Received: 5 September 2025 | Revised: 21 January 2026 | Accepted: 5 February 2026

DOI: 10.1002/rfe.70041

ORIGINAL ARTICLE

REVIEW of FINANCIAL ECONOMICS WILEY

The effect of inflation and the failure of Silicon Valley bank on shareholder wealth

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Abstract

This study examines how the collapse of Silicon Valley Bank (SVB) and heightened inflation affected shareholders wealth in U.S. financial institutions. Using daily stock returns from February 15 to March 29, 2023, we calculate abnormal and cumulative abnormal returns to measure market reactions. Applying ordinary least squares (OLS) and difference-in-differences methods, we record a substantial reduction in shareholder wealth linked to SVB bankruptcy, exacerbated by inflationary pressures. These results highlight the systemic nature of financial shocks, where distress in individual institution can transmit broadly across markets. Our findings enhance the literature on financial institutions by shedding the light on the protective benefits of diversification diminishing during extreme adverse events. For policymakers, investors, and firms, the findings underscore the importance of monitoring systemic risk and strengthening resilience against contagion effects in periods of heightened uncertainty.

KEYWORDS

CAR, inflation, shareholder wealth, SVB collapse, U.S. banks

JEL CLASSIFICATION

C23, D53, E02, E44, G01, G14

1 | INTRODUCTION

> "Banks are very vulnerable to panic or bank runs; depositors' withdrawal may be naturally increased the panic among all other depositors to withdraw their own deposits (Geman, 2023)."
>
> [Diamond & Dybvig, 1983]

The economic scenario described above closely reflects SVB's growth and eventual collapse. Customers of SVB have made exceptional withdrawals of $4.2 billion per hour, or more than $1 million per second for 10 straight hours (on March 16), following the Federal Deposit Insurance Corporation's (FDIC) seizure of SVB on 10 March, 2023. According to Mollick and Assefa (2013), this scenario is a repeat of the 2008 Washington Mutual bank run, which was the largest bank run in modern U.S. history and had a negative impact on shareholder returns.

What factors lead to bank failures? The failure of banks can be caused by a number of factors, including inadequate risk management (Beltratti & Stulz, 2012), tax regulation (Acharya & Richardson, 2009; Laeven & Valencia, 2013), macroeconomic uncertainty (Aubuchon & Wheelock, 2010), lax corporate governance (Berger et al., 2016), and others. By evaluating the database on global systemic banking crises from 1970 to 2011, Laeven and Valencia (2013) show that one of the key causes of banking crises is insufficient regulation and supervision. Additionally, bank collapse and economic downturns are positively correlated, according to Aubuchon and Wheelock's (2010) research. Acharya and Richardson (2009) remark that risk-taking behavior is a major contributing factor to bank failure; however, Berger and Bouwman (2013) emphasize that insufficient capitalization can also cause a bank to fail.

In the United States, bank failures significantly increased after the 2008 financial crisis. The most bank failures since the savings and loan crisis of the 1980s and early 1990s occurred in 2010 with 157. The number of bank collapses has, however, progressively decreased since that time[1]. The regulatory changes that were put in place in the wake of the financial crisis with the intention of strengthening the banking industry and averting future failures could be one explanation for this reduction (Hasan et al., 2022). The Dodd-Frank Wall Street Reform and Consumer Protection Act, for instance, introduced new legislation that boosted the capital and liquidity requirements for banks and enhanced risk management practices (Le et al., 2016). The chance of bank failures has decreased as a result of these efforts, which have improved the stability and resilience of the banking industry. The drop in bank failures has also been influenced by the general improvement in the economy and the banking sector's recovery from the financial crisis.

The Fisherian theory of interest, named after (Fisher's, 1930) study, postulates that the nominal expected return on any asset is made up of the expected real interest rate and the expected rate of inflation. According to the extended Fisher hypothesis, expected and unexpected nominal returns, as well as expected and unexpected inflation rates, influence actual nominal returns (see, for example, Bodie, 1976; Peel & Pope, 1988). The foundation for the positive association between stock returns and inflation is the idea that equities are inflation hedges because they represent claims on real assets (Das et al., 2024; Geske & Roll, 1983). However, a vast body of empirical research has shown that stock returns and inflation are negatively correlated (see, for example, Adams et al., 2004; Bodie, 1976; Fama, 1981). Only a small number of research have discovered data that is in accordance with theory (see, for example, Luintel & Paudyal, 2006). The tax-augmented theory put forth by Anari and Kolari (2001) is one explanation for the theoretically inconsistent negative impact of inflation on returns.[1]

The ongoing high inflation (6% in February 2023) in the United States and the recent SVB collapse raise concerns about: (i) another financial crisis; (ii) how the Federal Reserve controls this situation; (iii) the potential impact on the shareholder wealth of FIs, particularly on banks. This collapse during a period of high inflation has introduced uncertainty to the shareholders, and we expect that bank and non-bank shareholders were more affected during this period. In this paper we fill the gap in the literature through empirical studies to examine the impact of inflation and SVB collapse on shareholder wealth.

In this paper, we examine how inflation may have contributed to Silicon Valley Bank's collapse. We gather the abnormal returns (AR) and cumulative abnormal returns (CAR) in a sample of all financial institutions for the period February 15 2023 to March 29 2023 using daily stock data for our inquiry. Our findings show that the recent SVB collapse (10 March) and inflation have had a negative and considerable impact on AR for FI shareholders. Finally, we note that compared to the period before March 10, this negative link is substantially stronger for bank stockholders than non-bank FI shareholders after March 10.

In conclusion, there are many factors that contributed to Silicon Valley Bank's failure, including its significant investment in debt securities during a period of low interest rates, its minimal reliance on equity capital compared to its rivals, and its lack of depositor diversity. The recent rise in interest rates has resulted in large unrealized losses for the bank. A bank run was more likely because the bank's deposit base was heavily concentrated among a small number of depositors. The danger to the bank was further increased by the fact that the bank had much less equity capital than its competitors.

Our research is significant in at least two ways. First, it enables investors and policymakers to develop efficient financial strategies by helping us comprehend the financial consequences on FIs (mostly for banks). In addition, by considering both inflation and the collapse of SVB, we extend earlier research on the connection between the recent financial crisis or inflation and stock returns (such as Aliyu, 2012; Li et al., 2010; Mollick & Assefa, 2013; Peavy III & Hempel, 1988).

The rest of the paper is organized as follows. We briefly review the previous literature and the theoretical background on this paper in Section 2. In Section 3 we discussed data and method. In the following section (Section 4) we discussed our findings and heterogeneity of this paper. Section 5 concludes the paper.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 | Background of Silicon Valley Bank

SVB was founded in Santa Clara, California, in 1983 with the goal of promoting entrepreneurship and innovation in the technology and life sciences sectors. While its primary focus is still on these industries, SVB has expanded its services to include asset management, private wealth management, investment banking, funds management, M&A advisory services, and other investment services. In addition, the bank has grown into a global financial holding company with activities in Europe, Asia, and the United States.

SVB has advanced significantly over the past 40 years. Its total asset base was around $956 million in 1992. By 2019, this amount had increased substantially, exceeding $70 billion. SVB's growth accelerated during the COVID-19 pandemic, and its total assets peaked in the first quarter of 2022 at a value of $218 billion.

SVB had established itself as one of the most profitable large banks in the nation, along with the impressive growth in its assets. For many years, it regularly achieved a return on equity of more than 20%. SVB's return on equity remained above 11% despite the difficulties brought on by the Covid-19 pandemic from 2020 to 2022, much higher than the ratio for Californian banks or the industry average. SVB focused heavily on developing strong relationships with businesses in the global private equity and venture capital market to demonstrate its unwavering commitment to encouraging and supporting entrepreneurial aspirations.

SVB ran into problems in 2022 as a result of a weak economy and a slowdown in the high-tech industry. Consequently, a large number of depositors withdrew their funds, forcing the bank to sell its securities. The bank's total assets decreased from $218 billion in the first quarter to $209 billion in the last. This situation persisted until the day of SVB's collapse on March 10, 2023.

2.2 | Theoretical background

2.2.1 | Economic theory

A well-known banking model for bank runs, called the "Diamond and Dybvig model," was created in 1983 by three Nobel Prize winners (awarded in 2022): Ben Bernanke, Douglas Diamond, and Phil Dybvig. The model illustrates how banks' combination of illiquid assets (such as business or mortgage loans) and liquid liabilities (deposits that may be withdrawn at any time) may naturally induce panic among depositors. According to the model, banks act as intermediaries between borrowers who prefer taking out long-term loans and savers who prefer placing deposits in liquid accounts. Banks typically provide a vital service by pooling money from several small deposits into loans for borrowers. By doing this, banks help depositors avoid the significant processing costs related to lending directly to businesses (Geman, 2023).

The model, however, shows how susceptible banks are to panics or bank runs: if a depositor believes that all other depositors will withdraw their money, it becomes irrelevant whether the long-term loans of the bank are likely to be profitable; instead, the rational response is to rush to withdraw deposits before the other depositors do the same.

2.2.2 | Financial theory

Asset liability management (ALM) became a standard practice in banks in the 1970s as a result of the high and constantly fluctuating interest rates and the collapse of some Savings & Loans. The temporal adequacy of the assets to the liabilities, particularly to those liabilities that are deposits that must be repaid on demand, is a core concern in ALM. This is putting aside the (valid) topic of bank borrower credit profiles.

It is certain that the typical ALM indicators were not in place at SVB, given the absence of a Chief Risk Officer for most of 2022 and the replacement of that individual by a novice risk management committee (along with some possible insider trading by the CEO and CFO). Estimates indicate that SVB had a "duration gap" of at least 6 years between its assets and liabilities because it maintained a significant portfolio of medium- to long-term bonds in order to generate competitive returns on its investments. Frederick Macaulay initially introduced the fundamental but significant concept of "bond duration" in Macaulay (1938), in the simple setting of a flat yield curve with parallel moves. This indicator was expanded as more intricate models for the dynamics of the yield curve emerged in the mid-1980s and 1990s, along with a number of “risk markers” that enable secure monitoring of how market changes affect a bank's balance sheet in terms of interest rate risk and liquidity risk.

2.3 | Hypothesis development

The value of SVB's investments significantly decreased as a result of the bank's investments in U.S. Treasuries and mortgage-backed securities, as well as the Federal Reserve's decision to raise interest rates to fight inflation. The bank's clients, notably startups that relied on private fundraising, experienced a spike in withdrawals as a result of this downturn. The bank suffered substantial losses of almost $1.9 billion as a result of being compelled to sell off assets, including bonds that had lost value as a result of rising interest rates. Approximately 89 percent of SVB's deposits, according to the Federal Deposit Insurance Corporation (FDIC), were uninsured. Additionally, Vo and Le (2023) highlight three SVB traits that, when compared to other significant U.S. banks, contribute to understanding why it failed: less investment in equity, more debt, and a highly concentrated depositor base.

The stock markets around the world can be significantly impacted by bank failures, which can also cause disruptions in the financial system and erode investor confidence. The impact of bank failures on stock markets has been studied in a number of works (Bellia et al., 2022; Fiordelisi & Ricci, 2016; Hori, 2005; Liu, 2020; Toussaint-Comeau et al., 2020; Yamori & Murakami, 1999). These studies show that bank failures can significantly reduce domestic and international shareholder wealth, with the effect being most pronounced for small/community banks and during economic downturns (Toussaint-Comeau et al., 2020). The findings also suggest that factors such as the type of assets banks hold (Caiazzo & Zazzaro, 2023) and the effectiveness of national institutions (Kabir & Hassan, 2005; Ramirez & Shively, 2012) influence how bank failures affect stock markets. Based on these arguments we developed our hypothesis as follows:

H1. Inflation and Silicon Valley Bank (SVB) collapse negatively affect shareholder wealth.

When Silicon Valley Bank abruptly failed, investors had to reconsider the future of regional banks more broadly. This might result in a major reduction in lending from banks, which are under pressure to boost deposit rates as a result of the Fed's increased interest rate policy to combat inflation (Timiraos, 2023). Over the past year, Federal Reserve officials have occasionally acknowledged the danger of being forced to address inflation and financial stability consequences at the same time. Many have stated they would employ emergency lending measures to address the latter so they could continue raising interest rates or maintain rates at higher levels to address the former, similar to the bank-funding facility the Federal Reserve disclosed.

During times of financial crisis, the non-banking sector does not appear to be susceptible to contagion from either the domestic or global banking sector. Most of the time, the data points to non-banking sectors actually decoupling, meaning that their vulnerability to banking shocks is reduced during a crisis compared to a non-crisis period. This could mean that businesses in the non-banking sector have access to other credit sources during these times. As a result, the non-banking sector protected the real economy from the full impact of the banking shock and served as a partial hedge for stock investors whose portfolios were primarily held domestically (Dungey et al., 2020). To learn more about the possible effects of the SVB collapse on various industries in the United States, Yousaf and Goodell (2023) used an event study technique. Their research again shows a relatively modest influence across the commodities, financials, and real estate sectors after analyzing daily data from 11 important U.S. equity sectors. On the day of the SVB collapse, all three of these industries saw a significant negative impact, but the financial industry was hardest hit. Based on these arguments, we developed our following hypothesis:

H2. Inflation and Silicon Valley Bank (SVB) collapse negatively greater affect banks shareholder wealth more than non-bank shareholder wealth.

3 | DATA AND METHODS

3.1 | Data

This section focuses on the data sources, variable definitions, and methods of this study. The level of our analysis is FI (banks)-day and covers the period from February 15 2023 to March 29, 2023 (excluding weekends). Here, February 15, 2023 to March 09, 2023 refers to the “pre-collapse period,” and March 10, 2023 to March 29, 2023 refers to the “post-collapse period" for difference-in-differences (DiD) specifications between banks and non-bank FIs. Notably, SVB was seized by the Federal Deposit Insurance Corporation (FDIC) on Friday, March 10, and we consider it a major event within the high inflationary environment in the United States. We collect the stock and firm-level data from the Compustat database, consisting of all daily observations over the period. We use the daily log return to calculate the AR of each stock, considered as shareholder wealth. Our sample is based on the stock returns of all FIs in the United States. Following Boungou and Yatié (2022), the data on search volumes related to inflation and the SVB collapse (including words like "inflation," "inflation in the United States," and "collapse of Silicon Valley Bank") is downloaded from Wikipedia Trends. Here, AR and CAR (only for the DiD specification) are considered the dependent variables, while inflation and the SVB collapse are considered the independent variables. All the continuous variables are winsorized at the 1st and 99th percentiles, and we exclude all the missing values observations of the variables.

3.2 | Variable definitions

The definitions of the variables in our sample are the main topic of this section. The final dataset consists of one dependent variable, one independent variable, and two control variables (Table 1).

Here, $AR_{i,t}$ or $CAR_{i,t}$ is considered as dependent variable, Inflation & SVB $Collapse_{i,t}$ is considered as independent variable and SIZE & ROA are considered as control variables in the models for final analysis.

3.3 | Methods

We use the event study methodology to examine the impact of inflation and SVB collapse on the shareholder returns around the SVB collapse (day 0). We calculate the AR and CAR by using the Market-Adjusted Model as a Risk Model (Hasan, 2022; Hasan et al., 2023). The AR for stocks i on day t is calculated as:

$$\mathrm{AR}_{it} = r_{it} - r_{mt} \tag{1}$$

where r_i and r_m are the stock returns for firm i and $\mathrm{market}_{\mathrm{m}}$, respectively, the market $\mathrm{return}_{\mathrm{mt}}$ is defined as the return on Center for Research in Security Prices (CRSP) value-weighted market returns (Brown & Huang, 2020). The computation of the CAR for firm i over days (t_1, t_2) is measured as:

$$\mathrm{CAR}^{i}_{t_1,t_2} = \sum_{t=t_1}^{t_2} \mathrm{AR}_{it} \tag{2}$$

Using panel data, we analyze the reaction of U.S. stock market returns to inflation and SVB collapse. We use different event studies and regress between dependent and independent variables. The panel data describe a sample of all FIs and is estimated as follows:

$$\mathrm{AR}_{i,t} = \alpha + \beta_1 \text{Inflation \& SVB Collapse}_{i,t} + \vartheta\ \text{Controls}_{i,t} + \theta_t + \lambda_t + \varepsilon_{i,t} \tag{3}$$

where $AR_{i,t}$ denotes abnormal returns from stock's closing price of firm i on day t. Inflation & SVB $Collapse_{i,t}$ expresses the log of Wikipedia Trends search data of firm i on day t, related to the inflation and SVB collapse (including words like inflation, Inflation in United States, and collapse of silicon valley bank). $Controls_{i,t}$ denotes the SIZE (natural log of market value) and ROA (ratio of net income and total assets) of firm i on day t. This regression controls the time and day effects, where time-fixed effects absorb the overall trend and day fixed effects absorb the different fixed and time-invariant levels of search intensities across the institutions. We use robust standard errors in the analysis.

In the DiD specification, we examine whether the impact of inflation and SVB collapse on AR for bank shareholders is more after the current SVB collapse during the first 14 days of the trading window of collapse, we consider two windows surrounding the SVB collapse date (day 0), that is, CAR (−17, −1) and CAR (0, 14). We include the indicator variables for the "pre-collapse period" and "post-collapse period," and interact these variables with Inflation & SVB $Collapse_{i,t}$.

$$\begin{aligned}\mathrm{CAR}_{t_1,t_2} = {} & \alpha + \delta_1 \text{Inflation \& SVB Collapse}_t + \delta_2 \text{Inflation \& SVB Collapse}_t * \text{Bank Only}_t * \text{Post}_t \\ & + \beta_1\ \text{Bank Only}_t + \beta_2\ \text{Post}_t + \vartheta\ \text{Controls}_t + \varepsilon_{t+1}\end{aligned} \tag{4}$$

TABLE 1 Variable definitions.

Variable	Abbreviation	Definition and construction
$AR_{i,t}$ or $CAR_{i,t}$	Abnormal or Cumulative abnormal returns	The return is calculated from the stock prices (closing price), which is associated with the profitability from the stock trading before and during the SVB collapse. $AR_{i,t}$ denotes abnormal returns from stock's closing price of firm *i* on day *t*. Market-Adjusted Model is used as a Risk Model to calculate $CAR_{i,t}$
Inflation & SVB $Collapse_{i,t}$	Inflation and Silicon Valley Bank Collapse	Following (Boungou & Yatié, 2022), Inflation & SVB $Collapse_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse
SIZE	Market Values	We calculate the market values from stock price and outstanding shares. Here, size is the natural log of market value at the end of quarter *t*. We consider the size as a control variable to control the effect of market value on stock returns
ROA	Return on Assets Ratio	The return on asset ratio at the end of quarter *t*. We consider the return on asset ratio as a control variable to control the effect of ROA on abnormal or cumulative abnormal returns

where is CAR_{t_1,t_2} cumulative abnormal return for firm *i* over days (t_1, t_2), Inflation & SVB $Collapse_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse (including words like inflation, Inflation in United States, and collapse of silicon valley bank). $Controls_{i,t}$ denotes the SIZE (natural log of market value) and ROA (ratio of net income and total assets) of firm *i* on day *t*. This regression controls the time and day effects, where time-fixed effects absorb the overall trend and day fixed effects absorb the different fixed and time-invariant levels of search intensities across the institutions. We use robust standard errors in the analysis. In this specification, δ_2 represents the difference in CAR between the bank and non-bank shareholders after controlling for SIZE and ROA. In this specification, δ_2 measures the incremental bank shareholder returns by comparing the pre- and post-collapse periods.

We use different event studies for the shorter and longer time span to measure the impact of inflation and SVB collapse on shareholder returns. We also use the DiD for finding the gap in CAR between banks and FIs after March 10, compared to before March 10. From February 15, 2023 to March 09, 2023 refers to the "pre-collapse period," and from March 10, 2023 to March 29, 2023 refers to the "post-collapse period."

4 | RESULTS

In this section, we present the results of our analysis of the impact of inflation and the SVB collapse on shareholder wealth. Table 2 provides the summary statistics with different panels for various event windows. We design our paper around several event studies by investigating: the impact of inflation and SVB collapse on shareholder wealth in shorter events (Table 3); the impact of inflation and SVB collapse on shareholder wealth in longer events (Table 4); the impact on shareholder wealth for banks (Table 5); and DiD specifications (Table 6).

Table 2 presents the descriptive statistics for the samples of different event windows (different panels indicate the different event windows) surrounding the SVB collapse date. It shows that the mean of the AR is 0 (0, 2) and (−1, 2), −0.849 (−10, 14), and 0 (−17, 15). The mean of the inflation & SVB collapse is 8.071 (0, 2), 8.043 (−1, 2), and 7.938 (−10, 14) and (−17, 15), size of firms is 6.360 (0, 2), 6.358 (−1, 2), and 6.367 (−10, 14) and (−17, 15), and ROA is 0.003 (0, 2), (−1, 2), (−10, 14), and (−17, 15). The median of the AR is 0.01 (0, 2), −0.130 (−1, 2), −1 (−10, 14), and −0.485 (−17, 15). The median of the inflation & SVB collapse is 8.111 (0, 2), 8.026 (−1, 2), and 7.952 (−10, 14) and (−17, 15), size of firms is 6.072 (0, 2), 6.070 (−1, 2), and 6.072 (−10, 14) and (−17, 15), and ROA is 0.003 (0, 2), (−1, 2), (−10, 14), and (−17, 15). Notably, we winsorize the continuous variables at the 1st and 99th percentile to deal with the outliers. We exclude all the missing value observations of the variables.

In Table 3, Column (1) shows the results for event window (0, 2) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.317) after using the control variables, and economically and statistically significant (<0.01). Column (2) shows the results for event window (0, 4) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.735) after using the control

TABLE 2 Summary statistics.

Variables	*N*	Mean	Std. dev.	p25	Median	p75
Panel A: Event window (0, 2)						
$AR_{i,t}$	1524	0	0.085	−0.017	0.01	0.019
Inflation & SVB $Collapse_{i,t}$	1524	8.071	0.162	7.856	8.111	8.246
SIZE	1524	6.360	2.251	4.766	6.072	7.837
ROA	1524	0.003	0.002	0.002	0.003	0.003
Panel B: Event window (−1, 2)						
$AR_{i,t}$	1521	0	1.758	−0.148	−0.130	−0.125
Inflation & SVB $Collapse_{i,t}$	1521	8.043	0.160	7.856	8.026	8.246
SIZE	1521	6.358	2.253	4.765	6.070	7.835
ROA	1521	0.003	0.002	0.002	0.003	0.003
Panel C: Event window (−10, 14)						
$AR_{i,t}$	12,096	−0.849	1.973	−1.003	−1	−0.985
Inflation & SVB $Collapse_{i,t}$	12,096	7.938	0.176	7.832	7.952	8.110
SIZE	12,096	6.367	2.242	4.766	6.072	7.834
ROA	12,096	0.003	0.002	0.002	0.003	0.003
Panel D: Event window (−17, 15)						
$AR_{i,t}$	15,120	0	25.337	−0.487	−0.485	−0.470
Inflation & SVB $Collapse_{i,t}$	15,120	7.938	0.176	7.832	7.952	8.11
SIZE	15,120	6.367	2.242	4.766	6.072	7.834
ROA	15,120	0.003	0.002	0.002	0.003	0.003

Note: The summary statistics of the observations for various event windows are shown in this table. The acronym $AR_{i,t}$ stands for abnormal returns from the firm's stock closing price on day *t*. SVB Collapse & Inflation. It displays the log of Wikipedia Trends search information for company *i* on day *t*, which is tied to inflation and the collapse of the SVB. $Controls_{i,t}$ stands for firm *i*'s SIZE and ROA on day *t*.

variables, and economically and statistically significant (<0.01). Column (3) shows the results for event window (−1, 2) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.103) after using the control variables, and economically and statistically significant (<0.01). Column (4) shows the results for the event window (−3, 1) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.052) after using the control variables, and economically and statistically significant (0.05). All columns present consistent results. Although we find that the inflation & SVB collapse greater reduced the shareholder wealth (AR) during the (0, 4) event window. These results are consistent with the prior findings that have also found a negative relationship between bank failure and stock returns (Peavy III & Hempel, 1988), financial crisis and stock return (Mollick & Assefa, 2013), and inflation and stock return (Aliyu, 2012; Li et al., 2010).

In Table 4, Column (1) shows the results for the event window (−7, 15) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.044) after using the control variables, and economically and statistically significant (<0.01). Column (2) shows the results for the event window (−10, 14) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.121) after using the control variables, and economically and statistically significant (<0.01). Column (3) shows the results for the event window (−17, 15) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.056) after using the control variables, and economically and statistically significant (<0.01). All columns present consistent results. Although we find that the inflation & SVB collapse greater reduced the shareholder wealth (AR) during the (−10, 14) event window. These results are consistent with the prior findings that have also found a negative relationship between bank failure and stock returns (Peavy III & Hempel, 1988), financial crisis and stock return (Mollick & Assefa, 2013), and inflation and stock return (Aliyu, 2012; Li et al., 2010).

Tables 3 and 4 present the main results considering the different duration surrounding the SVB collapse date (10 March). Our results highlight a negative and statistically significant relationship at the 1% level (except column 4 (AR (−3, 1) of Table 1, 5% significance level)) between the inflation and current collapse and AR. Indeed, our results show that the impact of inflation and SVB collapse on AR is more after the current SVB collapse (columns 1 and 2 in Table 3)

TABLE 3 Impact of inflation and SVB collapse on shareholder wealth: Shorter events.

Dependent variable: $AR_{i,t}$ (abnormal returns)				
	(1)	(2)	(3)	(4)
Variables	AR (0, 2)	AR (0, 4)	AR (−1, 2)	AR (−3, 1)
Inflation & SVB collapse$_{i,t}$	−0.317***	−0.735***	−0.103***	−0.052**
	(0.043)	(0.112)	(0.030)	(0.021)
Observations	777	1295	777	1036
Number of institutions	259	259	259	259
Control variables	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Note: This table presents results from estimating Equation (1). $AR_{i,t}$ denotes abnormal returns from stock's closing price of firm *i* on day *t*. Inflation & SVB Collapse$_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse *Controls*$_{i,t}$ denotes the SIZE and ROA of firm *i* on day *t*. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the .01, .05, and .10 level (two-tail), respectively.

TABLE 4 Impact of inflation and SVB collapse on shareholder wealth: Longer events.

Dependent variable: $AR_{i,t}$ (abnormal returns)			
	(1)	(2)	(3)
Variables	AR (−7, 15)	AR (−10, 14)	AR (−17, 15)
Inflation & SVB collapse$_{i,t}$	−0.044**	−0.121***	−0.056***
	(0.018)	(0.016)	(0.016)
Observations	3367	6168	6168
Number of institutions	259	257	257
Control variables	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes

Note: This table presents results from estimating Equation (1). $AR_{i,t}$ denotes abnormal returns from stock's closing price of firm *i* on day *t*. Inflation & SVB Collapse$_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse *Controls*$_{i,t}$ denotes the SIZE and ROA of firm *i* on day *t*. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the .01, .05, and .10 level (two-tail), respectively.

compared to other shorter events in Table 3 and longer events in Table 4. These results indicate the sensitivity of AR to inflation and SVB collapse. Our results are consistent with the prior findings that have also found a negative relationship between bank failure and stock returns (Peavy III & Hempel, 1988), financial crisis and stock return (Mollick & Assefa, 2013), and inflation and stock return (Aliyu, 2012; Li et al., 2010).

For a robustness check of our results, we use different event studies in Table 5, like Table 3, for only banks instead of non-bank FIs. In Table 5, Column (1) shows the results for event window (0, 2) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.343) after using the control variables, and economically and statistically significant (<0.01). Column (2) shows the results for event window (0, 4) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.758) after using the control variables, and economically and statistically significant (<0.01). Column (3) shows the results for event window (−1, 2) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.108) after using the control variables, and economically and statistically significant (<0.01). Column (4) shows the results for the event window (−3, 1) using the firm and day fixed effects. We find that the inflation & SVB collapse and AR are negatively associated (−0.057) after using the control variables, and economically and statistically significant (0.05). All columns present consistent results. Although we find that the inflation & SVB collapse greater reduced the banks' shareholder wealth (AR) during the (0, 4) event window. These results are consistent with the prior findings that have also found a negative relationship between bank failure and stock returns (Peavy III & Hempel, 1988), financial crisis and stock return (Mollick & Assefa, 2013), and inflation and stock return (Aliyu, 2012; Li et al., 2010).

REVIEW of FINANCIAL ECONOMICS — WILEY

We also use DiD specifications (Table 6) to test between banks and non-bank FIs before and after the current SVB collapse date (March 10). To find the robustness of our results, we use CAR as a dependent variable in DiD. In the DiD specification, we examine whether the impact of inflation and SVB collapse on AR for bank shareholders is more after the current SVB collapse during the first 14 days of the trading window of collapse, we consider two windows surrounding the SVB collapse date (day 0), that is, CAR (−17, −1) and CAR (0, 14). We use the DiD for finding the gap in CAR between banks and FIs after March 10 compared to before March 10. From February 15, 2023 to March 09, 2023 refers to the "pre-collapse period," and from March 10, 2023 to March 29, 2023 refers to the "post-collapse period." We include the indicator variables for the "pre-collapse period" and "post-collapse period," and interact these variables with Inflation & SVB $\text{Collapse}_{i,t}$.

In Table 6, shows the results for DiD specification using the firm and day fixed effects in column (3). In column (1), we find that the inflation & SVB collapse and CAR are negatively associated (−0.008) without using the control variables, and economically and statistically significant (<0.01). In column (2), we find that the inflation & SVB collapse and CAR

TABLE 5 Impacts on shareholder wealth: Banks.

Dependent variable: $AR_{i,t}$ (abnormal returns)				
	(1)	(2)	(3)	(4)
Variables	**AR (0, 2)**	**AR (0, 4)**	**AR (−1, 2)**	**AR (−3, 1)**
Inflation & SVB $\text{collapse}_{i,t}$	−0.343***	−0.758***	−0.108***	−0.057**
	(0.046)	(0.117)	(0.032)	(0.023)
Observations	684	1140	684	912
Number of banks	228	228	228	228
Control variables	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes

Note: This table presents results from estimating Equation (1). $AR_{i,t}$ denotes abnormal returns from stock's closing price of firm *i* on day *t*. Inflation & SVB $\text{Collapse}_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse $\text{Controls}_{i,t}$ denotes the SIZE and ROA of firm *i* on day *t*. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the .01, .05, and .10 level (two-tail), respectively.We still find a negative relationship between inflation and SVB collapse and AR, but this relationship is greater for banks (Table 5) than FIs (Table 3). Notably, the impact was significantly greater for bank shareholders because of collapsing the second-largest bank in the United States.

TABLE 6 Difference-in-difference specifications.

Dependent variable: $CAR_{i,t}$ (cumulative abnormal returns)			
Variables	**Model 1**	**Model 2**	**Model 3**
Inflation & SVB $\text{collapse}_{i,t}\text{\_Post}_t\text{\_Bank}$	−0.008***	−0.011***	−0.011***
	(0.002)	(0.003)	(0.003)
Post_t	−0.009***	−0.007**	−0.008
	(0.002)	(0.003)	(0.005)
Inflation & SVB $\text{collapse}_{i,t}$	0.000	0.000	0.005
	(0.002)	(0.003)	(0.003)
Observations	10,964	10,964	10,964
Number of institutions	459	459	459
Control variables	No	Yes	Yes
Time-fixed effects	No	No	Yes
Firm fixed effects	No	No	Yes

Note: This table presents results from estimating Equation (2). $CAR_{i,t}$ denotes cumulative abnormal returns from stock's closing price of firm *i* on day *t*. Inflation & SVB $\text{Collapse}_{i,t}$ expresses the log of Wikipedia Trends search data of firm *i* on day *t*, related to the inflation and SVB collapse $\text{Controls}_{i,t}$ denotes the SIZE and ROA of firm i on day *t*. *t*-Statistics (two-tailed *p*-values) based on robust standard errors appear in parentheses (brackets). ***, **, and * denote statistical significance at the .01, .05, and .10 level (two-tail), respectively.

are negatively associated (−0.011) after using the control variables, and economically and statistically significant (<0.01). Column (3) shows the results after using the firm and day fixed effects. We find that the inflation & SVB collapse and CAR are negatively associated (−0.011) after using the control variables, and economically and statistically significant (<0.01). All columns present consistent results with previous findings (Table 5). These results are consistent with the prior findings that have also found a negative relationship between bank failure and stock returns (Peavy III & Hempel, 1988), financial crisis and stock return (Mollick & Assefa, 2013), and inflation and stock return (Aliyu, 2012; Li et al., 2010).

Importantly, we still observe a negative relationship between inflation & SVB collapse and CAR (shareholder wealth). This negative relationship is significantly greater for bank shareholders than non-bank FIs shareholders after 10 March (SVB collapse date) compared with prior to March 10.

4.1 | Heterogeneity

We use the fixed effects (time and firm) in this study, which techniques allow me to control the unobserved heterogeneity (unobservable effects) specific to an individual or group. Specifically, in the regression models, we include firm and time-fixed effects with the regressions to account for potential heterogeneity across the firms in a given trading day. These fixed effects help to mitigate the concerns of omitted firm-level characteristics, which might be associated with future performance. The time-fixed effects control the change in market conditions, which affect all firms in a given period. We consider the day (time) fixed effect separately as a different model to allow the time period effects to differ between the models. This approach controls the possibility that the market conditions differentially affect the firms. Notably, we find the same results in all the models.

5 | CONCLUSION

Alarms have been raised in the banking industry due to the SVB collapse and the high inflation rate, and there are growing concerns regarding the likelihood of further, more widespread financial contagion. In light of the relevance of bank failures to financial markets and the growing academic interest in financial contagion (Corbet & Goodell, 2022), this study provides the first empirical evidence of the impact of inflation and the SVB collapse on shareholder returns. Using daily data on AR for FIs in the United States over the period from February 15, 2023 to March 29, 2023, our results show significant negative effects of inflation and the SVB collapse on shareholder returns (AR or CAR). We also notice that this negative relationship is significantly greater for bank shareholders than for non-bank FI shareholders after March 10 compared with the period prior to March 10.

The evidence of financial contagion emphasizes the necessity for policymakers in both types of economies to monitor potential systemic risks and take action to lessen the effects of particular problems on other financial institutions and markets. Our findings also have a number of implications for investors and decision-makers. The benefits of diversification techniques may not always materialize as anticipated prior to a major adverse event, such as the SVB collapse, even if international equity markets offer investors alternatives for hedging and diversification. Our research shows that a shock like the SVB collapse, given the current state of the global capital market, has the ability to damage many capital markets rather than being contained to the nation where the event occurred.

This result is particularly important for regional investors who need to rebalance and diversify their holdings in order to lessen the effects of such contagion. To preserve the stability and resilience of their financial systems over the long run, regulators and policymakers still need to monitor potential risks and vulnerabilities.

Our study emphasizes the interconnection of financial systems and the necessity for policymakers and regulators to monitor and reduce the risk of financial contagion using an event study methodology. While the event study approach is popular and useful for examining the effects of particular events on financial markets, there are some drawbacks to be aware of. First, event studies ignore other potential factors that can influence changes in equity by assuming that the event under study is the sole cause of the observed changes. Second, it can be difficult for event studies to choose the appropriate event window and event date, as well as the correct estimation window for computing AR. Furthermore, event studies may not fully capture the dynamism and complexity of market reactions over time. Finally, event studies can be susceptible to benchmark selection and the presence of confounding variables.

Despite the fact that the primary focus of our study is on how the SVB collapse influenced global financial markets, it is crucial to stress that future research could benefit from a more in-depth examination of the precise mechanisms by which financial contagion occurred around the SVB collapse. Future studies might also investigate various financial and industry sectors. For instance, research could focus on the banking sector, the bond and treasury markets, cryptocurrencies, or decentralized finance to determine the financial contagion brought on by SVB's failure.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Endnote

[1] Anari and Kolari (2001) suggest that nominal stock returns must exceed the inflation rate to compensate tax-paying investors (see also Luintel & Paudyal, 2006).

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How to cite this article: Das, B. C., Hasan, F., Sutradhar, S. R., & Obeidat, M. A. (2026). The effect of inflation and the failure of Silicon Valley bank on shareholder wealth. *Review of Financial Economics*, *44*, 1–12. https://doi.org/10.1002/rfe.70041