The Impact of Monetary Policy in Venture Capital

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Abstract

We provide the first causal evidence on the impacts of monetary policy in venture capital (VC) markets. Using an identification strategy that combines high-frequency monetary policy shocks (MPS) with granular data on VC deals, we show that a contractionary MPS reduces the volume and number of VC deals, as well as the number of general partners (GPs) involved in a VC deal. We find that these reductions are most pronounced for firms in the seed and early financing stages, which have long exit horizons and, as a result, may experience sharper valuation declines compared to those of later-stage firms in response to contractionary shocks. We also establish that deals associated with both recently launched and established funds are sensitive to these shocks. However, while contractionary MPS lead recently launched funds to reduce early-stage financing deals, they significantly accelerate exits (mergers and pre-IPOs). Our findings suggest that monetary policy plays a unique role in VC markets by shaping the disinvestment cycle of VC funds.

Keywords: investment, monetary policy, venture capital.

JEL Classification: D22, G11, G24, G32.

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1. Introduction

Macroeconomic conditions play a significant role in shaping venture capital (VC, henceforth) markets.[1] These conditions influence both the availability of capital and the risk appetite of investors, making venture capital particularly sensitive to shifts in the broader economy. For instance, higher interest rates can have a significant impact on VC investments by increasing the cost of capital, altering risk-return expectations, and affecting the broader economic environment in which startups operate. Indeed, Figure 1 shows a recent drop in the number of VC deals, which coincides with the recent U.S. monetary policy tightening cycle that started in 2022. Despite the large body of literature on VC-macroeconomic condition interactions, there is no comprehensive empirical evidence on the causal impacts of monetary policy in venture capital.

We provide the first causal evidence on the impacts of monetary policy in VC markets. We posit that VC deals in the seed and early stages are the most sensitive to contractionary monetary policy shocks. Firms with longer cash flow durations (i.e., those expecting significant revenues or profits in the distant future) are more sensitive to changes in the discount rate. When monetary policy tightens, the discount rate increases, reducing the present value of future cash flows more significantly for firms with longer durations. For example, a startup may expect cash flows to materialize 5, 10, or more years into the future. A higher discount rate decreases the value of those future cash flows, potentially leading to lower valuations, and reduced investment attractiveness. Consistent with our hypothesis, we find heterogeneous impacts on the number of investments, the deal volume size, and on the number of general partners (GPs) over the deal financing stage.

A fundamental challenge in studying the effect of monetary policy across financing stages is the lack of deal-level data. To overcome this, we collect granular data on VC deals that contain information on the stage of VC financing, the volume of the deal, the GP associated with each deal, and the industry of the firm receiving the investment. Following Preqin's classification, we define the following financing stages, along with a debt stage: Seed (seed, angel, grant),

[1] See, for example, Gompers, Lerner, et al. (1998), Gompers and Lerner (2000), Kaplan and Schoar (2005), Gompers, Kaplan, and Mukharlyamov (2016), and Robinson and Sensoy (2016)

Early Stage (ES, Series A), Middle Stage (MS, Series B), Late Stage (LS, Series C–Series L, add-ons, growth capital/expansion), Exit (merger, PIPE, pre-IPO), and Venture Debt (VD). This detailed dataset allows us to construct a long panel of 30,805 unique firms from 1990 to 2023, while also obtaining information on the stage of each firm.

Another central challenge in estimating the impact of interest rates on VC markets is that monetary policy is endogenous to the economy. We address this by employing an identification strategy that uses high-frequency monetary policy shocks (MPS), measured by the changes of Federal funds rate futures contracts in the 30-minute window around FOMC announcements. The identifying assumption is that all public information is already incorporated into the prices at the beginning of the narrow window and therefore contains no other news that affect interest rate expectations. We build on Bauer and Swanson (2023) to refine our series of monetary policy shocks, which improves the relevance of monetary policy surprises by substantially expanding the set of monetary policy announcements. They also address concerns about the exogeneity of the shocks by removing components of monetary policy surprises that are correlated with economic and financial data.[2]

We begin by showing that a contractionary monetary policy shock significantly reduces both the volume and the number of VC deals. In response to a 25 bps contractionary monetary policy shock, the volume of VC deals decreases by 12.47% relative to the mean. The results for the number of investments (deals) are consistent with our previous findings regarding deal financing size. Specifically, in response to the same contractionary shock, the number of investments decreases by 13.54% relative to the mean. Notably, the decline peaks one quarter after the shock and gradually dissipates over the following year. These magnitudes are greater than the reduction in traditional investment in physical assets such as capital expenditures, which reduces by 5-6% in response to a 25 bps contractionary shock, underscoring the important role that monetary policy plays in VC markets.

We find that this effect is observed across most industries, with a more pronounced impact in real estate and financial services. This likely happens because these sectors are typically

[2]See subsection 3.2 for details on the construction of the monetary policy shocks.

interest-rate sensitive. For instance, in the real estate industry, higher interest rates increase mortgage and commercial loan costs, reducing property demand and investment. In the financial sector, fintech firms can face reduced credit demand and higher funding costs in response to higher rates, thereby affecting their profitability.

We next establish significant heterogeneous responses of VC investment across financing stages. We find that the drop in venture capital (VC) investment volume for seed-stage firms is nearly fourteen times larger than that for late-stage firms following a contractionary shock. The effect on the number of investments is even more pronounced: the reduction for seed-stage firms is almost sixteen times larger than that for late-stage firms. This is consistent with early- and seed-stage firms having long exit horizons. As a result, in response to higher rates, their valuations may drop more sharply than those of later-stage firms, making them less attractive to sellers and thereby reducing the chances of the deal closing. It also underscores the volatility of smaller deals in securing funding and highlights the difficulties of seed-stage companies navigating their early years with caution.

We continue to show that the drop in VC investment in response to contractionary monetary policy shocks is concentrated in firms that have recently received their first investment. Intuitively, the idea is that investors have less information about these firms because this is their first investment round. Therefore, when deciding whether to cut VC investment, investors are more likely to reduce funding for firms that have recently received their first investment, compared to those that received it "a while ago". For example, consider two firms: Firm A, which has recently received its first investment, and Firm B, which received its first investment "a while ago". Given that investors likely have more information about Firm B, the investment directed to this firm should be less sensitive to contractionary monetary policy shocks. Consistent with this reasoning, we find that in response to a 25 bps contractionary monetary policy shock, the volume of VC investments decreases by 27.27% relative to the mean for firms that have recently received their first investment. For firms that received their first investment a longer time ago, the drop is 13.89% and marginally statistically significant (at 10%). These results align with our previous findings that the drop in

VC investment is most pronounced for deals at the early and seed stages.

To investigate the mechanisms driving our results, we study how recently launched and established funds react differently to monetary policy. To do this, we construct a variable that measures the time between the deal date and the date on which the investing fund completed its fundraising. The rationale is that funds with a smaller time gap are newly raised (i.e., less mature). We find that deals associated with both recently launched and established funds are sensitive to contractionary monetary policy shocks, and this effect is again concentrated in early-stage financing deals. We also document that while contractionary monetary policy shocks lead recently launched funds to reduce early-stage financing deals, they accelerate exits. This likely happens because recently launched funds may want to increase liquidity, demonstrate realized returns, and enhance their credibility in the market during these adverse conditions, which are essential factors when raising capital for subsequent funds. These funds may also choose to capitalize on actual market conditions rather than risk an uncertain future exit, possibly further deteriorated by the increase in interest rates. These findings suggest that monetary policy significantly impacts the disinvestment cycle of VC funds.

We conclude our analysis by studying the effect of monetary policy on the number of GPs in each deal. We uncover that in response to a 25 bps contractionary shock, the number of GPs in VC deals reduces by 12.6% relative to the mean. This effect remains significant one year after the shock, smoothly dissipating after six quarters. We also show that deals at the seed stage are the most sensitive to these shocks, consistent with our previous findings. This result is important as a reduction in the number of GPs involved in VC deals could limit the availability of funding, expertise, and strategic guidance for startups, potentially reducing innovation and slowing economic growth.

The remainder of the paper proceeds as follows. In Section 2, we discuss the related literarture. In Section 3, we describe the data. In Section 4, we present the empirical strategy and main results. In Section 5, we study the role of a fund's age in the transmission of monetary policy. Section 6 documents the impact of monetary policy on GPs. Section 7 concludes.

2. Related Literature

Our paper contributes to several strands of the corporate finance, monetary policy and private equity (PE) literature. Many empirical and theoretical studies have studied how monetary policy transmit to firm investment (Gertler and Gilchrist 1994; Ottonello and Winberry 2020; Cloyne et al. 2023; Jungherr et al. 2024; Perez-Orive, Timmer, and Ghote 2024; Beyhaghi et al. 2024; Almeida et al. 2024). None of these papers studies the effect of monetary policy on the VC markets. We show that contractionary shocks reduce both the number and volume of VC deals and this decline in VC investment is heterogeneous across financing stages, with the effects being concentrated among firms at earlier stages.

In a recent study, Ma and Zimmermann (2023) use aggregate VC investment as a measure of innovation to document that monetary policy may affect the productive capacity of the economy in the longer term. In contrast, we leverage granular VC deal-level data combined with high-frequency monetary policy shocks to provide the first comprehensive empirical evidence on how monetary policy influences VC markets. We also document heterogeneous effects across financing stages, industries, and types of funds—an aspect not addressed by previous literature.

Döttling and Ratnovski (2023) find that intangible investment responds less to monetary policy than tangible investment. Similarly, Caggese and Pérez-Orive (2022) show that lower interest rates are less stimulating for high-intangible firms compared to high-tangible firms. These papers only focus on public firms. We use granular VC deal-level data to show that VC deals at the seed and early stages are the most sensitive to monetary policy. Contrary to previous literature, our findings show that monetary policy can significantly affect firms' innovation and, potentially, long-term growth.

We also align with key papers in the private equity (PE) literature that emphasize the role of macroeconomic conditions in the industry (Gompers, Lerner, et al. 1998; Gompers and Lerner 2000; Kaplan and Schoar 2005; Gompers, Kaplan, and Mukharlyamov 2016; Robinson and Sensoy 2016). These studies focus on understanding market liquidity and its relationship with performance. Closely related to our work, Robinson and Sensoy (2016)

identify a procyclical systematic component in capital calls for LPs. We examine the specific role of monetary policy and employ an identification strategy that isolates the real effects of interest rates on VC deals. Using deal-level data, we also identify specific sectors and company financing stages that are more sensitive to macroeconomic conditions. This approach captures nuances that aggregate-level studies often overlook, allowing for a more precise assessment of which sectors and companies are most affected. Notably, our findings indicate that not all deals, sectors, and companies experience the same level of impact. Instead, early-stage deals are the most affected by contractionary monetary policy shocks.

3. Data

We use three main data sources: Preqin, FRED, and the monetary policy shocks from Bauer and Swanson (2023). The first data set provides deal-level information on VC investments, the second contains country-level macroeconomic variables, and the third offers information on monetary policy shocks. Our baseline sample covers the years 1990 to 2023 and includes 30,805 unique firms. Table 1 shows that the total number of deals in our sample is 103,155, with a total volume of USD 868,114.3 million. The average number of deals per year is 882, and the average deal volume is USD 15.1 million. Using Preqin data has two main advantages: first, we have the exact date of each deal, which allows us to construct a long panel for studying the effect of monetary policy shocks; second, Preqin provides comprehensive deal-level information, such as the stage of VC financing, the deal volume, and the industry of the firm receiving the investment.

3.1 Macroeconomic Variables

The main source is FRED. We use the following macroeconomic variables: CPI (Consumer Price Index), Employment Ratio (Employment-Population Ratio), Industrial Production (Industrial Production Index), GDP Growth (Change in Real Gross Domestic Product), and Excess Bond Premium (Excess bond premium of Gilchrist and Zakrajšek (2012)).

3.2 Measuring Monetary Policy Shocks

Given that monetary policy is endogenous to macroeconomic conditions (e.g., the central bank raises interest rates in response to inflation), we use high-frequency identification to extract monetary policy shocks. It is crucial to use "pure" monetary policy shocks to identify the causal effects of monetary policy on VC investment because these shocks represent unexpected or exogenous changes in monetary policy, untainted by current or anticipated economic conditions.

The high-frequency approach measures the surprise element of monetary policy by evaluating high-frequency interest rate changes around monetary policy announcements. In particular, the surprise component is constructed by price changes of Federal funds rate futures contracts in the 30-minute window around FOMC announcements. The identifying assumption is that all public information is already incorporated into the prices at the beginning of the narrow window and therefore contains no other news that affect interest rate expectations.

However, as recent studies have shown, this methodology might capture the "information effect" of monetary policy, which could bring biases in the estimation of monetary policy transmission (Nakamura and Steinsson 2018). The idea is, for example, an unexpected monetary easing might lead to pessimism among the market participants about economic fundamentals. As a result, central banks could potentially convey information of their perception of the economic state to the investors, through various communication tools.

Therefore, in our main analysis we use the monetary policy shocks from Bauer and Swanson (2023). The MPS data are based on the responses of the first four quarterly Eurodollar futures contracts. Following the literature, we aggregate these high-frequency shocks to a quarterly frequency in order to merge them with our deal-level data and macro controls (see Subsection 3.1). Compared to conventional MPS measures, Bauer and Swanson (2023) improve the relevance of monetary policy surprises by substantially expanding the set of monetary policy announcements. In addition to Federal Open Market Committee (FOMC) announcements, they include press conferences, speeches, and testimonies by the Federal Reserve chair. They also address concerns about the exogeneity of the shocks by removing the component of the monetary policy surprises that is

correlated with economic and financial data (nonfarm payrolls surprise, employment growth, yield curve slope, S&P 500, commodity prices, and treasury skewness).

4. Empirical Strategy and Main Results

This section presents the empirical strategy we employ, followed by the main results. First, we examine how the number of VC investments and deal volume respond to monetary policy shocks. Next, we investigate heterogeneous responses across financing stages and industries. We analyze the heterogeneous responses of firms that received their first VC investment more recently versus those that received it earlier. Finally, we answer which transmission channel of the monetary policy shock is acting, selectiveness or liquidity constraints.

4.1 VC investment Response

4.1.1 Average Response

We estimate the impact of monetary policy shocks on VC investment using the following specification:

$$y_{i,t+h} - y_{i,t-1} = \beta_1^h \; MPS_t + \gamma_1^{h'} \; X_{t-1} + \alpha_i + \epsilon_{i,t}, \tag{1}$$

where $y_{i,t+h}$ is the outcome variable (the log of deal financing size and the log of the number of VC investments) at h quarters after the MPS at time t. MPS_t refers to the monetary policy shocks from Bauer and Swanson (2023), aggregated to the quarterly level. X_{t-1} is a vector of controls that includes the lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. α_i represents firm fixed effects, and standard errors are robust and clustered at the firm level.

Table 2 summarizes our findings. In response to a 25 bps contractionary shock, the volume of VC deals decreases by 12.47% relative to the mean. The results for the number of investments (deals) are consistent with our previous findings regarding deal financing size. Specifically, in

response to the same contractionary shock, the number of investments decreases by 13.54% relative to the mean. In Figure 2, we plot the impulse response functions (IRFs), which show that the effect persists for approximately one year after the shock.

We next estimate the effect of monetary policy shocks across industries. To do so, we follow Preqin's classification and divide our sample into ten categories: Business Services (BS), Consumer Discretionary (CD), Energy & Utilities (EU), Financial & Insurance Services (FI), Healthcare (H), Industrials (I), Information Technology (IT), Raw Materials & Natural Resources (MR), Real Estate (RE), and Telecoms & Media (TM).

Tables 3 and 4 present the results for deal financing size and the number of investments, respectively. A contractionary monetary policy shock has a strong negative effect across all industries. We also document that the real estate and financial sectors are among the industries most sensitive to monetary policy shocks. One possible explanation for this result is that these sectors are typically interest-rate sensitive. For instance, in the real estate industry, higher interest rates increase mortgage and commercial loan costs, reducing property demand and investment. In the financial sector, fintech firms can face reduced credit demand and higher funding costs in response to higher rates, thereby affecting their profitability.

4.1.2 Financing Stage

Our previous findings show that contractionary monetary policy shocks significantly reduce VC investment. In this section, we examine which financing stage experiences the most pronounced decrease in VC investment. Following Preqin's classification, we define the following financing stages, along with a debt stage: Seed (seed, angel, grant), Early-stage-ES (series A), Middle Stage-MS (series B), Late-stage-LS (series C- series L, add on, growth capital/expansion), Exit (merger, PIPE, pre-IPO), and Venture Debt (VD). We drop "secondary stock purchase" and "unspecified round" as these are not classified as financing stages. We then estimate Equation (1) for each of these five stages.

Table 5 presents the results for deal financing size. In response to a contractionary

shock, the decrease in VC investment is significant only for firms in the earlier stages of financing. Specifically, in response to a 25 bps contractionary shock, VC investment decreases by 15.72% and 7.8% (relative to the mean) for firms in the seed and early stages, respectively. Table 6 shows that the results using the number of investments as the outcome variable align with the previous findings for deal financing size. The drop in VC investment is most pronounced for firms in the seed and early stages.

Overall, our findings support the duration channel of monetary policy. Firms with longer cash flow durations (i.e., those expecting significant revenues or profits in the distant future) are more sensitive to changes in the discount rate. When monetary policy tightens, the discount rate increases, reducing the present value of future cash flows more significantly for firms with longer durations. For example, a startup may expect cash flows to materialize 5, 10, or more years into the future. A higher discount rate decreases the value of those future cash flows, potentially leading to lower valuations, reduced investment attractiveness, and a higher cost of capital.

4.1.3 Number of Quarters Since First Investment

Our previous results show that the reduction in VC investment is concentrated in firms early in their financing stages. Consistent with this, we expect contractionary monetary policy shocks to reduce VC investment most significantly for firms that have recently received their first investment. The rationale is that these firms not only have longer cash flow durations, but investors also have less information about them, as this is their first investment round.[3] As a result, when deciding whether to cut VC investment, investors are more likely to reduce funding for firms that recently received their first investment, compared to those that received it "a while ago". For example, consider two firms. Firm A has recently received its first investment, while Firm B received its first investment "a while ago". Given that investors likely have more information about Firm B, the investment directed to this firm should be less sensitive to contractionary monetary policy shocks.

We implement the idea above by first creating a variable $qsfi_{i,t}$, which represents the number

[3]There is evidence that asymmetric learning could affect venture capital decisions (see Hochberg, Ljungqvist, and Vissing-Jørgensen (2014)).

of quarters since the firm's first investment. We then sort firms into terciles each quarter based on their $qsfi_{i,t}$ and estimate Equation (1) for each of these three subsamples. Tables 7 and 8 collect our findings. For both outcome variables (deal financing size and number of investments), the decline is much stronger for firms in the bottom tercile of $qsfi_{i,t}$, suggesting that contractionary monetary policy shocks reduce VC investment most significantly for firms that have recently received their first investment. For example, in response to a 25 bps contractionary monetary policy shock, the volume of VC investments decreases by 27.27% relative to the mean for firms in the bottom $qsfi_{i,t}$ group, while the reduction is 13.89% relative to the mean for firms in the mid $qsfi_{i,t}$ group.

5. The Role of Fund Life Cycle

We expand our investigation into the mechanisms underlying our results by examining whether the reduction in VC investment after contractionary monetary policy shocks is driven by liquidity constraints or selectiveness. Monetary policy shocks can cause a rearrangement in investment assets, and an expected movement is investors withdraw their funds from risky assets directing them to "safe assets" that are paying more returns. However, in the VC industry, the framework is different, the resources are in close end vehicles, funds after the fundraising process work with capital commitments and have their dry powder (using the market jargon to the capacity to invest, the funds available) guaranteed. Fund managers (GPs) call these capital commitments, requiring capital contributions to be made, when they find a good opportunity to invest. Therefore, is not possible to withdraw resources during the funds life period, and the net equity of the fund remains available, independent of the contractionary shocks. This special characteristic brings us to the question, selectivity or liquidity? Apparently, if the dry powder is guaranteed, the impact of contractionary MPS would be selectiveness, fund managers (GPs) reacting from MPS doing less deals, and being more restrictive prioritizing deals with better risk-adjusted returns.

Nonetheless, another important event happening in this market is the greater difficulty for funds to be established. The fundraising process is more difficult, with investors (LPs) adapt-

ing their decisions to invest with this new environment presented by the MPS. In other words, the reduction in this market activity would be provoked by less funds in the industry, with few newer funds, the liquidity channel. To test these channels, we investigate whether the reduction in VC investment after contractionary monetary policy shocks is driven by recently launched or more established funds. We hypothesize that less deal activity with recently launched funds are a signal that this market is facing liquidity constraints, whereas less deal activity with more established funds are likely to be a signal of selectiveness.

We estimate where the negative effect of monetary policy on VC investment is concentrated using a two-step process. First, for each deal, we calculate the difference between the date of the deal and the fund's fundraising close date ($GapDate$). For example, if a fund closed its fundraising on January 18, 2025, and a deal occurred on January 20, 2025, this variable is set to two. If no investment occurs in the next quarter, this difference remains the same as in the previous period. We then divide our sample into two groups each quarter based on the distribution of this variable. Second, for each of these groups, we estimate the impact of monetary policy shocks on VC investment separately for four financing stages: Seed (seed, angel, grant), Early Stage (Series A), Middle Stage (Series B), Late Stage (Series C–Series L, add-ons, growth capital/expansion), and Exit (merger, PIPE, pre-IPO).

Tables 9–13 present our results. We document two main findings. First, both recently launched and established funds reduce VC investment (number and volume of deals) in response to a contractionary monetary policy shock. These effects are heterogeneous and primarily concentrated in deals at early financing stages. For example, in response to a 25 bps contractionary shock, recently launched and established funds decrease the number of deals at the seed stage by 1.56% and 2.4%, respectively. However, these effects are not statistically significant for middle and late financing stages.

Second, we show that, in response to higher interest rates, recently launched funds increase the number and the volume of deals at the exit stage. This impact is economically significant: in response to a 25 bps contractionary shocks, the number and the volume of deals at the exit

stage increases by 2.91% and 4.41%, respectively. This likely happens because recently launched funds may want to increase liquidity, demonstrate realized returns, and enhance their credibility in the market during these adverse conditions, which are essential factors when raising capital for subsequent funds. These funds may also choose to capitalize on actual market conditions rather than risk an uncertain future exit, possibly further deteriorated by the increase in interest rates.

6. The Impact on GPs

Our previous results show that monetary policy significantly affects VC investments. Building on this idea, we investigate whether a contractionary monetary policy shock can reduce the number of general partners (GPs) involved in a VC deal. One possibility is that GPs face funding constraints, limiting their ability to participate in multiple deals. Another is that with fewer resources available, some GPs may choose to opt out of deals altogether or concentrate on fewer, more promising opportunities.

We collect the number of GPs in each VC deal from our sample and estimate Equation (1) using the log of the number of GPs as the outcome variable. Figure 3 displays the results. In response to a 25 bps contractionary shock, the number of GPs in VC deals reduces by 12.6% relative to the mean. This effect remains significant one year after the shock, smoothly dissipating after six quarters. This result is important as a reduction in the number of GPs involved in VC deals could limit the availability of funding, expertise, and strategic guidance for startups, potentially stifling innovation and slowing economic growth.

Next, we estimate the impact of monetary policy across industries and financing stages. Tables 14 and 15 present the findings. We find that the reduction in the number of GPs is concentrated in the business services, healthcare, information technology, and real estate industries. One possible explanation for these results is that these industries require substantial capital investment and have longer exit horizons, making them riskier under tight monetary conditions. We also show that deals at the seed stage are the most sensitive to these shocks, consistent with our previous findings.

7. Conclusion

We provide novel evidence that monetary policy significantly impacts VC markets. Using granular deal-level data on VC investment and high-frequency monetary policy shocks, we document that: (1) contractionary shocks reduce both the number and volume of VC deals; (2) this decline in VC investment is heterogeneous across financing stages, with the effects being concentrated among firms at earlier stages; (3) contractionary monetary policy shocks most significantly reduce VC investment for firms that have recently received their first investment; and (4) deals associated with both recently launched and established funds are sensitive to these shocks. However, while contractionary MPS lead recently launched funds to reduce early-stage financing deals, they significantly accelerate exits (mergers and pre-IPOs).

Contrary to previous literature, which suggests that capital constraints are the primary driver of investment slowdowns, we find that risk aversion may also play a crucial role in determining which firms face the first cuts. Our findings suggest that as investment volume declines, GPs tend to allocate capital to more established, lower-risk firms rather than seed or early-stage ventures. This study not only fills a gap in the corporate finance and private equity literature but also provides valuable insights for the Federal Reserve's conduct of monetary policy.

Figures and Tables

Table 1: Summary Statistics

		Per Quarter		
	Total	Average	Median	Std.Dev
Number of Deals	103,155	882	640	809
Deal Volume (U$MM)	868,114.3	15.1	9.7	335.9

This table presents the summary statistics for the number of deals and deal volume (in USD millions). Column (1) reports the total number of deals and the total deal volume for our full sample. Columns (2), (3), and (4) report the average, median, and standard deviation of these variables per quarter. Our sample period spans 1990 to 2023. Source: Preqin.

Table 2: Effect of MP on VC deals

	Deal Financing Size	Number of Investments
MPS	-0.0165***	-0.0229***
	(0.00346)	(0.00423)
Observations	1052841	1052841
R-squared	0.23	0.22
Macro Controls	Yes	Yes
Firm FE	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variables are Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment and Number of Investments is the log change in the number of VC deals. MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3: Industry Analysis and the Effect of MP on VC deals: Deal Financing Size

	BS	CD	EU	FI	H	I	IT	MR	RE	TE
MPS	-0.0320**	-0.0373**	-0.00444	-0.0656**	-0.0163*	-0.0665**	-0.0128**	0.0486	-0.173**	-0.00463
	(0.0145)	(0.0180)	(0.0327)	(0.0265)	(0.00933)	(0.0293)	(0.00542)	(0.0384)	(0.0720)	(0.0139)
Obs	55441	54798	18523	23538	189785	21718	477922	11464	1999	52557
R-squared	0.22	0.23	0.24	0.24	0.23	0.23	0.23	0.21	0.29	0.22
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variable is Deal Financing Size. Deal Financing size is the log change in the volume size of the VC investment. We estimate Equation 1 for each industry. We follow Preqin's classification and divide our sample into ten categories: Business Services (BS), Consumer Discretionary (CD), Energy & Utilities (EU), Financial & Insurance Services (FI), Healthcare (H), Industrials (I), Information Technology (IT), Raw Materials & Natural Resources (MR), Real Estate (RE), and Telecoms & Media (TM). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Industry Analysis and the Effect of MP on VC deals: Number of Investments

	BS	CD	EU	FI	H	I	IT	MR	RE	TE
MPS	-0.0411**	-0.0491**	-0.00500	-0.0800**	-0.0235**	-0.0798**	-0.0191***	0.0638	-0.203**	-0.0112
	(0.0176)	(0.0223)	(0.0407)	(0.0324)	(0.0115)	(0.0372)	(0.00658)	(0.0480)	(0.0882)	(0.0173)
Obs	55441	54798	18523	23538	189785	21718	477922	11464	1999	52557
R-squared	0.21	0.22	0.23	0.23	0.23	0.23	0.22	0.21	0.30	0.22
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variables is the Number of Investments. Number of Investments is the log change in the number of VC deals. We estimate Equation 1 for each industry. We follow Preqin's classification and divide our sample into ten categories: Business Services (BS), Consumer Discretionary (CD), Energy & Utilities (EU), Financial & Insurance Services (FI), Healthcare (H), Industrials (I), Information Technology (IT), Raw Materials & Natural Resources (MR), Real Estate (RE), and Telecoms & Media (TM). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Effect of MP on VC deals: Deal Financing Size

	Seed	ES	MS	LS	Exit	VD
MPS	-0.0284***	-0.0141*	0.00733	-0.00191	0.0297	0.00697
	(0.0109)	(0.00814)	(0.0108)	(0.00903)	(0.0275)	(0.0196)
Obs	114209	160671	136941	180560	13515	55733
R-squared	0.20	0.20	0.25	0.24	0.23	0.26
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variable is Deal Financing Size. Deal Financing size is the log change in the volume size of the VC investment. We estimate Equation 1 for each financing stage. We follow Preqin's classification and define the following financing stages, along with a debt stage: Seed (seed, angel, grant), Early-stage-ES (series A), Middle Stage-MS (series B), Late-stage-LS (series C- series L, add on, growth capital/expansion), Exit (merger, PIPE, pre-IPO), and Venture Debt (VD). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6: Effect of MP on VC deals: Number of Investments

	Seed	ES	MS	LS	Exit	VD
MPS	-0.0480***	-0.0160	0.00671	-0.00303	0.0346	0.00380
	(0.0153)	(0.00977)	(0.0127)	(0.0107)	(0.0325)	(0.0264)
Obs	114209	160671	136941	180560	13515	55733
R-squared	0.19	0.21	0.25	0.24	0.23	0.25
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variables is the Number of Investments. Number of Investments is the log change in the number of VC deals. We estimate Equation 1 for each financing stage. We follow Preqin's classification and define the following financing stages, along with a debt stage: Seed (seed, angel, grant), Early-stage-ES (series A), Middle Stage-MS (series B), Late-stage-LS (series C- series L, add on, growth capital/expansion), Exit (merger, PIPE, pre-IPO), and Venture Debt (VD). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Effect of MP on VC deals: Deal Financing Size

	Top qsfi	Mid qsfi	Bottom qsfi
MPS	-0.00359	-0.0131*	-0.0893***
	(0.00440)	(0.00751)	(0.0102)
Obs	284998	287732	246239
R-squared	0.26	0.26	0.21
Macro Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

This table shows the effect of monetary policy on VC investment. The dependent variable is Deal Financing Size. Deal Financing size is the log change in the volume size of the VC investment. We sort firms into terciles each quarter based on their $qsfi_{i,t}$ (see section 4) and estimate Equation (1) for each of these three subsamples. Top qsfi, Mid qsfi and Bottom qsfi are the group of firms in the top, medium and bottom tercile of the $qsfi_{i,t}$ distribution. MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 8: Effect of MP on VC deals: Number of Investments

	Top qsfi	Mid qsfi	Bottom qsfi
MPS	-0.00457	-0.0165*	-0.130***
	(0.00540)	(0.00916)	(0.0126)
Obs	284998	287732	246239
R-squared	0.25	0.26	0.21
Macro Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. The dependent variables is the Number of Investments. Number of Investments is the log change in the number of VC deals. We sort firms into terciles each quarter based on their $qsfi_{i,t}$ (see section 4) and estimate Equation (1) for each of these three subsamples. Top qsfi, Mid qsfi and Bottom qsfi are the group of firms in the top, medium and bottom tercile of the $qsfi_{i,t}$ distribution. MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 9: Effect of MP on VC deals: Seed Stage

	Deal Financing Size		Number of Investment	
	Recently launched	Established	Recently Launched	Established
MPS	-0.0756**	-0.0956	-0.0625**	-0.0962*
	(0.03165)	(0.0655)	(0.0261)	(0.0563)
Obs	40713	13357	40713	13357
R-squared	0.3081	0.3317	0.2930	0.3454
Macro Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. We estimate this regression for deals at the Seed (seed, angel, grant) financing stage. The dependent variables is Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment. Number of Investments is the log change in the number of VC deals. For each deal, we calculate the difference between the date of the deal and the fund's capitalization date ($GapDate$). We then divide our sample into two groups each quarter based on the distribution of this variable and estimate Equation (1) for each of these three subsamples. Established and recently launched are the group of deals in the top and bottom of the distribution of this variable. MPS is the monetary policy shock as in Bauer and Swanson (2023). All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock, one lag of the outcome variable and of lag of $GapDate$. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 10: Effect of MP on VC deals: Early-Stage

	Deal Financing Size		Number of Investment	
	Recently launched	Established	Recently Launched	Established
MPS	-0.0334	-0.0215	-0.0282**	-0.0159
	(0.0205)	(0.0275)	(0.0137)	(0.0181)
Obs	68695	43792	68695	43792
R-squared	0.2890	0.3704	0.2893	0.3699
Macro Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. We estimate this regression for deals at the Early-stage-ES (series A) financing stage. The dependent variables is Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment. Number of Investments is the log change in the number of VC deals. For each deal, we calculate the difference between the date of the deal and the fund's capitalization date ($GapDate$). We then divide our sample into two groups each quarter based on the distribution of this variable and estimate Equation (1) for each of these three subsamples. Established and recently launched are the group of deals in the top and bottom of the distribution of this variable. MPS is the monetary policy shock as in Bauer and Swanson (2023). All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock, one lag of the outcome variable and of lag of $GapDate$. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 11: Effect of MP on VC deals: Middle-Stage

	Deal Financing Size		Number of Investment	
	Recently launched	Established	Recently Launched	Established
MPS	0.0160	-0.0412	0.0073	-0.0254
	(0.0264)	(0.0294)	(0.0167)	(0.0190)
Obs	53309	57215	53309	57215
R-squared	0.3047	0.4231	0.3054	0.4191
Macro Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. We estimate this regression for deals at the Middle Stage-MS (series B) financing stage. The dependent variables is Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment. Number of Investments is the log change in the number of VC deals. For each deal, we calculate the difference between the date of the deal and the fund's capitalization date ($GapDate$). We then divide our sample into two groups each quarter based on the distribution of this variable and estimate Equation (1) for each of these three subsamples. Established and recently launched are the group of deals in the top and bottom of the distribution of this variable. MPS is the monetary policy shock as in Bauer and Swanson (2023). All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock, one lag of the outcome variable and of lag of $GapDate$. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 12: Effect of MP on VC deals: Late-Stage

	Deal Financing Size		Number of Investment	
	Recently launched	Established	Recently Launched	Established
MPS	-0.0312	0.0198	-0.0237	0.0133
	(0.0281)	(0.0235)	(0.0178)	(0.0149)
Obs	49606	102034	49606	102034
R-squared	0.3238	0.3082	0.3279	0.3076
Macro Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. We estimate this regression for deals at the Late-stage-LS (series C- series L, add on, growth capital/expansion) financing stage. The dependent variables is Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment. Number of Investments is the log change in the number of VC deals. For each deal, we calculate the difference between the date of the deal and the fund's capitalization date ($GapDate$). We then divide our sample into two groups each quarter based on the distribution of this variable and estimate Equation (1) for each of these three subsamples. Established and recently launched are the group of deals in the top and bottom of the distribution of this variable. MPS is the monetary policy shock as in Bauer and Swanson (2023). All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock, one lag of the outcome variable and of lag of $GapDate$. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 13: Effect of MP on VC deals: Exit

	Deal Financing Size		Number of Investment	
	Recently launched	Established	Recently Launched	Established
MPS	0.1765**	0.0905	0.1164**	0.0597
	(0.0851)	(0.1080)	(0.0540)	(0.0683)
Obs	3994	3978	3994	3978
R-squared	0.2790	0.3147	0.2799	0.3105
Macro Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

This table reports the coefficients from the regression of monetary policy shocks on VC investment. We estimate this regression for deals at the Exit (merger, PIPE, pre-IPO) financing stage. The dependent variables is Deal Financing Size and Number of Investments. Deal Financing size is the log change in the volume size of the VC investment. Number of Investments is the log change in the number of VC deals. For each deal, we calculate the difference between the date of the deal and the fund's capitalization date ($GapDate$). We then divide our sample into two groups each quarter based on the distribution of this variable and estimate Equation (1) for each of these three subsamples. Established and recently launched are the group of deals in the top and bottom of the distribution of this variable. MPS is the monetary policy shock as in Bauer and Swanson (2023). All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock, one lag of the outcome variable and of lag of $GapDate$. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 14: Industry Analysis and the Effect of MP on the Number of GPs

	BS	CD	EU	FI	H	I	IT	MR	RE	TE
MPS	-0.0821**	-0.0805	-0.0143	-0.0683	-0.0506*	-0.0590	-0.0398***	-0.0666	-0.290*	0.0136
	(0.0390)	(0.0518)	(0.101)	(0.0719)	(0.0262)	(0.0793)	(0.0149)	(0.115)	(0.163)	(0.0433)
Obs	37878	37149	11786	16307	130308	13809	340656	6792	1437	34136
R-squared	0.21	0.23	0.22	0.24	0.22	0.23	0.22	0.20	0.30	0.22
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

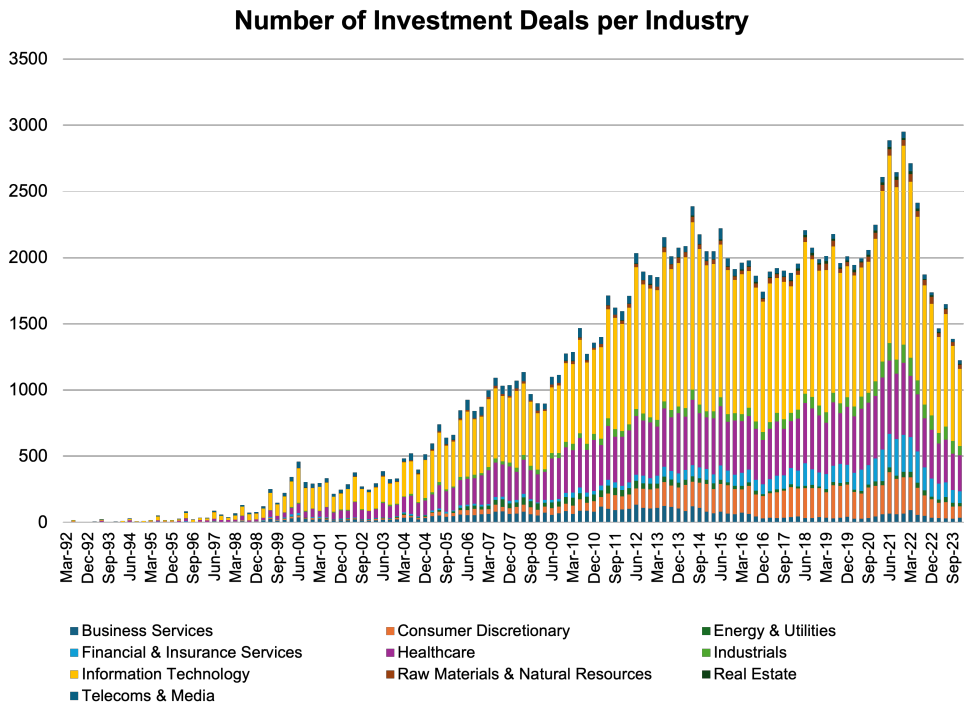
This table reports the coefficients of the regression of monetary policy shocks on the number of GPs. The dependent variables is the Number of GPs. Number of GPs is the log change in the number of GPs. We estimate Equation 1 for each industry. We follow Preqin's classification and divide our sample into ten categories: Business Services (BS), Consumer Discretionary (CD), Energy & Utilities (EU), Financial & Insurance Services (FI), Healthcare (H), Industrials (I), Information Technology (IT), Raw Materials & Natural Resources (MR), Real Estate (RE), and Telecoms & Media (TM). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 15: Effect of MP on the Number of GPs

	Seed	ES	MS	LS	Exit	VD
MPS	-0.0788***	-0.0271	0.0210	-0.00477	0.0891	0.0283
	(0.0256)	(0.0173)	(0.0256)	(0.0243)	(0.0595)	(0.0327)
Obs	98746	152388	133791	178259	12220	52700
R-squared	0.21	0.22	0.25	0.24	0.22	0.26
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the coefficients of the regression of monetary policy shocks on the number of GPs. The dependent variables is the Number of GPs. Number of GPs is the log change in the number of GPs. We estimate Equation 1 for each financing stage. We follow Preqin's classification and define the following financing stages, along with a debt stage: Seed (seed, angel, grant), Early-stage-ES (series A), Middle Stage-MS (series B), Late-stage-LS (series C- series L, add on, growth capital/expansion), Exit (merger, PIPE, pre-IPO), and Venture Debt (VD). MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this table shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. Standard errors are heteroskedasticity robust and clustered at the firm level. We report the respective standard errors in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

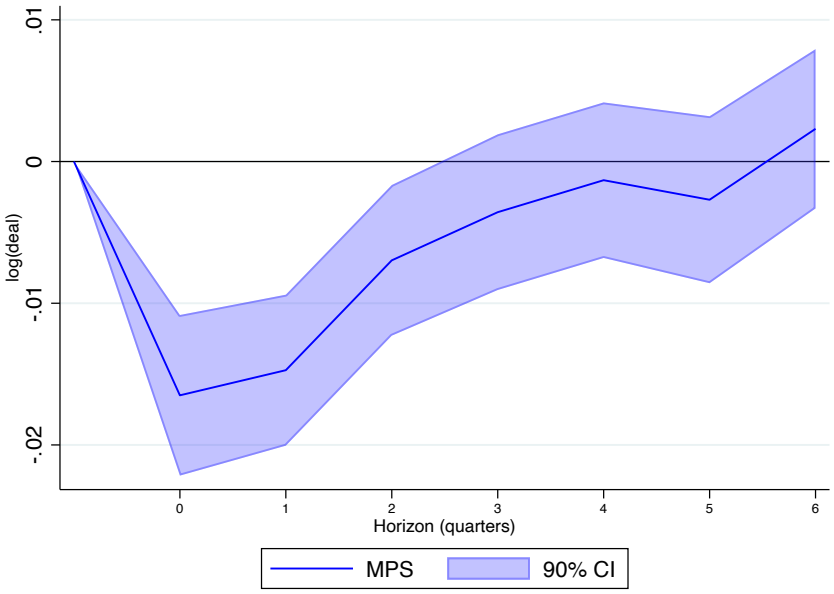
Figure 1: Number of Investments Deals per Industry



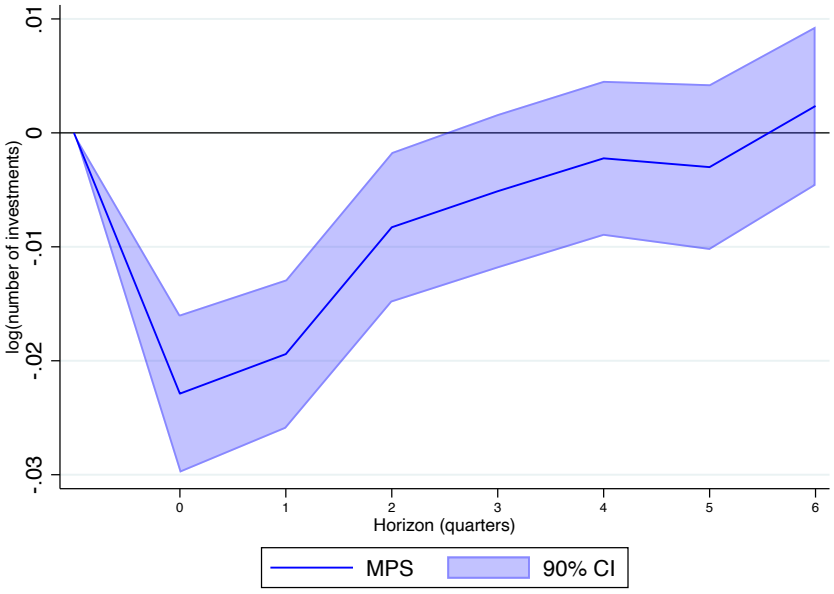
This figure shows the number of VC deals per industry at the quarterly frequency. we follow Preqin's classification and divide our sample into ten categories: Business Services (BS), Consumer Discretionary (CD), Energy & Utilities (EU), Financial & Insurance Services (FI), Healthcare (H), Industrials (I), Information Technology (IT), Raw Materials & Natural Resources (MR), Real Estate (RE), and Telecoms & Media (TM). Source: Preqin.

Figure 2: The Effect of Monetary Policy on VC Investment

(a) Deal Financing Size

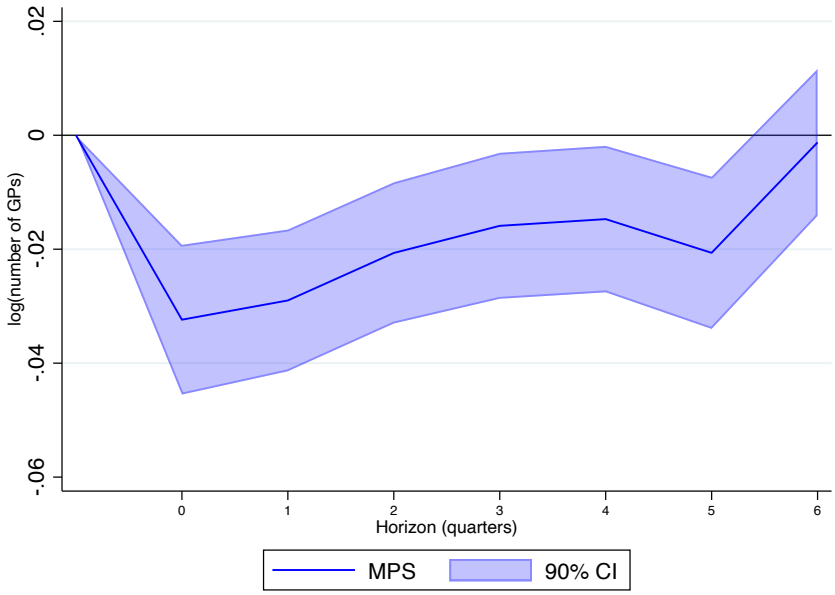


(b) Number of Investments



This figure shows the effect of monetary policy on VC investment. The dependent variables are Deal Financing Size (Panel A) and Number of Investments (Panel B). Deal Financing size is the log change in the volume size of the VC investment and Number of Investments is the log change in the number of VC deals. MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this figure shows the response of VC investment to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. The dashed line represents 90% confidence intervals. Standard errors are heteroskedasticity robust and clustered at the firm level.

Figure 3: The Effect of Monetary Policy on the Number of GPs



This figure shows the effect of monetary policy on the number of GPs. The dependent variable is Number of GPs. Number of GPs is the log change in the number of GPs. MPS is the monetary policy shock as in Bauer and Swanson (2023). Therefore, this figure shows the response of the number of GPs in VC deals to a 100 bps contractionary monetary policy shock. All regressions control for lagged employment ratio, industrial production, GDP growth, and the Excess Bond Premium. We also include one lag of the shock and the outcome variable. The dashed line represents 90% confidence intervals. Standard errors are heteroskedasticity robust and clustered at the firm level.

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