Corporate Discount Rates

Gormsen and Huber

Minnesota Asset Pricing Conference – Discussion – May 2023

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This Paper

What interest rates do corporations use?

- If you cannot ask them directly, listen to what they say!
  - Corporate earnings call transcripts
- Split discount rates into a perceived "funding cost" (WACC) and "hurdle rate"
- Link these discount rates to actual investment

A gap in the literature

- Old question on the disconnect between finance and aggregate quantities (Merton and Fisher, Summers)
- New questions
  - Account for the recent downward trend in investment

Macroeconomics and Finance: The Role of the Stock Market

Stanley Fischer and Robert C. Merton (Carnegie-Rochester 1983)

One of the explanations for the neglect of the stock market in macroeconomics may be the view that **because the stock market fluctuates excessively, rational managers will pay little attention to the market in formulating investment plans.** *This view is shown to be unfounded by demonstrating that rational managers will react to stock price changes even if the stock market fluctuates excessively*

Taxation and Corporate Investment: A q-Theory Approach

Lawrence Summers (1981)

Equation[b]	Constant	$q - 1$	Q	*Rho*	*Standard error of estimate*
4-1	0.119 (0.006)	−0.038 (0.019)	...	...	0.039
4-2	0.096 (0.008)	...	0.026 (0.007)	...	0.036
4-3	0.104 (0.035)	0.039 (0.016)	...	0.944	0.017
4-4	0.096 (0.025)	...	0.017 (0.004)	0.923	0.016

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- Near zero response of investment to stock prices.

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See also

- Barro, Robert J., 1990, The stock market and investment, Review of Financial Studies 3, 115-131.
- Blanchard, Olivier, Changyong Rhee, and Lawrence Summers, 1993, The stock market, profit, and investment, Quarterly Journal of Economics 108, 77-114.
- Cochrane, John H., 1991, Production-based asset pricing and the link between stock returns and economic fluctuations, Journal of Finance 46, 209-237.

Lamont (JF 2000): Investment Plans

	g_t	$\Delta\pi_t$	r_t	$E_{t-1}[g_t]$
	1	2	3	4
Constant	0.01	0.00	0.14	0.10
	(0.01)	(0.00)	(0.04)	(0.02)
g_{t-1}	0.37	−0.10	0.35	
	(0.18)	(0.05)	(0.74)	
r_{t-1}	0.03	0.01	0.12	
	(0.05)	(0.01)	(0.18)	
$\Delta\pi_{t-1}$	−0.59	−0.01	2.75	
	(0.83)	(0.27)	(2.77)	
$\hat{g}_t$	1.01	0.01	−1.81	
	(0.13)	(0.04)	(0.49)	
$\hat{g}_{t-1}$	−0.53	0.03	−0.49	
	(0.26)	(0.07)	(1.01)	
$E_{t-1}[\Delta\pi_t]$				1.12
				(1.90)
$E_{t-1}[r_t]$				−0.60
				(0.13)
$\Delta\pi_t - E_{t-1}[\Delta\pi_t]$				
$r_t - E_{t-1}[r_t]$				
R^2	0.81	0.36	0.29	0.69

This paper

Listen to managers!

- From implicit discount rates (structural equations and data on outcomes) to measuring actions directly

$$\delta_t = \underbrace{1 + r_t}_{\text{observed}} + \underbrace{v_t + \kappa_t}_{\text{manager opinion}}$$

- It is a lot of work!!
- The next step in the literature (short of getting into the managers' head)

What are we measuring?

Is it just investment with a different unit?

- Looking at investment based on managers' statement on discount rates is tautological
  - Discount rate is the rate that "rationalizes" their investment decision

Experiments (shock to discount rate)

- Exogenous shock to discount rates lead to change in managers' expectations?
  - Index inclusion, QE, monetary policy
  - Does it go in discount rate or gets absorbed in wedge?

Getting information from the cross-section

Some specific results

- Wedge higher with (1) *market power*, (2) *volatility*, (3) *financing constraints*

Some other directions

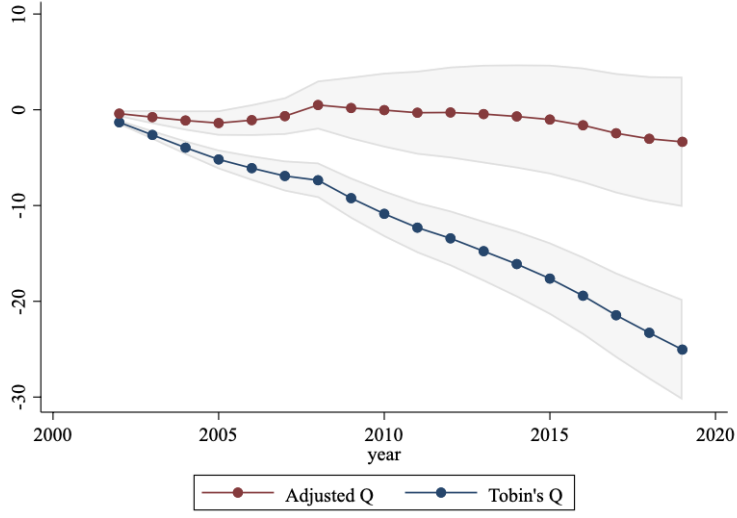
- Managers incentives matter!
  - Executive compensation structure; industry peers comparisons
- Other firm characteristics
  - ... and the cross-section
  - We are not short of theories that predict returns at the firm-level
  - Example: displacement risk

Different sources of risk

- The cross-section shows us something about how different managers discount different sources of risk
- Comparing firms high-low market risk with high-low displacement risk
  - How does the wedge compare across these portfolios
  - Fama-French 25 sorted wedge?

What do we learn?

The case of missing investment



What do we learn?

The case of missing investment

- The puzzle of why managers quote different (higher) discount rates is still a puzzle
  - Lack of investment opportunities
  - Market power
  - Increase in (unmeasured) intangibles

- Include measured discount rates as inputs to work that calibrate the decline in investment
  - See Farhi and Gourio, or Corhay, Kung, and Schmid

Testable implications for many, many interesting ideas...

Many, many interesting ideas are now in reach
Just a few ...

- WACC fallacy
- Managers' expectations
- Andrei, Mann, and Moyen: R2 of q-investment regression increases from 7% to 70% post-1995
- Price elasticity of demand for capital (implications for taxation, Goolsbee 1998)

Final Thoughts

Interesting Paper! Go read it.

Take away

- Direct measures of managers' discount rates
- Reconciling perceived stock prices and corporate investment