

טכנולוגיות חדשות והכלכלה:
תמורות ואתגרים

08.12.2025 | בית ציוני אמריקה- תל אביב



Who is Shocking the Start-up Nation?

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Work in Progress

The views presented do not necessarily represent those of the Bank of Israel

Introduction

Research question:

- Do domestic and global (U.S.) monetary policies affect Israel's high-tech sector's VC investment?
- What are the channels?

Key findings:

- U.S. monetary policy has a strong and significant effect on VC investment; domestic policy does not.
- This is in contrast to the response of other high-tech sector indicators that do respond to domestic policy.
- The transmission from U.S. rates to VC flows operates in part through Nasdaq valuations.

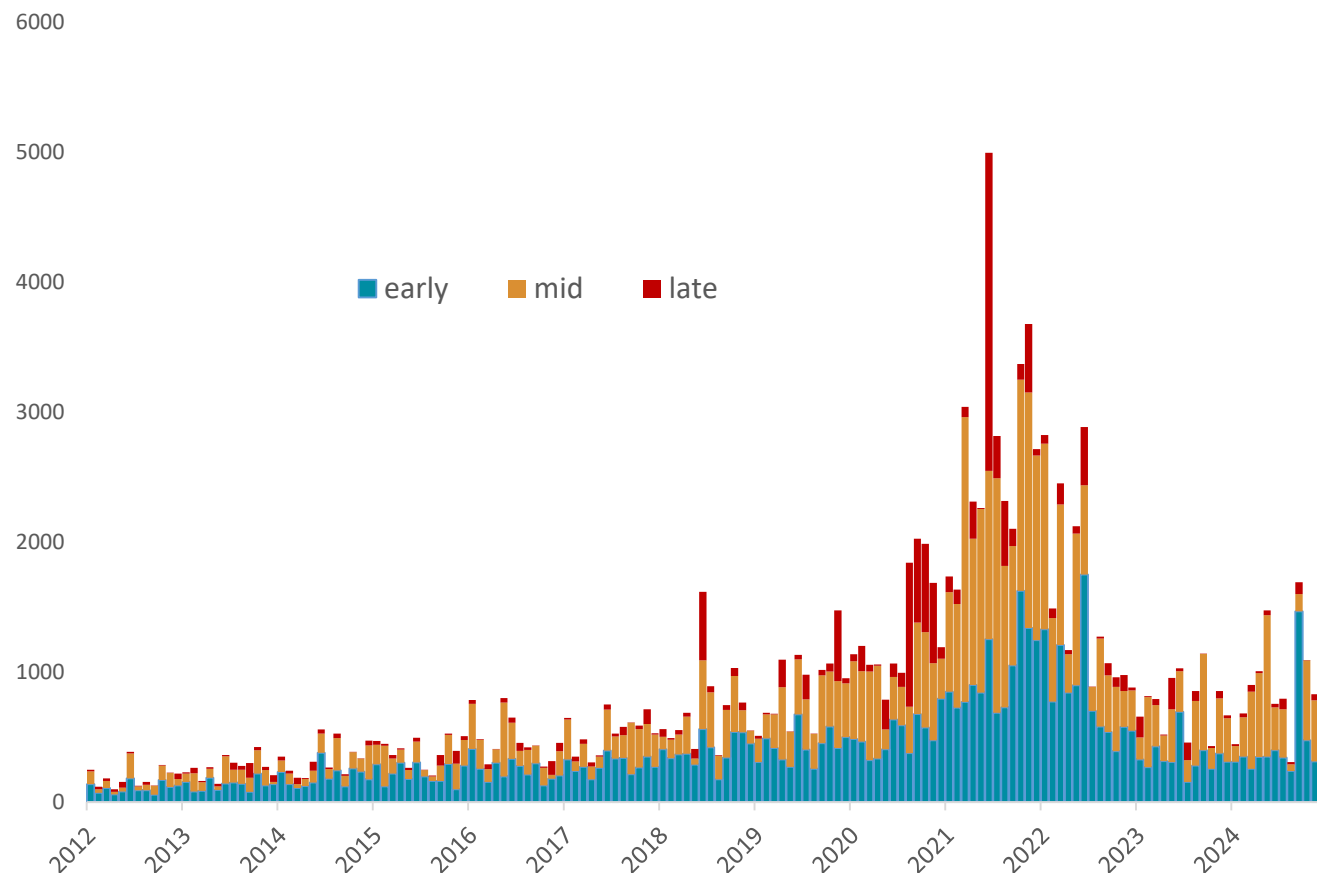
Motivation: The high-tech sector's pivotal role in the Israeli economy

The Israeli high-tech sector:

- Constitutes 18% of Israel's GDP, 58% of exports and 40% of business sector growth. Employs ~11% of workforce. Employees generate 1/3 of income tax revenues.
- Within this ecosystem, the **startup segment** alone accounts for roughly ~2% of GDP in recent years, with around 5,000 active startups employing approximately 35,000 workers (~ 0.8%).

Total VC investment

By stage, \$ Mill



Source: IVC

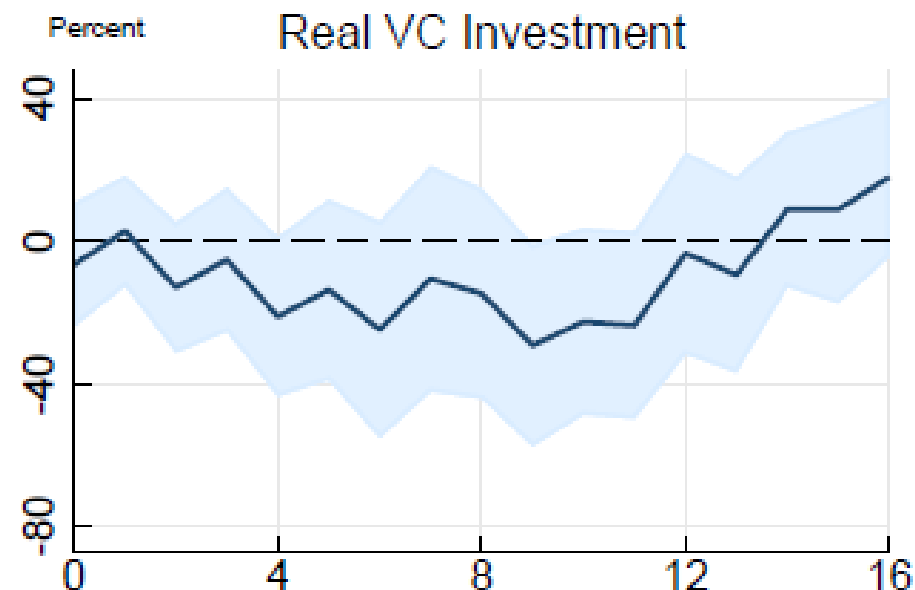
Our research connects to 2 strands of economic literature:

- Recent studies examine the **long-term effects of monetary policy on economic growth**, rather than focusing solely on business cycles (Comin & Gertler 2006; Jordà et al. 2024).
 - Within this broader literature, related research examines the determinants of **economic activity and the financing of high-tech sector**, including VC investments, R&D etc. (Gompers & Lerner, 1999; Ma & Zimmermann, 2023).
- But what about a small open economy like Israel?
 - Extensive research highlights the impact of **large economies' monetary policy on SOEs**. (Obstfeld & Rogoff 2009; Calvo, 1996; Rey, 2015).

Our paper sits at the intersection:

We examines how U.S. global monetary policy influences the financing and activity of Israel's high-tech and start-up sector.

Ma & Zimmermann (2023):
U.S. monetary policy affects innovation



**Do domestic and global (U.S.)
monetary policies affect Israel's high-
tech sector's VC investment?**

Methodology and data

- We use Local Projections (Jorda, 2005) in order to identify the effect on VC funding.



$$y_{t+h} = \alpha_h + \beta_h \varepsilon_t + \sum_{i=1}^I \gamma_h y_{t-i} + \sum_{i=1}^I \delta_h \varepsilon_{t-i} + \eta_h x_t + u_h$$

Dependent variable: **(log) nominal dollar flow of venture capital funds (IVC).**

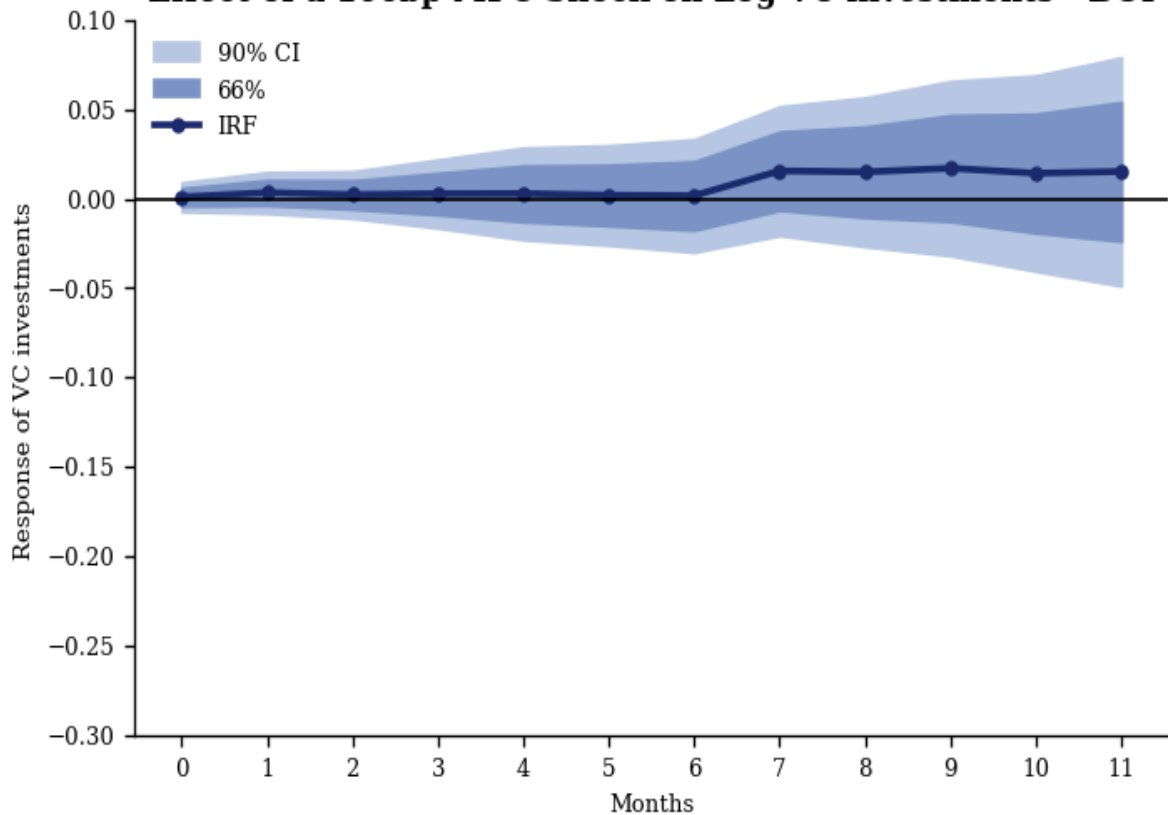
Shock: **Daily change in 1-year nominal yield around date of monetary decision.** (US T-bills, Telbor for Israel).

Control variables: 12 lags of dependent variable, 12 lags of monetary shock, (log) euro/dol, (log) dol/ILS, (log) cpi, (log) NSDQ index, unemp. rate 25-64 - all lagged 1,2, months, iboi rate, ifed rate – lagged 1,2 periods, Month dummies, Dummies for COVID shutdowns, dummy for post-Oct23.

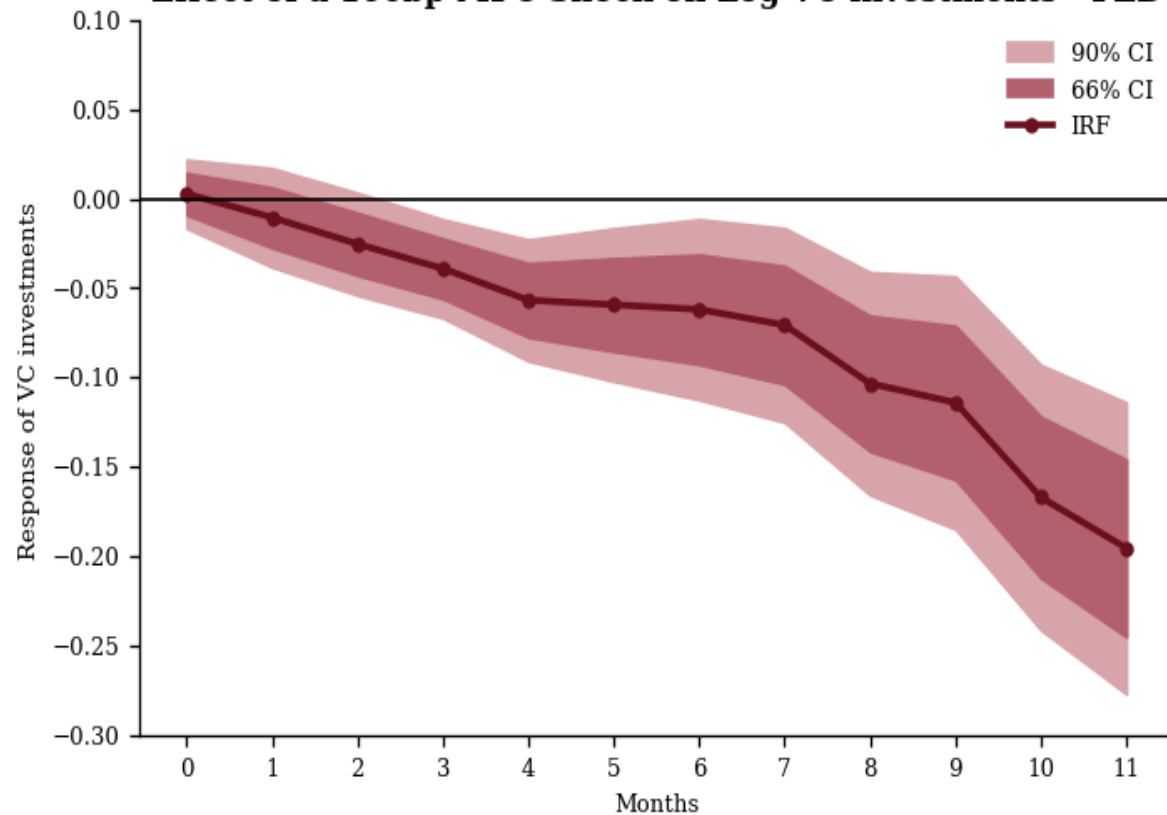
Sample: Monthly data, 1/2012 – 12/2024.

Main results: VC investment is affected by US monetary policy, but not by BOI rates

Effect of a 100bp MPC Shock on Log VC investments - BOI



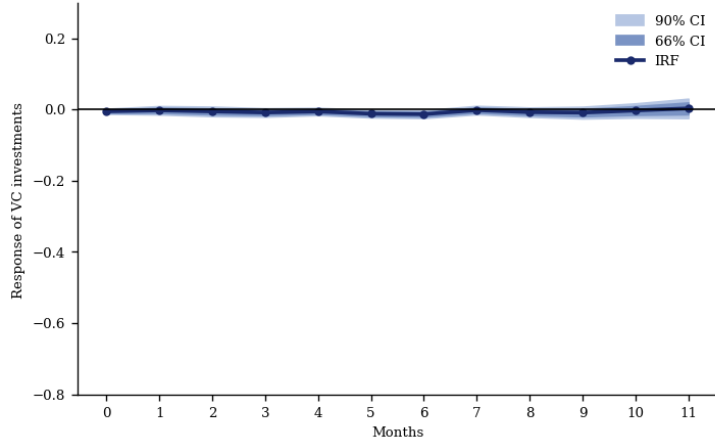
Effect of a 100bp MPC Shock on Log VC investments - FED



The effect on later rounds of fundraising is stronger

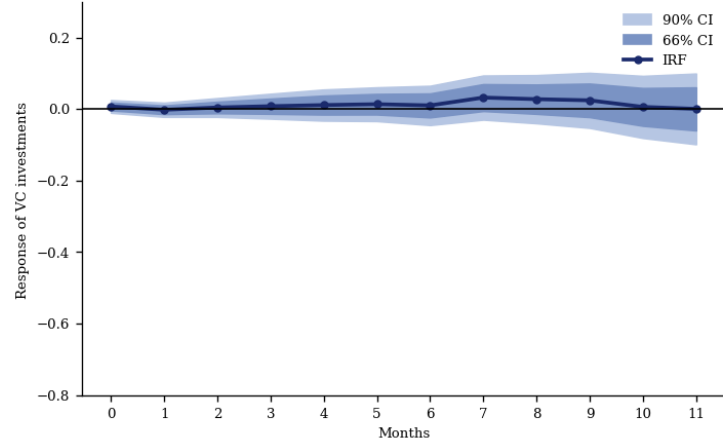
Early

Effect of a 100bp MPC Shock on Log *Early* VC investments - BOI



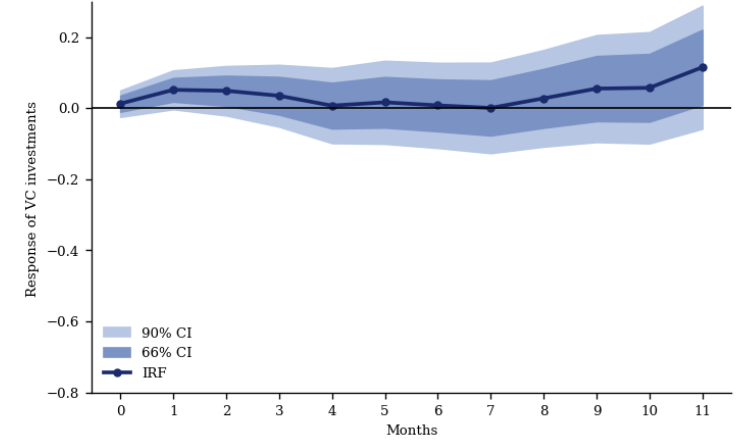
Mid

Effect of a 100bp MPC Shock on Log *MID* VC investments - BOI

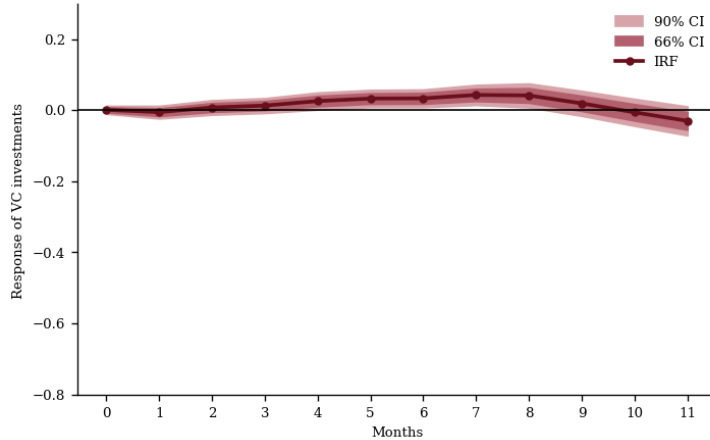


Late

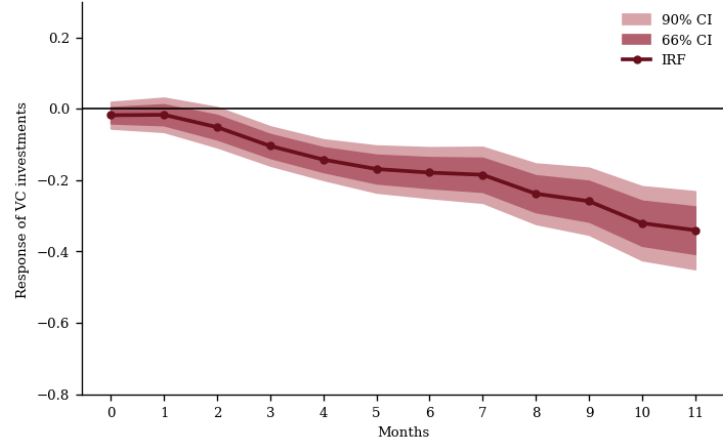
Effect of a 100bp MPC Shock on Log *LATE* VC investments - BOI



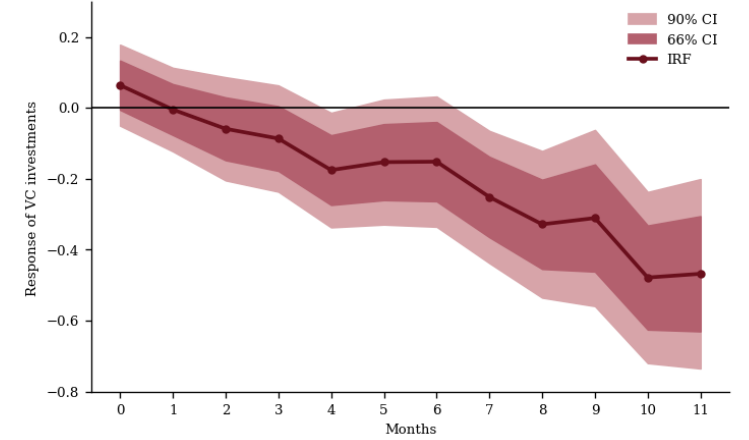
Effect of a 100bp MPC Shock on Log *Early* VC investments - FED



Effect of a 100bp MPC Shock on Log *MID* VC investments - FED



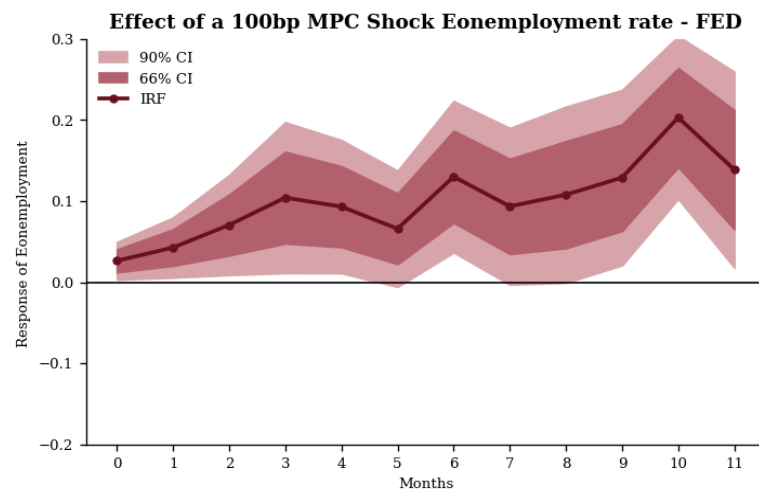
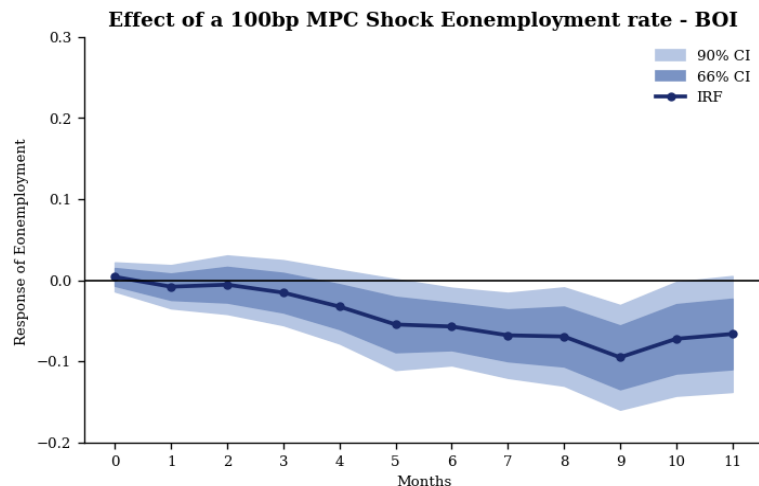
Effect of a 100bp MPC Shock on Log *LATE* VC investments - FED



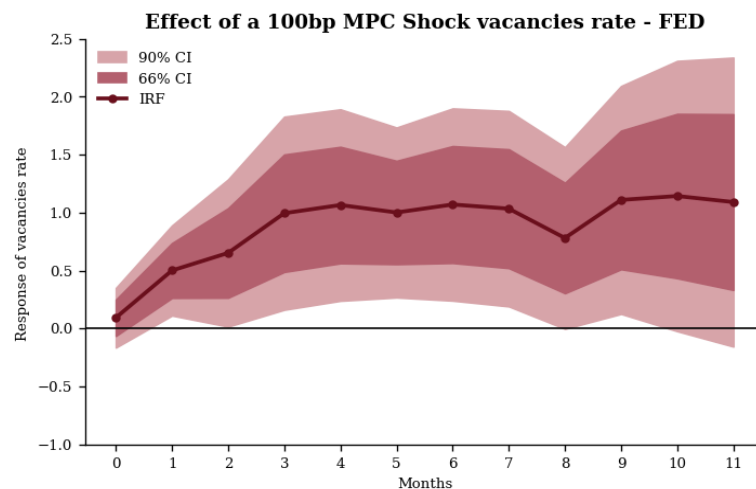
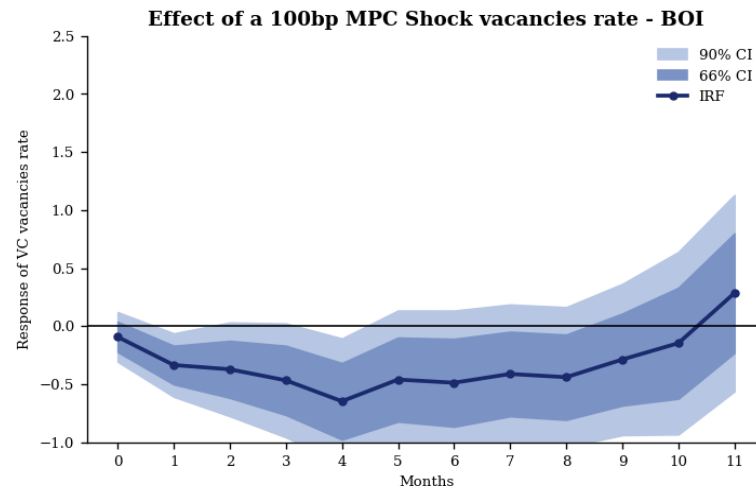
Does domestic monetary policy affect the high-tech sector activity?

BOI policy is important for hi-tech employment and market valuation

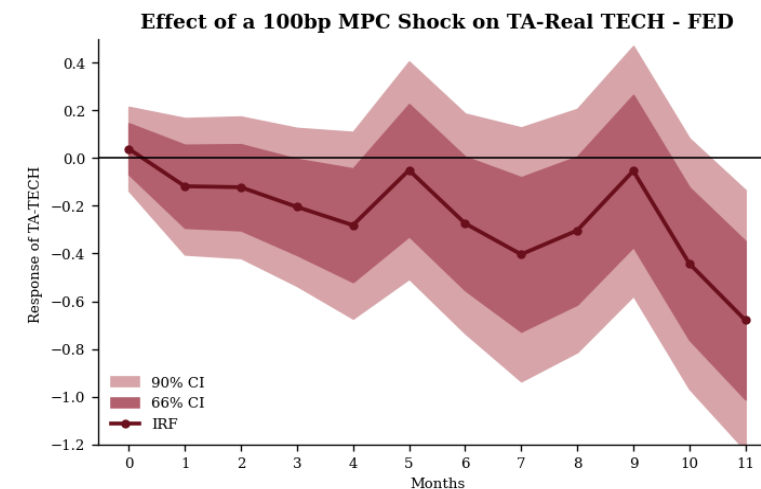
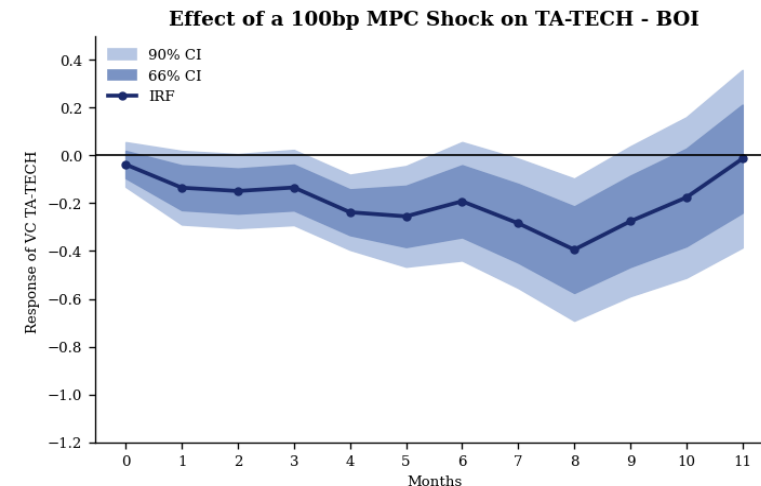
Hi-tech Employment



Hi-tech vacancies



TA-TECH





What is the mechanism?

Second step: Identifying the mechanism

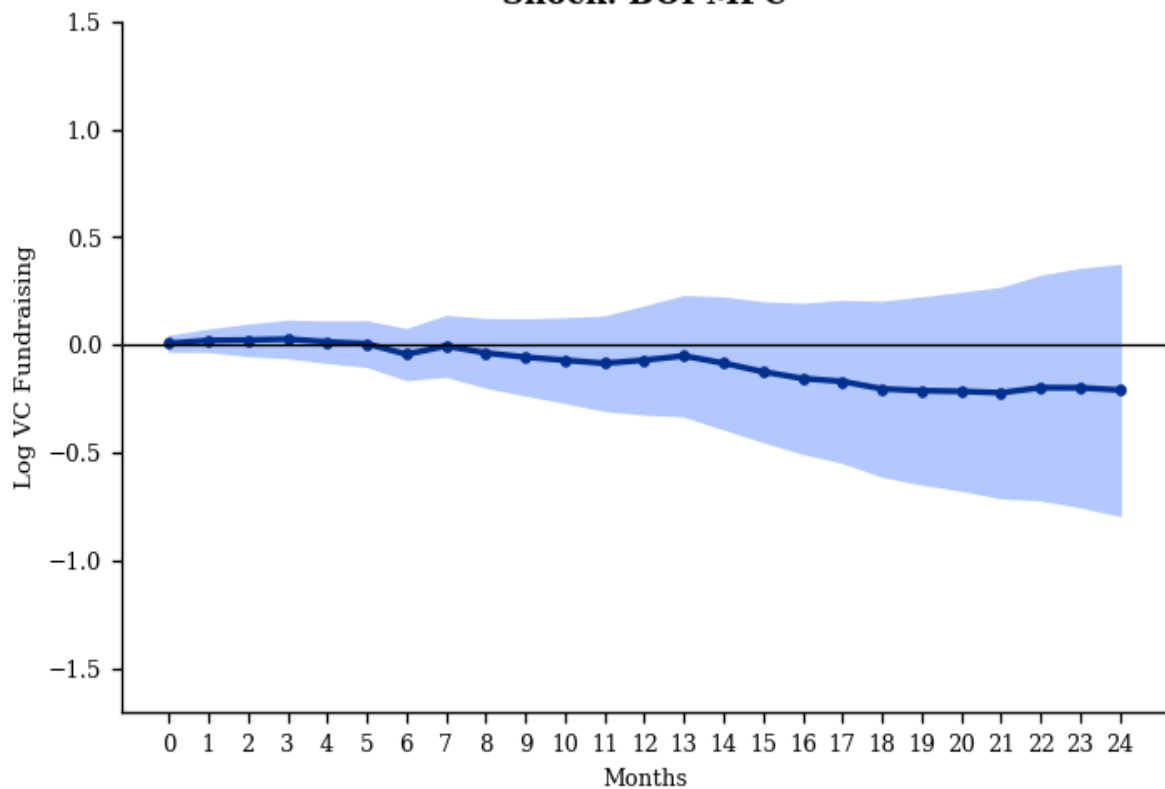
We hypothesize the US equity market serves as a key channel for the transmission of US monetary policy shocks to VC investment.

We examine the hypothesis in two ways:

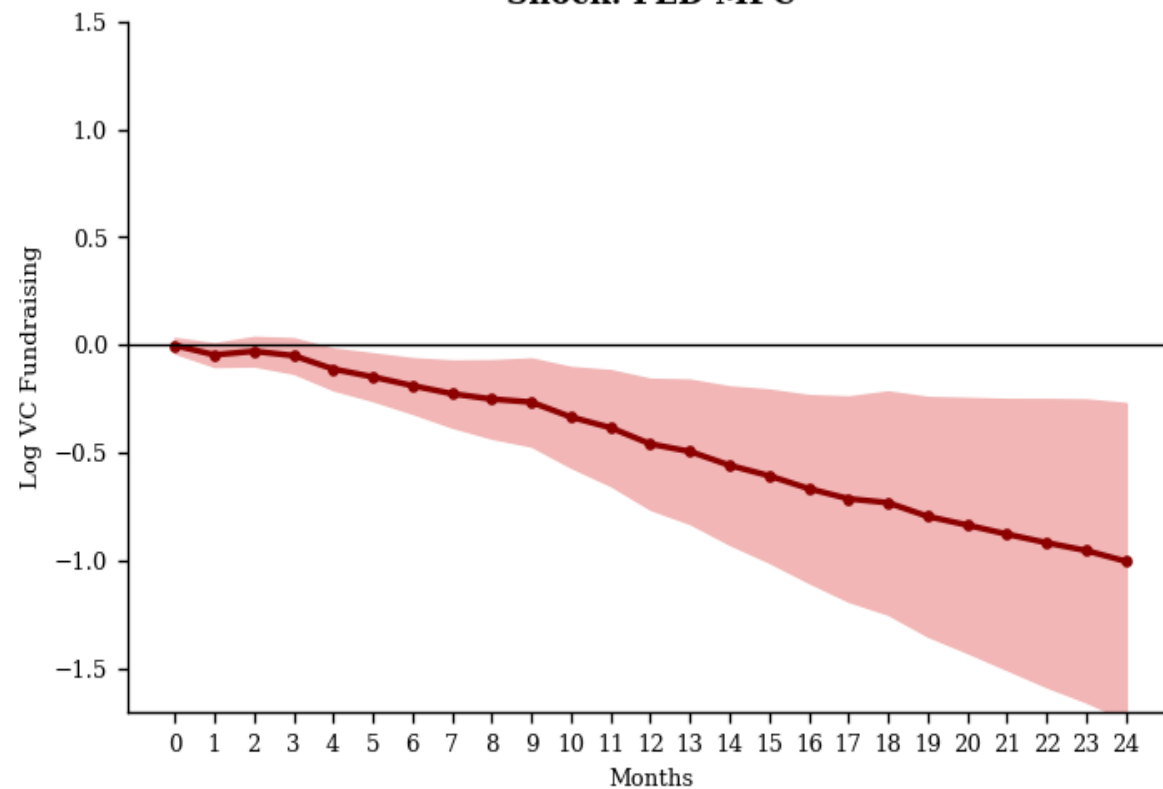
1. We estimate a 5 variable VAR: US monetary shocks, BOI monetary shocks, $dl(\text{NASDAQ})$, $dl(\text{DOL/ILS})$, and VC funding. We identify structural shocks using Cholesky decomposition.
2. We implement the baseline LP, differentiating between interest rate adjustments accompanied by upward or downward shifts in the NASDAQ index.

VAR Results: VC responds to US shocks

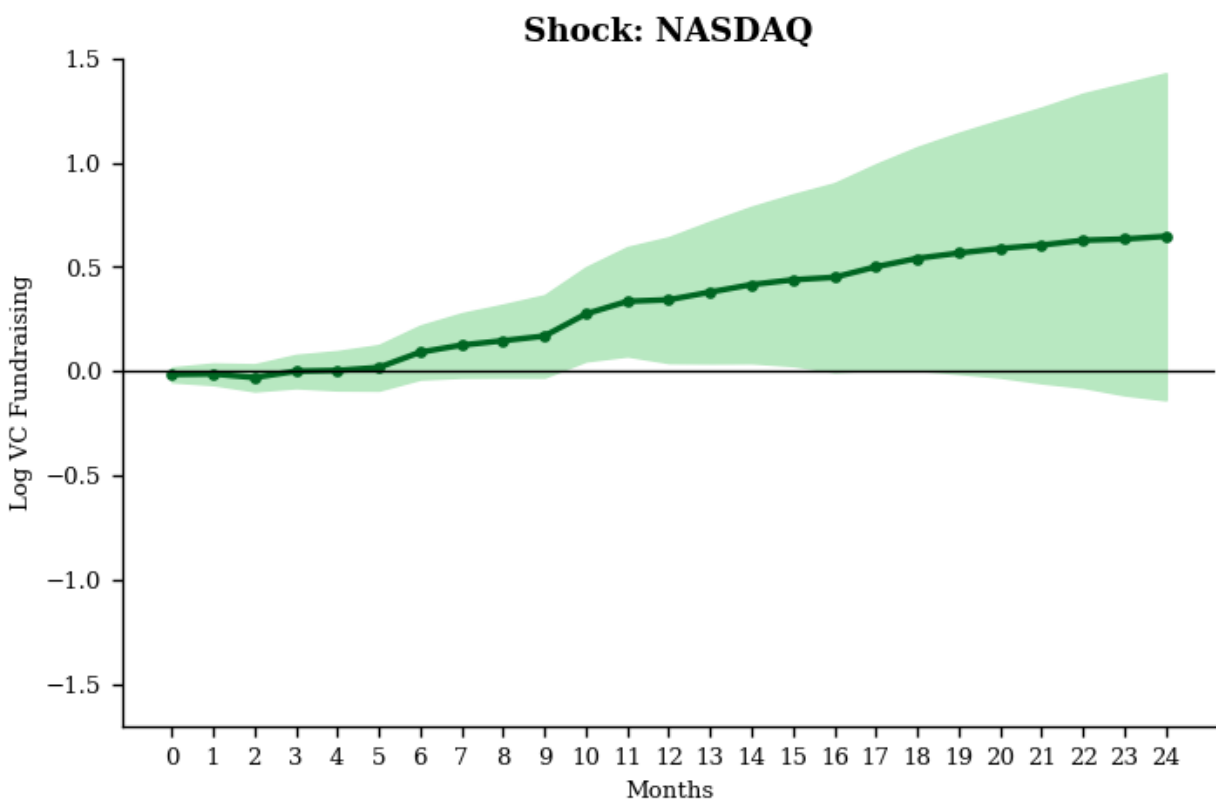
Shock: BOI MPC



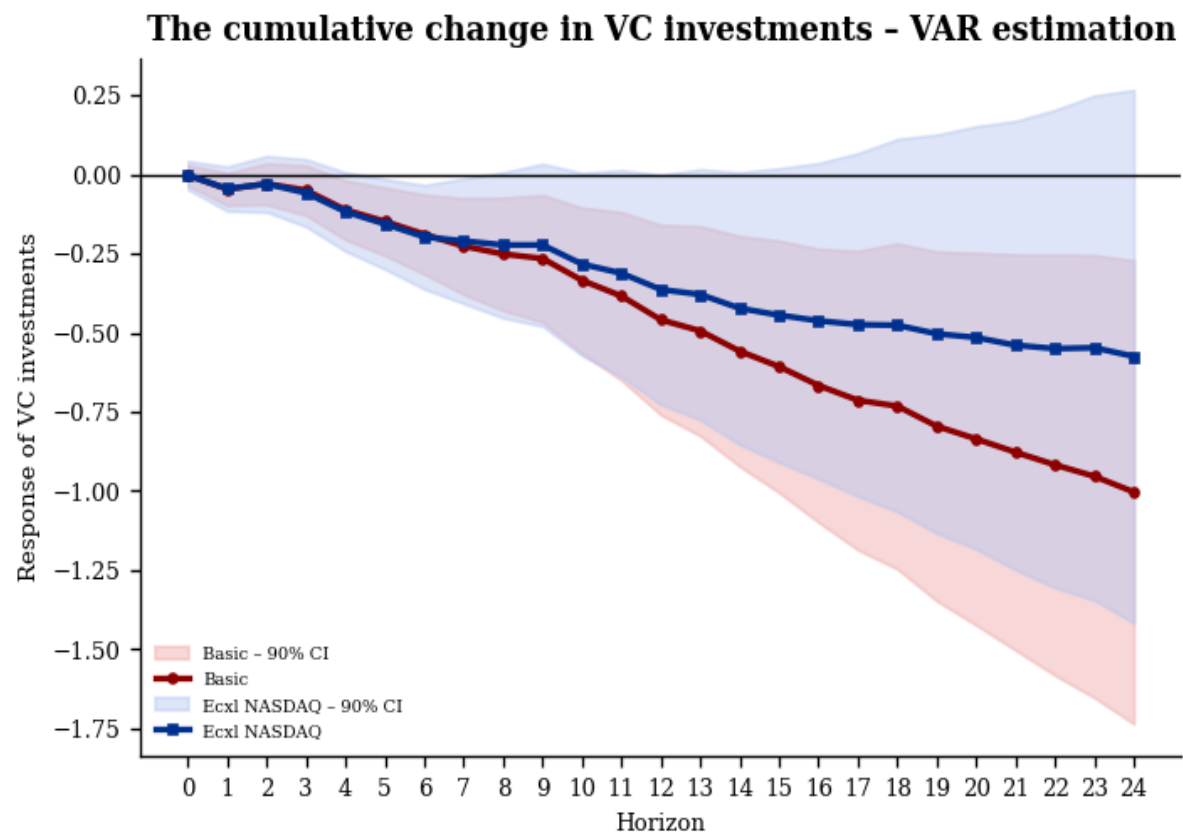
Shock: FED MPC



VAR Results: VC responds to NASDAQ



What if we shut this channel?

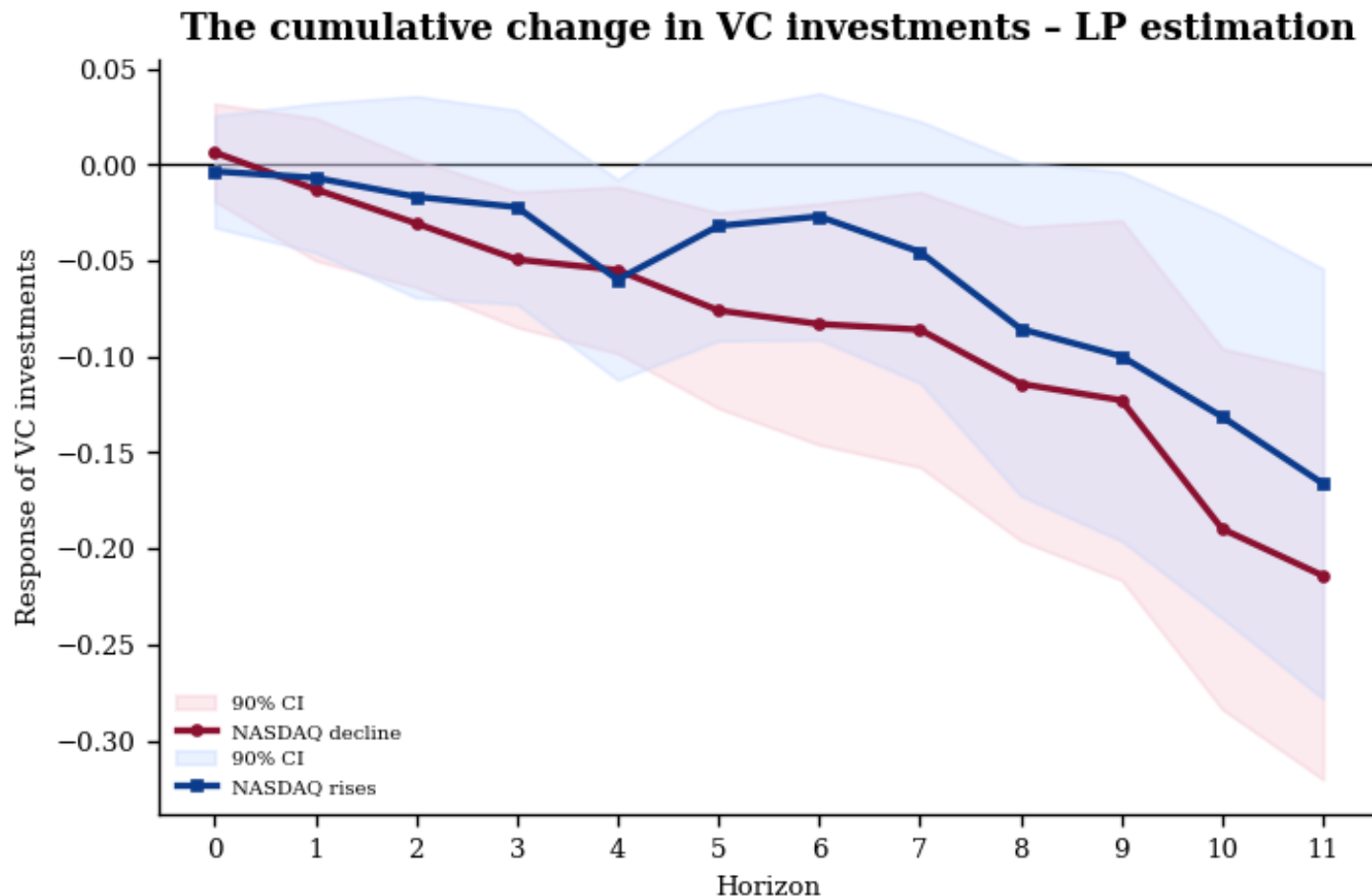


Shutting off the transmission of changes in the NASDAQ index (due to monetary shocks) to VC investment mitigates the effect of US monetary tightening.

LP estimation with NASDAQ Conditioning

When NASDAQ rises with monetary tightening (**blue line**), the impact on VC activity is smaller and less statistically significant.

Conversely, when tighter monetary policy coincides with a NASDAQ decline (**red line**), the effect on VC is stronger.





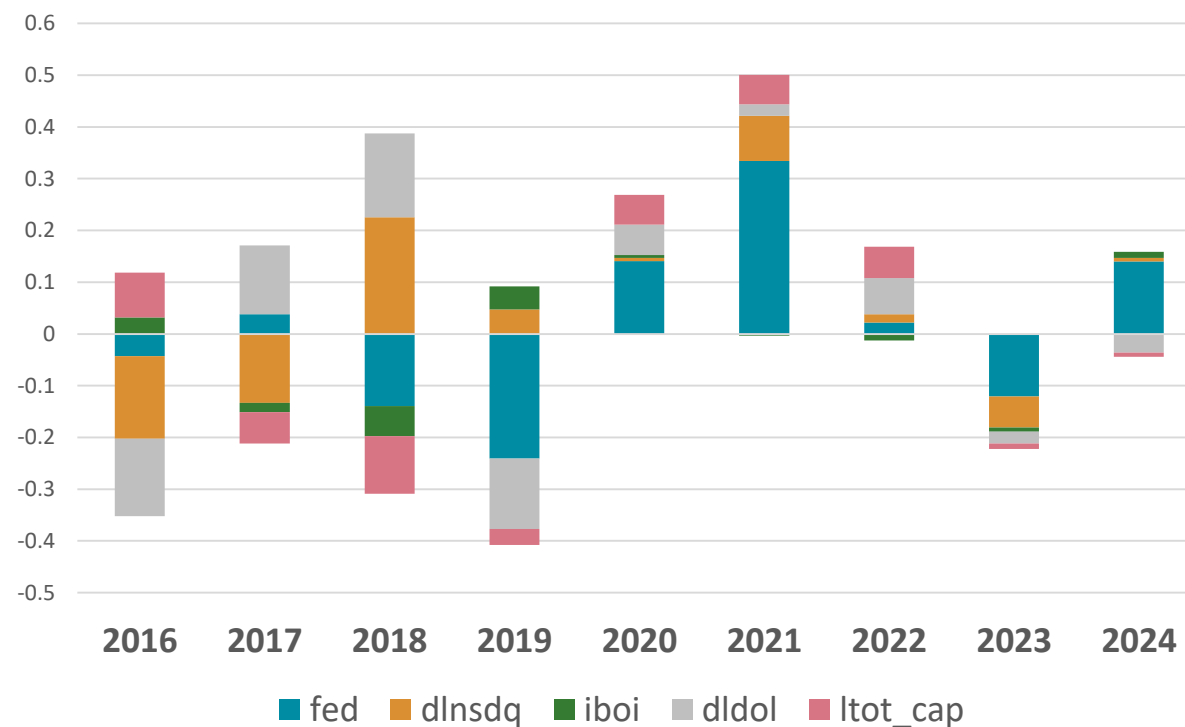
Thoughts about the Mechanism: Why Do VC Investments Respond to NASDAQ Shocks?

- **Rising equity-market indicates better prospects for global (high-tech) activity and export opportunities.**
- **IPO and M&A activity is highly sensitive to equity-market conditions.**
 - Market downturns sharply reduce the likelihood of exits.
- **Equity-market declines restrict the supply of capital to private firms via Wealth Effect.**
 - Falling financial-asset values reduce the available capital of investors.
- **VC valuations often track public-market multiples.**
 - Declines in the NASDAQ reduce comparable public-company multiples.

Historical Decomposition

- The evolution of VC is the sum of historical shocks to the factors analyzed.
- Fed shocks have a major contribution to VC flows – negative in 2023, and positive in 2024.
- (Exog.) shocks to the NASDAQ index contributed to VC funding in early years.

The contribution of various shocks to the evolution of VC



Summing Up

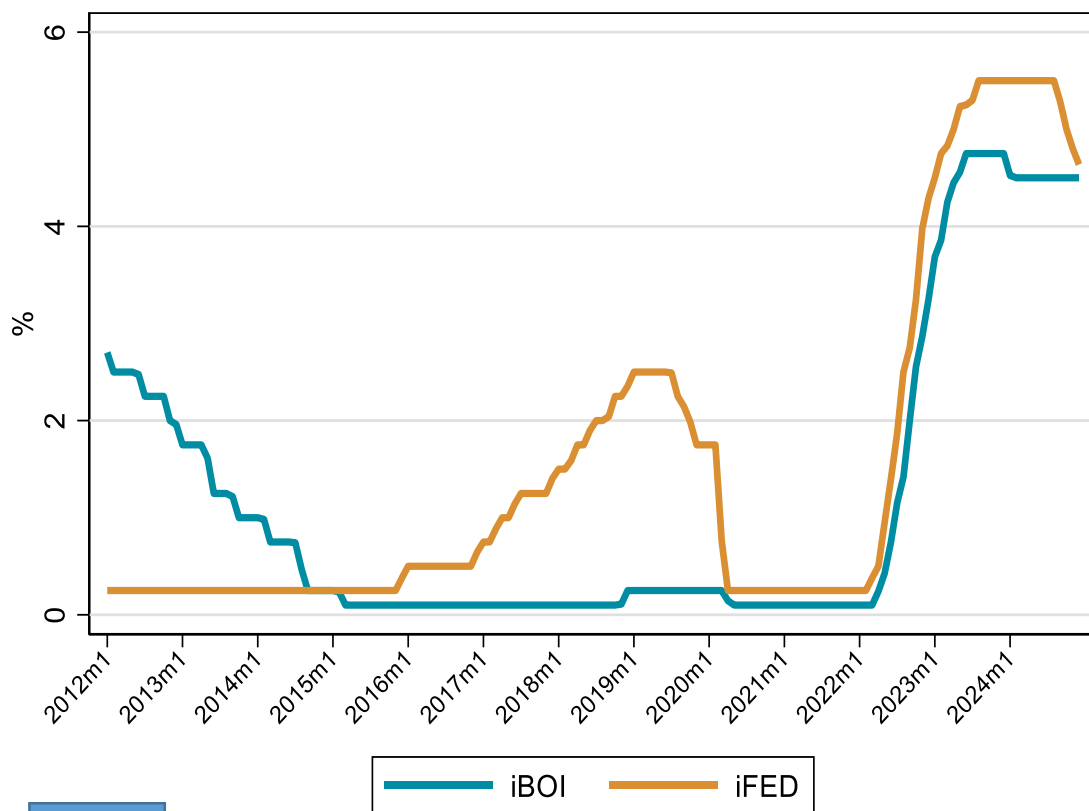
- VC investment in high-tech start-ups declines in response to tightening US monetary policy, but is not affected by domestic monetary policy.
- In contrast, local activity of the high-tech sector does depends on domestic monetary policy.
- We find support for the hypothesis that one of the channels for this effect is via the US asset market (NSDQ).



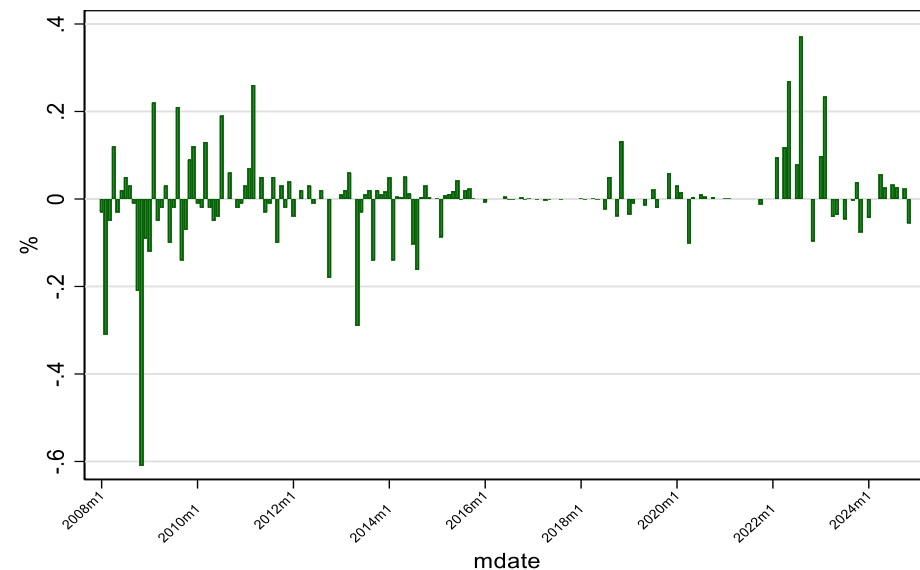
Thank you

Monetary policy shocks

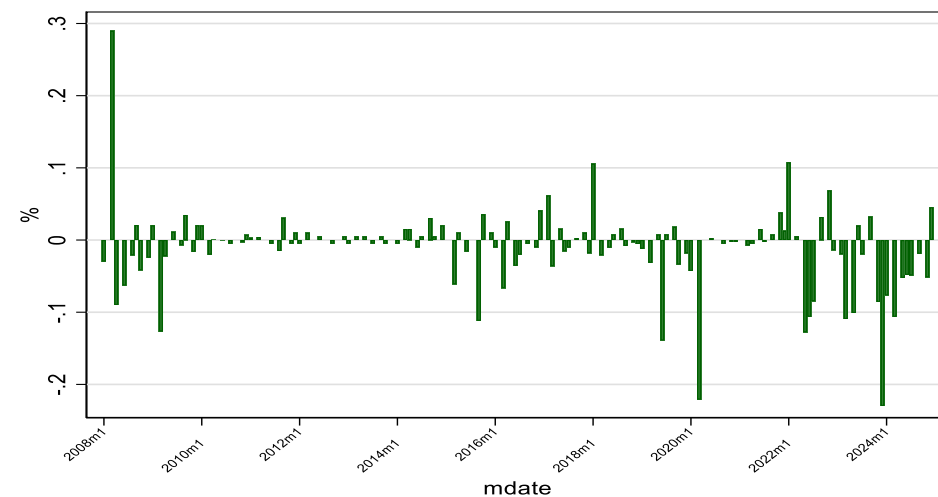
BOI and Fed Rates, 2012-2024



Fed – 1 year T-bills

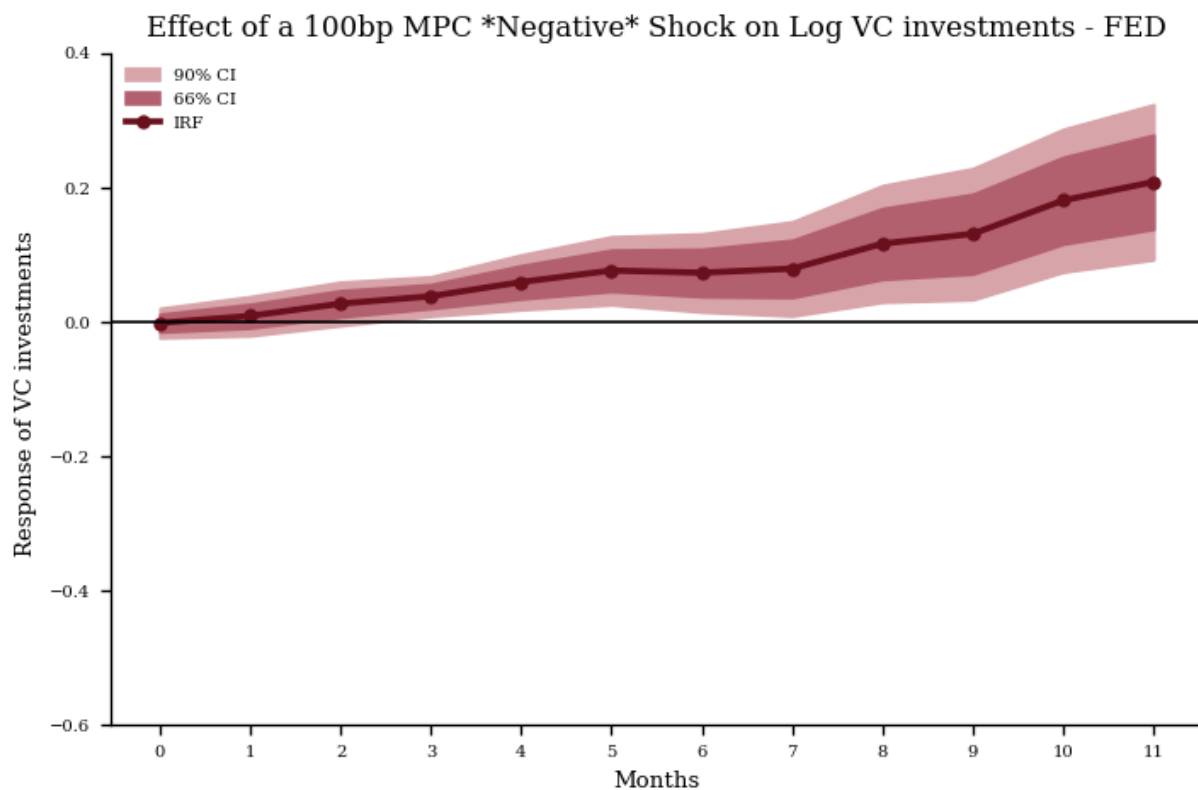


Bank of Israel – 1 year Telbor



Tightening has a stronger effect than accommodating

Negative



Positive

