

# **Intangible Capital, Negative Cash Flow, and Corporate Policy: International Evidence**

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# Summary

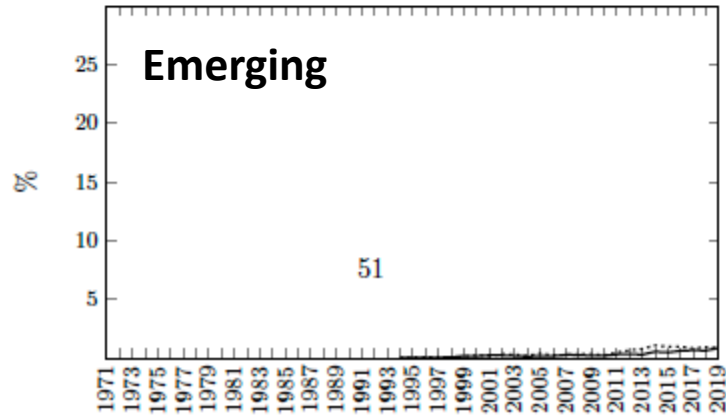
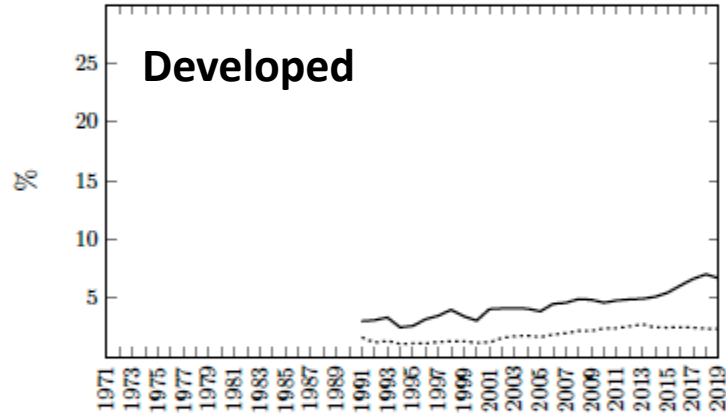
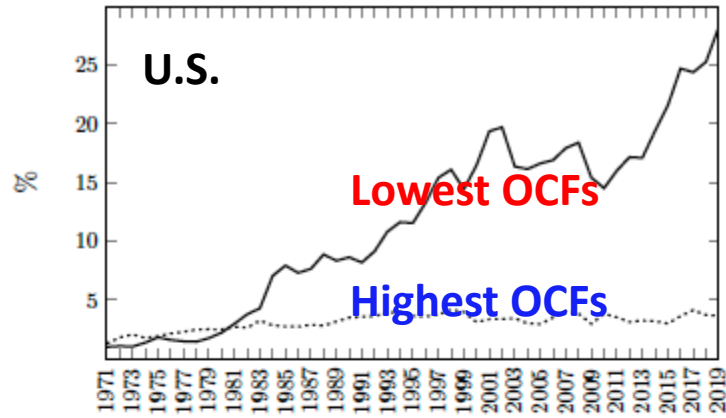
Firms increasingly report negative operating cash flows (OCFs).

Evidence suggests that:

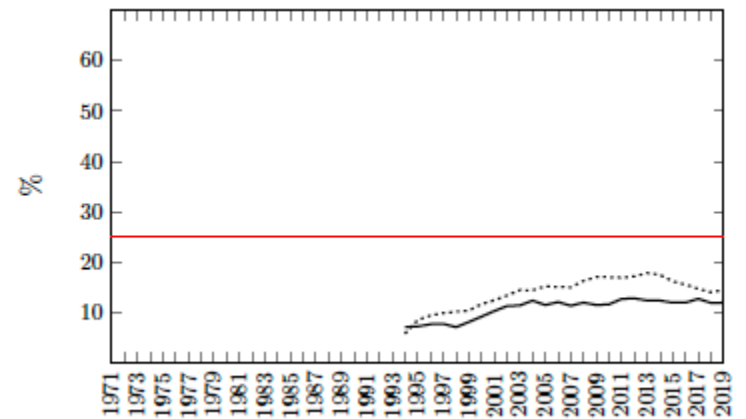
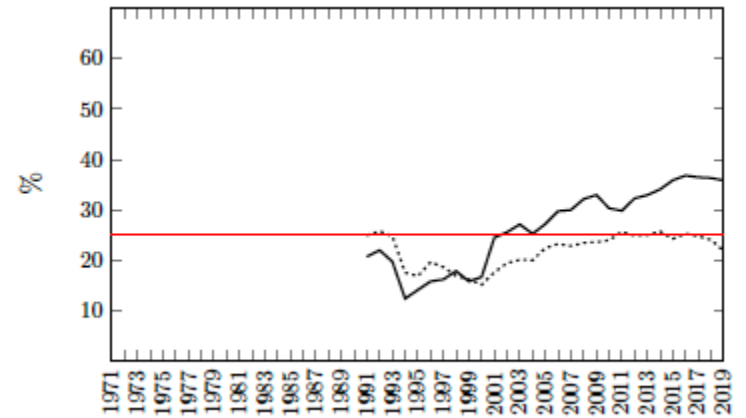
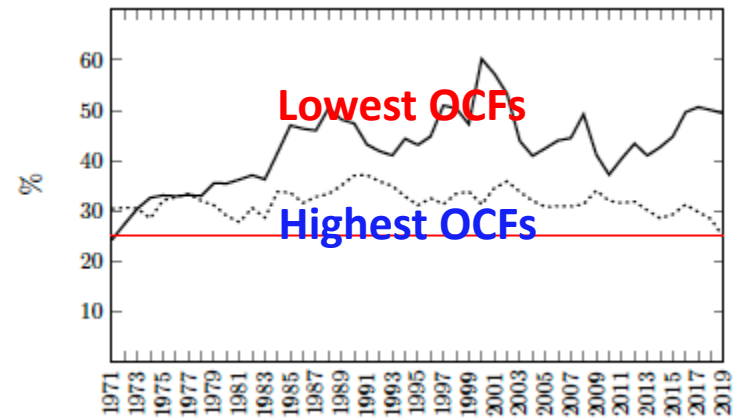
- In developed countries, **negative OCFs are associated with intangible investments**, and appear to alter firms' policies on cash holding and capital raising.
- In developing countries, **negative OCFs are NOT associated with intangible investments**, and do NOT appear to alter firms' policies.

"Causality" is established at the country level using International Property Right Index, Global Innovation Index, and GDP per Capita as instruments for Intangible Investments.

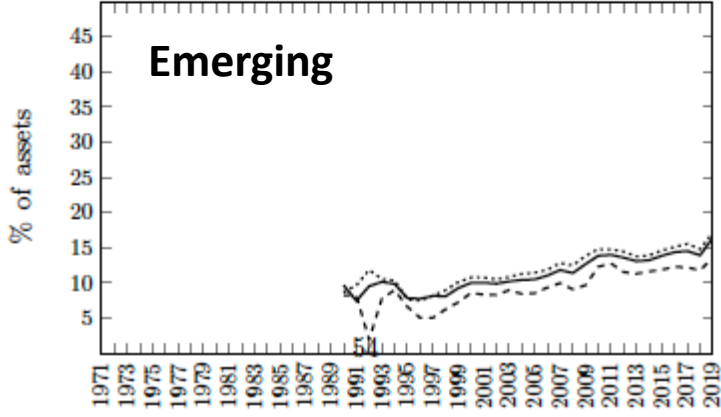
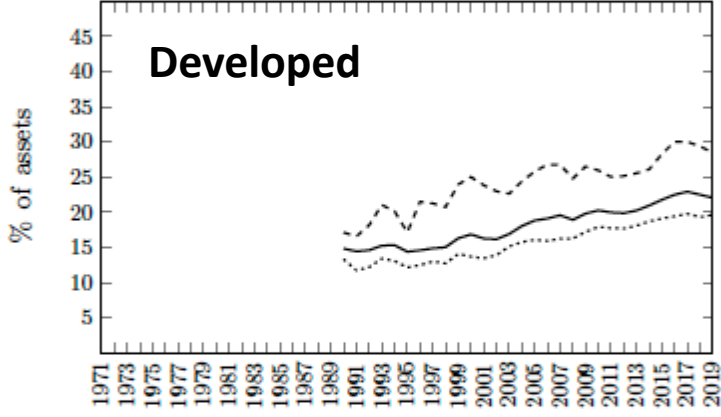
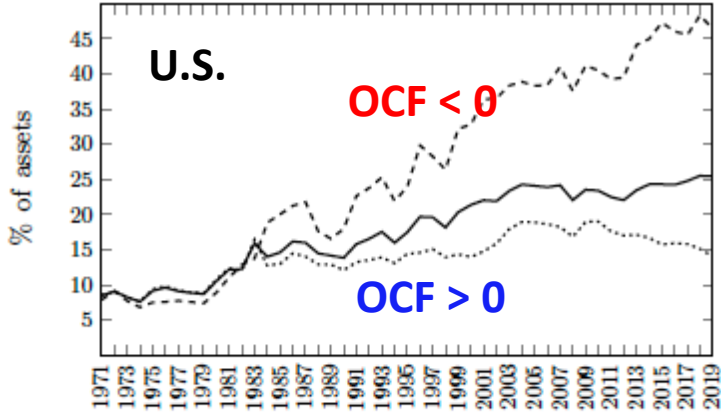
# R&D/Assets



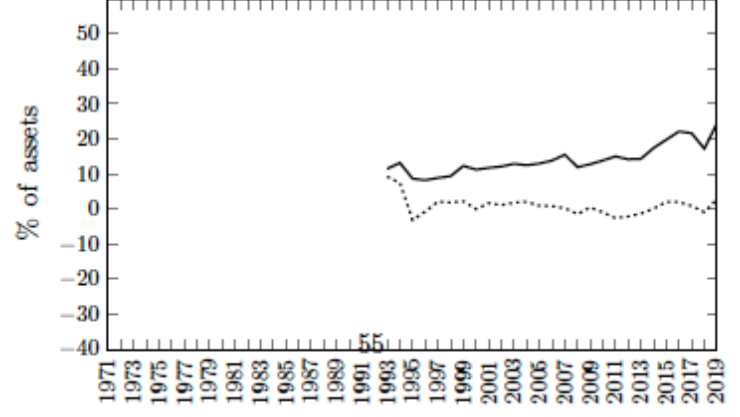
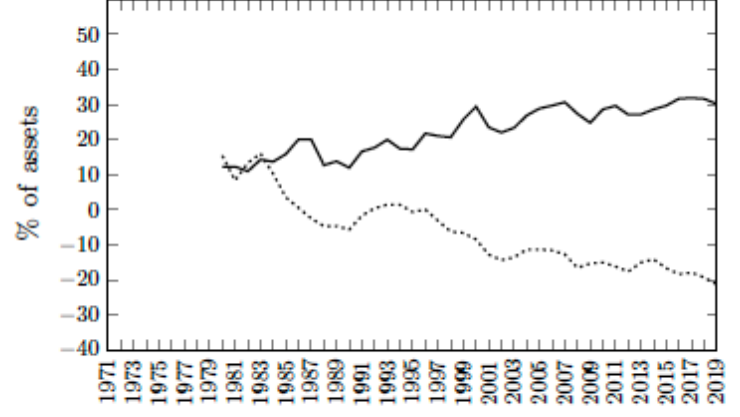
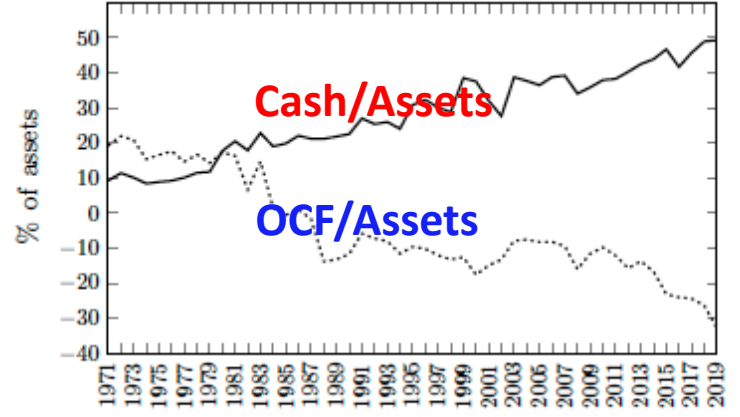
# SG&A/Assets



# Cash/Assets



# OCF and Cash of Equity Issuing Firms



# My View

- Comprehensive documentation of OCFs, intangible investments, cash, and equity issuance across countries.
  - Interesting fact: **Negative OCF firms in developed and developing countries are different types of firms.** The former group looks like growth firms, while the latter looks like poorly performing firms.
- However, the paper is too descriptive, and many facts documented, at least in the U.S., have been well known.
  - **What is the (new) punchline?**
  - Intangible investments are not the root of the story.
  - Causality establishment (3SLS) seems unclear and incorrect.

# What is the (New) Punchline?

- Lots of correlations but what is the point?
- **Denis and McKeon (JFE 2021) documents similar facts for the U.S.**

“We conclude that funding needs and staged equity financing by negative NCF firms are central features of the secular rise in the average cash-balance ratio.”

“intangibility is not what is important, per se, in explaining the increase in average cash balances; most of the explanatory power of high asset intangibility comes from the **high intangibility cases with negative NCF.**”

(See also Falato et al. (2018), Begenau and Palazzo (2018), etc.)

# What is the (New) Punchline?

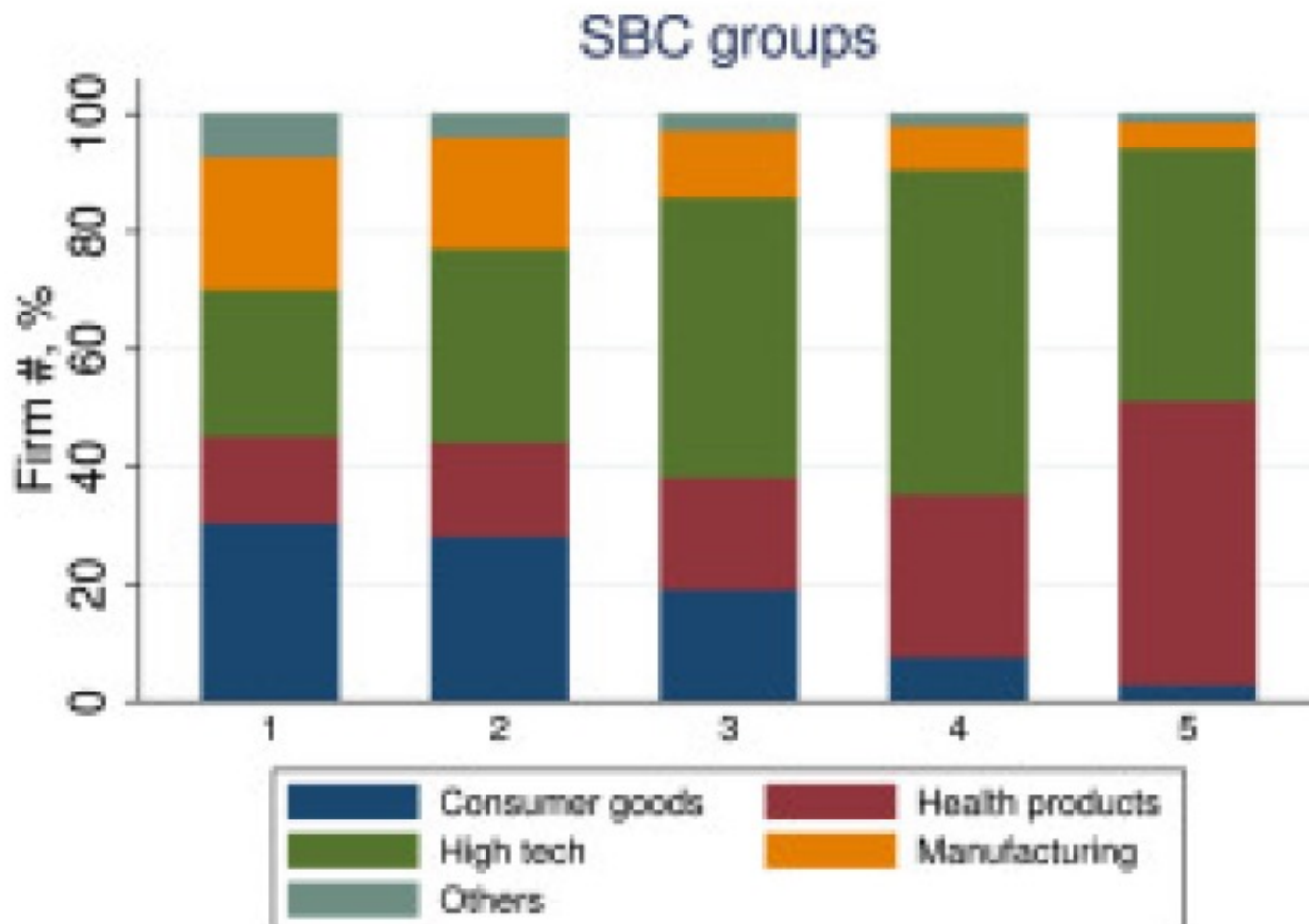
- If the goal is to publish in a top journal, it does not seem enough to just look at other countries and document similar facts.
  - Can we use the cross country differences to establish “causality”?
  - Can we get deeper into what drives intangible investments with negative NFC?
  - **What do international data bring to the table??**

# Root of Story

- Since intangible investments are “misclassified” as operating cash flows (Green, Louis, and Sani (JAR 2022), Peters and Taylor (JFE 2017)), it is not surprising that OCFs of firms with high intangible investments are lower and can be negative.
  - If tangible investments were classified in the same way, then high investment firms would also have negative OCFs.
- If the payoff from the investments comes far into the future, the negative OCF can sustain for a long time.
- **What type of firms tend to have lots of intangible capital that takes longer to pay back?**



Sun and Xiaolan (JFE 2019) show that firms that invest a lot in intangible capital tend to finance it with stock-based compensation. They also show that industries with more SBC are different!



# Establishing Causality

- The authors' 3SLS model is like this:

$$II = b_0 + b_1 * IV1 + b_2 * IV2$$

$$OCF = c_0 + c_1 * \widehat{II}$$

$$Cash = d_0 + d_1 * \widehat{OCF}$$

- **This is NOT 3SLS.** The 3<sup>rd</sup> stage is to use error covariance to re-weight the IV estimation to improve efficiency, not to use the endogenous variable in the 2<sup>nd</sup> stage in another equation!
- **The variables are at the country level, or country-year level.**  
Why?
  - So much information is lost through aggregation.
  - Bias/misspecification can occur as the relationship is non-linear.

# Establishing Causality

- Need to argue why the IVs based on Property Right Index, Global Innovation Index, and GDP per Capita are valid and pass the exclusion restrictions.
  - **Countries in which firms do more R&D and produce more patents may innovate more and do more to protect property right.**
- Need a bunch of control variables to extract only the variation in intangible investments that is associated with the IVs, not the confounders.
- Important to start with the simultaneous equations that reflect the economics, and a clear determination of variables that are endogenous, exogenous, and pre-determined.

# To Conclude ...

- **Lots of interesting facts** but these facts need to be woven together to draw a simple punchline that is new to the literature.

## My wish list:

- Use international data to draw new insights.
- Go to the root of the story – beyond just the intangible investments.
- To establish causality, start with the simultaneous equations that represent the economics.