Firm Heterogeneity and the Capital Market

Tobias König, January 7th-9th, ASSA 2022 Virtual Annual Meeting

Research Question

What is the role of financial constraints for the transmission of both an external equity financing shock and a monetary policy shock on firm investment rates?

Motivation

- Analyze role of financial constraints by looking at transmission of monetary policy shocks and external equity financing shocks.
- Role of financial constraints for components of firms funding:
  - external equity and corporate loans
- Investment explains large share of business cycle fluctuations.

Findings

Role of financial constraints for firm investment:

1. **Equity shock:**
   constrained firms w/ high expected profits (Tobin's Q)
2. **Monetary policy shock:**
   constrained firms w/ high debt burden

Sensitivity of firm investment rates relative to the average economy-wide response:

	Equity shock	Monetary policy shock
Tobin's Q	+	0
EBC	0	+
ABC	-	-

EBC: earning-based constraint
ABC: asset-based constraint

Dataset

- Compustat: publicly-listed firms in the US
- Range: 1982Q1 - 2020Q3 (quarterly)

Equity Shock Identification

Granular Instrumental Variables (GIV)

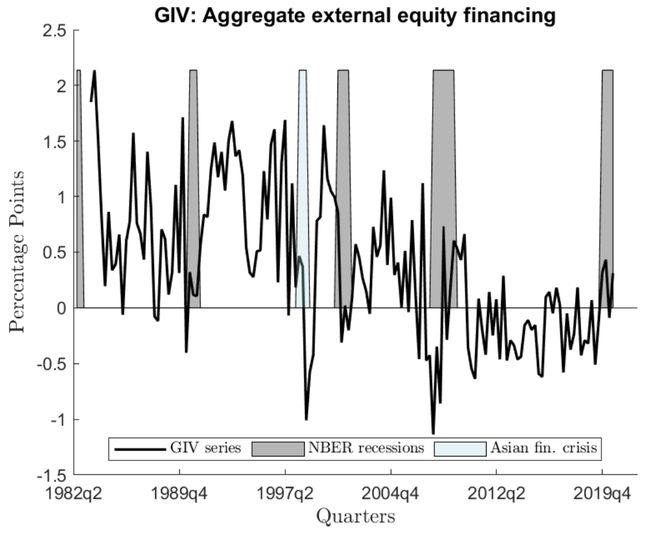
- Gabaix and Koijen (2020)

The GIV for the external equity financing shock is defined as:

$$u_t^{giv} = \sum_{i=1}^{N} \tilde{S}_{i,t-1}\hat{\epsilon}_{i,t} - \frac{1}{N}\sum_{i=1}^{N}\hat{\epsilon}_{i,t}$$

- $\hat{\epsilon}_{i,t}$: estimated innovation to firm's i equity growth rate: $\epsilon_{i,t} = \lambda_{i,t}\eta_t + u_{i,t}$.
- $\tilde{S}_{i,t-1}$: lagged market val. of firm's i out. shares / by aggr. market cap.

Interpretation: Investor sentiment shock e.g. increased demand for Googles shares, increasing company's share prices and number of shares.



Method: Local Projections

Role of competing financial constraints

Goal: Understanding the role of up to six financial constraints for firm investment.

The six marginal responses of firms with a one std. dev. higher financial measure $FC_{i,t-1}$ are simultaneously estimating by:

$$\frac{\Delta y_{i,t+h}}{y_{i,t-1}} = \alpha_i^h + \nu_{st}^h + \gamma^h[FC_{i,t-1} \times shock_t] + \sum_{k=1}^{1}\Gamma_k^h X_{i,t-k} + e_{i,t}^h,$$

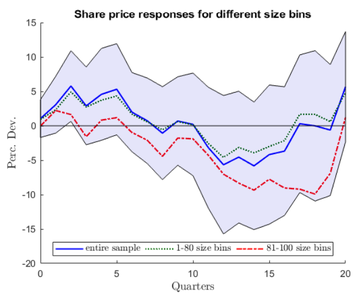
with γ^h measuring the marginal effects.

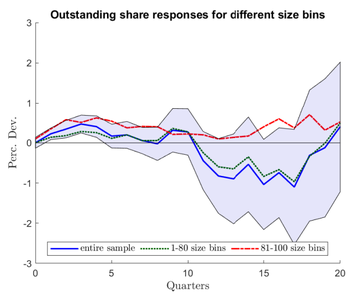
$FC_{i,t-1}$: earning-based constraints, asset-based constraints, Tobin's Q, firm size, liquidity, dividend dummy.

Results

GIV spill-over effects on SME

- GIV: an idiosyncratic increase in external equity of large companies.
- Positive spill-over effects on number of shares and share prices of small and medium sized companies.





External equity financing and future expected profits

- Investment rates of constrained firms with high expected future profits are more sensitive to equity shocks.

Firm assets, cash-flow, and monetary policy

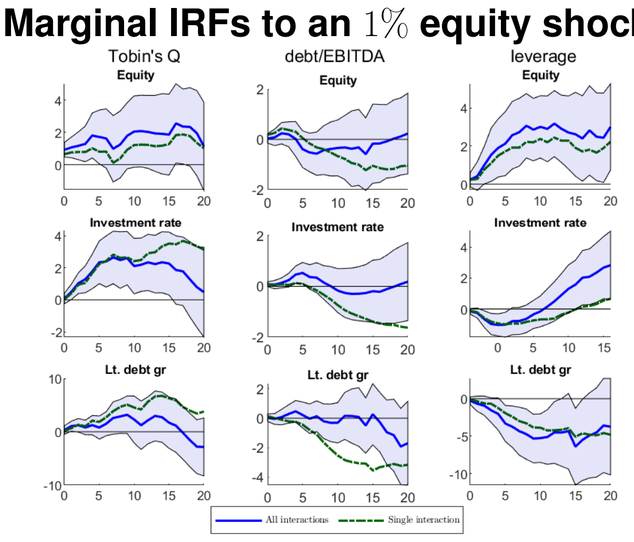
- Indebtedness highly relevant for explaining heterogeneity in the investment rates after a favorable monetary policy shock.
- Earning-based constrained firms: increase their investment relatively more, since monetary policy rather affects short-term cash-flow.
- Asset-based constrained firms: rather substitute equity for debt.

Conclusion

Modelling perspective: Necessary to distinguish between competing measures of financial constraints.

Policy maker: Take into account both monetary policy and access to capital markets to relax firms' financial constraints.

Marginal IRFs to an 1% equity shock



Marginal IRFs to a $10bp$ favorable monetary policy shock