UNC
KENAN-FLAGLER
BUSINESS SCHOOL

Asset Pricing with Misallocation

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2022 MFA

Outline

The Paper in a Nutshell

- Influential long run risks literature:
- Several papers endogenize x_t
- Macro literature: misallocation affects economic growth
- This paper develops a framework in which

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- Influential long run risks literature:

$$g_{t+1} = \mu + x_t + \widetilde{g}_{t+1}$$

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The Model's Mechanism

- Financial Frictions (equity & debt constraints):

  $\uparrow$ in capital depreciation

  $\Rightarrow \uparrow$ in misallocation (productive firms use capital intensively)

  $\Rightarrow \downarrow$ in aggregate productivity of final goods sector

  $\Rightarrow \downarrow$ in the demand for intermediate inputs

  $\Rightarrow \downarrow$ profits from R&D investments

  $\Rightarrow \downarrow$ less patent production

  $\Rightarrow \downarrow$ lower endogenous growth

- Persistent idiosyncratic productivity:

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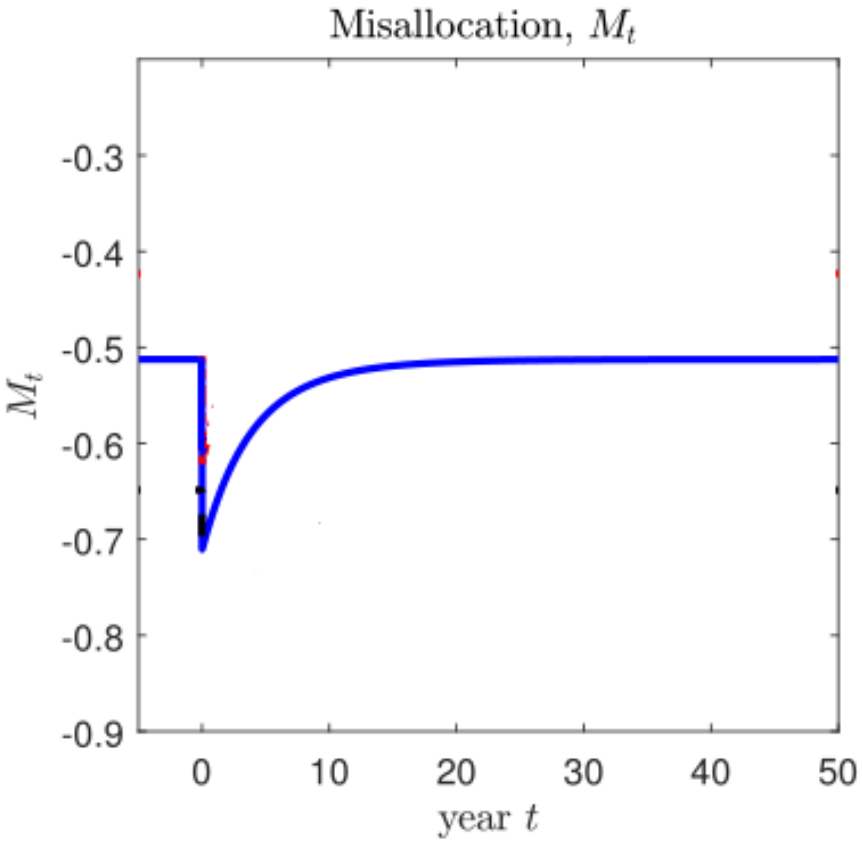

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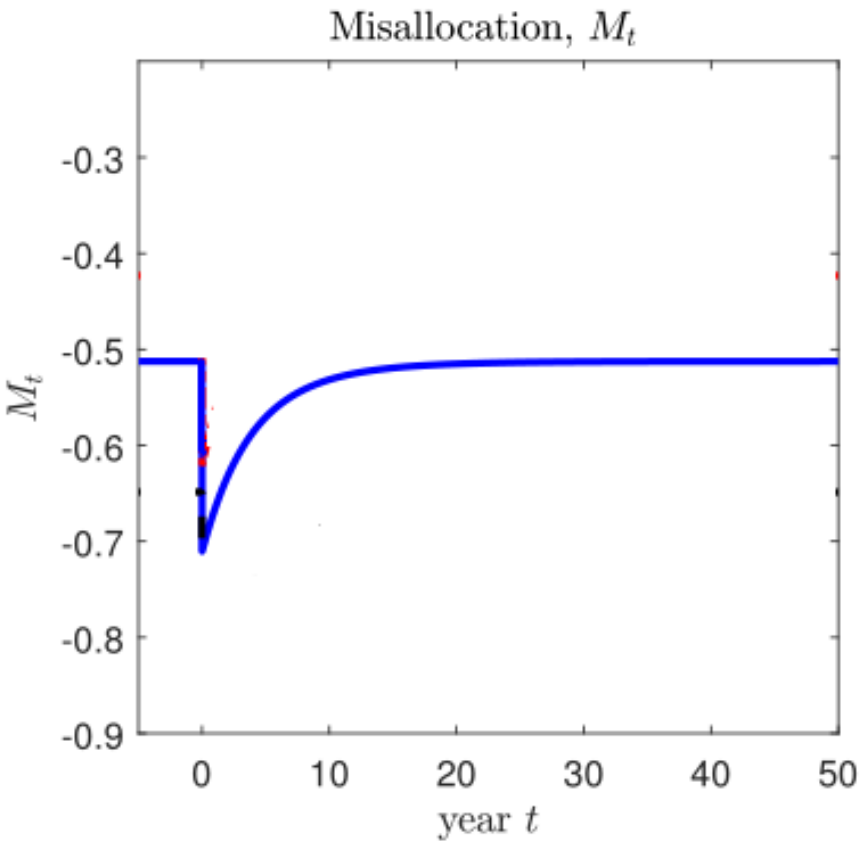

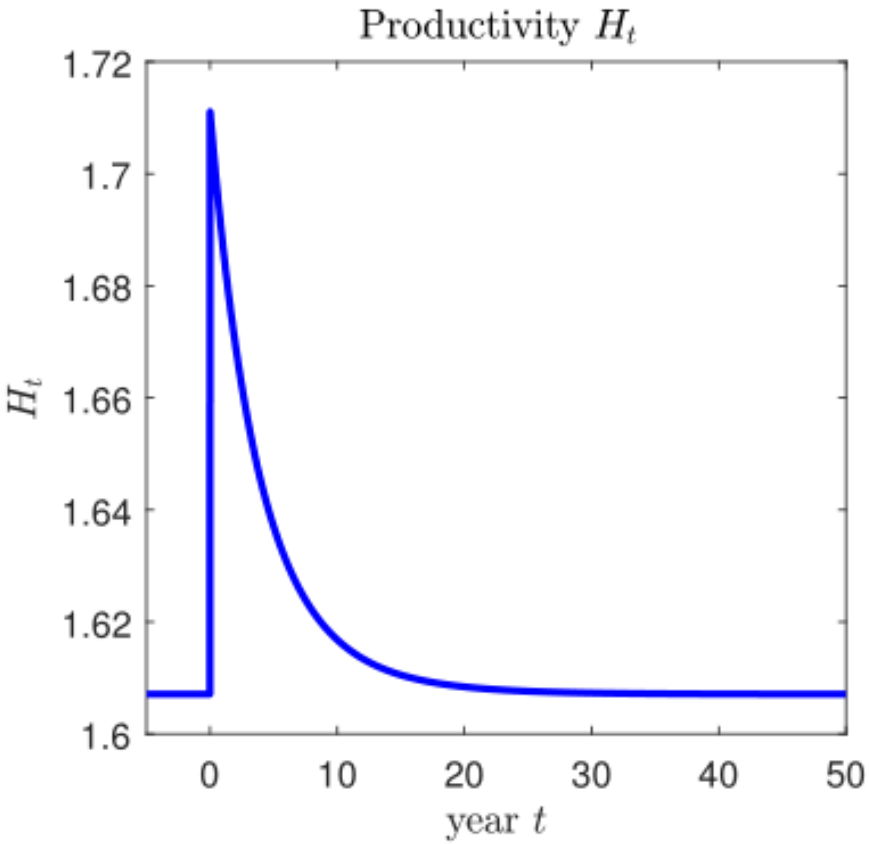

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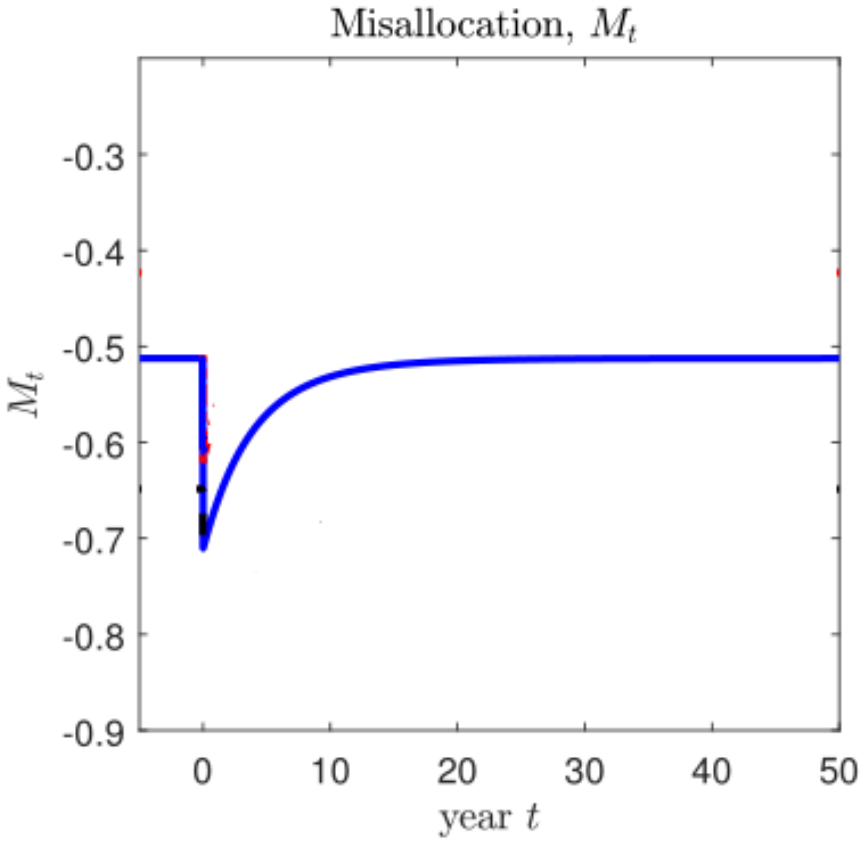

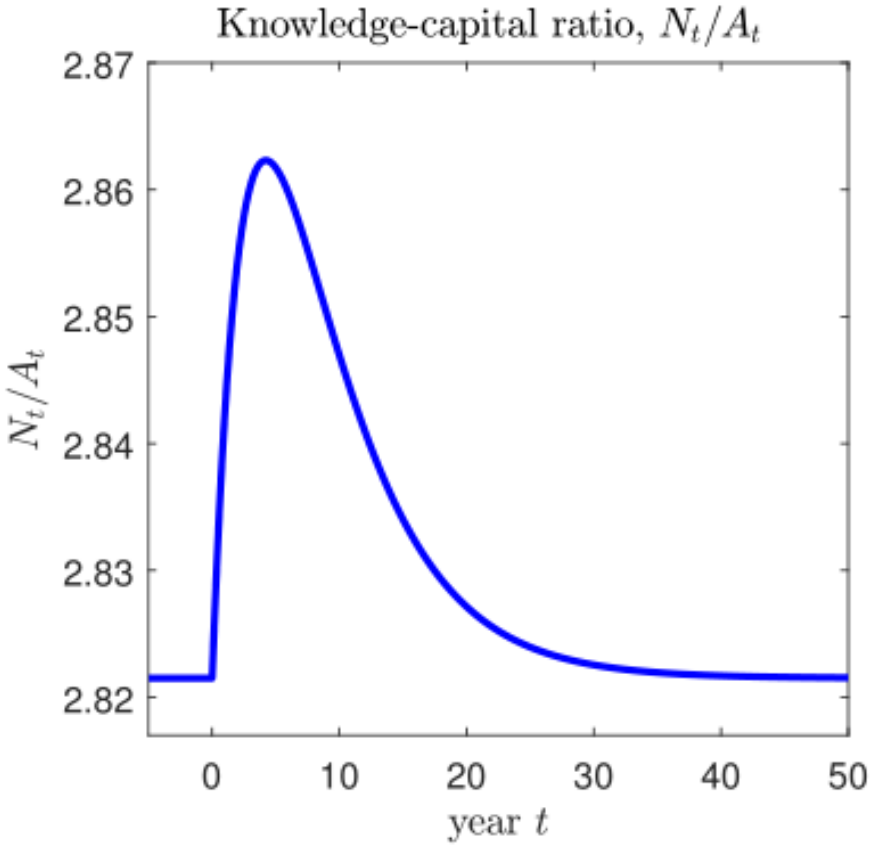

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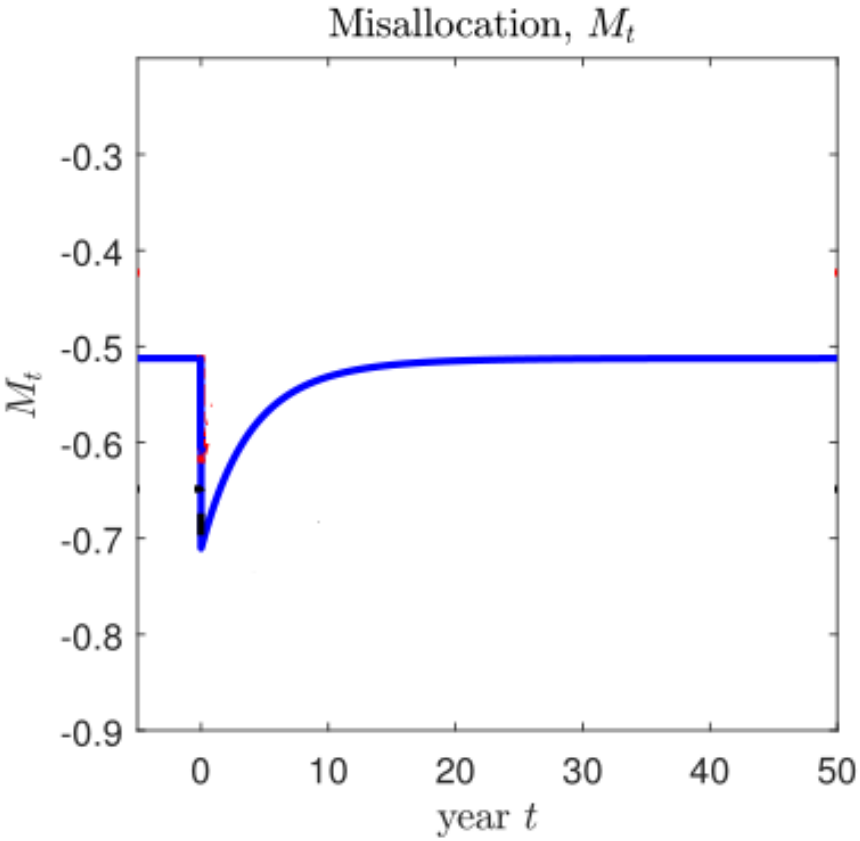

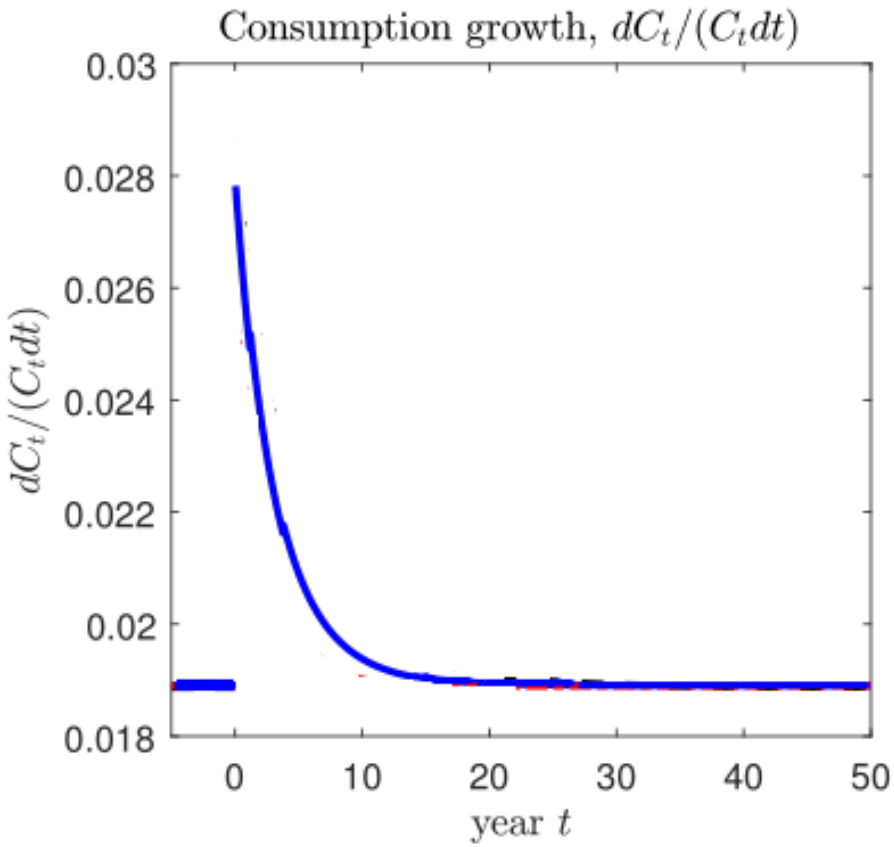

Empirical Results: Misallocation $\Rightarrow$ Growth

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1965 - 2016
β
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1965 - 2016

	Misallocation and R&D intensity
	t
β	-0.076
	$[-0.032]$
R-squared	0.102

Empirical Results: Misallocation $\Rightarrow$ Growth

1965 - 2016

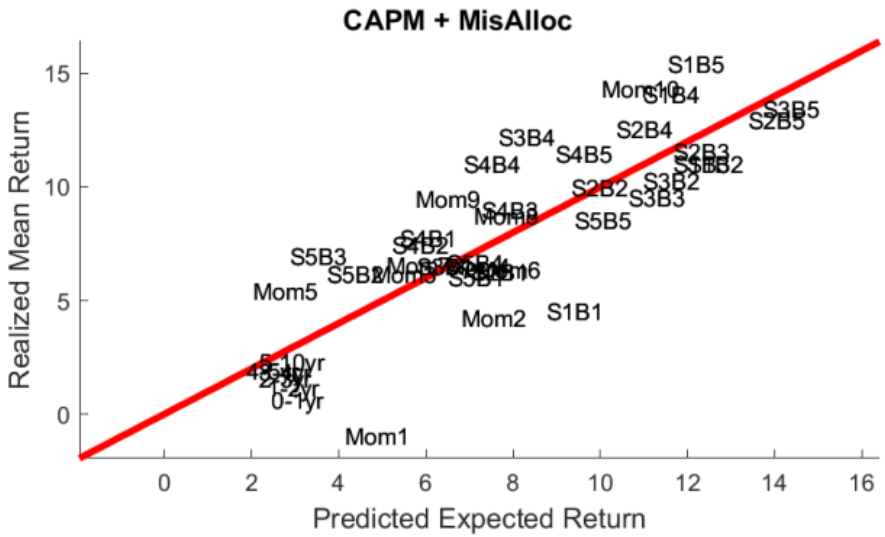
	Misallocation and R&D intensity	Consumption growth forecasts
	t	$t \rightarrow t+5$
β	-0.076	-0.208
	$[-0.032]$	$[-0.066]$
R-squared	0.102	0.173

Empirical Results: Misallocation $\Rightarrow$ Growth

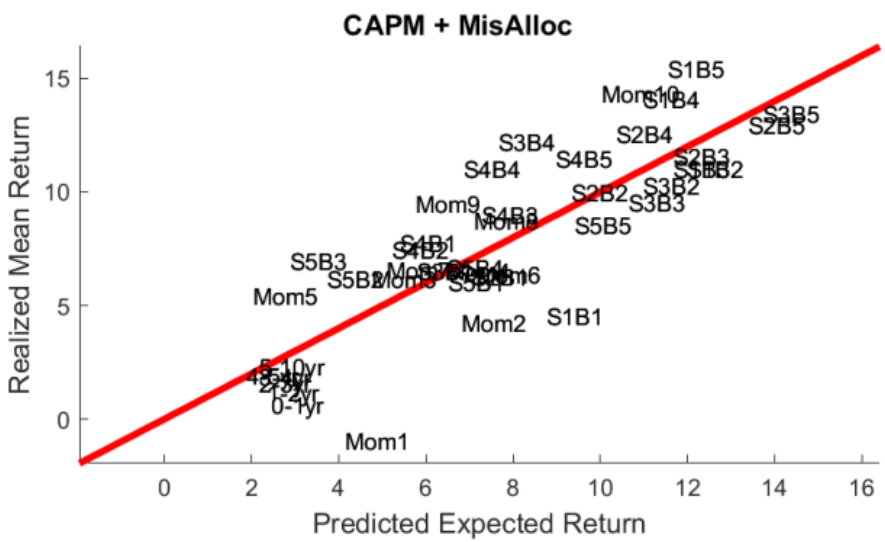
1965 - 2016

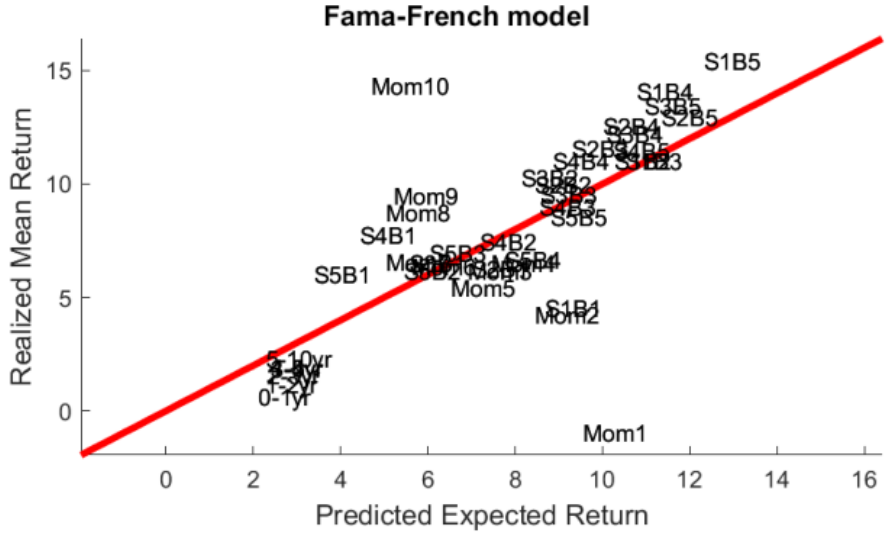
	Misallocation and R&D intensity	Consumption growth forecasts	Output growth forecasts
	t	$t \rightarrow t+5$	$t \rightarrow t+5$
β	-0.076	-0.208	-0.216
	$[-0.032]$	$[-0.066]$	$[-0.083]$
R-squared	0.102	0.173	0.123

Empirical Results: Pricing the Cross-Section



Empirical Results: Pricing the Cross-Section





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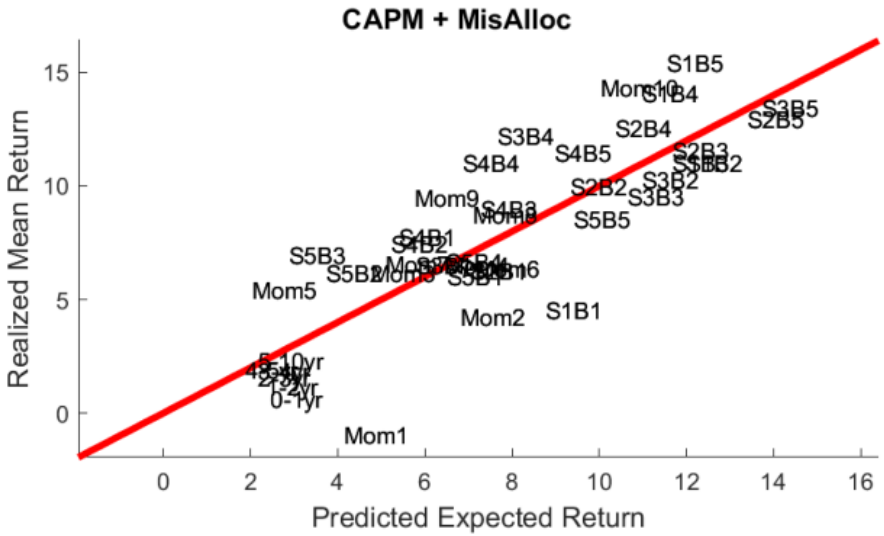

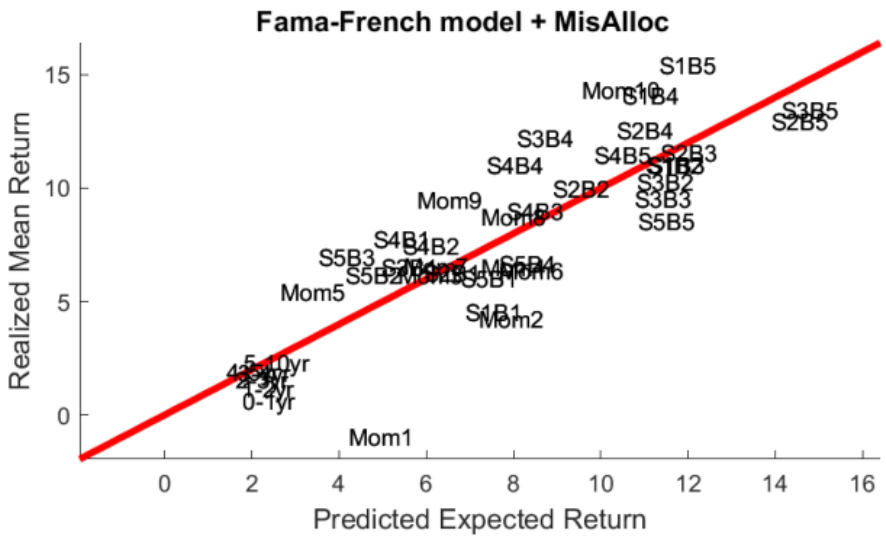

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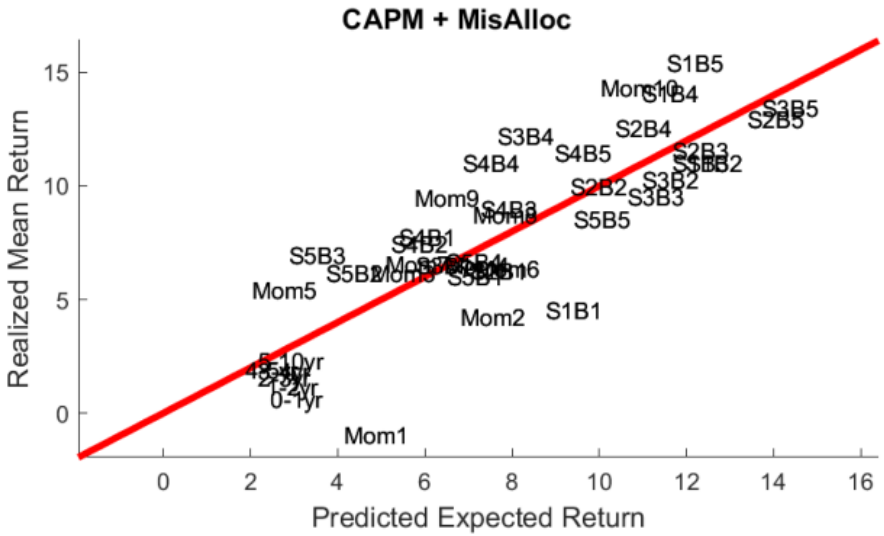

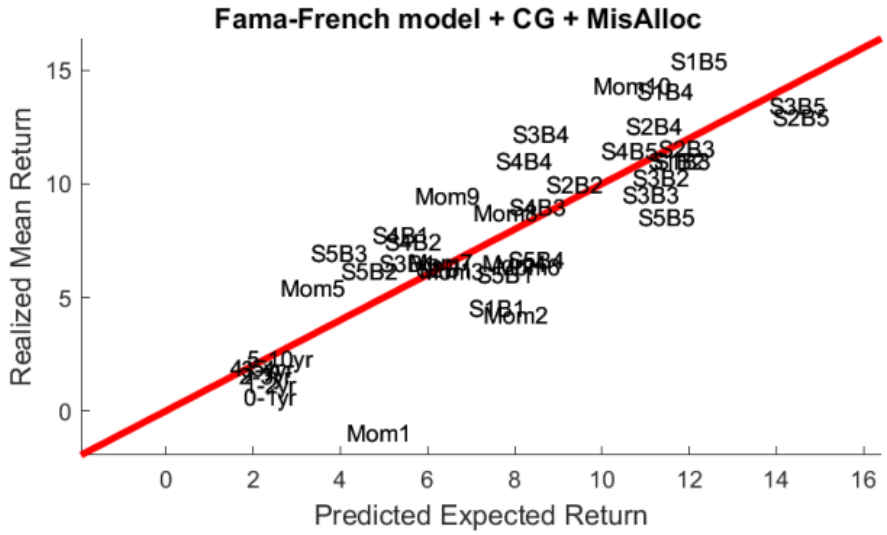

Outline

1) On the LRR Connection

- LRR model:

$$g_{t+1} = \mu + x_t + \widetilde{g}_{t+1}$$

$$x_{t+1} = \rho \cdot x_t + \widetilde{x}_{t+1}$$

- In Bansal and Yaron (2004), $\mathbb{V}ar_t[\widetilde{g}] = \sigma_t^2$ is also present
- In your model, $SR = 0.36$. Does it come entirely from x_t?
- Can you explore whether non-linearities create σ_t?
- LRR also has well-known limitations
  (Beeler and Campbell 2012; Binsbergen, Brandt, and Koijen 2012; ...)
- Can you explore whether your endogenous LRR model alleviate these issues?

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2) On the Risk Price of Technology Shocks

- You endogenous SDF if given by

$$\frac{d\Lambda_t}{\Lambda_t} = -r_{f,t}dt - \eta_t dW_t$$

- In your model and empirical analysis, $\eta_t < 0$
  ($\uparrow$ in aggregate depreciation/misallocation is bad news)
- But $\uparrow$ misallocation $\Rightarrow \downarrow$ technology
- So, (embodied) "technology shocks" have positive price of risk
  ($\downarrow$ in technology is bad news)
- Debate about the sign of the risk price of technology shocks
  (see the discussion in Garlappi and Song (2017))
- Your paper seems to contribute to this debate

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2) On the Risk Price of Technology Shocks

- You endogenous SDF if given by

$$\frac{d\Lambda_t}{\Lambda_t} = -r_{f,t}dt - \eta_t dW_t$$

- In your model and empirical analysis, $\eta_t < 0$
  ($\uparrow$ in aggregate depreciation/misallocation is bad news)
- But $\uparrow$ misallocation $\Rightarrow$ $\downarrow$ technology
- So, (embodied) "technology shocks" have positive price of risk
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3) On the D/P Growth Predictability

- Misallocation predicts long-run consumption growth (data)
- D/P does not predict long-run consumption growth (data)
- Misallocation is the key state variable (in the model)
- Can you show the connection between misallocation and D/P (in the model and data)?
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Other Comments

1. Can you provide more asset pricing moments
   (e.g., $\mathbb{E}[r]$, σ, return predictability...)?
2. Can you focus on dividend claim (not consumption claim)?
3. The $MissAlloc_t$ HP filter should be 1-sided. Is it?
4. "The aggregate TFP, which is exogenous in the model of Kung and Schmid (2015), is endogenous in our model"
   - I understand what you meant
   - But productivity is partially endogenous in their model
5. Should you add exogenous productivity shocks?
   - Hard to think about SDF that only has misallocation shock
   - The empirical analysis uses CAPM+Misallocation

Outline

Final Remarks

- Very interesting paper highlighting the importance of misallocation in determining long-run growth risk:
  - $\uparrow$ misallocation $\Rightarrow \downarrow$ R&D investment $\Rightarrow \downarrow$ growth
  - If idiosyncratic productivity is persistent, then misallocation is persistent (as well as its growth effect)
- It would be useful to:
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