In a 1986 speech, then U.S. President Ronald Reagan lamented that “the 9 most terrifying words in the English language are: Hi, I’m from the government and I’m here to help.” This statement epitomizes the neoliberal view of how Silicon Valley became a global beacon of high-technology ingenuity, entrepreneurship, and venture capital. For followers of Ronald Reagan and Milton Friedman—not to mention staunch libertarians and “tech bros” in the Bay Area today—Silicon Valley is the triumph of the free market and American capitalism.

The role of early military investment in radar and other technologies sometimes receives acknowledgment. Silicon Valley’s colocation with leading universities such as Stanford is occasionally credited as well, as is the proximity of Bell Labs. But the U.S. government’s role in the promotion and coordination of technological innovation is typically obscured. This imagined Silicon Valley narrative, as I call it, which lauds the triumph of unencumbered market forces, leaves out the government’s crucial role as financier, profit-enabler, and permissive but intentional regulator.

There is another version of the story, though, that offers important lessons both for American policymakers looking to promote economic growth in other regions and for foreign policymakers seeking to recreate the “magic” of Silicon Valley in their own countries. In the true story, the visible hand of the state is evident behind the veneer of the supposedly laissez-faire Silicon Valley VC market. Long before Silicon Valley became synonymous with tech VC, the U.S. government intervened to support the onset and growth of the venture capital
industry, which clustered around Sand Hill Road in northern California and Route 128 near Boston. As Linda Weiss asserts in America Inc.? Innovation and Enterprise in the National Security State, it is a myth that the VC financing synonymous with Silicon Valley is merely “an invention of the U.S. market”.

The true story, in which the state was a lead protagonist, is more complicated than the libertarian interpretation that has become commonplace. But it is a more complete version and, as a result, one that is more instructive for cities, regions, and countries around the world that are now hustling to foster vibrant innovation ecosystems. The world’s leading venture capital markets did not spring forth fully formed from the invisible hand: rather, they are the product of “venture capital states” acting in accordance with their local context.

VENTURE CAPITAL, THE STATE, AND THE CONSTRUCTION OF SILICON VALLEY

The state has been a central, even necessary character in the American tech industry from the beginning. The government’s role in financing the technology underlying today’s Silicon Valley giants (notably Apple and Google) was detailed in Mariana Mazzucato’s book The Entrepreneurial State (2013). For Mazzucato, the growth of these firms is not a product of unfettered capitalism, but rather a case of “When John Maynard Keynes met Adam Smith”: the government initiates what the private sector cannot, and then market forces can flourish. This necessary role of the state in opening the door to the free market corresponds with Karl Polanyi’s view in The Great Transformation (1944)—the idea of a liberal market utopia is a fallacy as “even laissez faire is planned.” The most sophisticated neoliberals themselves have been conscious, at least privately, of the primary role of the state in organizing and facilitating markets; but popular neoliberalism has either drifted toward libertarian views or emphasized only neoliberalism’s deregulatory elements.
In America, the venture capital asset class came into being, in its modern, professionalized form, around the time of World War II. Beginning in 1958, U.S. government money was given in the form of loans to VC managers via the Small Business Investment Company program. These loans provided critical funding to the VC industry in those early days, when “limited partners” such as pension funds, foundations, and endowments had not yet begun to invest in the asset class. The visible hand of the state ensured that there was money for a venture capital market, and Silicon Valley was to be the epicenter.

Later, in the 1970s, the national government made venture capital more accessible for institutional investors to invest in and more profitable for VC managers. Specifically, the Employee Retirement Income Security Act (ERISA) reinterpretation of the Prudent Man Rule in 1979 allowed institutional investors (especially pension funds) to invest in the VC asset class. Pension funds could then invest in venture capital because the Department of Labor’s 1979 reinterpretation of what was a “prudent risk” no longer applied to venture capital. In effect, VC was no longer too risky for public pension funds to invest in. This meant that much more money would be available for the venture capital managers as public pension assets could now be allocated to VC funds.

In the same year, the capital gains tax rate (to which VC profits are subject) was reduced. Like most other alternative investors, venture capital funds make money from two sets of fees: from management fees that help to cover operating expenses, and from performance fees (referred to as “carried interest” in industry lexicon) charged to investors as a percent of the returns produced. Typically, venture capitalists structure these fees as “2 and 20”: 2 percent on assets under management and 20 percent of the profits produced for their investors. In the United States, the carried interest (carry) of the VC fund is taxed at capital gains rates, rather than earned income rates. Furthermore, capital gains to investors, instead of being “double taxed” at the fund entity level and again at the investor level, are “passed
through” to investors and taxed only once at the capital gains rate. In 1979, the U.S. capital gains tax rate to which venture capital profits are subject was lowered from 35 percent to 28 percent for assets held more than one year.

And for what was nearly a triple crown (but a year late), lighter-touch regulations were introduced in 1980 via the Small Business Investment Incentive Act. These three efforts provided by the state helped fuel the rise of the VC industry, which was already benefiting from the launch of the NASDAQ in 1971, which offered a favorable exit venue for high-growth startups in VC portfolios.

Thus, from the beginning, the road to Silicon Valley VC was paved by conscious state action designed to support innovation and entrepreneurship—at times through deregulation and tax cuts to encourage market activity, but also through direct and indirect subsidies (via public pensions). In the modern narrative of Silicon Valley venture capital, this key element has been written out of the story, and the illusion of a totally free-market process persists.

**Motivations for Promoting Venture Capital**

Today, innovation and entrepreneurship, which have become synonymous with Silicon Valley, are almost universally encouraged in order to propel economic competitiveness and job creation. Unlike other investment classes, such as hedge funds and sovereign wealth funds (which are sometimes criticized for their dubious impact on firms and markets), venture capital is conceptualized as part of the financial sector that society cannot afford to live without. In 2014, the *Wall Street Journal* went so far as to dub venture capital “Humanity’s Last Great Hope” for its purported ability to identify and nurture transformative technologies.

Research undertaken by the National Venture Capital Association corroborates this sentiment: 40 percent of all the companies that have gone public in the United States between 1974 and 2015 received VC funding in their ascent. Those 556 companies account for 85
percent of all research and development (R&D) spending and 63 percent of the public equities market capitalization, and they employ more than three million people.

Venture capital funding—which is often referred to as “smart money” and “patient capital” given the operational and technical expertise that comes with the long-term investment—is typically dispersed to startups when they raise their first external round of equity funding. The point at which VCs invest, from the “seed stage” through to the A and B rounds, is often called the valley of death for many startups. It is the point where they run out of initial government grants and personal savings, yet need more money for commercializing their product. Without such funding, they will probably die. This is where venture capitalists arrive and rescue some: they provide significant amounts of equity funding, along with operational expertise and extensive professional networks. Venture capitalists invest in these fledgling companies with the hope that some will become “unicorns,” or that they will at least achieve a profitable exit.

This critical role of venture-stage funding cannot be denied. But there is another, less cheerful reason for its growing popularity that should not be overlooked: venture capital funding is increasingly seen as a substitute for other forms of R&D spending that are in decline, especially research directly funded by governments. Although the rise of venture capital depended on many conditions furnished by the state, its apparent success has often been used to justify reduced public R&D spending. Downward pressure on public spending has come from a variety of sources, particularly the promulgation of austerity measures that leave governments increasingly unable to fund basic research—even though this basic R&D is often central to national industrial strategy, particularly in the technology sector. Thus the shortfall in public R&D spending reinforces the argument that venture capitalists are the answer, since they are private investors flush with money, networks, and expertise. As a result, policymakers often embrace the myth of Silicon Valley as a laissez-faire phenomenon,
hoping that they can emulate the success of American venture capital in contexts of varied state commitment to R&D spending.

**INTERNATIONAL COMPETITION DRIVES VARIATION, NOT CONVERGENCE**

Motivated to spur economic growth through greater innovation and job creation, states across a remarkable range of geographies, cultures, regime types, and sizes have implemented policies focused on encouraging venture capital. In fact, more than forty-five countries—all OECD, G20, and Asian Tiger countries—have launched efforts to build local Silicon Valley VC markets. Evidence of the fervor can be seen in the proliferation of “Silicon” monikers invoked globally, including “Silicon Beach” in Australia, the Moscow suburb Skolkovo now dubbed “Russia’s Silicon Valley,” and the “Silicon Savannah” in Kenya.

At first glance, this proliferation might seem to confirm the mythical view of the rise of the original Silicon Valley in the 1980s and ’90s, which happened to coincide with a time of globalization, an apparent “retreat of the state,” and the advance of a “golden straitjacket.” This period is characterized as an era in which neoliberalism, as promulgated by the Washington Consensus, was at its zenith. In effect, market forces and the prevailing policy consensus seemed to align against any significant role for the state in the economy.

According to this view, neoliberal VC policies would spread not only because of the success of the American Silicon Valley but also because policymakers elsewhere would be handcuffed into permissive regulatory regimes. The competition for investment from internationally mobile capital holders, it was thought, would force policymakers to choose low tax rates and light-touch regulations if they were to have any hope of building local VC markets.

If anything, however, international attempts to encourage the development of venture capital show the limitations of this view and further undermine the myth that the original Silicon Valley was merely a product of market forces. In the first place, most attempts to
replicate Silicon Valley have been led by state actors (similar to what actually happened in the United States). Moreover, some of the most successful ones have relied upon overt state intervention and support, while more laissez-faire models have sometimes floundered. [any examples???] Conformity with the Silicon Valley model is in fact a poor predictor of success. Far more critical is a policy’s correspondence with local political and economic norms, and of course the quality of execution on the part of both state and private-sector actors.

As the “S-shaped” curve of venture capital diffusion in the figure below suggests, many governments have taken purposive action to propel local Silicon Valley–like VC markets. [no break paragraph]

**Figure 1:** State launches of VC policy efforts (cumulative number) 1957–2017
But the mere international diffusion of VC policy gives an incomplete picture of the role of the state in promoting venture capital. The forty-five “venture capital states” have taken distinctly different—often interventionist—paths toward building venture capital cultures in their political contexts. Even states of similar population and economic sizes, geographically and culturally proximate and at comparable levels of industrialization, have implemented policies that are different from one another and distinct from the Silicon Valley model. In fact, no two countries pursued identical policy paths.

This element of state direction in venture capital markets has been overlooked. States, not simply competitive market forces, have driven the international growth of the venture capital market. Policymakers actively intervene in order to compete in the increasingly
interconnected and high-tech global economy and, above all, to be more innovative in order to leapfrog competitors. Rather than waiting for would-be venture capitalists to do it themselves, governments have stepped in to create and constitute local markets. Their methods have ranged from conventional neoliberal approaches—like targeted tax incentives and supportive regulatory regimes—all the way to direct public funding or choosing and supporting initial market participants.

**Venture Capital in Taiwan and Singapore**

As an illustration of the distinctive approaches to local policy design, consider the cases of Taiwan and Singapore. Taiwan’s policymakers began learning about VC policy in response to competitive pressures to attract international capital—pressures which became quite urgent after their removal from the United Nations. In 1981, Kwoh-Ting Li, Taiwan’s minister without portfolio, led a study trip to Silicon Valley, Boston’s Route 128, and Japan. By studying multiple foreign policy models, Li—who came to be known as the “Father of Taiwan’s Economic Miracle”—created a menu of policy options that could be adapted to their local context. The result was the adoption of a 20 percent tax credit (a mechanism Taiwan had previously used to advance its growing ICT activities) and a unique local company structure for venture capital funds that gave nervous local investors control over investment decisions.

In Singapore, policymakers felt increasing competition vis-à-vis Hong Kong and China in their bid to be the premier financial center in East Asia. Acting in response to these pressures in the mid-1990s, they learned about VC policy options by studying Silicon Valley primarily, but also Israel and Taiwan. They studied the Israeli Yozma Fund (discussed more below) as a model for how to use public funding to attract foreign venture capital managers.
The result was the creation of the Technopreneurship Investment Fund in 1999, with $1 billion under management, that offered to invest in global blue-chip venture capital firms willing to set up a Singaporean operation. This adaptation of the Israeli Yozma model reflected their long-established preference for using government money to attract international firms to Singapore.

The lack of international conformity with the Silicon Valley model is not for lack of study on the part of policymakers. In the Singaporean case, a member of the Technopreneurship-21 committee that was charged with advancing Singapore’s tech-centric entrepreneurial activity was sent to live in northern California for two years, to ensure he really understood what had contributed to cluster’s rise. Upon his return to the Lion City, he reported that the methods would not suit Singapore: instead the government would have to use public money, and on a larger scale. Rather than pushing for pension funds’ ability to invest in the fledgling asset class (as the ERISA reinterpretation had done in the United States), he advocated for the creation of a government fund of funds, along the lines of the one that Israel had successfully implemented in 1993. That adaptation was inspired by his further study of the Israeli Yozma model, and that in turn was adapted to fit the Singaporean context.

Competition has spurred governments to learn how to intervene, but it has not propelled convergence on any supposed orthodoxy, whether real or imagined. As in Silicon Valley so in Taiwan and Singapore: policymakers across the world intervene in distinct ways to promote the innovation and entrepreneurship activities that many suppose the free market brings through its own mechanisms.

**DIFFERENT ROADS TO THE VALLEY**
Just as in the case of late-industrializing countries, fostering venture capital investment usually requires purposeful state action. American state support of the growing VC market in the 1970s aimed to increase the money available for growing technology firms. At that time, there was not yet a “Silicon Valley” to aspire to or replicate. In contrast, the later international efforts to build Silicon Valley–like VC cultures have had a clearer aim, though a variety of efforts to achieve that goal. Are they working?

Failure to copy the mythic version of the American Silicon Valley has not mean that local VC policy efforts fail. Quite the contrary, the advance of VC markets globally has more often than not been the product of overt policy intervention. VC industries—including that in the United States—have flourished because the state has been hands-on in directing funding and giving specific incentives to venture capitalists. The growth of venture capital has been far from the “governments can’t pick winners” truism; in many cases, policymakers have been essential to establishing initial cohorts of venture capital managers in each of the most vibrant clusters of VC activity.

For example, China’s early advances in venture capital activity stemmed almost entirely from government investment. Public funding likewise proved essential for establishing venture capital in the Baltics. Perhaps most remarkably, Israel created the world’s largest VC market on a per capita basis through public investment initiated through the Yozma Fund (a $100 million fund of funds) in 1993. The chief scientist invested in ten would-be venture capital firms via the fund as a means to create a world-class VC cohort. It worked. By 2000, Israel had the second-largest venture capital market on an absolute basis, and the largest relative to population. Taiwan’s tax credits, a more authentically neoliberal model, catalyzed both the most successful government-engineered venture capital market as well as “the most Silicon Valley–like” VC industry in Asia.
As Vivek Wadhwa, a prominent venture capitalist quipped in 2013, “Silicon Valley can’t be copied.” He was right. By the same token, however, country-specific versions of Silicon Valley will not simply pop into existence. Policymaking that attempts to suppress local context in favor of a contextless approach—for example by copying an international “best practice” (e.g., the Washington Consensus)—fails to outperform. Successful VC development strategies have depended heavily on fitting the local environment (of course, there must also be a baseline level of demand for venture capital). Even when Taiwan launched its tax credit in the 1980s, its effectiveness was not due to its correspondence with neoliberal doctrine, but because it fit well with local norms: Taiwanese policymakers used a tax credit along with an inverse of the LP structure (the latter making it very different from the U.S. model) to support local firms in the most context-appropriate way. [** Explain why these were context-appropriate and not simply successful because neoliberalism is true**]

Survivorship bias in successful VC policy models has obscured the fact that failure is common and all too easy. But while failure is often thought to stem from lack of correspondence to the Silicon Valley model [examples why this isn’t the case], it in fact depends on poor design and bad implementation. Policy works when there is favorable bedrock (in terms of demand for venture capital from growing startups) and policies well-designed for the local context. [x]

**Policy Formation and Contextual Rationality**

Policies need to reflect the “contextual rationality” of the locale. In fact the ordinary tendency of policy formation would normally reflect context-specific features provided it were not distorted by an ideological overlay (for example, the intrusion of opposition to state activity within a state-directed economic context). Rather than envisioning an idealized,
decontextualized environment, we should realize that policymakers see themselves and the policies available to them in specific ways. These norms shape their valuation of policies as they learn about them, and consequently shape how they apply those policies for local use. Recall, for example, the trips taken by economic policymakers to Silicon Valley in order to understand what elements could or could not, or should or should not, be replicated in their local contexts.

**Figure 2**: Visualizing the Silicon Valley VC policy model diffusing to Hong Kong, Singapore and Taiwan

The contextual rationality framework contends that rational learning processes should be understood as rooted in normative contexts. It does not suggest that politics is irrelevant, or that formal institutional constraints do not shape the form that policies take. On the contrary it heeds the call of Martha Finnemore and Kathryn Sikkink to model “social context as a
background for rational choice.”

A key ontological difference underpins contextual rationality as compared to bounded or conventional forms of rationality. In bounded rationality, actors are conceptualized as learners with limited computational skills dependent upon cognitive biases, as in the Nobel Prize–winning[*] work by Daniel Kahneman and Amos Tversky. According to bounded rationality scholarship, policy convergence (i.e., a type of preference convergence) occurs precisely because actors’ cognitive heuristics leave them beholden to replicate the “anchor” that they study. Revered models of leaders and peers become anchors from which policymakers cannot deviate, as Kurt Weyland has contended in his widely cited work that brought cognitive psychology insights to policy diffusion scholarship. In contrast, conventional depictions of rationality hold that learners have preferences based in material interests, which are susceptible to full Bayesian updating as they process new information. Conventional depictions of rationality expect little deviation from a high-performing model, as Bayesian updating overrides prior beliefs in response to observing the merits of the model.

The contextual rationality approach, in contrast, expects policymakers to undergo fully informed and distinctive learning experiences that reach different conclusions about policy values. Contextually rational policymakers are not “limited” or “bounded” in their rationality; they are rational learners whose local normative context forms the basis of their rationality. At the same time, their norms are not quickly changed as they study some foreign success, as Bayesian learning posits. In light of this central analytical role of sticky local norms, contextual rationality has a fundamentally different expectation than the bounded and conventional rationality schools: diversity, not convergence.

Accordingly, we should expect policymakers to adjust even core elements of much studied and highly regarded policy models, such as the Silicon Valley VC policy model. They are neither easily anchored nor reprogrammed in the face of success. They are able to
design policies to suit their local context by adapting what they learn, and thus they do not simply accept the Silicon Valley model.

**Future Venture Capital States**

The rise of venture capital states was not an outcome of 1980s and 1990s neoliberalism. Governments around the world are now just as actively studying and taking action in promoting local venture capital.

One area that they are considering is regulatory change that could increase the amount of money available for venture capital. Though internationally pension funds are major investors in venture capital, outside of the U.S. they are typically only investors in an indirect way: in many jurisdictions, regulations restrict public pensions from investing in VC funds. This restriction originates from the same logic as the original ERISA Prudent Man Rule did: governments want to limit the risk that publicly managed pensions take. When the state has fiduciary duty over retirement savings, they want to be careful in the risks they take. This underlying motivation makes sense.

But regulations do already allow pension funds to invest in private equity. And in practice, pension funds are significantly exposed to venture capital investments as private equity funds often invest in VC funds. As a result, pension funds are essentially paying a double layer of fees. They still have exposure to venture capital investments but do not have direct input into fund management. This should change. In the UK, such change may be on the way. In spring 2017 the UK Treasury initiated a review of patient capital for innovative, high-growth SMEs. There is a suggestion that UK pension funds could be a greater source of patient capital directly for venture capital if the government lifted the current £5 million limit.
Future venture capital states will include countries outside of the OECD, and not necessarily competitors in the global ICT sector. Developing countries that aspire to leapfrog into higher-value economic activity through the promotion of entrepreneurship and innovation are implementing VC policy. For instance, Vietnamese policymakers studied the Silicon Valley VC policy model, and concluded that they, too, wanted to build a local Silicon Valley. In 2016 the Vietnamese state launched a VC fund and implemented changes to its regulatory context to promote more investment activity. Jamaican policymakers, in partnership with the World Bank and private investors, launched “Start-Up Jamaica” in 2014, a hospitality-focused accelerator program inspired by, but adapted from, Start-Up Chile (not least with its Bob Marley-inspired tag line “Get up, start up”). Then there are those states that become venture capital investors themselves, notably Singapore and Saudi Arabia. In June 2016, Saudi Arabia’s Public Investment Fund caught headlines for its $3.5 billion investment in Uber—effectively making it the largest venture capital state. These new venture capital states are pursuing efforts to constitute markets, rather than merely to fine-tune competitive positioning or fill specific funding gaps, as mature venture capital states are doing.

The efforts of the true venture capital states are consistent with the Polanyi assessment that it has always been, and will be, the visible hand of the state that builds and maintains the road to the free market. In the name of instigating the innovation and entrepreneurial activities that should spring spontaneously from unfettered capitalism (but never do), future venture capital states will pave their own roads through contextually rational policymaking. They are intervening for the same reasons that the U.S. government acted to grow the venture capital industry now synonymous with Silicon Valley.

Contrary to Ronald Reagan’s contention about the “nine most terrifying words in the English language,” what is and will continue to be far more terrifying is that governments, both in the Americas and across venture capital states globally, fail to support innovation or
simply coast on past successes. The ordinary tendency of policymakers will be to form locally suitable strategies and to build local clusters of venture capital activity. But they must have the institutional capacity and political space for such state-directed activity.

Accordingly, Western policymakers, particularly in the United States, must avoid two fatal errors. In the first place they cannot insist that policymakers in fledgling VC environments copy the Silicon Valley model in ideological, cultural, or even industrial terms. More important, they must not embrace a libertarian story about the growth of American high-tech innovation. Particularly as high-tech innovation increases elsewhere in the world, the United States will fall behind if it coasts on its past glories. The model of contextual rationality applies to American policymakers, too. To be successful in the coming decades, they will have to formulate a new industrial policy and continued goals for high-tech innovation and manufacturing.


Policymakers’ ability to choose distinct forms of VC tax policy should not be construed as a clear triumph of state power over markets. VC tax policies—be it tax credits, lower rates, or exemptions—all represent different forms of policymakers’ reduced taxation of the VC industry. Although they choose distinct forms, policymakers are choosing among various ways to concede their tax proceeds. They either reduce tax rates for a broad category of investment or give tax credits to VC investors. In this sense, policymakers respond to competitive pressures by studying different ways in which they can minimize, rather than increase, their tax revenue from VC activity in order to promote, not constrain, VC.


The term “conventional rationality” is used to refer to “full”, “calculated”, “complete” and “instrumental” rationality, though the author acknowledges differences between these terms, particularly that instrumental rationality has a focus on cost. See March (1978) for delineation of “alternative rationalities”, Barros (2010) for conceptualizations of rationalities attributed to Simon’s broad category of “bounded rationality” (including global rationality and procedural rationality) and Townley (2008) for an exploration of the treatment of several forms of rationality in organization studies.