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Interest Rates, Venture Capital, and Financial Stability

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Interest Rates, Venture Capital, and Financial Stability

Hilary J. Allen¹

Following several prominent bank failures and as central banks continue to tighten interest rates to fight inflation, there is increasing interest in the relationship between monetary policy and financial stability. This Article illuminates one path through which the prolonged period of low interest rates from 2009-2021 has impacted financial stability: it traces how yield-seeking behavior in the wake of the Global Financial Crisis and Covid pandemic led to a bubble in the venture capital industry, which in turn spawned a crypto bubble as well as a run on the VC-favored Silicon Valley Bank. This Article uses this narrative to illustrate the importance of proactive financial regulation both in preventing financial crises that invite more accommodative monetary policy, and in preventing accommodative monetary policy from sowing the seeds of future financial stability problems if it is deployed.

The Article is primarily a descriptive account, designed to highlight the venture capital industry's unexpected and underappreciated contribution to financial stability threats in the early 2020s. This Article does, however, suggest several policy implications of this account. It argues for increased monitoring of the venture capital industry by financial stability regulators, given that venture capital is well-positioned to generate asset bubbles now and in the future. More specifically, it argues for more aggressive enforcement of the securities laws to tamp down on the present crypto bubble, as well as for structural separation between crypto and the traditional financial system.

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I. INTRODUCTION

When a financial crisis or other calamitous event (like a pandemic) hits the economy, the central bank tends to respond by lowering interest rates. When inflation starts to pick up, the central bank will respond by raising interest rates. These actions can have implications for the stability of our financial system – sometimes in short order, and at other times, they may take much longer to manifest. There is increasing interest in this relationship between monetary policy and financial stability, and this Article will illuminate one path through which the prolonged period of low interest rates from 2009-2021 impacted financial stability.

As the financial system crashed in 2008, the Federal Reserve rapidly lowered interest rates to get more money flowing through the US economy. The crisis of 2008 proved so devastating, though, that these monetary policy interventions could not produce a quick recovery. The Federal Reserve kept rates low for over a decade, and just as it started to increase them, the world was hit by the Covid pandemic in 2020. Interest rates were once again set as low as they could go. This Article will chronicle how some of the seeds for future financial instability were sown during this period as people “reached for yield” (meaning they sought out riskier investments that promised the kinds of returns that were unachievable from more staid investments during a period of prolonged low interest rates). In response to rising inflation, the Federal Reserve started to raise interest rates rapidly in 2022, and this Article will also recount some of the financial stability risks that have emerged in connection with this abrupt change of policy.

In particular, this Article will focus on how yield-seeking behavior created a bubble in the venture capital (“VC”) industry, which in turn spawned a crypto bubble as well as a run on the VC-favored Silicon Valley Bank (“SVB”). To be clear, the impact of interest rate policy on financial stability will probably be felt most keenly in other sectors of the financial system.² However, financial stability risks can crop up in unexpected places, and it is precisely because VC funds are not typically considered pertinent to financial stability that they make such an interesting case study. By following one tendril of the impact of interest rate policy through the VC industry to the crypto industry and SVB, policymakers can get a sense of the kinds of unexpected impacts that accommodative monetary policy can have on financial stability.

² For a discussion of the financial stability implications of rising interest rates for sectors like banking, commercial real estate, and sovereign debt, *see* Board of Governors of the Federal Reserve System, FINANCIAL STABILITY REPORT, 16; 33 *et seq.*; 59-60 (May 2023), available at <https://www.federalreserve.gov/publications/files/financial-stability-report-20230508.pdf>.

The unpredictable consequences of prolonged periods of low interest rates underscore the importance of proactively using financial regulation to prevent or mitigate financial instability in the first place. Interest rates are one of the most important policy tools that exist to deal with the aftermath of financial crises, but the aftermath of the 2008 crisis made it clear that accommodative monetary policy won't always be a complete response to the harms of financial crises.³ Furthermore, if accommodative monetary policy inspires yield-seeking behavior that causes a subsequent round of financial instability to erupt before interest rates have been meaningfully increased, traditional monetary policy won't even be available as a crisis response because interest rates won't have any room to go lower.⁴ *Ex ante* financial stability regulation designed to prevent or mitigate financial crises is inevitably imperfect and often undermined by political economy and human psychology – but it can help, and given the limitations and unintended consequences of monetary policy as an *ex post* crisis response, it is incumbent upon financial regulators to try.

The exploration of case studies in this Article is intended to increase the salience of the financial stability risks tied to interest rate policy. These case studies also highlight the relevance of VC funds to financial stability. To be clear, there are other, more pressing risks to financial stability than those posed by private investment funds, and even among these funds, hedge funds are probably more worthy of financial stability regulators' attention.⁵ And yet, the actions of VC funds have generated important financial stability concerns in recent years and so the Article offers some recommendations for how financial stability regulators should approach the VC industry going

³ “Conventional monetary policy—that is, lowering the overnight interest rate—may be insufficient to forestall or cure a severe recession. This realization can lead policymakers in one of two directions—or both, if the recession is severe enough or happens suddenly. One direction is to supplement *conventional* monetary policy with *unconventional* monetary policies...The other direction is to deploy fiscal policy instruments such as tax cuts and government spending.” Alan S. Blinder & Mark Zandi, *The Financial Crisis: Lessons for the Next One*, CENTER ON BUDGET AND POLICY PRIORITIES, 41 (Oct. 15, 2015), available at <https://www.cbpp.org/sites/default/files/atoms/files/10-15-15pf.pdf>. It is also important to remember that although “the broader economy will ultimately recover from a crisis, many people (particularly the most vulnerable members of society) may be left behind when it does.” Hilary J. Allen, *Regulatory Managerialism and Inaction: A Case Study of Bank Regulation and Climate Change* (forthcoming, J. LAW & CONTEMP. PROBLEMS).

⁴ George A. Akerlof & Robert J. Shiller, *ANIMAL SPIRITS*, 79 (2009). There was, however, significant experimentation with *non-traditional* monetary policy tools in the wake of the 2008 financial crisis. For an overview, see Reserve Bank of Australia, UNCONVENTIONAL MONETARY POLICY, available at <https://www.rba.gov.au/education/resources/explainers/pdf/unconventional-monetary-policy.pdf?v=2023-07-14-10-14-40>.

⁵ For a discussion of financial stability risks associated with hedge funds, see Financial Stability Oversight Council, 2022 ANNUAL REPORT, 42-44 (Dec. 16, 2022), available at <https://home.treasury.gov/system/files/261/FSOC2022AnnualReport.pdf>.

forward. It argues for increased monitoring of the VC industry in general to help detect developing asset bubbles, and more specifically, for increased enforcement of the securities laws against VC firms involved in crypto ventures (both by the SEC, and through private litigation).

The rest of this Article will proceed as follows. Section II sketches in very broad strokes the financial stability risks that can arise from prolonged periods of low interest rate policy, as well as the stability risks associated with a “snapback” to higher interest rates following such a period. Section III explores one bubble facilitated by the prolonged period of low interest rates following the 2008 financial crisis: a bubble in VC investment. Section IV looks more specifically at two case studies that illustrate how this bubble in VC investment has threatened financial stability. It first looks at the crypto bubble that the VC industry helped facilitate, and then looks at the role that the VC industry played in sparking the regional banking tumult following SVB’s failure. Section V then explores the implications of these case studies for financial regulatory policy. First, Section V considers how financial regulatory policy should address the stability risks associated with prolonged low interest rate policy more generally. Section V then makes the argument that financial stability regulation should pay more attention to the VC industry. Section VI concludes.

II. PROLONGED LOW INTEREST RATE POLICY AND FINANCIAL STABILITY

This Section will start by providing some working definitions of “financial stability” and “monetary policy.” With regard to financial stability, many people think of the financial system as being stable so long as we are not presently experiencing a crisis, but financial stability requires more than that – it requires the financial system to be resilient, so that it can absorb shocks without compromising the credit and payments functions on which the broader economy depends.⁶ Financial stability regulation therefore seeks to make the financial system more resilient to shocks in general, and sometimes, it seeks to prevent or limit the shocks themselves.⁷ Financial stability regulators must always retain a degree of humility about their work, because the operation of something as complex as the financial system will always be somewhat unpredictable. Despite this unpredictability, though, there are some dynamics that are well understood to be particularly problematic for financial stability.

⁶ Hilary J. Allen, *DRIVERLESS FINANCE: FINTECH’S IMPACT ON FINANCIAL STABILITY*, 7 (2022).

⁷ Financial Stability Oversight Council, *FACT SHEET: The Financial Stability Oversight Council’s Proposed Analytic Framework for Financial Stability Risk Identification, Assessment, and Response* (Apr. 21, 2023), available at <https://home.treasury.gov/system/files/261/FSOC-2023-Risk-Framework-Fact-Sheet.pdf>

Asset bubbles, for example, are a common source of financial instability. In his seminal book *Irrational Exuberance*, economist Robert Shiller defines a “bubble” as:

*a situation in which news of price increases spurs investor enthusiasm, which spreads by psychological contagion from person to person, and, in the process, amplifies stories that might justify the price increase and brings in a larger and larger class of investors, who, despite doubts about the real value of the investment, are drawn to it partly through envy of others' successes and partly through a gambler's excitement.*⁸

Not all asset bubbles cause financial stability problems: Shiller's work is identified most closely with the dot-com bubble of the late 1990s, when investors lost a lot of money but no financial crisis resulted. There are likely to be financial stability problems, however, if highly leveraged financial institutions like banks have significant exposure to the bubble, as they did with the subprime mortgage bubble of the 2000s.⁹ When a bubble like that pops, it will impact the liquidity and maybe even solvency of the exposed financial institutions, and so they will pull back from extending the credit that the broader economy relies upon to grow.

Even if financial institutions aren't directly exposed to the asset bubble in question, they could still be compromised indirectly. They might be a creditor of a financial institution that *was* exposed to the bubble, or they could be affected by fire sale externalities or sentiment contagion.¹⁰ Fire sale externalities occur when those who *are* exposed to the affected asset class (particularly if they borrowed money to buy the asset in the first place) need to sell *other* assets at fire sale prices in order to right their financial condition. This will depress the prices of those other assets, creating potential problems for financial institutions exposed to *them*.¹¹ Sentiment contagion can be a problem because some financial institutions (particularly banks) depend so heavily on public confidence. Fears – even misplaced and unsupported fears – about a bank's exposure to an affected asset class could lead to a run.¹²

Banks are susceptible to runs because of “maturity mismatch:” bank liabilities like deposits can be withdrawn at any time, whereas bank assets have a longer duration and therefore can't be readily converted into cash

⁸ Robert J. Shiller, *IRRATIONAL EXUBERANCE*, __ (2015).

⁹ Financial Crisis Inquiry Commission, *THE FINANCIAL CRISIS INQUIRY REPORT*, xix-xx (2011).

¹⁰ For background on fire sales and sentiment contagion, see Anil K. Kashyap, Richard Berner, and Charles A.E. Goodhart, *The Macroeprudential Toolkit*, 59 *IMF ECONOMIC REVIEW* 145, 147-150 (2011).

¹¹ *Id.*

¹² Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 *J. POLITICAL ECONOMY* 401, 404 (1983).

without discounting their value.¹³ Banks only have a fraction of the amount they owe on deposits on hand at any one time, and that is ordinarily fine because the odds are that not every depositor will seek to withdraw all of their funds at the same time. Panic, however, changes these odds. An individual depositor cannot rely on other depositors not to withdraw in the event of a panic, and if they refrain from withdrawing but others don't, they will be at a disadvantage because the bank will satisfy the earlier withdrawal requests by liquidating its best and most liquid assets, and the bank may not be able to process subsequent withdrawals.¹⁴ The first depositor is therefore incentivized to be an "early mover" if confidence in the bank is threatened in any way, and the bank run can become a self-fulfilling prophecy.¹⁵

Financial stability regulators are highly attuned to the fragilities associated with leverage, interconnectedness, fire sales, and runs.¹⁶ The private sector lacks the incentives and the information needed to address the systemic impacts of these kinds of fragilities, and so the job necessarily falls to financial stability regulators.¹⁷ If these regulators do not succeed, the result may be a financial crisis that leads to a broader economic recession. In the wake of such a crisis, we typically see central banks deploy highly expansionary monetary policy (in the form of low interest rates) as an *ex post* response.¹⁸

At the risk of oversimplification, monetary policy entails lowering interest rates in an accommodative or expansionary phase to encourage economic growth, and raising rates in a contractionary phase to limit inflation.¹⁹ In the United States, monetary policy is carried out by the Federal Reserve, and its primary tool is setting targets for the federal funds rate (i.e. "the interest rate that banks pay to borrow reserve balances overnight").²⁰ The Federal Reserve then seeks to get interest rates to match targets through what are called "open market operations", which entail buying government securities from banks, introducing cash into the system.²¹ Conversely, selling government securities can be used to reduce the money supply in order to combat inflation.

¹³ *Id.* at 402.

¹⁴ *Id.* at 403.

¹⁵ *Id.* at 402.

¹⁶ Financial Stability Oversight Council, *supra* Note 7.

¹⁷ Allen, *supra* Note 6 at 221.

¹⁸ Hilary J. Allen, *Putting the "Financial Stability" In Financial Stability Oversight Council*, 76 OHIO ST. L. J. 1087, 1104 (2015).

¹⁹ Board of Governors of the Federal Reserve System, *Monetary Policy: What Are Its Goals? How Does It Work?*, available at <https://www.federalreserve.gov/monetarypolicy/monetary-policy-what-are-its-goals-how-does-it-work.htm>.

²⁰ *Id.*

²¹ Carnell *et al.*, THE LAW OF FINANCIAL INSTITUTIONS 7TH Ed., 77-79 (2021).

After the financial crisis of 2008, interest rates were historically “low for long.”²² Target interest rates were reduced swiftly during 2008, and remained as low as they could go until the end of 2015. After 2015, the Federal Reserve increased rates somewhat but the target never exceeded 2.5% during the period 2016-2019. Then, with the Covid pandemic hitting the United States in March 2020, the target rate was again reduced as low as it could go, where it remained until March 2022.²³ Then, in the face of increasing inflation, the Federal Reserve started to increase its target interest rate; by May 2023, the target rate had been increased to 5-5.25%.²⁴

The Federal Reserve is directed to carry out its monetary policy with a view to its dual mandate to pursue both price stability and full employment.²⁵ This dual mandate often requires a delicate balancing act. Too much inflation erodes people’s savings and purchasing power and damages confidence in the dollar as a reliable store of value, but when interest rates are raised to reduce the amount of money in the economy and curb inflation, they can also curb economic growth and employment. This balancing act is rendered even more difficult when financial stability concerns are also taken into account.²⁶

Central banks are paying increasing attention to the interactions between monetary policy and financial stability – this Article will engage only with a small slice of this bigger picture issue by focusing on how prolonged low interest rates have impacted the VC industry, and through it, financial stability. It is, however, worth setting the scene by considering in broad strokes how prolonged periods of low interest rates might undermine financial stability. As President of the Cleveland Federal Reserve Bank Loretta Mester put it in 2021:

A commitment to a protracted period of very low interest rates could encourage risk-taking as investors search for yield; it could lead to a build-up in leverage; and it could lead lenders to lower their credit standards and promote increased borrowing. While all of these are avenues through which monetary policy typically affects the economy,

²² Eric S. Rosengren, President & Chief Executive Officer Federal Reserve Bank of Boston, *Financial Stability and Regulatory Policy in a Low Interest Rate Environment*, Keynote address at the Norges Bank and International Banking, Economics and Finance Association Workshop: “Prepared for the Next Crisis? The Costs and Benefits of Financial Regulation”, 3-4 (Nov. 11, 2019).

²³ All rates and dates are drawn from <https://fred.stlouisfed.org/series/DFEDTARU>.

²⁴ *Id.*

²⁵ 12 U.S.C. § 225a; Board of Governors of the Federal Reserve System, *supra* Note 19.

²⁶ While it has no statutory mandate to pursue financial stability, the Federal Reserve takes the position that such a mandate is implied from “the penumbra of the Federal Reserve Act. Thomas C. Baxter, Jr., Exec. Vice President & Gen. Counsel, Fed. Reserve Bank of N.Y., *Remarks at the Future of Banking Regulation and Supervision in the EU Conference, Financial Stability: The Role of the Federal Reserve System* (Nov. 15, 2013), available at <http://www.newyorkfed.org/newsevents/speeches/2013/bax131120.html>.

*the concern is that these effects could be excessive and create or contribute to financial vulnerabilities.*²⁷

Ultimately, financial stability and monetary policy have an interactive relationship that is not fully understood. Central bankers and economists are actively debating the precise contours and predictability of their interplay, and what that means for the conduct of monetary policy.²⁸ It is relatively uncontroversial, however, to acknowledge – as President Mester did – that low interest rate policy implemented to assist economic growth in the wake of a financial crisis can sow the seeds for a future financial crisis by encouraging people to reach for yield. There are also concerns that if a future crisis erupts while interest rates remain low, central banks will have little scope for reducing rates further (in other words, they will have limited “dry powder” to deploy), limiting the efficacy of monetary policy as a response to that future crisis.²⁹ Monetary policy may also be stymied in its ability to control inflation if a financial crisis forces the hand of a central bank, resulting in a shift to accommodative monetary policy before inflation has been tamed. Monetary policy is also typically effected through banks,³⁰ and so if bank

²⁷ Loretta J. Mester, President & CEO, Fed. Reserve Bank of Cleveland, *Remarks at Workshop on Low-Interest-Rate and Unconventional Monetary Policy, Financial Stability and Monetary Policy in a Low-Interest-Rate Environment* (Jun. 22, 2021), available at <https://www.clevelandfed.org/collections/speeches/2021/sp-20210622-financial-stability-and-monetary-policy-in-a-low-interest-rate-environment>. See also Bank for International Settlements Committee on the Global Financial System, *Financial stability implications of a prolonged period of low interest rates*, CGFS Papers No. 61, 1 (Jul. 2018), available at <https://www.bis.org/publ/cgfs61.pdf> (“low rates could change firms’ incentives to take risks, which could engender additional financial sector vulnerabilities”). See further Joint Task Force of ESRB Advisory Technical Committee (ATC), ESRB Advisory Scientific Committee (ASC), and ESCB Financial Stability Committee (FSC), *Lower for longer – macroprudential policy issues arising from the low interest rate environment*, 3 (Jun. 2021), available at https://www.esrb.europa.eu/pub/pdf/reports/esrb.reports210601_low_interest_rate~199fb84437.en.pdf?902fd7a7eacd507c650ed631ebe7482e (“financial stability risks may increase in the [low interest rate environment] due to the search-for-yield, resulting in an excessive build-up of leverage”).

²⁸ “[P]recise estimates of the probability of a financial crisis following credit and asset price booms remain unavailable. More importantly, how high the probability of a crisis should be permitted to climb before prompting preemptive policy action remains an open question.” Robin Greenwood *et al.*, *Predictable Financial Crises*, 77 *JOURNAL OF FINANCE* 809, 864 (2022). See also, for example, John C. Williams, President & CEO, Fed. Reserve Bank of San Francisco, *Presentation to the Deutsche Bundesbank Conference Housing Markets and the Macroeconomy: Challenges for Monetary Policy and Financial Stability* (Jun. 5, 2014), available at <https://www.frbsf.org/wp-content/uploads/Financial-Stability-and-Monetary-Policy-Happy-Marriage-or-Untenable-Union.pdf>; Maximilian Grimm *et al.*, *Loose Monetary Policy and Financial Instability*, NBER Working Paper 30958, available at https://www.nber.org/system/files/working_papers/w30958/w30958.pdf.

²⁹ Rosengren, *supra* Note 22 at 1-2.

³⁰ “The close relationship between banks and the money supply has important consequences for public policy. Any breakdown of the banking system will affect the money supply and threaten the stability of the economy.” Carnell *et al.*, *supra* Note 21 at 80. See also “The

stability is compromised by the one-two punch of prolonged low interest rates and then a financial crisis,³¹ that will impede the implementation of monetary policy.

And then there are financial stability risks associated with exiting a prolonged period of low interest rates. It is hard to say whether and when these stability risks may be significant enough to justify deviations from inflation-fighting monetary policy, but it remains true that once easy money ceases to be available, that can prick bubbles created as a result of increased yield-seeking behavior during the low interest rate period. Although not all bubbles cause financial instability, financial stability will probably be impacted if banks and other leveraged financial institutions are significantly exposed to a bubble that pops.³² Liquidity will also dry up as easy money disappears: when money is sloshing around during a prolonged period of low interest rates, financial institutions may underestimate the liquidity risks of the assets they acquired during their search for yield.³³ As liquidity evaporates, we might see forced fire sales of assets at discounted prices, which can transmit problems from asset class to asset class.³⁴

The banking business model also has some inherent vulnerabilities that will be impacted if interest rates rise rapidly. As a report from the Bank for International Settlements noted in 2018:

*a period of prolonged low interest rates could well be followed by a sharp surge or “snapback” in interest rates. Such a snapback could be challenging for financial institutions, even in the absence of additional risk-taking. Banks would likely experience valuation losses on long-duration assets and credit losses on loans.*³⁵

The increase in interest rates in 2022 could be described as such a snapback, and in its 2023 Financial Stability Report, the Federal Reserve noted that:

Bank funding costs are likely to increase as deposit rates continue to rise following earlier policy rate hikes and would continue to do so with any additional policy firming. While deposit rates are likely to remain lower than market interest rates, higher funding costs may

strength of the banking system also allowed monetary policymakers to use their tools fully to support the economy.” Mester, *supra* Note 27.

³¹ “Low interest rates could more directly impact the profitability of banks by lowering net interest margins and earnings, thereby limiting banks' capital levels and their ability to lend through a downturn and changing their appetite for risk.” Mester, *supra* Note 27.

³² See Note 9 and accompanying text.

³³ This has been referred to as a “liquidity illusion.” ATC, ASC & FSC, *supra* Note 27 at 44.

³⁴ *Id.*

³⁵ Bank for International Settlements Committee on the Global Financial System, *supra* Note 27 at 2.

*pressure the profitability of banks with large portfolios of fixed-rate assets that were acquired when interest rates were much lower. A sharp rise in interest rates could also lead to increased volatility in global financial markets, stresses to market liquidity, and a correction in asset prices. Liquidity pressures could subject banks to outflows of deposits and other forms of short-term funding.*³⁶

There is therefore no shortage of financial stability concerns associated with prolonged low interest rate policy and the current shift away from it. The remainder of this Article will focus on a narrow subset of these financial stability risks: the ones associated with the VC industry.

III. VENTURE CAPITAL

Some of the “easy money” made available during the accommodative period from 2009-2021 found its way into VC funds.³⁷ A VC fund is a type of private fund that specializes in providing equity capital to startup ventures, and typically couples that equity investment with the provision of management and strategy advice and guidance.³⁸ This “hands on” approach distinguishes VC from many other private fund investment strategies.³⁹ Another distinguishing factor is the expectation that many of the startup ventures a VC fund invests in will fail – which means that the fund must select a few “home run” ventures that grow exponentially in order for the fund to succeed.⁴⁰ The fund is typically formed for a limited duration of ten or twelve years, and so it must exit from all its venture investments before the end of that period.⁴¹

Ultimately, though, VC funds are still funds. They usually follow the typical fund structure of pooling funds from investors in a limited partnership, where the investors are the passive limited partners and some entity affiliated with the VC firm will act as general partner. The general partner will invest the pooled funds in ventures chosen by a management company that is also affiliated with the VC firm.⁴² Ultimately, the VC firm’s compensation will

³⁶ Board of Governors of the Federal Reserve System, *supra* Note 2 at 59-60.

³⁷ See Note 45 and accompanying chart.

³⁸ Elizabeth Pollman, *Adventure Capital* (forthcoming, S. CAL. L. REV.).

³⁹ Other distinguishing factors include the types of companies invested in, and staged financing. *Id.*

⁴⁰ Sebastian Mallaby, THE POWER LAW: VENTURE CAPITAL AND THE MAKING OF THE NEW FUTURE, 9 (2022); Matthew Wansley & Samuel Weinstein, *Venture Predation* (forthcoming J. CORP. L).

⁴¹ “Vetting and selling startups takes time, so VCs only have about five to six years between investment and exit for their startups to grow in value.” Wansley & Weinstein, *supra* Note 40.

⁴² “Venture capital firms raise capital from passive limited partners, organized in funds with 10-12 year terms, charging an annual management fee and a percentage of profits.⁴² Acting as general partner of the fund, venture capitalists make and monitor investments in a portfolio of startups.” Pollman, *supra* Note 38.

be a function of the dollar amount of assets invested in the fund, and of the profits the fund can generate.⁴³ The VC industry also benefits from private funds' appealing tax treatment.⁴⁴

Charts from the Financial Times (reproduced below)⁴⁵ show that in the United States, both the number of VC deals and the dollar amount invested in VC increased at a reasonably steady pace during the post-financial crisis era of low interest rates, with a significant spike in investment in 2021. “The scale of the most recent venture boom has dwarfed that at the end of the 1990s, when annual investment peaked at \$100bn in the US. By comparison, the amount of cash pumped into American tech start-ups [in 2021] reached \$330bn. That was twice as much as the previous year, which was itself twice the level of three years earlier.”⁴⁶



This spike in VC investment has been described by more than a few commentators as a bubble.⁴⁷ Economist Robert Shiller has observed that

⁴³ “The LPs compensate the VCs in two ways: an annual management fee of 2% of the fund’s assets and “carried interest” equal to 20% of the fund’s profits.” Wansley & Weinstein, *supra* Note 40.

⁴⁴ “Because VC funds are partnerships, capital gains flow directly to investors without being taxed. Furthermore, if investors are tax-exempt, such as non-profit pension funds or foundations, they do not pay any taxes at all. The VC limited partnership thus represented an attractive vehicle for a broad class of institutional investors.” The VC industry has also lobbied to have the capital gains tax rate reduced to incentivize investors who are not tax-exempt. Peter Lee, *Enhancing the Innovative Capacity of Venture Capital*, 24 YALE J.L. & TECH. 611, 629 (2022).

⁴⁵ Richard Waters, *Venture capital’s silent crash: when the tech boom met reality*, FINANCIAL TIMES (Aug. 1, 2022), available at <https://www.ft.com/content/6395df7e-1bab-4ea1-a7ea-afaa71354fa0>.

⁴⁶ *Id.*

⁴⁷ See, for example, *id.*; Allison Baum Gates, *Are We in a Venture Capital Bubble*, FORBES (Jul. 5, 2021), available at <https://www.forbes.com/sites/allisonbaumgates/2021/07/05/are-we-in-a-venture-capital->

bubbles typically have multiple idiosyncratic and entangled causes, but emphasizes that the impact of these causes tends to be amplified in ways that remain reasonably consistent from bubble to bubble.⁴⁸ He borrows from the engineering literature to describe these amplification mechanisms as “feedback loops” where “the initial impact of the precipitating factors is amplified, resulting in much larger price increases than the factors themselves would have suggested.”⁴⁹ For example, as asset prices go up, that can create expectations that the price will go up further and so build confidence in the asset, such that more people buy the asset – which drives the price up further, and confirms optimistic expectations.

Shiller’s explanation of bubbles emphasizes that demand (even amongst sophisticated investors) is not always driven by the kinds of factors an economist would consider rational – instead, demand can be increased by investors “fear of missing out” (“FOMO”), or by envy from those who have watched from the sidelines as others made money.⁵⁰ Demand cannot increase forever, though – especially when that demand has been fueled in part by easy money that is no longer available. Once demand falls off, the feedback loop becomes a vicious cycle where the attention and enthusiasm that fueled the upswing of the bubble convert to panic and distrust that encourage selling behavior that drives prices down in a way that only confirms the panic and distrust and encourages more selling.⁵¹

Shiller’s perspective is helpful for understanding the most recent VC bubble. Yield-seeking behaviors inspired by prolonged low-interest rate environments are generally understood to have increased interest in VC investments, but FOMO and other narrative factors were also relevant.⁵² The VC industry was an integral part of the dot-com bubble where “new era stories” about the transformative potential of the internet abounded;⁵³ new stories about transformative technologies surely help explain the most recent VC bubble as well. There is now a general consensus, though, that the air is coming out of the venture capital bubble⁵⁴ (although interest in AI ventures remains strong).⁵⁵ The number and value of deals done in the third and fourth quarters of 2022 fell significantly,⁵⁶ and this is at least in part attributable to

[bubble/?sh=3d401f986f08](#); Tomio Geron, *Is this a VC bubble, or just the new normal?*, PROTOCOL (Jan. 15, 2021); Tony Yiu, *The Venture Capital Bubble is Finally Over*, MEDIUM (Dec. 13, 2022).

⁴⁸ Shiller, *supra* Note 8 at ___.

⁴⁹ *Id.* at ___.

⁵⁰ “How one feels certainly depends on one’s recent experience in investing.” *Id.* at ___.

⁵¹ *Id.* at ___.

⁵² “If there was one word to describe it, it was Fomo,” says Eric Vishria, a partner at Benchmark Capital. The “fear of missing out” he points to brought a stampede at the peak of the market.” Waters, *supra* Note 45.

⁵³ Shiller, *supra* Note 8 at ___.

⁵⁴ Waters, *supra* Note 45.

⁵⁵ [Pitchbook]

⁵⁶ Pitchbook & NVCA, VENTURE MONITOR Q4 2022, 5.

the changes in interest rate policy made in 2022.⁵⁷ At the end of 2022, industry publication Venture Monitor reported that:

*The inflation that drove the federal-funds rate to multidecade highs has also impacted the venture industry. For the past several years, VC has been an attractive asset class for major allocators. While the United States' VC funds have returned impressive values to their LPs, one factor driving the growth of investment in alternative assets such as VC has been low interest rates, which made it difficult to generate returns in more traditional asset classes. As interest rates rise, allocators are diversifying, and this is likely to involve moving some assets away from VC.*⁵⁸

To be clear, the end of the VC bubble does not mean that VC coffers are empty. Many VC funds built up war chests while interest rates were low, but now there is no guarantee that these war chests will be replenished with new capital.⁵⁹

Fortunately, the end of a VC bubble is unlikely to have any immediate financial stability implications: a VC investor cannot withdraw their money from a VC fund before the end of the fund's term, and so we need not be worried about runs on VC funds. Even if individual VC funds end up closing at a loss at the end of their 10-year terms, the financial stability implications are likely to be muted. Investors in a VC fund *could* end up with negative returns at the end of a fund's term if the fund were not able to exit profitably from enough startup ventures to deliver positive returns to its investors,⁶⁰ but those losses would only impact the stability of the broader financial system if the investors were unable to absorb these losses and started to engage in destabilizing behaviors like fire sales of other assets. Such outcomes are unlikely if investors are well diversified.

But the VC bubble has already demonstrated its impact on financial stability in other ways.⁶¹ For example, as we will explore in Section IV.B, a

⁵⁷ Other dampening factors may include the fact that many so-called "unicorns" are struggling, and IPOs are becoming increasingly elusive as an exit mechanism. See Elizabeth Pollman, *Startup Failure* (forthcoming, DUKE L. J.).

⁵⁸ Pitchbook & NVCA, *supra* Note 56 at 3.

⁵⁹ Waters, *supra* Note 45.

⁶⁰ "[O]verall exit activity plummeted in 2022. Annually, exit activity value dropped below \$100 billion for the first time in five years." Jacob Robbins, *How bad was 2022 for VCs? It depends where you look?*, PITCHBOOK (Jan. 24, 2023), available at <https://pitchbook.com/news/articles/vc-trends-charts-2022>. "[I]nvestors who put the bulk of their latest funds to work at the peak of the market could be facing the sort of negative returns that have not been seen since the dotcom crash at the turn of the century." Waters, *supra* Note 45.

⁶¹ The bubble has also created other harms that are outside the scope of this article. For example, the glut of venture capital has enabled startups to engage in predatory pricing that can "harm consumer welfare by raising prices and reducing consumer choice. Second, it

significant amount of the glut of VC investment ended up deposited with Silicon Valley Bank, rendering that bank unstable in a way that damaged confidence in the banking system more broadly. And the VC bubble also propagated a crypto bubble that, if regulatory authorities had handled it differently, might have had serious financial stability implications – and might still, if VCs are successful in lobbying for changes in regulatory policy.

IV. CASE STUDIES

The previous Section discussed the money that rushed into VC funds during a period of prolonged low interest rates. This Section will consider the financial stability implications of what VC funds have done with that money. In doing so, it will explore some of the factors that predispose the VC industry to inflating asset bubbles in boom times. These asset bubbles can be directly detrimental to those who invest in the affected assets (particularly those who invest later in the cycle) – this raises questions about investor protection that are largely beyond the scope of this Article.⁶² If leveraged financial institutions also invest in these asset bubbles, though, then that can threaten financial stability.⁶³ If a crisis results, then people who never even invested in the bubble themselves will be harmed, albeit indirectly.⁶⁴

There are several factors that make the VC industry particularly prone to inflating asset bubbles. While the VC industry is often lionized for its nonconformist ability to identify idiosyncratic genius, reality often fails to match that narrative. Peter Lee, drawing on both academic research and interviews with Silicon Valley figures, demonstrates that the innovative capacity of venture capital is impeded by three interlocking factors: entrepreneurs often need social ties with VC firms to receive funding, VCs often exhibit herd mentality, and VC funds must be able to “exit” from projects in the medium term because of how these funds are structured.⁶⁵ For this Article’s consideration of the impact of VC investments on financial stability, the herd mentality is most significant: this mentality helps a bubble of investments in VC firms translate into bubbles in the areas that those VC firms fund. While herd mentality has been observed among all kinds of fund

can harm the economy in a more subtle way by distorting the price signal and leading third parties to make economically irrational decisions. Third, it can harm society in the long run by misallocating capital to predatory pricing and away from genuine innovations.” Wansley & Weinstein, *supra* Note 40. As the authors note, “It may not be a coincidence that venture predation became so popular in the late 2010s—a period of low interest rates, a frothy stock market, and an unprecedented amount of money pouring into venture capital.” *Id.*

⁶² There is some discussion of investor protection regulation in Section V.B.ii, *infra*.

⁶³ See Note 9 and accompanying text.

⁶⁴ Allen, *supra* Note 6 at 7 (“financial system failure has significant implications for the people and businesses that make up the broader economy”).

⁶⁵ Lee, *supra* Note 44 at 615-617.

managers,⁶⁶ it is exacerbated in the VC context by the “groupthink” that arises from the tightknit social networks between VC firms and founders.⁶⁷

Lee observes that “[h]istorical evidence reveals several trends of “hot” technologies receiving significant VC funding and then losing favor. Perhaps owing to the close-knit, socially connected nature of the VC-startup ecosystem, information signals from a few key decisionmakers can steer significant shifts in funding trends.”⁶⁸ In the relatively small and hyperconnected world of Silicon Valley VC, interest from one marquee name VC firm can sometimes be all that is needed to spark hype in a particular type of investment,⁶⁹ particularly because VC firms often co-operate with one another in syndicated deals rather than trying to outcompete one another.⁷⁰ Lee notes his interviewees’ observations that this herding “creates significant waste and overlooks promising innovations outside the mainstream.”⁷¹ One such interviewee commented that “there’s just countless examples of that, where poor quality innovation is what actually makes it to market, ’cause of the team, the network, the location, the hype, the everything.”⁷²

Another trait that predisposes VC investment towards creating bubbles is that VC returns are generated primarily from one big success – what Sebastian Mallaby has called “power law.”⁷³ It is entirely expected that VC funds will see many of their investments become worthless, and so those funds won’t worry about failures in the same way traditional financiers would.⁷⁴ Instead, the focus is on the possible exponential upside of a new business, even if its success seems somewhat unrealistic, on the assumption that “the future is best discovered by means of maverick moon shots” – it is these maverick moon shots that will deliver the funds’ returns.⁷⁵ Optimism is therefore structural, and not just a matter of groupthink. This is exacerbated because it is difficult to express pessimism in startup investment – short-selling of startup shares is not possible in any meaningful sense, and so there is a pronounced and asymmetric preference for optimism over pessimism.⁷⁶

⁶⁶ For discussion of incentives and evidence of herding by fund managers, see Sushil Bikhchandani & Sunil Sharma, *Herd Behavior in Financial Markets*, 47 IMF STAFF PAPERS 279 (2001).

⁶⁷ Lee, *supra* Note 44 at 650.

⁶⁸ *Id.* at 616.

⁶⁹ *Id.* at 656.

⁷⁰ Wansley & Weinstein, *supra* Note 40.

⁷¹ Lee, *supra* Note 44 at 616.

⁷² *Id.* at 645

⁷³ Mallaby chose the term “power law” because “the winners advance at an accelerating, exponential prate, so that they explode upward for more rapidly than in a linear progression.” Mallaby, *supra* Note 40 at 7.

⁷⁴ “[H]e learned not to worry about the bets that went to zero. All he could lose was one times his money.” *Id.* at 9.

⁷⁵ *Id.* at 12

⁷⁶ Jesse M.Fried & Jeffrey N. Gordon, *The Valuation and Governance Bubbles of Silicon Valley*, THE CLS BLUESKY BLOG (Oct. 10, 2019), available at

VC's relative lack of concern about their failed investments may help explain why VC firms sometimes perform less diligence on their investments than the public would expect. Low levels of diligence can contribute to the growth of bubbles, as they allow more and lower quality startups to enter the market. These limitations of VC oversight may also persist after VC funds first invest in a project: "the board [on which VC interests are represented] typically invests little in compliance and internal controls...because...the company is usually still figuring out if it can even make an innovative product or service that people want and develop a strategy to bring it to market."⁷⁷ If the project goes well, then VCs "need the company's valuation to keep going up in order to raise another round of financing and not get significantly diluted, and eventually to reach an exit that generates returns."⁷⁸ The desire for exponential growth and profits certainly provide an incentive for VC firms to refrain from being too critical of their investments, as does the clubby natures of the relationships between VCs and founders (VCs are sometimes too worried about scaring away founders to exercise real oversight).⁷⁹

Many of these factors were heightened or exacerbated by the prolonged low-interest rate environment we just experienced. VC firms had a glut of money which they had to deploy *somewhere*: as one industry commentator put it, with money flooding into VC funds, things "quickly went from not enough capital to not enough ideas for the flood of capital to fund."⁸⁰ In such an environment, it would not be surprising for herding to intensify, startup valuations to increase, and diligence standards to suffer:

It wasn't just the high prices investors were prepared to pay not to miss the boat: periods for conducting due diligence were drastically shortened and protections that investors usually build in to protect their investments fell by the wayside.⁸¹

This recent VC bubble was notable for its significant herding of investments into several sectors: ultrafast delivery companies, fintechs in general, and

<https://clsbluesky.law.columbia.edu/2019/10/10/the-valuation-and-governance-bubbles-of-silicon-valley/>.

⁷⁷ Elizabeth Pollman, *Startup Governance*, 168 U. PENN. L. REV. 155, 202 (2019).

⁷⁸ *Id.*

⁷⁹ *Id.* at 206.

⁸⁰ Yiu, *supra* Note 47.

⁸¹ Waters, *supra* Note 45. *See also*, investment discipline was loosened, with VCs spreading their bets widely across entire sectors rather trying to single out the small number of big winners that had traditionally provided the lion's share of the industry's profits. *Id.* With regards to diligence for crypto investments more specifically, *see* Erin Griffith and David Yaffe-Bellany, *Investors Who Put \$2 Billion Into FTX Face Scrutiny, Too*, N.Y. TIMES (Nov. 11, 2022).

crypto more specifically.⁸² The next Part will focus on the recent crypto bubble.

A. Crypto

The chart from the Financial Times reproduced below shows significant growth in crypto investments beginning at the end of 2020, and also shows the bust that followed the failure of Terra/Luna in May 2022 – the beginning of 2022’s “crypto winter.”⁸³

Digital assets dashboard



The good news from a financial stability perspective is that, because few traditional financial institutions were exposed to crypto, implosions in the crypto industry have had limited impact on the real economy.⁸⁴ It is also good news from a financial stability perspective that the crypto industry has significantly shrunk in size. The market for crypto assets has not, however,

⁸² “When asked which sectors are likely to prove the biggest disappointments, most venture investors list the same handful: the ultrafast delivery companies, like Gopuff and Gorillas, that have set out to bring customers their grocery items in as little as 20 minutes; fintechs that embarked on an expensive campaign to build large consumer businesses; and blockchain-based ventures that have been caught up in the crypto crash.” Waters, *supra* Note 45.

⁸³ Financial Times, *Digital Asset Dashboard*, available at <https://digitalassets.ft.com> (current as of June 6, 2023). The valuation figures cited for crypto assets are highly manipulable and often convey limited or misleading information, but even taking these numbers with many grains of salt, crypto’s boom and bust cycle is clear (on the manipulability of crypto valuations, see Matt Levine, *FTX’s Balance Sheet Was Bad*, BLOOMBERG (Nov. 14, 2022); Molly White, *Cryptocurrency “market caps” and notional value*, MOLLY WHITE (Jul. 17, 2022), available at <https://blog.mollywhite.net/cryptocurrency-market-caps-and-notional-value/>).

⁸⁴ “[D]espite crypto’s large user base and the substantial losses to many investors, the market turmoil in 2022 had little discernible impact on broader financial conditions outside the crypto universe, underlining the largely self-referential nature of crypto as an asset class.” Giulio Cornelli, Sebastian Doerr, Jon Frost, and Leonardo Gambacorta, *Crypto Shocks and Retail Losses*, BIS BULLETIN No. 69, 1 (Feb. 20, 2023), available at <https://www.bis.org/publ/bisbull69.pdf>.

disappeared as easy money has retreated from the economy. This Part will argue that the VC industry has played a central role in both building, and sustaining, the crypto industry. While the fact that the crypto industry has not failed completely might superficially seem like good news from a financial stability perspective, in the longer term, keeping the crypto industry going could prove negative for financial stability – especially if the traditional financial system embraces crypto in that longer term.

In previous work, I have explored in detail how the complexity, leverage, rigidity, and runs that characterize the crypto markets – as well as the underlying operational fragilities of blockchain technology – replicate and exacerbate the fragilities we see in traditional finance without providing any meaningful improvements in capital intermediation or transaction processing.⁸⁵ While the general consensus is that crypto business models do not *yet* threaten the stability of the financial system,⁸⁶ if the crypto markets grow and integrate with traditional finance, then banks and other critical financial intermediaries could be compromised by the boom-bust cycle of the crypto markets.⁸⁷ If this were to happen, even people who eschewed crypto investments would be impacted by a crypto crash and the ensuing financial instability.

This Article will incorporate this previous work on crypto and financial stability by reference, and take it as given that crypto could threaten a financial crisis if it integrated with traditional finance. The purpose of *this* Article is to examine the role that the VC industry is playing in supporting the crypto industry, and in trying to encourage the integration of crypto and traditional finance.

As already discussed, economist Robert Shiller has observed that every bubble is a product of many different factors.⁸⁸ For the dot-com era stock bubble of the late 1990s, Shiller identified, amongst other factors, the availability of new internet technologies, generational factors (the relevant generation there was the Baby Boomers), the presence of new 24-7 business news channels, and an increased interest in gambling. All of these factors have analogues in the crypto bubble. The crypto bubble can be partially attributed to excitement around the development of new blockchain technologies (which are often marketed, not coincidentally, as “the next internet,” notwithstanding their lack of demonstrated utility and inherent

⁸⁵ Hilary J. Allen, *DeFi: Shadow Banking 2.0?*, 64 WM. & MARY L. REV. 919 (2023); Allen, *supra* Note 6. See also Angela Walch, *The Bitcoin Blockchain as Financial Market Infrastructure: A Consideration of Operational Risk*, 18 NYU J. LEGISLATION & PUB. POL’Y 837 (2015).

⁸⁶ Cornelli *et al*, *supra* Note 84 at 4.

⁸⁷ Hilary J. Allen, *DeFi: Shadow Banking 2.0?*, 64 WM. & MARY L. REV. 919 (2023).

⁸⁸ See Notes 48-50 and accompanying text.

limitations).⁸⁹ The crypto bubble can also be explained in part by the millennial generation having a sense of precarity and distrust of traditional finance as a result of their formative experiences with the financial crisis of 2008.⁹⁰ It can be attributed to the rise of new social media channels for disseminating “new era stories” about crypto,⁹¹ and to a new comfort with gambling typified by the ascension of sports betting.⁹² The crypto bubble can also be explained in part by fiscal policy stimulus measures implemented during the pandemic that left many consumers with extra funds and few places to spend them⁹³ – as well as by consumers’ yield-seeking behaviors during prolonged periods of low-interest rates.⁹⁴

Regardless of what sparks a particular bubble, Shiller’s work establishes that the same kinds of feedback loops amplify the impact of those sparks.⁹⁵ Shiller has described feedback loops in the stock market as “naturally occurring Ponzi processes,” because:

even if there is no manipulator fabricating false stories and deliberately deceiving investors in the aggregate stock market, tales about the market are everywhere. When prices go up a number of times, investors are rewarded sequentially by price movements in these markets, just as they are in Ponzi schemes. There are still many people (indeed, the stock brokerage and mutual fund industries as a

⁸⁹ For examples using this descriptor, see a16zcrypto, THE STATE OF CRYPTO (2023) (“Web3 is the next evolution of the internet”); Jana Arbanas *et al.*, *The metaverse and Web3: The next internet platform*, DELOITTE (Jul. 25, 2022), available at <https://www2.deloitte.com/us/en/insights/industry/technology/web3-and-metaverse-the-future-of-the-internet.html>. For some cold water on these claims, see <https://concerned.tech>; Molly White, *Narrative over numbers: Andreessen Horowitz's State of Crypto report*, MOLLYWHITE.COM (May 9, 2023), available at <https://newsletter.mollywhite.net/p/andreessen-horowitzs-state-of-crypto>.

⁹⁰ Andrew Van Dam, *The Unluckiest Generation in US History*, WASHINGTON POST (Jun. 5, 2020); Allen, *supra* Note 6 at 24.

⁹¹ Regarding the use of social media channels to discuss investment strategies, see Sergio Alberto Ricci & Christina M. Sautter, *Corporate Governance Gaming: The Collective Power of Retail Investors*, 22 NEV. L.J. 51 (2021).

⁹² The rise of gambling culture is a particularly interesting parallel. “The rise of gambling institutions, and the increased frequency of actual gambling, had potentially important effects on our culture and on changed attitudes toward risk taking in other areas” Shiller, *supra* Note 8 at __. Shiller also notes that “[t]his period of volatility occurred during a “gambling craze” that was brought on not by legalization, but by the organized crime that was inadvertently created by the prohibition of alcoholic beverages from 1920 to 1933.” *Id.* at __. In the early 2020s, interest in gambling seems to be growing in the United States. Stephen Marche, *America’s Gambling Addiction is Metastasizing*, THE ATLANTIC (Nov. 26, 2021).

⁹³ Darren Aiello *et al.*, *Cryptocurrency Investing: Stimulus Checks and Inflation Expectations* (May 2023), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4281330.

⁹⁴ “Crypto fans had a fun ride, powered by exuberant risk taking in an era of low interest rates.” Derek Thompson, *The Crypto Crash is Just the Start*, THE ATLANTIC (May 13, 2022).

⁹⁵ See notes 48-49 and accompanying text.

whole) who benefit from telling stories that suggest that the market will go up further. There is no reason for these stories to be fraudulent; they need only emphasize the positive news and give less emphasis to the negative. The path of a naturally occurring Ponzi scheme—if we may call speculative bubbles that—will be more irregular and less dramatic, since there is no direct manipulation, but the path may sometimes resemble that of a Ponzi scheme when it is supported by naturally occurring stories.⁹⁶

Such “naturally occurring Ponzi processes” are not restricted to the stock market, and given that the entire crypto industry is often described as Ponzi-like,⁹⁷ it is worth considering the role that stories and other interventions from VC firms have played in creating and prolonging the crypto bubble.

By way of background, a Ponzi scheme exists where “early investors are paid returns from funds provided by new investors, as opposed to being paid from actual returns of a purported investment,”⁹⁸ and some members of the crypto industry freely admit that it is Ponzi-like in its attributes.⁹⁹ After all, crypto assets (with the exception of some asset-backed stablecoins) are not backed by any productive economic activity or other assets – they have no value unless new buyers can be attracted to the market or existing holders can be encouraged to buy more.¹⁰⁰ Like any bubble or Ponzi process, though, the crypto industry required some initial investors to get started and establish credibility – attracting the first investments is often the most challenging part of a Ponzi scheme.¹⁰¹ VC funds have often played that role, so what attracted VC to crypto ventures in the beginning?

Ultimately, VC firms are seeking “investments with high upside, relatively short time frames, and less risk.”¹⁰² VC funds are not designed to last forever – they are typically formed for 10 years, after which the fund will be liquidated and its assets will be distributed to the limited partner

⁹⁶ Shiller, *supra* Note 8 at ___.

⁹⁷ In addition to the entire crypto industry being Ponzi-like, it is also rife with actual frauds, as catalogued by Molly White’s website “Web3 is Going Just Great,” <https://web3isgoinggreat.com>.

⁹⁸ Catherine Carey & John K. Webb, *Ponzi Schemes and the Roles of Trust Creation and Maintenance*, 24 J. FIN. CRIME 589, 589 (2017).

⁹⁹ Perhaps most infamously, in April 2022 Sam Bankman-Fried conceded on the Odd Lots podcast that crypto yield farming was ponzi-like. Tracy Alloway & Joe Weisenthal, *Matt Levine on the Collapse of Sam Bankman-Fried’s FTX and Alameda*, BLOOMBERG (Nov. 18, 2022). See also, for example, Daniel Kuhn, *Is Crypto a Ponzi? Define ‘Ponzi’*, COINDESK (May 11, 2023), available at <https://www.coindesk.com/layer2/2022/01/18/is-crypto-a-ponzi-define-ponzi/>.

¹⁰⁰ Robert McCauley, *Why bitcoin is worse than a Madoff-style Ponzi scheme*, FINANCIAL TIMES (Dec. 22, 2021)

¹⁰¹ Carey & Webb, *supra* Note 98 at 595.

¹⁰² Lee, *supra* Note 44 at 668-9.

investors.¹⁰³ Lee has observed that software/internet businesses are particularly appealing to VC funds because they are typically less capital intensive and quicker to set up than things like biotech and cleantech, which then leaves more time to exit.¹⁰⁴ Crypto ventures are likely to be particularly attractive to VC funds because it is relatively quick and inexpensive to generate the rapid, exponential growth that VC funds prize when that growth can be generated by sentiment and doesn't require the development of prototypes or infrastructure.¹⁰⁵

The unique exit strategies that crypto ventures offer (or rather, the unique exit strategies that are available so long as the securities laws are not enforced against crypto ventures) also appeal to VC firms. Typically, VC funds exit their venture investments either by finding a company willing to acquire the venture, or by orchestrating an IPO of the venture's stock.¹⁰⁶ Unless an IPO is pursued, securities laws prohibit VC funds from selling their interests in the venture to the general public (at least in the United States) for one year.¹⁰⁷ Even after that year has passed, securities exchanges are prohibited from listing unregistered securities, making it challenging for VCs to connect with retail buyers and therefore limiting their exit opportunities.¹⁰⁸ With crypto ventures, however, VC funds typically receive tokens in connection with their investments. If these tokens are not considered to be securities, then resales will be unrestricted. Some VCs recognize that the tokens *may* be securities, so they wait for a year, but then sell them to the US public on unregistered crypto exchanges.¹⁰⁹ The practical effect is that VCs have ways to exit their crypto investments as soon as their contractual lock-up expires.¹¹⁰

Crypto-related ventures are therefore very appealing to VC funds, and after making their initial investments in such ventures, funds have incentives to sustain the Ponzi-like bubble (at least until they have exited from all their

¹⁰³ *Id.* at 667.

¹⁰⁴ *Id.* at 668. For more on the pressures VC faces to exit investments, see Pollman, *supra* Note 77 at 209 *et seq.*

¹⁰⁵ "The distribution of returns from a successful venture portfolio follows a power law. Most of the startups will fail or generate only modest growth, but one or two will grow exponentially. The outsized returns from those outlier companies must offset the losses from the rest of the portfolio." Wansley & Weinstein, *supra* Note 40.

¹⁰⁶ *Id.*; Lee, *supra* Note 44 at 624.

¹⁰⁷ Securities Act of 1933 § 5; Rule 144. For further elaboration see Matt Levine, *When is a Token Not a Security?*, BLOOMBERG (Jun. 7, 2023).

¹⁰⁸ *Id.* The prohibition lies in Securities & Exchange Act of 1934 § 5.

¹⁰⁹ *Id.*

¹¹⁰ "VCs often buy a huge chunk of tokens at an early stage at a very low price, and these tokens are often time-locked, so they can't be sold for one or two years. When the time is up, VCs face the dilemma of dumping their tokens — which makes them a fortune but tanks the price of the community's holdings — or hanging on. Typically, VCs are perceived to choose the former." Max Parasol, *The risks and benefits of VCs for crypto communities*, COINTELEGRAPH (Jul. 8, 2022).

crypto ventures).¹¹¹ As Wansley and Weinstein have observed, “[t]he most successful VCs...do not just try to *find* home runs—they try to *build* home runs.”¹¹² The VC firm Andreessen Horowitz (often referred to as “a16z”) has been particularly aggressive in building the crypto industry, and so a16z will be used as a case study here to illustrate ways in which VC firms can use war chests amassed in a prolonged period of low interest rates to help propagate and sustain a bubble in another asset class.

As of May 2022, a16z had funded more than \$7.6 billion in crypto and Web3 ventures¹¹³ (Web3 seeks to use blockchain infrastructure to financialize interactions, and is in many ways a rebranding of crypto).¹¹⁴ A16z’s first crypto investment was in the crypto exchange Coinbase in 2013, and it has since launched several dedicated crypto venture funds, backing at least 75 crypto/blockchain companies.¹¹⁵ As one industry publication put it, “[c]rypto has become central to a16z’s business, and the firm plans to own large portions of the digital world.”¹¹⁶ A16z therefore has a vested interest in the success of the crypto industry.

The academic literature on VCs suggests that a few big names can create hype around a particular sector,¹¹⁷ and as a marquee firm, a16z certainly has the clout to attract other VC firms to crypto and blockchain ventures. Intentionally or not, a16z seems to have exploited VC’s herd mentality to build interest in these kinds of ventures among other VC firms: it has invested alongside firms like Coinbase Ventures, Paradigm, Animoca Brands, Dragonfly Capital, Sound Ventures, Tiger Global Management, Coatue Management, Variant Fund, and CoinFund.¹¹⁸

A16z has also sought to tell the story of crypto more broadly in order to attract retail investors to the crypto ventures it has funded: through media

¹¹¹ “VC funds don’t have to actually guarantee that investments in these tokens will be profitable; they only “need to create the *impression* that recoupment is possible” long enough to exit.” Wansley & Weinstein, *supra* Note 40.

¹¹² *Id.*

¹¹³ *Where a16z is investing in crypto and blockchain*, CBInsights (Jul. 29, 2022), available at <https://www.cbinsights.com/research/a16z-andreessen-horowitz-crypto-blockchain-investments/>.

¹¹⁴ “At its core, Web3 is a rebranding of crypto and blockchain.” Peter Kafka, *Web3 is the future, or a scam, or both*, VOX (Feb. 1, 2022).

¹¹⁵ CBInsights, *supra* Note 113.

¹¹⁶ *Id.*

¹¹⁷ Lee, *supra* Note 44 at 656. As one example, one journalist covering the Terra/Luna collapse reported, “One very senior risk analyst at a crypto VC fund told me he held grave reservations regarding the “algorithm stablecoin.” But his team was assuaged by the cap table having some big names in crypto capital....” Parasol, *supra* Note 110.

¹¹⁸ CBInsights, *supra* Note 113.

appearances;¹¹⁹ policy whitepapers;¹²⁰ and forums like its “web3 with a16z crypto” podcast and “web3 weekly” newsletter.¹²¹ In doing so, a16z seemed to be harnessing narrative to build confidence in the crypto industry¹²² (as Shiller notes, during a bubble, there will always be those “who benefit from telling stories that suggest that the market will go up further”).¹²³ So-called “new era stories” – which capitalize on new technologies to make the case that the laws of financial gravity no longer apply – can be particularly compelling fodder for bubbles.¹²⁴

As I have explored at length elsewhere, however, the new era stories that are being told about blockchain technology’s decentralization, democratization, and efficiency, are hollow.¹²⁵ For example, the technological decentralization generated by blockchain technology does nothing to guarantee economic decentralization.¹²⁶ A system can have lots of nodes, but if someone controls most of the nodes, they control the system – and concentration of economic power in crypto is sometimes worse than in traditional financial markets.¹²⁷ It is this concentration of economic power

¹¹⁹ A16z is known for its savvy in using media to promote its investments. “Analyst and former a16z partner Benedict Evans has called the firm “a media company that monetizes through VC.” Elizabeth Lopatto, *Andreessen Horowitz saw the future — but did the future leave it behind?*, THE VERGE (May 3, 2023).

¹²⁰ See, for example, a16zcrypto, *Principles and Models of Web3 Decentralization*, available at https://a16z.com/wp-content/uploads/2022/04/principles-and-models-of-decentralization-miles-jennings_a16zcrypto.pdf; Miles Jennings, *Regulate Web3 Apps not Protocols* (Sept. 29, 2022), available at <https://a16zcrypto.com/posts/article/web3-regulation-apps-not-protocols/>; Miles Jennings & Brian Quintenz, *Regulate Web3 Apps, Not Protocols Part II: Framework for Regulating Web3 Apps* (Jan. 11, 2023), available at <https://a16zcrypto.com/posts/article/regulate-web3-apps-not-protocols-part-ii-framework-for-regulating-web3-apps/>.

¹²¹ White, *supra* Note 89.

¹²² Stories are an important part of building confidence, with confidence being “not just the emotional state of an individual. It is a view of other people’s confidence, and of other people’s perceptions of other people’s confidence. It is also a view of the world – a popular model of current events, a public understanding of the mechanism of economic change as informed by the news media and by popular discussions.” Akerlof & Shiller, *supra* Note 4 at 55.

¹²³ Shiller, *supra* Note 8 at ___.

¹²⁴ Akerlof & Shiller, *supra* Note 4 at 55.

¹²⁵ Hilary J. Allen, *DeFi: Shadow Banking 2.0?*, 64 WM. & MARY L. REV. 919 (2023); Hilary J. Allen, *The Superficial Allure of Crypto*, IMF FINANCE & DEVELOPMENT (F&D) (Sept. 2022); Hilary J. Allen, *The Case for Banning Crypto*, FOREIGN AFFAIRS (Apr. 5, 2023). See also, Tonantzin Carmona, *Debunking the narratives about cryptocurrency and financial inclusion*, BROOKINGS (Oct 26, 2022), available at <https://www.brookings.edu/research/debunking-the-narratives-about-cryptocurrency-and-financial-inclusion/>.

¹²⁶ Sirio Aramonte, Wenqian Huang, and Andreas Schrimpf, *DeFi Risks and the Decentralization Illusion*, BIS QUARTERLY REVIEW, (Dec. 2021), available at https://www.bis.org/publ/qtrpdf/r_qt2112b.pdf.

¹²⁷ David Rosenthal, *EE380 Talk*, DSHR’S BLOG (Feb. 9, 2022), available at <https://blog.dshr.org/2022/02/ee380-talk.htm> (“Gini coefficients of cryptocurrencies are extremely high.”). For more examples of founders and whales exercising their power in

that presumably makes crypto and Web3 ventures attractive to VC firms like a16z. If the goal of crypto and Web3 were true decentralization, then no centralized entity would profit – and without the possibility of a return, no VC firm would be funding those ventures.¹²⁸

In addition to offering these narratives around blockchain and crypto, a16z has also sought to deploy strategies of “regulatory entrepreneurship” to help build the crypto industry. Pollman and Barry define regulatory entrepreneurship as “pursuing a line of business in which changing the law is a significant part of the business plan” – and they note that this kind of approach can “lead to negative consequences when companies’ interests diverge from the public interest.”¹²⁹ One such regulatory entrepreneurship strategy entails “strategically operating in a zone of questionable legality or breaking the law until they can (hopefully) change it,”¹³⁰ and this strategy can prove particularly effective when a new technology is involved in the business model. As a society, we tend to be far too credulous of technology’s transformative power,¹³¹ and VC firms can harness that credulity to forge ahead with business models based on new technologies “[e]ven if existing regulations or statutes use broad language that, when read literally, prohibit the company’s activity.”¹³² The SEC takes the view that activities that are central to some of the crypto business models that a16z has funded – like allowing the general public to trade unregistered securities – do not comply

purportedly decentralized applications, see Scott Chipolina, *Cryptocurrency Fallout Delivers Sharp Kick to Decentralised Finance Dreams*, FINANCIAL TIMES (June 22, 2022), available at <https://www.ft.com/content/3d1a2409-4030-4a26-be27-dbc25f6fd75>.

¹²⁸ This issue was the subject of Twitter spat between a16z partner Chris Dixon and Twitter founder Jack Dorsey. For background, see Alex Konrad, *How Chris Dixon’s Dive Down The Crypto Rabbit Hole Made Him The World’s Top Venture Capitalist*, FORBES (Apr. 12, 2022).

¹²⁹ Elizabeth Pollman & Jordan M. Barry, *Regulatory Entrepreneurship*, 90 S. CAL. L. REV. 383, 383-4 (2017).

¹³⁰ *Id.* at 399. Pollman and Barry also describe other regulatory entrepreneurship strategies: “They seek to grow “too big to ban” before regulators can act, sometimes referred to as “guerilla growth.” Perhaps most dramatic, they mobilize their users and stakeholders as a political force.” *Id.* at 390. These descriptions also resonate: the crypto industry has sought exponential growth and its lobbyists now argue that it is too big and entrenched to ban. See, for example, Kristin Smith, *The Case for Regulating, Not Banning, Crypto*, COINDESK (Apr. 27, 2023). As for the mobilization of users, Grayscale Investments sought to follow Uber’s playbook and have investors petition the SEC to grant Grayscale’s application for a spot Bitcoin ETF. Kevin Helm, *Grayscale Investments Asks Investors to Help Convince SEC to Approve Bitcoin Spot ETF*, BITCOIN.COM (Feb. 22, 2022), available at <https://news.bitcoin.com/grayscale-investments-investors-help-convince-sec-approve-bitcoin-spot-etf/>.

¹³¹ The term “technological solutionism” was coined by Evgeny Morozov to describe the tendency to view “all complex social simulations either as neatly defined problems with definite, computable solutions or as transparent and self-evident processes that can be easily optimized,” with “the latest technologies mak[ing] the fixes easier, cheaper, and harder to resist.” Evgeny Morozov, *TO SAVE EVERYTHING, CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM*, 5; xiii (2013).

¹³² Pollman & Barry, *supra* Note 129 at 398.

with the securities laws.¹³³ This has not stopped these kinds of businesses from forging ahead, but increased enforcement activity from the SEC may have heightened VC firms' interest in seeking accommodative legislative regulatory change.

A16z has used money invested with it during low-interest rate periods to aggressively lobby regulators and legislators. It is no secret that a16z has been pursuing this kind of strategy for some time: as one New York Times article from 2021 put it, “[d]elivering significant returns on all this investment, executives at A16Z quickly realized, would necessitate playing a major role in shaping rules for these companies.”¹³⁴ A16z has sent numerous letters to federal regulators, hired a significant number of former government officials, engaged in campaign financing, and organized fundraisers for elected officials:¹³⁵ one article reported that “a16z’s leaders have given millions of dollars to pro-crypto candidates and PACs that wound up supporting them.”¹³⁶ Overall, the crypto industry is spending amounts on lobbying that are roughly comparable to the defense and pharmaceutical industries,¹³⁷ although it has not yet been able to secure the bespoke legislation it seeks.

Ultimately, Ponzi-like processes are not sustainable indefinitely: “[m]athematically, it is virtually impossible for a Ponzi scheme to be sustainable given that an exponentially increasing number of new members would be required.”¹³⁸ The “crypto winter” of 2022 started only two months after the Federal Reserve began its rate hikes, and while correlation does not prove causation, this sequence of events is not surprising. Rate hikes reduce

¹³³ A16z was an early investor in the crypto exchange Coinbase, against which the SEC recently brought an enforcement action for operating as an unregistered securities exchange, broker, and clearing agency. Securities and Exchange Commission, *Press Release: SEC Charges Coinbase for Operating as an Unregistered Securities Exchange, Broker, and Clearing Agency* (Jun. 6, 2023), available at <https://www.sec.gov/news/press-release/2023-102>. The SEC also brought an enforcement action against the Binance crypto exchange, in which the SEC alleges that unregistered securities were traded on the Binance platform, including Solana tokens (*see* <https://www.sec.gov/files/litigation/complaints/2023/comp-pr2023-101.pdf>). A16z is an investor in Solana as well as Coinbase. A16zcrypto, *Portfolio*, available at <https://a16zcrypto.com/portfolio/>.

¹³⁴ Eric Lipton, Daisuke Wakabayashi & Ephrat Livni, *Big Hires, Big Money and a D.C. Blitz: A Bold Plan to Dominate Crypto*, N.Y. TIMES (Oct. 29, 2021).

¹³⁵ *Id.*

¹³⁶ David Jeans & Sarah Emerson, *Andreessen Horowitz’s Crypto Lobbying is Paying Off*, FORBES (Oct. 17, 2022), available at <https://www.forbes.com/sites/davidjeans/2022/10/17/andreessen-horowitz-crypto-lobbying-washington/?sh=4d48b58d46e7>.

¹³⁷ “Political donations from the sector surged to more than \$26 million during 2021 and the first three months of [2022]. That influx of cash is outpacing spending by internet giants, drug makers and the defense industry.” Allyson Versprille and Bill Allison, *Crypto Bosses Flex Political Muscle With 5,200% Surge in US Giving*, BLOOMBERG (Jun. 2, 2022).

¹³⁸ Carey & Webb, *supra* Note 98 at 590.

the amount of money available in the economy, and Ponzi-like processes tend to fall apart when there are no new investors and existing investors need to cash out.¹³⁹ But – notwithstanding that more than a decade has passed without any significant use case for blockchain technology developing beyond speculation¹⁴⁰ – VC firms that have invested heavily in crypto ventures (and not yet exited) have strong economic motivation to try to revive interest in crypto and blockchain ventures.

One strategy VC firms have used to try to rebuild interest in crypto after 2022’s crypto winter has been to double down on pro-crypto narratives. We can use a16z’s 2023 “State of Crypto” presentation to illustrate its aggressive attempts to reclaim the narrative around crypto.¹⁴¹ Technologist Molly White offers detailed critiques of the choice and presentation of data in this report, and of its claims about blockchain scalability, environmental impact, and decentralization.¹⁴² We can focus on the report’s claims about decentralization as an example of its flaws. As already explored, claims of meaningful decentralization are entirely disingenuous, and yet the 2023 State of Crypto report says things like:

*Blockchains transfer control from centralized entities to decentralized communities*¹⁴³

and:

*We believe recent setbacks underscore the failure of opaque, centralized systems in contrast to the resilience of decentralized infrastructure. We believe decentralized computing platforms can also counter the trend of power consolidating into the hands of a few giant tech corporations. The internet needs web3. Those who understand this will fight for the future of these technologies.*¹⁴⁴

This presentation seems calculated to restore crypto investors’ faith in the ventures that a16z has funded.¹⁴⁵ But as interest rates climb and money

¹³⁹ *Id.*

¹⁴⁰ A recent report from the UK’s House of Commons Treasury Committee found that “[u]nbacked cryptoassets have no intrinsic value, and their price volatility exposes consumers to the potential for substantial gains or losses, while serving no useful social purpose. These characteristics more closely resemble gambling than a financial service, an impression reinforced by the evidence we have received of consumer behaviour.” House of Commons Treasury Committee, REGULATING CRYPTO, 3 (May 17, 2023), available at <https://committees.parliament.uk/publications/39945/documents/194832/default/>.

¹⁴¹ a16zcrypto, *supra* Note 89.

¹⁴² White, *supra* Note 89.

¹⁴³ a16zcrypto, *supra* Note 89 at 8.

¹⁴⁴ *Id.* at 2.

¹⁴⁵ “The truth is that Andreessen Horowitz needs crypto to do well. With an asset class so dependent on sentiment for value, they seem to be hoping that if they can convince both

becomes scarcer, VCs and the crypto industry presumably need to do more than placate existing crypto investors. New investors will be needed, and one strategy for attracting new money to the crypto industry (even as rates rise) would be to make crypto assets legitimate investment options for institutional investors.

Thus far, banks and institutional investors like pension funds and 401k plans have largely (although not entirely) eschewed crypto investments,¹⁴⁶ but if Congress were to pass bespoke legislation designed to accommodate crypto business models, compliance with that legislation could legitimize crypto investments and result in an influx of new investment from institutional investors.¹⁴⁷ It is therefore not surprising that, notwithstanding crypto's terrible year in 2022, the industry's lobbying pressure continued to intensify in 2023.¹⁴⁸ Reporting from Pitchbook in late 2022 noted that a16z's crypto

their investors and the general public that everything is going just great and crypto prices are about to take off again, they can cause it to become true." White, *supra* Note 89.

¹⁴⁶ US banking regulators have advised banks that they consider many activities relating to crypto assets to be unsafe or unsound practices. Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, *supra* Note 189. The Department of Labor has advised 401(k) plan fiduciaries "to exercise extreme care before they consider adding a cryptocurrency option to a 401(k) plan's investment menu for plan participants." U.S. Department of Labor Employee Benefits Security Administration, *Compliance Assistance Release No. 2022-01: 401(k) Plan Investments in "Cryptocurrencies"* (Mar. 10, 2022), available at <https://www.dol.gov/agencies/ebsa/employers-and-advisers/plan-administration-and-compliance/compliance-assistance-releases/2022-01>. Of course, several financial institutions have not heeded these warnings. Silvergate and Signature Banks' crypto activities are discussed elsewhere in this Article (although it should be noted that these banks do not appear to have invested directly in crypto assets). See Notes 170-171 and accompanying text. Fidelity created a Bitcoin 401(k) plan option for employers to offer to their employees. Tara Siegel Bernard, *Fidelity's New 401(k) Offering Will Invest in Bitcoin*, N.Y. TIMES (Apr. 26, 2022). Some pensions have also invested in crypto, but "[m]ost of the largest U.S. state and local government pension funds have dodged the ongoing fallout from the collapse of crypto exchange FTX by not directly investing in digital tokens. For the pensions that have dipped into the risky asset class, the investments represent just a small amount of the retirement funds' portfolio, and much of the limited exposure is indirect via crypto-related stocks or other investment products." Bloomberg, *Crypto fallout leaves U.S. retiree benefits mostly unscathed*, PENSIONS & INVESTMENTS (Nov. 21, 2022), available at <https://www.pionline.com/pension-funds/crypto-fallout-leaves-us-retiree-benefits-mostly-unscathed>.

¹⁴⁷ Stephen Cecchetti & Kim Schoenholtz, *Let Crypto Burn*, FINANCIAL TIMES (Nov. 17, 2022).

¹⁴⁸ "If recent filings are any indication, the industry's stumbles and continued fallout from the FTX collapse won't put a dent in crypto's rapidly expanding lobbying footprint — if anything, the renewed drive in Washington to finally stand up a framework for regulating digital currencies could further fuel the gold rush on K Street." James Thorne, *As crypto deals slow, a16z's Chris Dixon shifts to accelerator reboot, regulations* (Oct. 18, 2022), available at <https://pitchbook.com/news/articles/andreessen-horowitz-crypto-school-regulation-deals>; Kollen Post, *Bear market barely dents crypto lobby, with quarterly spending still near \$7 million*, FORTUNE (Feb. 16, 2023), available at <https://fortune.com/crypto/2023/02/16/bear-market-crypto-lobby-quarterly-spending-near-7m/>.

fund focused heavily on crypto lobbying even as it retreated somewhat from new deals.¹⁴⁹ If such lobbying efforts succeed, it will be a net negative for society as a whole (because crypto provides little utility and integrating crypto with the rest of the financial system would create new threats to financial stability).¹⁵⁰ It would, however, be a boon to the VC firms who have yet to exit their crypto ventures.

B. Silicon Valley Bank

We just considered potential threats to financial stability that might arise from crypto's VC-facilitated growth and integration with the broader financial system. This Part will look at a threat to financial stability that has already crystallized: the failure of Silicon Valley Bank and ensuing regional bank panic. To be clear, SVB's collapse resulted from a constellation of failures, including failures by the bank's management as well as its regulators.¹⁵¹ Investigations into these failures are ongoing, and they are also largely outside the scope of this Article.¹⁵² This Article will focus instead on the role that the VC industry played in SVB's collapse.

Two aspects of SVB's collapse are notable in this regard. First, the aggressive growth of SVB ("from \$71 billion to over \$211 billion in assets from 2019 to 2021")¹⁵³ was fueled largely by uninsured deposits from VC funds and the firms they funded. As the Federal Reserve's report on SVB notes, "[b]etween 2019 and 2021, SVBFG tripled in size as it benefited from rapid deposit inflows during rapid venture capital (VC) and technology sector growth in a period of exceptionally low interest rates."¹⁵⁴ Second, the run itself was notable for its "highly correlated withdrawals from SVBFG's concentrated network of VC investors and technology firms who...withdrew uninsured deposits in a coordinated manner at an unprecedented rate."¹⁵⁵

Before diving into these issues, though, it is helpful to have a little more background on SVB. The bank was founded in Santa Clara, California in 1983, and its business model focused on providing financial services to

¹⁴⁹ Thorne, *supra* Note 148.

¹⁵⁰ Hilary J. Allen, *DeFi: Shadow Banking 2.0?*, 64 WM. & MARY L. REV. 919 (2023).

¹⁵¹ Jeanna Smialek, *Before Collapse of Silicon Valley Bank, the Fed Spotted Big Problems*, N.Y. TIMES (Mar. 19, 2023).

¹⁵² For discussions of these issues, *see for example*, Board of Governors of the Federal Reserve System, REVIEW OF THE FEDERAL RESERVE'S SUPERVISION AND REGULATION OF SILICON VALLEY BANK (Apr. 2023), available at <https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf>; Anat Admati, Martin Hellwig & Richard Portes, *When will they ever learn? The US banking crisis of 2023*, VOXEU CPR (May 18, 2023), available at <https://cepr.org/voxeu/columns/when-will-they-ever-learn-us-banking-crisis-2023>.

¹⁵³ Board of Governors of the Federal Reserve System, *supra* Note 152 at i.

¹⁵⁴ *Id.* at 2.

¹⁵⁵ *Id.* at 4.

VC-backed firms.¹⁵⁶ During the VC bubble discussed in Section III, deposit funding rushed into SVB.¹⁵⁷ SVB needed to do something with all this new deposit funding, and it invested a significant amount of it in treasuries and asset-backed securities with longer-term maturities.¹⁵⁸ While these were high quality assets, they bore interest rate risk in the sense that their market value would become less valuable as interest rates increased. The Federal Reserve began to increase interest rates in 2022, but SVB management abandoned several interest rate risk mitigating hedges that had previously been in place.¹⁵⁹ This was a bad bet, as the Federal Reserve continued to raise interest rates throughout 2022 and into 2023.

On Wednesday, March 8, 2023, SVB publicly announced that it needed to engage in an emergency capital raise because it had sold \$21 billion securities at a loss of \$1.8 billion in order to free up cash to service deposit withdrawals.¹⁶⁰ Following this announcement, more than \$40 billion of deposits ran from SVB on Thursday, March 9, and management anticipated that another \$100 billion would run on Friday, March 10.¹⁶¹

Realizing that SVB could not recover from this bank run, regulators put SVB into FDIC receivership on March 10.¹⁶² Although not every bank failure constitutes a threat to financial stability, a single bank run *can* metastasize into a larger banking panic if it undermines confidence in banks that were somehow interconnected with or exposed to the first bank, or banks that had no direct exposure to the first bank but appear to have similar risk profiles.¹⁶³ With SVB, federal authorities feared the latter kind of contagion could engender broader financial instability, and this fear was fueled by social media activity from many prominent investors who publicly called for bailouts to prevent what they described as impending economic calamity.¹⁶⁴ On the Sunday following SVB's failure, regulators issued a statement promising to make all of SVB's uninsured depositors whole, invoking the

¹⁵⁶ "It took four decades to build Silicon Valley Bank and its parent company, SVB Financial Group, into the startup world's pre-eminent financier."

Ben Foldy, Rachel Louise Ensign & Justin Baer, *How Silicon Valley Turned on Silicon Valley Bank*, WALL ST. JOURNAL (Mar. 12, 2023).

¹⁵⁷ "SVB built a banking franchise around startups—companies, founders, venture-capital firms. It grew when they did. Deposits rose 86% in 2021." *Id.*

¹⁵⁸ *Id.*; Board of Governors of the Federal Reserve System, *supra* Note 152 at 2.

¹⁵⁹ Board of Governors of the Federal Reserve System, *supra* Note 152 at 24.

¹⁶⁰ Admati, Hellwig & Portes, *supra* Note 152. During late 2022-early 2023, SVB began to lose deposits as the VC bubble started to deflate and startups burned through their cash (startup deposits may also have been enticed away by more attractive interest rates being offered elsewhere as interest rates increased).

¹⁶¹ Board of Governors of the Federal Reserve System, *supra* Note 152 at i.

¹⁶² *Id.*

¹⁶³ Diamond & Dybvig, *supra* Note 12 at 402.

¹⁶⁴ Edward Ongweso Jr., *The Incredible Temper Tantrum Venture Capitalists Threw Over Silicon Valley Bank*, SLATE (Mar. 13, 2023), available at <https://slate.com/technology/2023/03/silicon-valley-bank-rescue-venture-capital-calacanis-sacks-ackman-tantrum.html>.

systemic risk exception to the legal requirement that SVB be resolved in the way that posed the least cost to the deposit insurance fund.¹⁶⁵

And so regulators ultimately concluded that SVB's failure could harm the financial system, but since 2019, regulators had largely proceeded on the assumption that banks the size of SVB would have limited impact on financial stability.¹⁶⁶ This was a departure from the more stringent regulatory framework that had been put in place after the 2008 crisis, and many people criticized that departure at the time.¹⁶⁷ SVB's failure confirmed many of those critics' fears: a run on a bank SVB's size had indeed compromised the stability of the financial system. There was a notable exodus of deposits from regional banks to larger, more regulated "too big to fail" banks in the wake of SVB's failure.¹⁶⁸ The regional bank Signature Bank failed on March 12 (two days after SVB), and the regional bank First Republic failed several months later, on May 1, 2023.¹⁶⁹

Signature Bank's failure is particularly pertinent to this Article because its fragilities derived in part from its exposure to the struggling crypto industry, highlighting another crypto-related financial stability risk (while most banks have eschewed crypto business, Signature Bank and Silvergate

¹⁶⁵ "On March 12, 2023, the Secretary of the Treasury approved the systemic risk exception, which authorized FDIC to guarantee insured and uninsured deposits of the two banks. FDIC and the Federal Reserve Board assessed that not guaranteeing the uninsured deposits likely would have resulted in more bank runs and negatively affected the broader economy. The Secretary of the Treasury concurred with this assessment and made the determinations. After determining that additional banks might need support and to minimize financial contagion, the Federal Reserve created the Bank Term Funding Program on March 12, 2023. The program provides eligible banks with additional liquidity by allowing the 12 Reserve Banks to provide loans of up to 1 year. Federal Reserve staff documented how the program met the requirements for an emergency lending facility under section 13(3) of the Federal Reserve Act, and Treasury approved the program. As of April 19, 2023, outstanding advances under the program were approximately \$74 billion." US Government Accountability Office, *Bank Regulation: Preliminary Review of Agency Actions Related to March 2023 Bank Failures: Highlights* (Apr. 28, 2023), available at <https://www.gao.gov/products/gao-23-106736>.

¹⁶⁶ "In 2019, following the passage of EGRRCPA, the Federal Reserve revised its framework for supervision and regulation, maintaining the enhanced prudential standards (EPS) applicable to the eight global systemically important banks, known as G-SIBs, but tailoring requirements for other large banks. For Silicon Valley Bank, this resulted in lower supervisory and regulatory requirements, including lower capital and liquidity requirements. While higher supervisory and regulatory requirements may not have prevented the firm's failure, they would likely have bolstered the resilience of Silicon Valley Bank." Board of Governors of the Federal Reserve System, *supra* Note 152 at iii.

¹⁶⁷ For an overview of these critiques, see Graham S. Steele, *The Tailors of Wall Street*, 93 U. COLO. L. REV. 993 (2022).

¹⁶⁸ Celia Caglio, Jennifer Dlugosz & Marcelo Rezende, *Flight to Safety in the Regional Bank Crisis of 2023* (May 23, 2023), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4457140.

¹⁶⁹ Maureen Farrell, Jeanna Smialek & Lauren Hirsch, *First Republic Bank Is Seized by Regulators and Sold to JPMorgan Chase*, N.Y. TIMES, May 1, 2023.

Bank – which voluntarily liquidated itself on March 8, 2023 – had aggressively pursued business models based on providing banking services to crypto businesses).¹⁷⁰ It is also worth noting that SVB itself had some interconnections with the crypto industry, and that the bailout of SVB’s uninsured depositors functioned as an indirect bailout of the crypto industry by protecting \$3.3 billion of USDC stablecoin reserves that had been deposited with SVB (the USDC stablecoin is an important on-ramp for crypto speculation).¹⁷¹

With that background, we can return to the role that the VC industry played in this episode of financial instability. In yet another illustration of the close social ties and herd mentality that characterize the VC industry, VC firms banked at SVB themselves, as well as encouraging – sometimes even requiring – their funded ventures to do so.¹⁷² The result was that SVB’s deposit base was highly concentrated. As the SVB website noted immediately prior to its collapse, it provided financial services to “nearly half [of] U.S. venture-backed technology and life sciences companies,” and those companies accounted for more than half of SVB’s deposits.¹⁷³ As already discussed,¹⁷⁴ the amounts involved were significant – due in large part to the glut of VC financing discussed in Section III.

Following the massive influx of money into VC funds and then startups, over 92.5% of SVB’s deposits exceeded the FDIC’s \$250,000 cap – and were therefore uninsured – at the time of SVB’s collapse. Without the guarantee of deposit insurance, deposit funding is more likely to run.¹⁷⁵ Following SVB’s public disclosure of its losses on March 8, some VC firms began to urge the ventures they funded to withdraw their deposits from SVB.¹⁷⁶ Other VC firms may have sought to withdraw their own funds first:¹⁷⁷

¹⁷⁰ Federal Deposit Insurance Corporation, *OPTIONS FOR DEPOSIT INSURANCE REFORM*, 6-7 (May 1, 2023), available at <https://www.fdic.gov/analysis/options-deposit-insurance-reforms/report/options-deposit-insurance-reform-full.pdf>.

¹⁷¹ SEC Chair Gary Gensler has described stablecoins as poker chips for the crypto casino. Tory Newmyer, *SEC’s Gensler likens stablecoins to ‘poker chips’ amid call for tougher crypto regulation*, WASHINGTON POST (Sept. 21, 2021). USDC, the second largest stablecoin, held \$3.3 billion of reserves with SVB at the time SVB was placed into FDIC receivership. Once USDC’s issuer disclosed this exposure publicly, the USDC stablecoin lost its \$1USD peg and its value fell below 90 cents. Steven Kelly, *Stablecoins Deliver on their Promise: Disrupting Banks*, WITHOUT WARNING (May 16, 2023), available at <https://www.withoutwarningresearch.com/p/stablecoins-deliver-on-their-promise>.

¹⁷² Ongweso, *supra* Note 164.

¹⁷³ Board of Governors of the Federal Reserve System, *supra* Note 152 at 18-19.

¹⁷⁴ See Notes 153-154 and accompanying text.

¹⁷⁵ Federal Deposit Insurance Corporation, *supra* Note 170 at 1.

¹⁷⁶ Ongweso, *supra* Note 164.

¹⁷⁷ VC firms often kept funds that they had raised from investors but not yet allocated to startup ventures at SVB. Jack Milligan, *An ecosystem of one: How SVB Financial became the venture capital industry’s leading bank*, BANK DIRECTOR MAGAZINE, 15 (Q1 2022), available at

as one Wall St Journal article reported, “VCs pulled their money and urged their portfolio companies to do the same. Some debated if they should wait to warn startups to buy themselves more time to move their own, much bigger, balances.”¹⁷⁸ Given the self-fulfilling nature of runs, many VC firms were aware that their withdrawals and warnings might spell the end of SVB.¹⁷⁹ For many, though, the need to protect their investments won out and they encouraged their portfolio companies to withdraw – but they often did so in private. To illustrate,

*In an email thread of more than 1,000 founders backed by Andreessen Horowitz, many entrepreneurs were encouraging each other to pull cash from the bank. David George, a general partner at the firm, weighed in somewhat cryptically: “Hi all, We know you have questions about how to handle the SVB situation,” he wrote. “We encourage you to pick up the phone and call your GP.” In many cases, investors stayed off social media during these critical hours. One venture investor with dozens of investments in common with both Sequoia Capital and Andreessen Horowitz said some of their founders received personal phone calls from the two venture giants early Thursday morning. “I’ve never seen phone calls be as popular as they were for those 48 hours.”*¹⁸⁰

To sum up, the VC firms that had “encouraged founders to use Silicon Valley Bank, leading to dangerous concentration, were the ones urging startups to pull their funds when it looked like the bank was in trouble.”¹⁸¹ Significant media attention (and some academic research) has been paid to the role of social media in the run on SVB, but the concentration of uninsured deposits was also critical to the run’s unprecedented speed.¹⁸² When there are fewer but larger depositors, each withdrawal will have a bigger impact, and this increased speed makes a run worse: “the quicker the requests for cash come in, the quicker asset sales must take place, which increases the likelihood that those assets will have to be sold at discounted prices.”¹⁸³ Depositor concentration at SVB was in many ways worse than it might appear

<https://www.svb.com/contentassets/466600f7f44349c8b6e7e9a28bf168e1/bank-director-magazine-january-2022.pdf>.

¹⁷⁸ Foldy, Ensign & Baer, *supra* Note 156.

¹⁷⁹ As one Bloomberg article reported, “There’s been plenty of debate, even within the normally friendly world of venture capital, about the morality of investors advising companies to bail on SVB — depleting its deposit base and exacerbating its cash crunch.” Saritha Rai *et al.*, *SVB’s Demise Swirled on Private VC, Founder Networks Before Hitting Twitter*, BLOOMBERG (Mar. 29, 2023).

¹⁸⁰ *Id.*

¹⁸¹ Sarah McBride and Olivia Solon, *SVB Run Exposes Rifts in Typically Chummy Venture Capital World*, BLOOMBERG (Mar. 15, 2023).

¹⁸² Steven Kelly, *Have Banking Apps and Twitter Really Changed Bank Runs?*, WITHOUT WARNING (May 11, 2023), available at <https://www.withoutwarningresearch.com/p/have-banking-apps-and-twitter-really>.

¹⁸³ Allen, *supra* Note 6 at 78.

at first blush, as multiple accounts belonging to different firms could effectively all run together if those firms were advised by the same VC funder. VC firms were therefore uniquely situated to impact confidence in SVB, which impacted the banking system more broadly.

V. IMPLICATIONS

The primary goal of this Article has been descriptive, to show that the risks to financial stability arising from prolonged periods of low interest rates can sometimes unfurl in unexpected ways. This Section will, however, suggest some implications of this descriptive account that policymakers and regulators might consider going forward. This Section does not wade into the controversy over the extent to which central banks should be mindful of the financial stability impacts of their monetary policy.¹⁸⁴ Instead, it starts from the uncontroversial premise that financial regulation provides a critical toolkit for protecting against financial instability, and offers some thoughts on deploying that toolkit in an environment that is affected by monetary policy. The second part of this Section will consider whether regulation of VC firms should be adapted in light of this Article's narrative account.

A. Financial Stability Regulation Generally

The overarching takeaway from this Article is that when policymakers respond to financial crises with prolonged periods of low interest rates, that can sow the seeds for the next round of financial instability – and those seeds may sprout in unexpected ways. This reality militates against relying entirely on *ex post* strategies for responding to bouts of financial instability. Notwithstanding that *ex ante* attempts to make the financial system more robust to crises will never be perfect,¹⁸⁵ fatalism about such crises will ensure dependence on accommodative monetary policy that will not only eventually inspire destabilizing yield-seeking behavior, but will also be diminishingly effective as a short-term rescue if interest rates are already relatively low when the crisis occurs.¹⁸⁶ It is therefore critical that financial regulation hold the line on financial institutions' prudential risk management, particularly during low-interest rate environments, on the understanding that risk-seeking activities in good times can contribute to a later bust.¹⁸⁷ Effective financial

¹⁸⁴ See Note 28 and accompanying text.

¹⁸⁵ Iman Anabtawi & Steven L. Schwarcz, *Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure*, 92 TEX. L. REV. 75, 93 *et seq.* (2013).

¹⁸⁶ See Notes 4 and accompanying text.

¹⁸⁷ “The first line of defence by prudential authorities should be to continue to build resilience in the financial system by encouraging adequate capital, liquidity, and risk management.” Bank for International Settlements Committee on the Global Financial System, *supra* Note 27 at 3.

stability regulation must also grapple with financial institutions' interactions with one another, and with the broader financial markets.¹⁸⁸

Financial regulation therefore has a critical role to play in preventing the financial crises that invite accommodative monetary policy, and when accommodative monetary policy *is* implemented, in preventing it from sowing the seeds of future financial stability problems. Over the last fifteen years, financial regulation has had a mixed track record in this regard. For example, banking regulators have been reasonably successful thus far in preventing banks from being exposed to the risks inherent in the crypto markets. In a Joint Statement issued on January 3, 2023, banking regulators confirmed their position that:

*Based on the agencies' current understanding and experience to date, the agencies believe that issuing or holding as principal crypto-assets that are issued, stored, or transferred on an open, public, and/or decentralized network, or similar system is highly likely to be inconsistent with safe and sound banking practices. Further, the agencies have significant safety and soundness concerns with business models that are concentrated in crypto-asset-related activities or have concentrated exposures to the crypto-asset sector.*¹⁸⁹

Banking regulators should be lauded for holding this line (although this is not an unmitigated success story: the two US banks that focused their business models on providing services to the crypto industry both failed in March 2023, and government support from the deposit insurance fund was made available to uninsured Signature Bank depositors).¹⁹⁰ The banking regulators charged with supervising SVB performed less well, however, failing to act aggressively enough in response to known interest rate and other risks at the bank.¹⁹¹ After the fact, the Federal Reserve concluded that “[s]upervisors did not fully appreciate the extent of the vulnerabilities as Silicon Valley Bank grew in size and complexity.”¹⁹²

Unfortunately, both political economy and human psychology can undermine *ex ante* financial stability regulation. A financial crisis can mobilize the public to support harm-reducing financial stability regulation that industry would otherwise resist, but as memories of that crisis fade, so

¹⁸⁸ Jeremy Kress & Jeffrey Zhang, *The Macroprudential Myth* (manuscript on file with author).

¹⁸⁹ Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, JOINT STATEMENT ON CRYPTO-ASSET RISKS TO BANKING ORGANIZATIONS (Jan. 3, 2023), available at <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20230103a1.pdf>.

¹⁹⁰ Federal Deposit Insurance Corporation, *supra* Note 170 at 6-7.

¹⁹¹ Board of Governors of the Federal Reserve System, *supra* Note 152 at 6.

¹⁹² *Id.*

too will the public interest in those policies.¹⁹³ Industry, on the other hand, never stops resisting regulations that reduce its profitability, and so such regulations are likely to be abandoned or underenforced in the longer term. Coffee has labeled this cycle “the regulatory sine curve,”¹⁹⁴ and in 2012 he predicted that “interest-group politics will produce a major down-sizing in the Dodd-Frank Act, both by way of administrative implementation and legislative revision.”¹⁹⁵ The regulatory tailoring associated with the enactment of the Economic Growth, Regulatory Relief, and Consumer Protection Act in 2018 confirmed that prediction – and contributed to the failure of Silicon Valley Bank.¹⁹⁶

Industry lobbying also seeks to exploit the fact that regulators themselves may lose interest in financial stability regulation as their memories of crisis recede. Humans often display an “availability bias,” in the sense that events less easily called to mind are less salient to them than more recent or vivid events.¹⁹⁷ For example, many of the financial stability implications of rising interest rates are not new. During the Savings & Loan Crisis of the 1980s, many banks failed because of their mismanagement of interest rate risk during a “snapback” period of significant interest rate increases.¹⁹⁸ But after the prolonged period of low interest rates following 2008, we now have people in charge (at both banks and regulatory agencies) who have either never experienced or have forgotten their experience with rising interest rates. As one Wall St Journal article put it, “Bankers that grew up in the easy-money era following the 2008 crisis failed to ready themselves for rates to rise again. And when rates went up, they forgot the playbook.”¹⁹⁹ Post-mortems of the regulatory supervision of SVB suggest that to some degree, regulators also forgot the playbook.²⁰⁰

While the salience of SVB’s failure has ensured that financial stability risks associated with interest rate changes are now receiving increased attention,²⁰¹ there are no easy solutions to the political and psychological challenges that *ex ante* financial stability regulation faces in good times.

¹⁹³ See John C. Coffee, *The Political Economy of Dodd-Frank: Why Financial Reform Tends to be Frustrated and Systemic Risk Perpetuated*, 97 CORNELL L. REV. 1019, 1024 (2012).

¹⁹⁴ “[R]egulatory oversight is never constant but rather increases after a market crash and then wanes as, and to the extent that, society and the market return to normalcy.” *Id.* at 1029.

¹⁹⁵ *Id.* at 1027

¹⁹⁶ See Notes 166-167 and accompanying text.

¹⁹⁷ Anabtawi & Schwarcz, *supra* Note 185 at 97-98.

¹⁹⁸ Admati, Hellwig & Portes, *supra* Note 152.

¹⁹⁹ Foldy, Ensign & Baer, *supra* Note 156.

²⁰⁰ Board of Governors of the Federal Reserve System, *supra* Note 152 at i-ii.

²⁰¹ For example, one recent paper examines the interplay between interest rate risk and liquidity risk when a bank has uninsured deposits. Itamar Drechsler, Alexi Savov, Philipp Schnabl & Olivier Wang, *Banking on Uninsured Deposits*, available at <http://www.nber.org/papers/w31138>.

There is a long-standing “leans vs clean” debate about central bankers’ use of monetary policy to address asset bubbles that grapples with similar issues.²⁰² One takeaway from that debate is that “personnel is policy,” and putting the right people in prominent positions can be key to ensuring consistently public-minded policy.²⁰³ Fortunately, the regulatory sine curve is not an “iron law” of financial regulation, and some financial regulators are more likely to hold firm on regulation even in good times.

I and others have made proposals that might also be helpful in responding to the political and psychological barriers to effective *ex ante* financial stability regulation. For example, I have advocated for restructuring of the US financial regulatory architecture so that there is a single prudential regulator mandated to focus on financial stability.²⁰⁴ Unfortunately, this is a politically unrealistic proposal: more limited proposals have a greater chance of implementation, and there is no shortage of interesting proposals for this kind of “countercyclical” regulation.²⁰⁵

In other work I have also explored how storytelling can help provide ballast against the regulatory sine curve.²⁰⁶ Part of the reason why financial stability regulation is not salient to the public is that it is a complex concept and there is rarely a direct, easy-to-follow conceptual path from threats to financial stability to the ultimate crisis.²⁰⁷ I have therefore advocated for financial regulatory agencies to tell stories about the financial stability harms they foresee, to make those harms more accessible and salient to the public.²⁰⁸ In addition to building public support for regulatory efforts, the process of

²⁰² “Should policymakers rely on ex ante measures to lean against potential financial imbalances as they build up, and thereby lower the probability of a bad event ever happening, or should they do most of their work ex post, focusing on the clean-up?” Jeremy C. Stein, Member of the Board of Governors of the Federal Reserve System, speech at the National Bureau of Economic Research Conference “Lessons from the financial crisis for monetary policy” (Oct. 18, 2013), available at <https://www.bis.org/review/r131107b.htm>.

²⁰³ “Chairmen William McChesney Martin and, later, Paul Volcker took seriously the Fed’s role as countercyclical macroeconomic stabilizer. Both of those well regarded custodians of our credit-money system seem to have understood the systemic prisoners’-dilemma-like structure of asset price bubbles and consumer price inflations alike. And so both employed the Fed’s principal systemic levers to “lean against the wind” and “take away the punch bowl just as the party was getting good” in order to stabilize asset and consumer price inflations. Volcker’s immediate successor, Chairman Greenspan, alas, saw things differently.” Hockett, Robert, “Bubbles, Busts, and Blame,” 37 CORNELL L. FORUM 14, 18 (2011), available at

<https://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=2659&context=facpub>.

²⁰⁴ Hilary J. Allen, *Putting the “Financial Stability” In Financial Stability Oversight Council*, 76 OHIO ST. L. J. 1087, 1138 (2015).

²⁰⁵ See Kress & Zhang, *supra* Note 188.

²⁰⁶ Hilary J. Allen, *Regulatory Managerialism and Inaction: A Case Study of Bank Regulation and Climate Change* (forthcoming, J. LAW & CONTEMP. PROBLEMS).

²⁰⁷ *Id.*; see also Coffee, *supra* Note 193 at 1028.

²⁰⁸ Hilary J. Allen, *Regulatory Managerialism and Inaction: A Case Study of Bank Regulation and Climate Change* (forthcoming, J. LAW & CONTEMP. PROBLEMS).

formulating and telling such stories could also limit the impact of availability bias on regulators.²⁰⁹ In many ways, that’s the overarching purpose of this Article – it tells the story of episodes of actual and potential financial instability in an attempt to raise the salience of financial stability risks associated with prolonged periods of low interest rates. Doing so can help build support for proactive financial stability regulation that aims to prevent the financial crises that would necessitate such “low for long” environments.

B. Regulation of Venture Capital

i. Monitoring

While the broader purpose of this Article has been to explore how financial stability risks can be generated by prolonged periods of low interest rates, the case studies used in this Article highlight that the VC industry is well positioned to build bubbles and exacerbate panics. This Part will therefore consider whether financial stability regulation should pay more attention to VC funds, which have typically flown beneath the radar of financial stability regulation and policy. The response to the wave of regional bank failures kicked off by Silicon Valley Bank has unsurprisingly focused on improving regulation of banks themselves,²¹⁰ but regulators seeking to protect financial stability must also look beyond banks to other parts of the financial system to see “how different developments fit together and where the unseen risks might be hidden.”²¹¹

There is some appreciation that financial stability risks might be hidden in some kinds of private funds,²¹² but VC funds have largely escaped even this kind of scrutiny.²¹³ I suspect this may be because, unlike many hedge funds, VC business models don’t typically involve leverage.²¹⁴ Significant leverage has long been understood to be inimical to financial stability: in this context, “leverage” describes the use of debt to multiply

²⁰⁹ Such storytelling can “free them from the confines of their models and historical experience.” *Id.*

²¹⁰ To give an example of the kind of regulatory changes that might be necessary, following the run on SVB, banking regulators have expressed interest in reconsidering “how venture capital funds are treated under the liquidity coverage ratio.” Victoria Guida, Tweet (Apr. 28, 2023), available at <https://twitter.com/vtg2/status/1652027523814035457>.

²¹¹ Martin Hellwig, Financial Stability and Monetary Policy, MAX PLANCK INST. FOR RES. ON COLLECTIVE GOODS 20 (Aug. 2015), https://www.coll.mpg.de/pdf_dat/2015_10online.pdf.

²¹² Chair Gary Gensler, *Statement on Form PF*. (May 3, 2023), available at <https://www.sec.gov/news/statement/gensler-statement-form-pf-050323>.

²¹³ Money market mutual funds have long been a focus of financial stability regulation, but questions have also been asked about the financial stability implications of asset managers like BlackRock. Kate Duguid & Saqib Iqbal Ahmed, *BlackRock, others’ risks should be studied, ‘systemic’ tag may not be best – Yellen*, REUTERS (Mar. 24, 2021).

²¹⁴ On the financial stability concerns associated with hedge funds’ use of leverage, see FSOC, *supra* Note 5 at 42-44.

return on investment.²¹⁵ If a leveraged investment loses value, those losses will also be multiplied, which is why leverage can be so damaging to financial stability in downturns.²¹⁶ VC funds and the startups they invest in don't typically take on a lot of debt, and when the money used to make investments isn't borrowed, financial stability regulators are typically less concerned. And so it makes perfect sense for financial stability regulators to pay more attention to leveraged funds, but in this Article, I have explored how VC firms are well positioned to leverage *other* things – like their reputation for being iconoclastic genius finders, insensitivity to losses, and funding that rushes to them in low interest rate environments when investors are seeking yield – to magnify bubbles on the upswing, and panics on the downswing.

If these bubbles and panics don't significantly impact other financial institutions, then they will remain largely irrelevant from a financial stability perspective. Financial stability regulators should still be paying attention to the VC industry, though, to see if it feeds any bubbles that *do* impact other financial institutions (for example, we might be seeing the beginning of a new bubble in AI-related stocks). Leveraged financial institutions might have direct exposures to the affected asset class. Or, if a bubble in one asset class pops, it could drag down prices in other asset classes (whether through sentiment contagion or fire sale externalities),²¹⁷ and leveraged financial institutions may have invested in those other asset classes. Financial stability regulators should monitor for the possibility of these kinds of dynamics.

To help financial regulators detect any bubbles emerging from VC investment (and any interactions of those bubbles with the traditional financial system), it would be helpful for financial regulators to know which startups are receiving VC funding, and what their valuations are. It might also be helpful for regulators to know which startups are likely to be guided by the same VC firm, and therefore manage their financial affairs in lockstep (as many of them did during the run on SVB) – this could provide advance warning that particular banks have high vulnerabilities to coordinated runs.

A starting point for this kind of monitoring would be the data compiled by Pitchbook, a research and data firm that maintains a database of VC deals.²¹⁸ Crunchbase and other existing sources may also provide useful information.²¹⁹ However, disclosure to Pitchbook and Crunchbase is

²¹⁵ Hilary J. Allen, *Let's Talk About Tax: Fixing Bank Incentives to Sabotage Stability*, 18 FORD. J. CORP. & FIN. L. 821, 833-35 (2013).

²¹⁶ *Id.*

²¹⁷ See Notes 10-12 and accompanying text.

²¹⁸ Pitchbook, *Who we are*, available at <https://pitchbook.com/about>

²¹⁹ “Crunchbase is a company providing business information about private and public companies. Their content includes investment and funding information, founding members and individuals in leadership positions, mergers and acquisitions, news, and industry trends.” Wikipedia, Crunchbase (last visited July 13, 2023), available at

voluntary, and may not include all the information financial regulators require (or may not include it in the standardized format that regulators will need to make sense of the market). Fortunately, several legal mechanisms already exist through which further, potentially more standardized information could be obtained for the purpose of financial stability regulation. The Office of Financial Research, which was formed pursuant to 2010's Dodd-Frank Act, is authorized by Section 153(f) of that Act to subpoena data from "financial companies" to assist it in analyzing risks to the financial system.²²⁰ The Office of Financial Research is directed to only exercise this subpoena power, though, if the information is not already readily available to it through agencies like the SEC.²²¹ The SEC already collects some information from the VC management companies that advise VC funds through Form PF. Some of this information would undoubtedly be useful in assessing any threats to financial stability posed by the VC industry, but Form PF is in many ways looking for information about leverage, interconnectedness, and other more typical financial stability concerns.²²² If our focus is the growth of bubbles and the power that the VC industry wields over the financial decisions of the startups it funds, then Form PF may need to be amended for VC firms, or the Office of Financial Research may need to exercise its subpoena power to supplement Form PF.

<https://en.wikipedia.org/wiki/Crunchbase#:~:text=Crunchbase%20is%20a%20company%20providing,%2C%20news%2C%20and%20industry%20trends>.

²²⁰ "Financial company" is defined by Section 201(11) of Dodd-Frank to include "any company that is predominantly engaged in activities that the Board of Governors has determined are financial in nature or incidental thereto for purposes of section 4(k) of the Bank Holding Company Act of 1956 (12 U.S.C. 1843(k))." VC management companies presumably engage in activities like investing for others, providing investment advisory services, and merchant banking activities that are covered by Sections 4(k)(4)(A), (C) and (H) of the Bank Holding Company Act.

²²¹ Dodd-Frank Sections 153(f)(1)(B) and 154(b)(1)(B)(ii).

²²² "Form PF disclosure requirements include a breakdown of the net asset value (NAV) that the investment manager manages, including the percentage of the reporting fund's NAV that was managed using high-frequency trading strategies. Form PF requires investment advisers to disclose the five trading counterparties to which the reporting fund has the greatest net counterparty credit exposure and the dollar amount owed to each creditor. It also requires that the manager identify changes in market factors and their effect on the portfolio's long and short components as a percentage of NAV. Additional disclosures include any information about the counterparties' collateral and other credit support posted to the respective reporting funds, as well as trading and clearing mechanisms subject to liquidity constraints and the duration of those constraints. Form PF is also intended to improve the SEC's understanding of reporting funds' liquidity, exposure, and assets. Accordingly, Form PF requires investment advisers to disclose the time increments needed to liquidate a certain percentage of the reporting fund's portfolio, the dollar value of long and short positions in each asset class, the value of turnover by asset class, the types of creditors and the market value of borrowings from them, and the aggregate value of all derivative positions for each advised fund. Finally, Form PF requires disclosure of the reporting fund's restrictions (if any) on investor withdrawals and redemptions and other information pertaining to investor liquidity, such as the percentage of NAV." Wulf A. Kaal, *Private Investment Fund Regulation - Theory and Empirical Evidence from 1998 to 2016*, 20 *U. PA. J. BUS. L.* 579, 591-592 (2018). For a discussion of the use (and limitations) of Form PF for financial stability purposes, see FSOC, *supra* Note 5 at 44.

If this monitoring of the VC industry reveals a need for new regulatory strategies, the Financial Stability Oversight Council (a council of regulators created in 2010 to monitor threats to financial stability) can recommend that individual regulatory agencies adopt new regulatory approaches for financial activities that impact financial stability.²²³ The Financial Stability Oversight Council also has the statutory power to designate non-bank financial firms as systemically important and to subject them to heightened prudential supervision by the Federal Reserve.²²⁴ While the Council retreated from entity designation during the Trump Administration,²²⁵ under the leadership of Treasury Secretary Yellen, the Council recently proposed guidance to reinvigorate this designation power.²²⁶ While it is highly unlikely that any VC firm would be systemically important enough to warrant such a designation, the authority exists should it be needed.

ii. *Crypto-Specific Enforcement*

In addition to considering these kinds of approaches to addressing the VC industry's potential impact on financial stability, it is also worth considering whether financial stability would benefit from any crypto-specific regulation of VC firms.

As explored in Section IV.A, prominent members of the VC industry continue to pump the crypto industry and seek to facilitate its integration with the traditional financial industry, which could damage financial stability in the longer-term. It is possible that the VC industry will eventually tire of such efforts if they cannot get the legislation and regulation they are lobbying for in an expeditious manner. There are already some indications that the VC herd is pivoting from crypto and blockchain-related ventures to artificial intelligence-related ventures: for example, dedicated crypto VC firm Paradigm is now shifting some of its attentions to AI.²²⁷ However, leaving

²²³ Dodd-Frank Section 120. For discussion of this power, see Hilary J. Allen, *Putting the "Financial Stability" In Financial Stability Oversight Council*, 76 OHIO ST. L. J. 1087, 1115-9 (2015); Jeremy C. Kress, Patricia A. McCoy & Daniel Schwarcz, *Regulating Entities and Activities: Complementary Approaches to Nonbank Systemic Risk*, 92 S. CAL. L. REV. 1455, 1475 *et seq.* (2019).

²²⁴ Dodd-Frank Section 113. For discussion of this power, see Kress, McCoy & Schwarcz, *supra* Note 223 at 1473-4.

²²⁵ *Id.* at 1480 *et seq.*

²²⁶ Financial Stability Oversight Council, *Authority To Require Supervision and Regulation of Certain Nonbank Financial Companies: Notification of Proposed Interpretative Guidance* (Apr. 28, 2023), available at <https://home.treasury.gov/system/files/261/FSOC-2023-Proposed-Nonbanks-Guidance.pdf>.

²²⁷ "VC firm Paradigm is taking its crypto-only focus to include "frontier" technologies such as AI, two sources with knowledge of the situation told The Block. The firm appears to have removed crypto/web3 mentions from the front page of its website earlier this month, suggesting a rebrand in the wake of high-profile collapses in the sector and rising regulatory uncertainty in the U.S." Yogita Khatri, Frank Chaparro, and Nathan Crooks,

financial stability to the whims of the VC industry doesn't seem to be a particularly prudent policy.

I have argued previously that rigorous enforcement of existing law is the best way to regulate crypto.²²⁸ Banking regulators should continue to limit banks' exposures to crypto (so that crypto bubbles have limited impact on traditional finance),²²⁹ and the SEC should continue to rigorously enforce the investor protections in the securities laws.²³⁰ Rigorous enforcement of the securities laws will have an incidentally beneficial impact on financial stability by limiting the supply of crypto assets, and thus any crypto bubble.²³¹ Where the SEC and private litigators can both enforce the securities laws directly against VC firms, the intensity of private litigation may be on a different wavelength to the "regulatory sine curve" discussed above,²³² and so could help fill the void if lobbying ends up limiting enforcement by the SEC.

Section 5 of the Securities Act of 1933 prohibits the offer or sale of a security without first registering with the SEC, unless an exemption from

Paradigm broadening crypto-only focus to areas including AI, THE BLOCK (May 25, 2023), available at <https://www.theblock.co/post/232247/crypto-vc-paradigm-ai>.

²²⁸ Hilary J. Allen, Testimony before the U.S. House of Representatives Committee on Financial Services, Subcommittee on Digital Assets, Financial Technology and Inclusion, Hearing on *The Future of Digital Assets: Identifying the Regulatory Gaps in Digital Asset Market Structure* (Apr. 27, 2023); Hilary J. Allen, Testimony before the Senate Committee on Banking, Housing, and Urban Affairs, Hearing on *Crypto Crash: Why the FTX Bubble Burst and the Harm to Consumers* (Dec. 14, 2022).

²²⁹ Banking regulators' current approach is set out in Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, *supra* Note 189.

²³⁰ For examples of recent crypto-related enforcement actions brought by the SEC, *see* Note 133.

²³¹ Registration under Section 5 of the Securities Act requires a significant amount of disclosure on the part of the issuer (including the provision of audited financial statements), and it takes time and money to prepare these disclosures. Over the years, Congress and the SEC have crafted numerous exemptions to Section 5's registration requirements where it was decided that capital formation could be better facilitated by dispensing with some investor protections, because the investors in question were able to fend for themselves. As a result, the most widely-used exemptions restrict who is eligible to purchase the securities in question, and restrict resales of those securities. Most crypto assets, however, are Ponzi-like in the sense that they need significant amounts of demand and liquidity to support their value. Restricting the pool of eligible investors, as well as limiting the liquidity of the crypto assets through resale restrictions, is therefore unlikely to be an appealing avenue for crypto issuers. If ventures who issue crypto assets to retail investors face enforcement actions for failure to comply with Section 5, it will change their cost-benefit calculus, discouraging the creation of crypto assets unless those assets have some long-term value creation potential that justifies the expense of the registration process. *See* Hilary J. Allen, Testimony before the U.S. House of Representatives Committee on Financial Services, Subcommittee on Digital Assets, Financial Technology and Inclusion, Hearing on *The Future of Digital Assets: Identifying the Regulatory Gaps in Digital Asset Market Structure* (Apr. 27, 2023);

²³² *See* Note 194 and accompanying text.

registration is available.²³³ Investors who have purchased a security that was offered or sold in violation of Section 5 have a remedy under Section 12(a)(1) that is essentially a put right: so long as the statute of limitations has not expired, investors can demand their money back.²³⁴ This remedy is not just available against the issuer of the security; it is also available against any “statutory seller” who “successfully solicits the purchase, motivated at least in part by a desire to serve his own financial interests or those of the securities owner.”²³⁵ If a VC firm helps market unregistered securities in the form of tokens issued by its crypto ventures, that VC firm might end up satisfying the definition of “statutory seller” even if it never holds or passes title to the token in question. In such circumstances, the VC firm would be liable to refund token investors, and may face enforcement actions from the SEC as well.

The SEC can also bring enforcement actions under Sections 5 and 15(a) of the Securities Exchange Act of 1934 (which require registration of securities exchanges and broker/dealers, respectively).²³⁶ Individual investors may also have recourse for violations of these provisions, as Section 29(b) of the Securities Exchange Act of 1934 allows for rescission and restitution of contracts made in violation of Sections 5 and 15(a), so long as such claims are brought in a timely manner.²³⁷

A meaningful threat of private litigation and SEC enforcement should encourage VC firms to ensure that the crypto projects they fund meticulously comply with the securities laws. Expectations that registration requirements will be enforced may also limit the appeal of crypto ventures to VCs because, as mentioned earlier, a large part of the recent appeal of these ventures was that they allowed for an early exit.²³⁸ If the securities laws are rigorously enforced, though, then VC firms will not be able to sell tokens and exit so easily.²³⁹ VC firms will have fewer incentives to fund crypto ventures in the first place, and where they do contemplate funding such ventures, they will have better incentives to perform due diligence because they will have “skin in the game” longer.

VI. CONCLUSION

²³³ Securities Act of 1933 Section 5.

²³⁴ Securities Act of 1933 Sections 12(a)(1) and 13.

²³⁵ *Pinter v Dahl*, 498 U.S. 622 (1988).

²³⁶ For examples of these kinds of enforcement actions, see Note 133.

²³⁷ For an overview of this kind of private litigation, see William K. Pao & David L. Kirman, *Discovering a Discovery Rule in Crypto Cases? The Uphill Struggle Plaintiffs Face in Trying to Resurrect Time-Barred ICO Claims*, O’MELVENY (Apr. 14, 2020), available at <https://www.omm.com/resources/alerts-and-publications/alerts/discovering-a-discovery-rule-in-crypto-cases/>.

²³⁸ See Notes 106-110 and accompanying text.

²³⁹ *Id.*

The zeitgeist seems to be shifting towards a more critical reckoning with the VC industry, and people are starting to ask whether it is good public policy to rely on (and indeed subsidize) the VC industry to direct our innovation priorities.²⁴⁰ This reckoning is beyond the scope of this Article, but this Article *has* called for a more critical assessment of the role that the VC industry has played in making our financial system more fragile in the early 2020s.

The VC industry's ability to do so arose in large part because of the prolonged period of low interest rates that followed the 2008 financial crisis (which were kept low even longer because of the Covid pandemic). Because responding to financial crises with prolonged periods of low interest rates will encourage yield seeking behaviors likely to sow the seeds of the next crisis, it is critical that regulators and policymakers take steps *ex ante* to make financial crises less likely. This kind of *ex ante* regulation will always face political and psychological challenges, but its chances of success can be increased by appointing the right people to key financial regulatory positions, and by conveying to the public the stakes of getting financial stability regulation wrong.

When it comes to regulating the VC industry itself, regulators should consider reorienting their perspective on what threats to financial stability the industry might pose. Although the VC industry is by no means the most pressing threat to financial stability, it would be worthwhile for financial stability regulators to be mindful of the role that the VC industry can play in building bubbles and coordinating panics. Keeping an eye on the VC industry may require new and different kinds of monitoring by regulatory authorities, but the legal foundations for such monitoring already exist. Legal foundations also already exist for enforcing securities registration requirements against the crypto industry (and perhaps even directly against VC firms). If the SEC or private litigants pursue such enforcement actions, crypto investments will presumably be less attractive to VC firms, and crypto's potential financial stability risks may never come to fruition.

²⁴⁰ See, for example, Lee, *supra* Note 44; Wansley & Weinstein, *supra* Note 40; Ongweso, *supra* Note 164.