Discussion of "Misallocation and Asset Prices"

by Winston Wei Dou, Yan Ji, **Di Tian** and Pengfei Wang

Dan Su

CKGSB

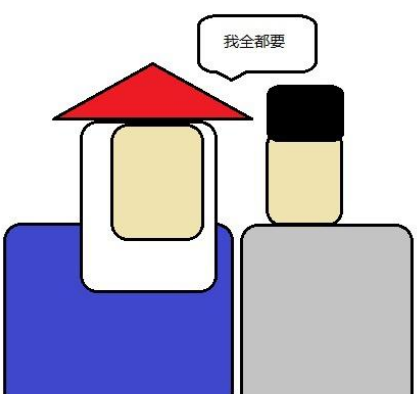
2024 CFRC Macro Finance Session

This Paper

- **Previous literature on misallocation**:
  - transitional dynamics: Buera and Shin (2013, 2017); Moll (2014); ...
  - steady state: Jovanovic (2014); Acemoglu et al. (2018); Peters (2020); ...
  - asset pricing: David, Schmid, and Zeke (2022); ...

THIS PAPER

- **Previous literature on misallocation**:
  - transitional dynamics: Buera and Shin (2013, 2017); Moll (2014); ...
  - steady state: Jovanovic (2014); Acemoglu et al. (2018); Peters (2020); ...
  - asset pricing: David, Schmid, and Zeke (2022); ...
- The authors:



THIS PAPER

- **Previous literature on misallocation**:
  - transitional dynamics: Buera and Shin (2013, 2017); Moll (2014); ...
  - steady state: Jovanovic (2014); Acemoglu et al. (2018); Peters (2020); ...
  - asset pricing: David, Schmid, and Zeke (2022); ...
- **Major contributions**
  1. valuation channel: innovation $\times$ financial frictions $\rightarrow$ discount rate $\rightarrow$ marginal q $\rightarrow$ innovation
  2. model-implied misallocation measure
  $$M_t = -\frac{Cov\left(\tilde{v}_{i,t}, \tilde{a}_{i,t}\right)}{var\left(\tilde{v}_{i,t}\right)}$$
  3. misallocation as a state variable
  $$\omega_t(z) = \frac{1}{z\sigma\sqrt{\pi}} \exp\left[-\frac{\left(\ln z + \sigma^2 M_t/2\right)^2}{\sigma^2}\right.$$

Comments?

- The paper is already well-polished
- Main draft (45 pages) + Online appendix (25 pages) + Additional materials (29 pages)
- Theory + Quantitative + Empirical with a clean identification strategy
- All different kinds of extensions and discussions
- Easiest/hardest discussion I have ever done

Comment #1: Level v.s. Changes of Misallocation

- **Key model setup**: aggregate capital depreciation shocks
  - productive firms are more exposed to aggregate shocks
  - a positive depreciation shock increases misallocation through a reduction in the capital accumulation
- An elegant way to achieve many goals
- **An interesting dilemma of financial development** λ
  - high λ: less financial friction, misallocation level is low, but the impacts of temporary shocks are large
  - low λ: more financial friction, misallocation level is high, but the impacts of temporary shocks are small
- Optimal financial friction?

Comment #2: Empirical Evidence

- **Key idea**
  - American Jobs Creation Act (AJCA): allow domestic firms in the US to repatriate their profits at a tax rate of 5.25% instead of 35%
  - treated industries: industries with foreign business intensity above 33%
  - AJCA $\rightarrow$ relax financial constraint $\rightarrow$ less misallocation and more R&D
- Great, but **no direct evidence on valuation channel**
- One possible solution: **firm-level corporate discount rate measure proposed by Gormsen and Huber (R&R at AER)**
- Another subtle difference
  - model: financial constraint for external financing
  - empirical: efficiency of internal capital markets

Comment #2: Empirical Evidence

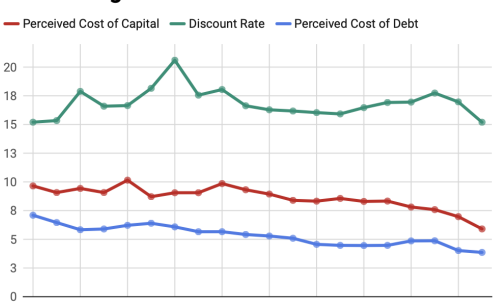
The cost of capital project aims to understand how firms' perceived cost of capital and their discount rates are determined, develop over time, and influence corporate investment. Please find data on these metrics below.

Download Data

Firm-level data: dta file, csv file. Please see this note for details.

Data Visualizations

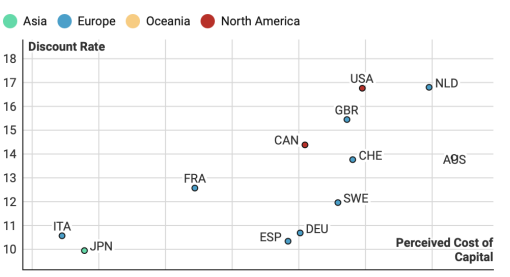
Raw Averages in the United States



Plot of average discount rate, perceived cost of capital, and perceived cost of debt in % by year for US firms.

Chart: Cost of Capital Project, 2022 • Get the data • Created with Datawrapper

Discount Rates and Perceived Cost of Capital in Different Countries



Plot of average discount rates and perceived cost of capital in % for different countries in the sample. Data from 2002 to 2021.

Chart: Cost of Capital Project, 2024 • Get the data • Created with Datawrapper

Comment #3: Ottonello and Winberry (2024)

Capital, Ideas, and the Costs of Financial Frictions*

Pablo Ottonello
University of Maryland and NBER
ottonell@umd.edu

Thomas Winberry
Wharton and NBER
twinb@wharton.upenn.edu

March 19, 2024

Abstract

We study the role of financial frictions in determining the allocation of investment and innovation. Empirically, we find that firms are investment-intensive when they have low net worth but become innovation-intensive as they accumulate more net worth. To interpret these findings, we develop an endogenous growth model with heterogeneous firms and financial frictions. In our model, low net worth firms are investment-intensive because their returns to capital are high. Financial frictions slow the rate at which firms exhaust the returns to capital and shift towards innovation. Calibrating to the US economy, we find that the resulting lower growth implies large GDP losses even though capital misallocation is small. In other words, financial markets effectively fund the implementation of existing ideas, but do not adequately fund the discovery of new ideas. If innovation has positive spillovers, a planner would not only raise innovation but also lower investment expenditures among constrained firms.

Comment #4: Deep Learning for Macro-Finance

- Hard to solve macro models with heterogeneous agents + aggregate shocks
- Nice discussions on the comparison with the traditional method
- **What about recent developments in global solution technique?**
  - derive finite dimensional approximation to the distribution
  - train neural networks to solve the resulting high dimensional PDEs
- Some reference
  - Gu, Lauriere, Merkel, Payne (2024): Krusell-Smith style macro models
  - Payne, Rebei, Yang (2024): searching and matching models
  - Gopalakrishna, Gu, Payne (2024): macro-finance models with implicit prices

Summary

- **A great and well-polished paper!**
- Important question, solid technical skills, novel insights, ...
- I learned a lot from reading it
- **Good luck with the publication!**