Disciplining Models of

Financial Frictions with Data

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Key Aspects of Financial Frictions Models

- Producers confront collateral constraints
- Agency costs big
- Substantial wedge between internal and external rates of return
Key Aspects of Data

- In the aggregate, available funds far exceeds investment
- In the aggregate, firms have lots of liquid assets
- Reallocation matters: About 16% of investment financed with internal funds
- Is this big? No
Does Typical Firm Use External Funds to Finance Investment?

- Use data from Flow of Funds for all nonfinancial corporations
- Available Funds (AF) = Revenues – Wages – Materials
  – Interest payments – Taxes
- In Flow of Funds, AF = Internal funds + Dividends
  Alternatively, AF = Retained earnings + Dividends + Depreciation
- In Flow of Funds use Gross Investment for Capital expenditure
Does Typical Firm Use External Funds to Finance Investment?

- Available Funds – Dividends + Net new debt issue
  + Net new equity issue
  = Capital expenditure

- Suppose Net new debt issue = 0
  Net new equity issue = 0

- That is, firms lose access to financial markets

- Can they finance all investment internally?
Available Funds and Capital Expenditures
Source: Flow of Funds and BEA

Sample Average:
Available Funds / Corporate GDP = .18

Data for U.S. Nonfinancial Corporations
Data for U.S. Nonfinancial Corporations
Noninterest Flow from Households to Firms,
Source: Flow of Funds and BEA.

Sample Average:
\[
\frac{\text{Capital Expenditure} - \text{Available Funds}}{\text{Corporate GDP}} = -0.03
\]
Noninterest Flows From Households To Firms

Quarters with positive flows (19):
1973 Q 1,2,4  1974 Q 1-4
1978 Q 2,4  1979 Q 1-4
1980 Q 1,2,4  1981 Q 1,3,4

Lag  Correlation
-4  -0.16677
-3  -0.05204
-2  0.09986
-1  0.25439
  0  0.40629
+1  0.42766
+2  0.41376
+3  0.34244
+4  0.25599

Does Typical Firm Use External Funds to Finance Investment?

• No, for aggregate of U.S. corporations

• Financial markets may play a big role in reallocating funds from cash-rich, project-poor firms to cash-poor, project-rich firms

• Use disaggregated data to analyze reallocation
Does Typical Firm Use External Funds to Finance Investment?

- Use data from Compustat

- Compute available funds for each firm, each time period

- $AF_{it} = \text{Available funds for firm } i \text{ in period } t$

- $I_{it} = \text{Gross investment by firm } i \text{ in period } t$

- How much would $I_{it}$ fall if no firm can invest more than $AF_{it}$
Available Funds and Capital Expenditure Relative to Corporate GDP

Source: COMPUSTAT and BEA

Sample Average:
Capital Expenditure / Corporate GDP = .10


Capital Expenditure / Corporate GDP
Available Funds and Capital Expenditure Relative to Corporate GDP, Firms Not Using External Funds

Source: COMPUSTAT and BEA

Sample Average:
- Capital Expenditure / Corporate GDP = 0.07
- Available Funds / Corporate GDP = 0.13
Available Funds and Capital Expenditure Relative to Corporate GDP, Firms Using External Funds
Source: COMPSTAT and BEA

Sample Average:
Capital Expenditure / Corporate GDP = .036
Available Funds / Corporate GDP = .019
Fraction of Firms Using External Funds
Source: COMPUSTAT

Sample Average = .43
Fraction of Investment Financed by External Funds

Source: COMPUSTAT

Sample Average = .16

Does Typical Firm Use External Funds to Finance Investment?

• Use of external funds to finance investment

\[ \frac{1}{T} \sum_{t=1}^{T} \frac{\sum_i (I_{it} - AF_{it}) | I_{it} > AF_{it}}{\sum_i I_{it}} \]

• In data, financial market constraints = 16% of investment financed by external funds

• Interpretation: If firms had **no** access to financial markets, investment would have fallen by 16%

• This is exceptionally extreme exercise
Morals to be Drawn

- Reallocation margin may be key

- Idea is financial markets’ role to get assets into best managers’ hands

- New investment in physical capital may be secondary