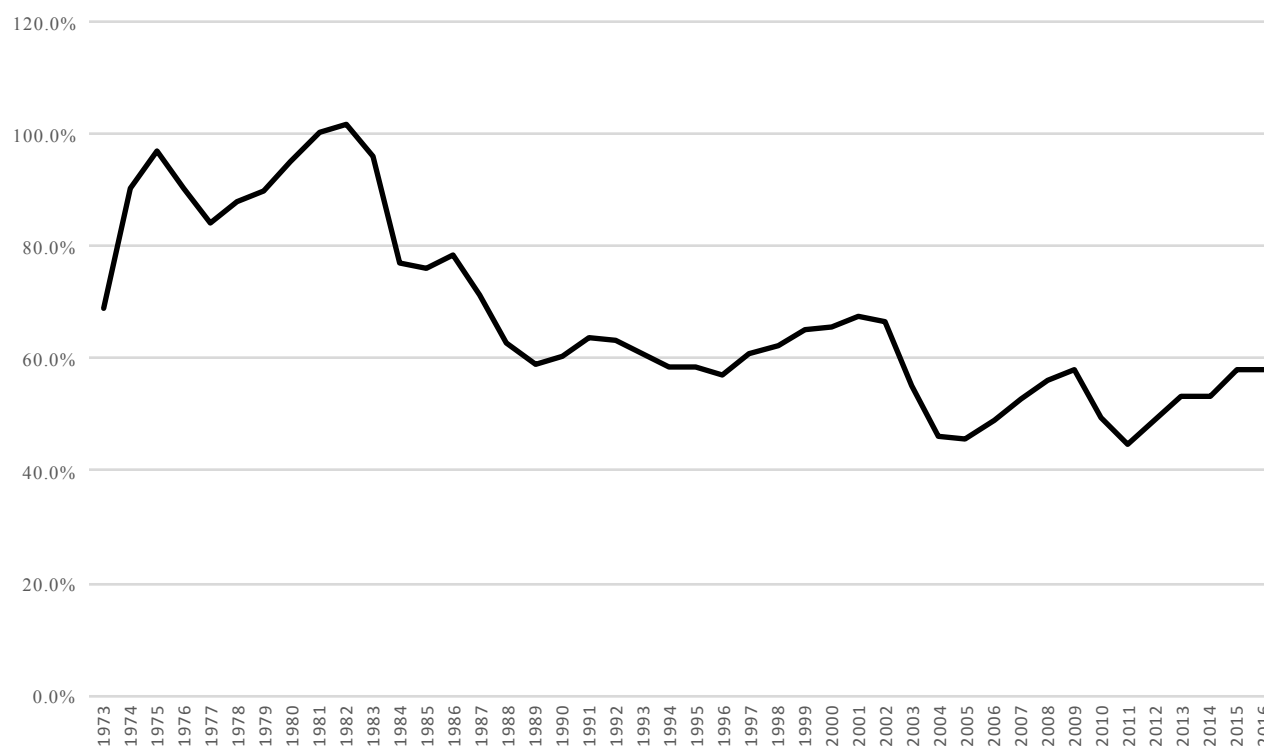
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1. Standard and Poors' Compustat database, 1973-2016
2. sample of largest US-incorporated NFCs
  1. firms are ranked by their total assets each year.
  2. I keep firms that have been among the top 1000 largest firms for at least one year and drop the firms that never make it to the top 1000 list.

# SAMPLE'S INVESTMENT SHARE

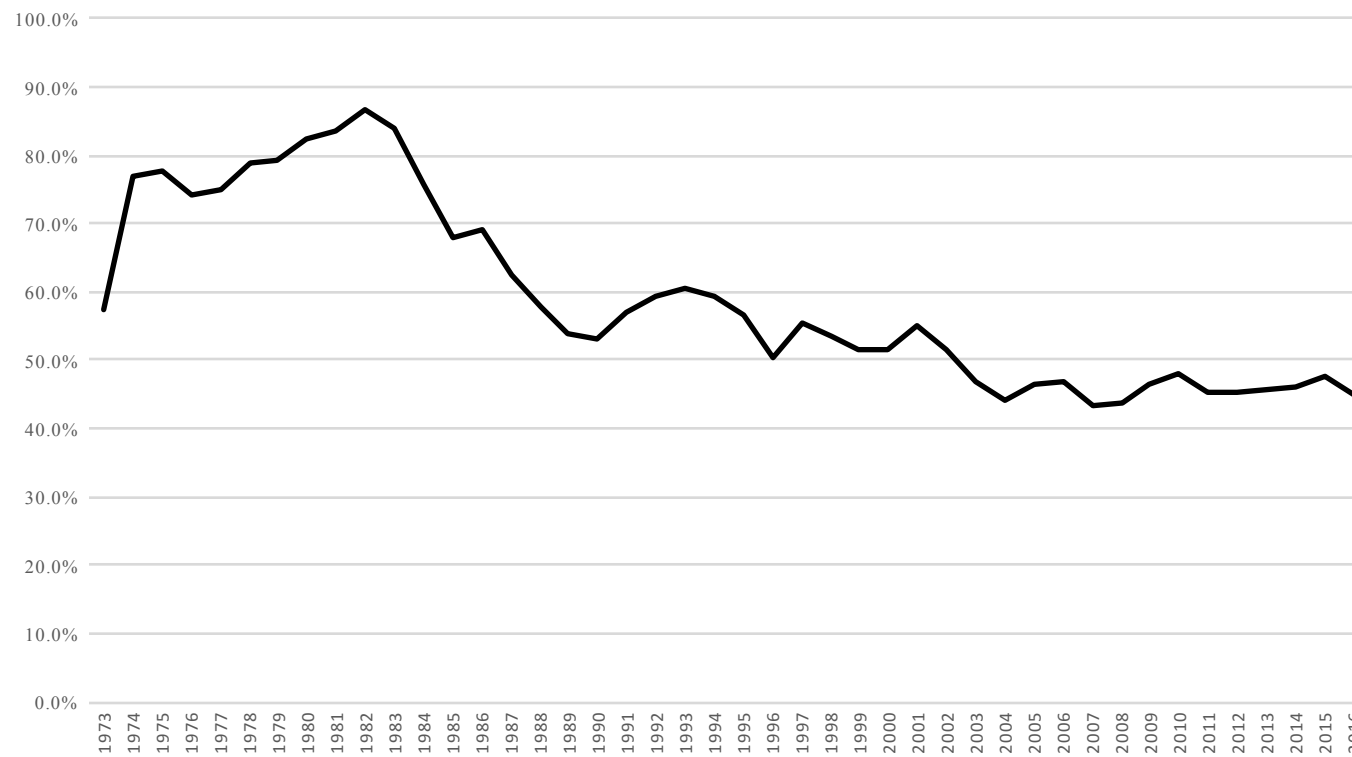


# INVESTMENT TO CASH FLOW RATIO

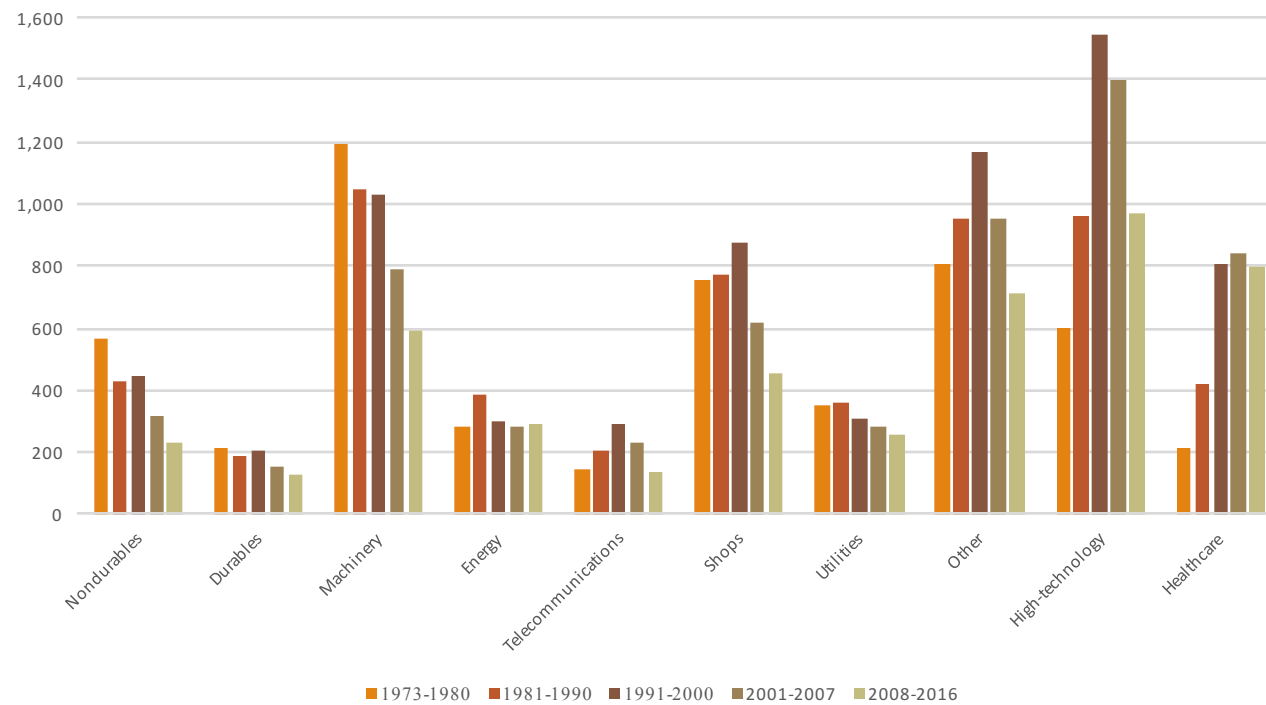




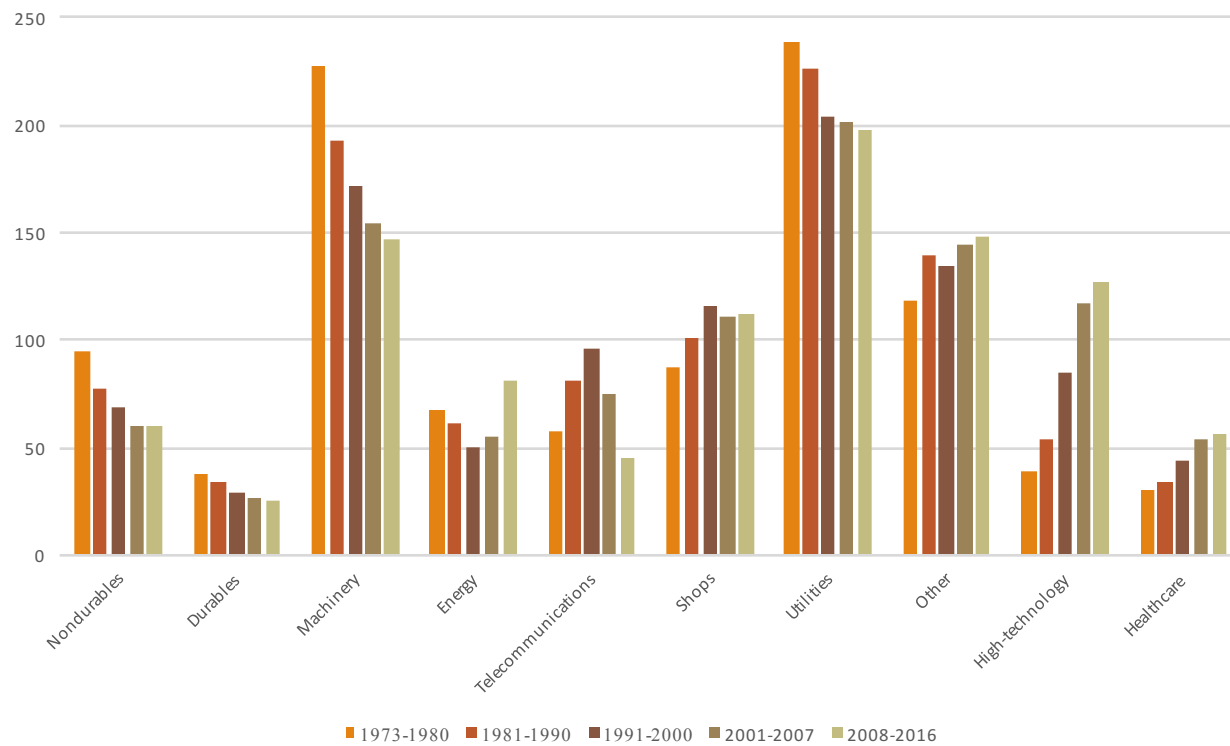
# INVESTMENT TO AVAILABLE FUNDS



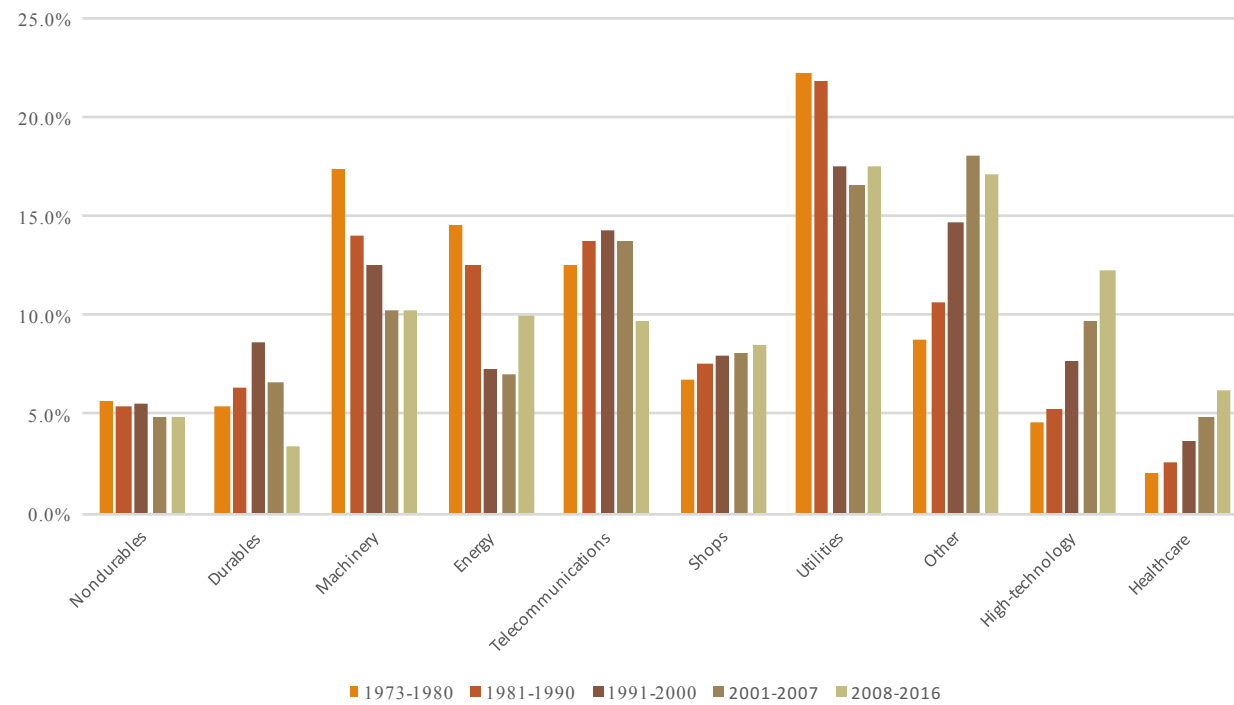
# NUMBER OF FIRMS



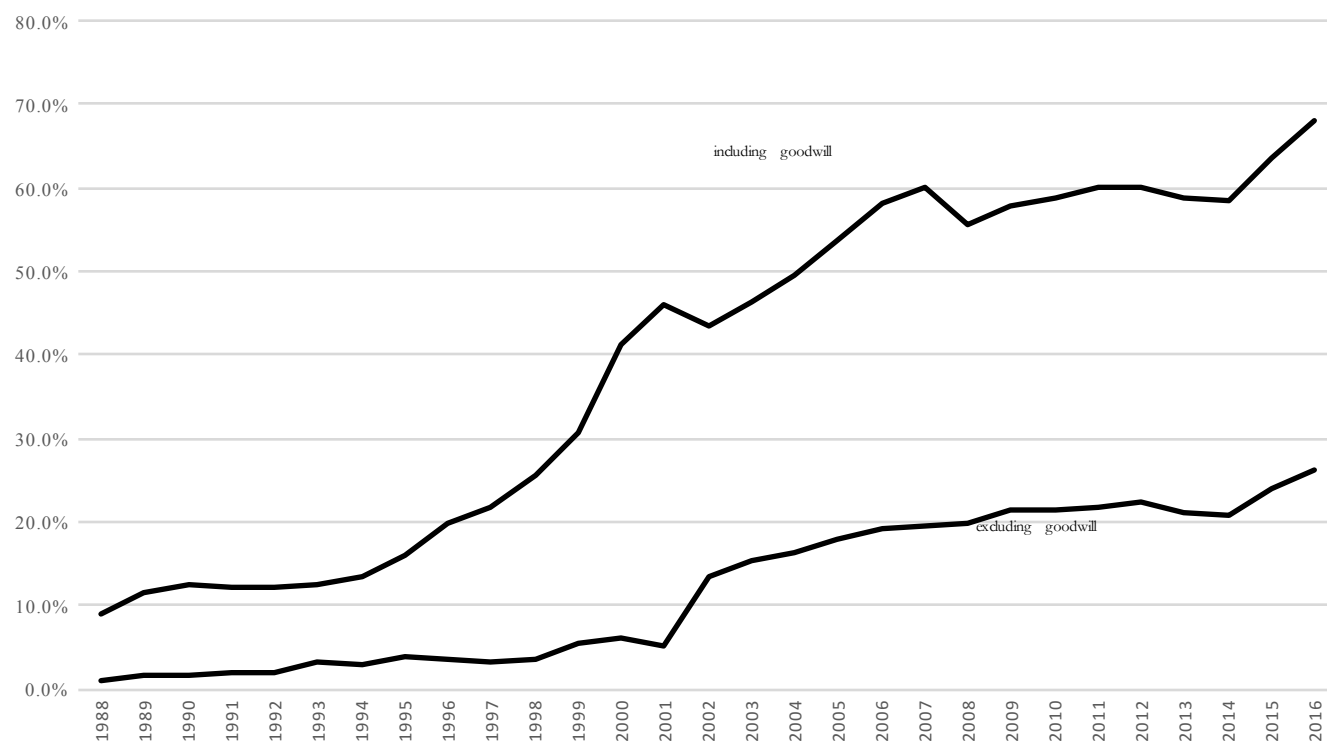
# NUMBER OF FIRMS AMONG TOP 1000



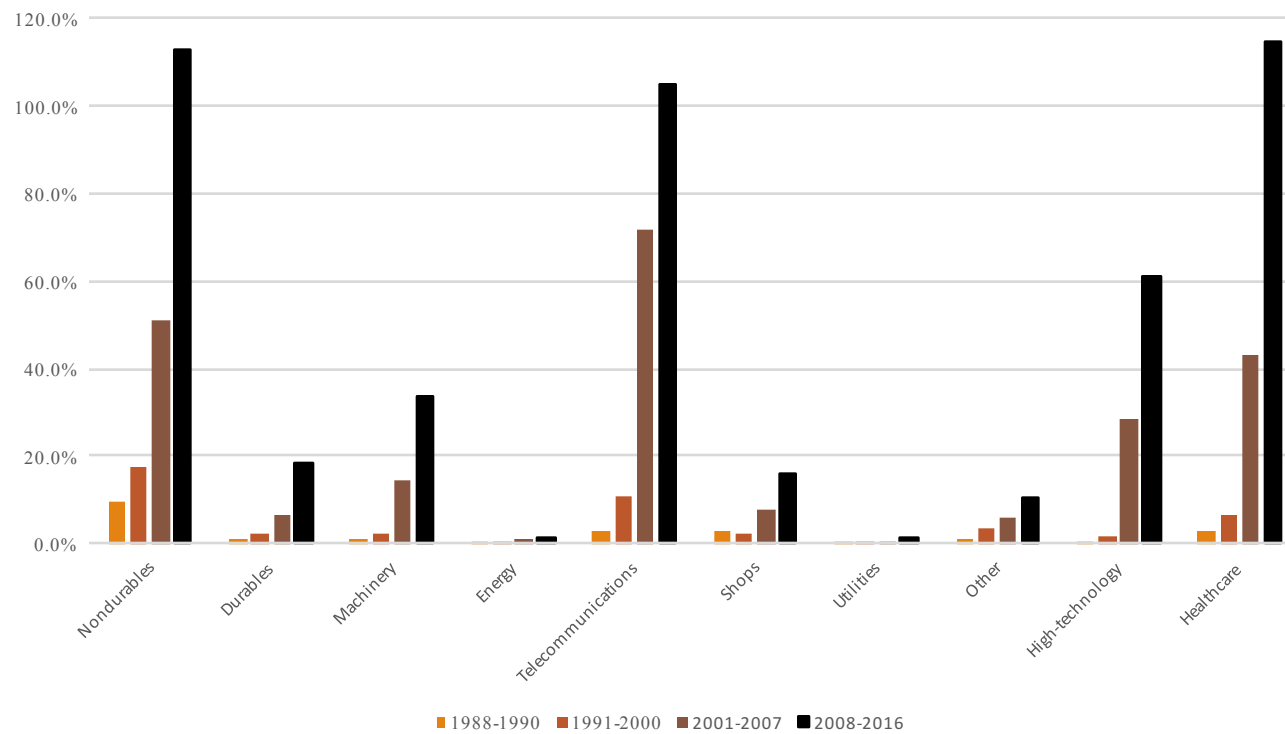
# WEIGHT BY TOTAL ASSETS



# INTANGIBLE ASSETS TO CAPITAL STOCK



# INTANGIBLE ASSETS TO CAPITAL STOCK

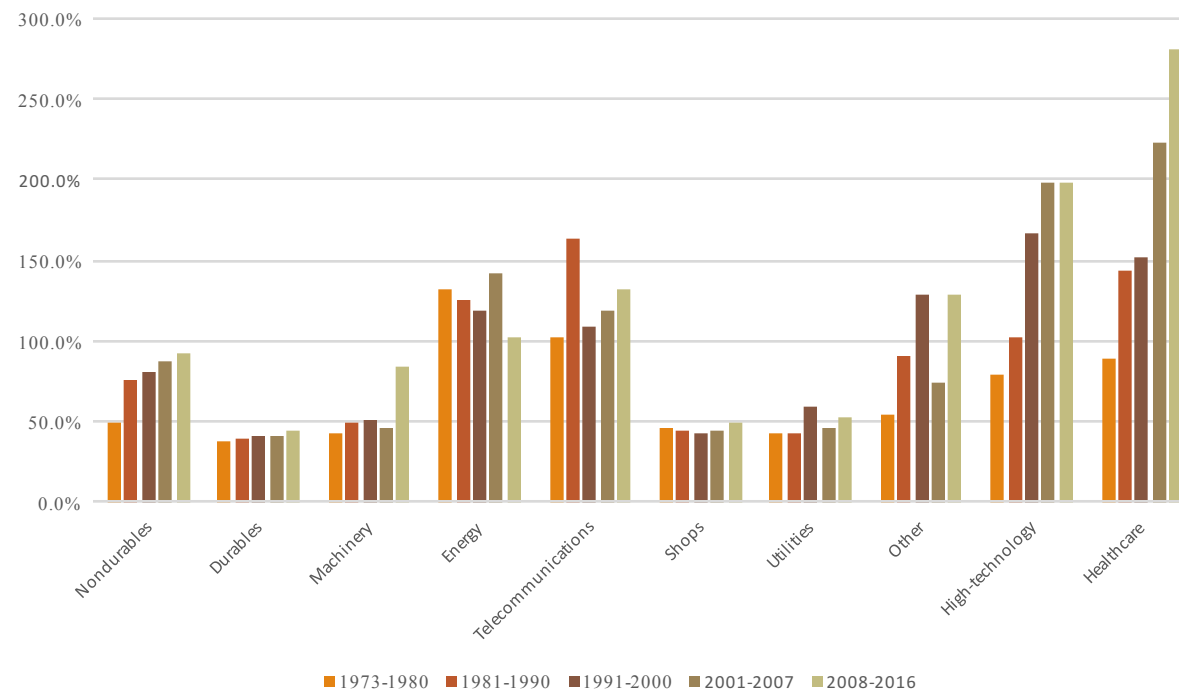


# INTANGIBLES AND INVESTMENT AND PROFITS

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I suggested above that the use of intangible assets could lead to higher profits for firms without a corresponding increase in their investment levels. This would imply that firms with higher intangible assets would have higher pricing power and lower investment-to-cash-flow ratios.

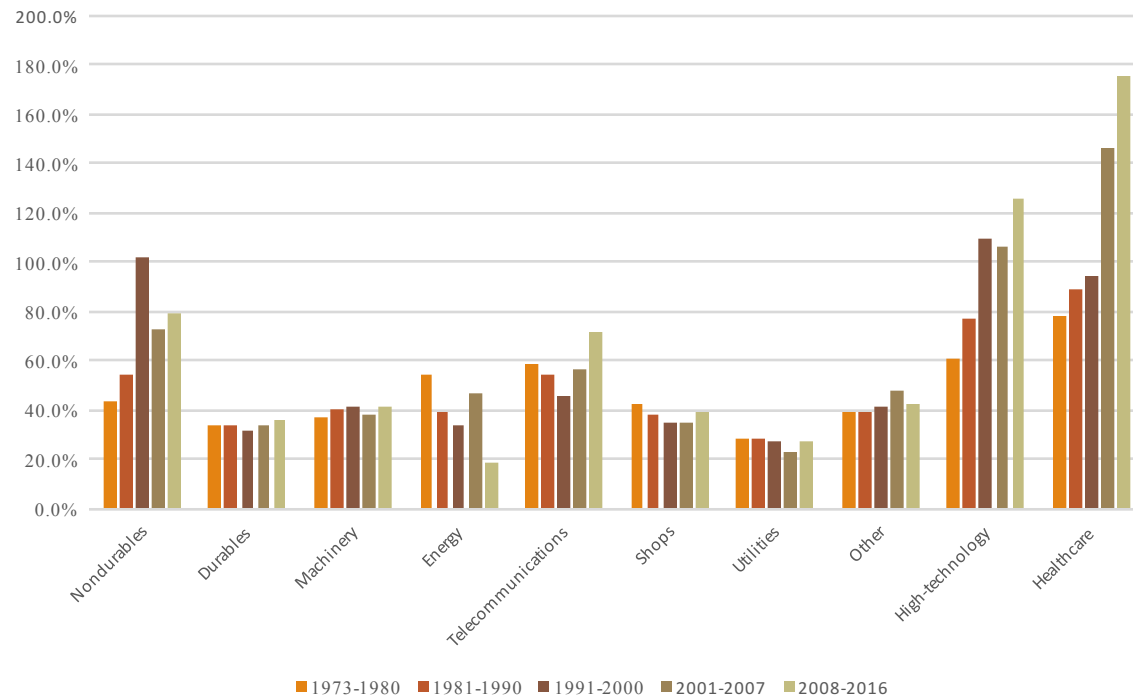
# SIMPLE MARKUP



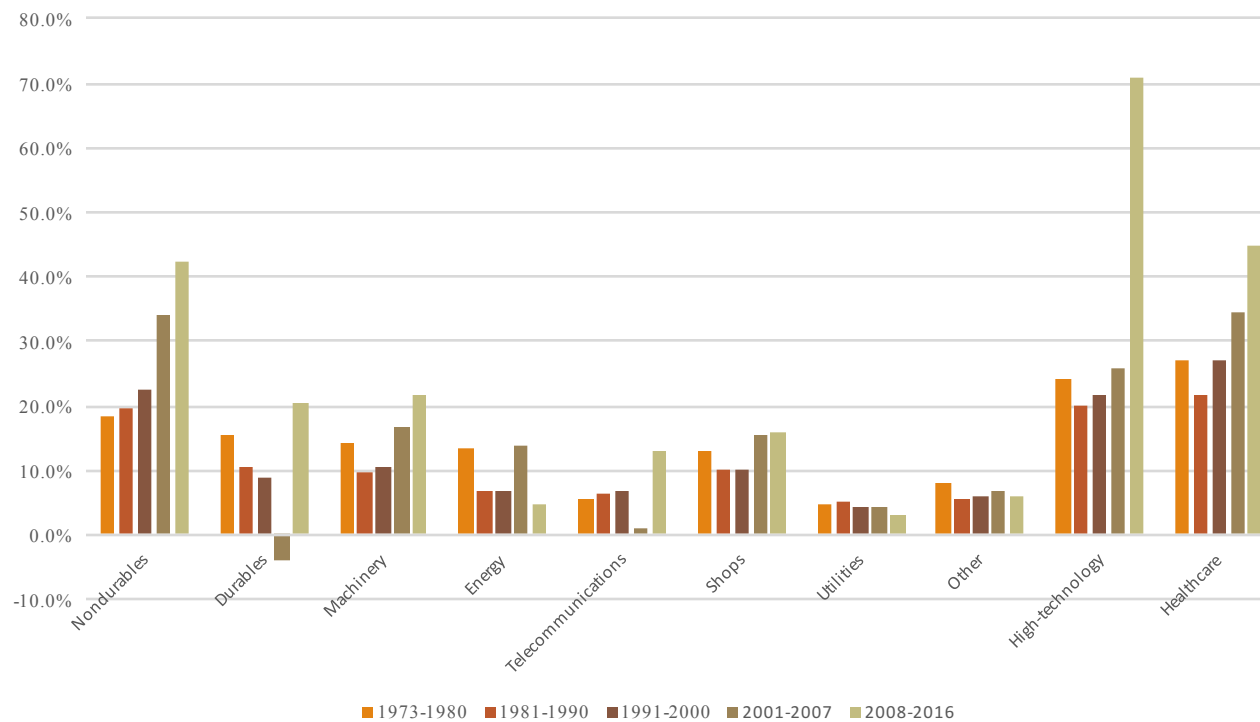


# TOTAL COST MARKUP

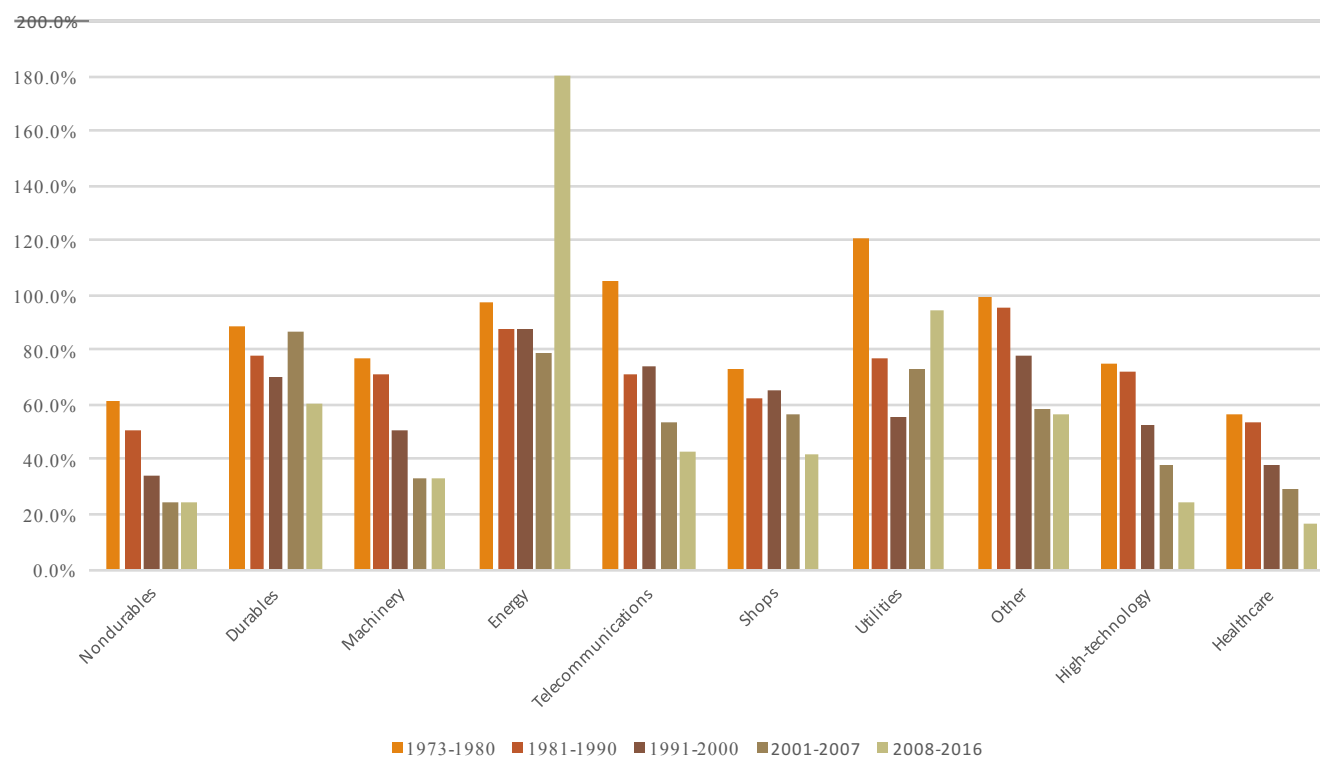
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# INDUSTRY PROFIT RATES



# INDUSTRY INVESTMENT TO CASH FLOW RATIOS



# INVESTMENT AND PROFIT SHARES

		1973- 1980	1981-1990	1991- 2000	2001-2007	2008- 2016	Rate of change from the first period to the last period
Nondurables	Investment	3.9%	4.1%	3.8%	2.9%	2.5%	-35.1%
	Profits	5.9%	6.1%	6.9%	6.2%	5.5%	-7.4%
Durables	Investment	5.1%	5.7%	8.2%	5.8%	3.0%	-40.7%
	Profits	5.9%	5.9%	7.3%	4.5%	2.9%	-51.5%
Machinery	Investment	14.7%	12.6%	10.7%	7.1%	6.9%	-53.2%
	Profits	17.5%	13.2%	13.0%	11.3%	11.0%	-37.4%
Energy	Investment	16.9%	15.5%	10.8%	14.5%	22.9%	35.3%
	Profits	16.0%	13.2%	7.7%	9.7%	9.2%	-42.7%
Telecommunications	Investment	15.5%	16.9%	19.4%	14.9%	9.9%	-36.0%
	Profits	13.6%	17.6%	16.6%	14.6%	12.1%	-11.3%
Shops	Investment	4.8%	5.5%	7.7%	9.6%	7.5%	54.5%
	Profits	6.1%	6.5%	7.2%	8.9%	9.4%	54.8%
Utilities	Investment	23.3%	18.8%	13.2%	18.5%	23.0%	-1.4%
	Profits	17.9%	18.7%	15.2%	13.8%	13.0%	-27.5%
Other	Investment	8.6%	12.2%	15.3%	15.4%	14.1%	63.8%
	Profits	7.9%	9.2%	12.2%	14.1%	13.2%	66.0%
High-technology	Investment	5.4%	6.2%	7.4%	6.8%	7.2%	33.6%
	Profits	6.6%	6.4%	8.8%	9.9%	15.5%	133.7%
Healthcare	Investment	1.5%	2.3%	3.2%	4.0%	2.7%	76.4%
	Profits	2.4%	3.2%	5.2%	7.2%	8.3%	240.9%

# SUMMARY OF FINDINGS

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1. Intangible assets to capital stock ratio increased in general but this increase is highest for firms in high-technology, healthcare, nondurables and telecommunications.
2. Industries with higher intangible asset ratios have lower investment to profit ratios.
3. Industries with higher intangible asset ratios have higher markups and profitability.
4. The composition of the nonfinancial corporate sector have changed and the weight of high-technology and healthcare firms have increased. However, this increase does not correspond to an equal increase in their investment share. The decline in the investment share of durables, nondurables and machinery is made up mostly by firms in location-specific industries, most notably in energy and utilities. Location-specific industries in general have steady markups and higher levels of investment to profit ratio.
5. Yet, intangible-intensive industries seem to capture a larger share of the profits than suggested by their share of investment or total assets. For example, while high-tech represents around 10 percent of total investment, it receives around 20 percent of total profits.

# SUMMARY OF FINDINGS

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All in all, these findings are in line with the suggestion that the increased reliance of the firms on intangible assets enable them to capture higher profits without a corresponding increase in investment.