

Entrepreneurship, Public Policy, and Cities

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Abstract

Since the 2008–09 global financial crises, interest among policy makers in promoting innovative, ventures has exploded. The emerging great hubs of entrepreneurial activity, like Bangalore, Dubai, Shanghai, Silicon Valley, Singapore, and Tel Aviv, bear the unmistakable stamp of the public sector. Enlightened government intervention played a key role in each region's emergence. But for each effective government intervention, dozens, even hundreds, disappointed, with substantial public spending bearing no fruit. This paper sheds light on how governments can avoid mistakes in stimulating entrepreneurship. In recent decades, efforts have increased to provide the world's poorest with financing and other assistance to facilitate their entry into entrepreneurship or the growth of their small ventures. These are typically subsistence businesses offering

services like snack preparation or clothing repair. Such businesses typically allow business owners and their families to get by, but little else. The public policy literature, along with academic studies of new ventures, often does not distinguish among the types of businesses being studied. The author will focus here exclusively on high-potential new ventures and the policies that enhance them. This choice, not intended to diminish the importance of efforts to boost microenterprises, reflects the complexity of the field: the dynamics and issues involving micro firms are quite different from those of their high-potential counterparts. A substantial literature suggests that promising entrepreneurial firms can have a powerful effect in transforming industries and promoting innovation.

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Entrepreneurship, Public Policy, and Cities

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Since the 2008–09 global financial crisis, interest among policy makers in promoting innovative, high-potential ventures has exploded. The emerging great hubs of entrepreneurial activity—like Bangalore, Dubai, Shanghai, Silicon Valley, Singapore, and Tel Aviv—bear the unmistakable stamp of the public sector. Enlightened government intervention played a key role in each region’s emergence. But for each effective government intervention, dozens, even hundreds, disappointed, with substantial public spending bearing no fruit.

This scenario might lead one to conclude that the public sector’s pursuit of entrepreneurial growth is a massive casino where bets are made with few guarantees of good returns. Perhaps there are no lessons to learn from the success or failure of programs to stimulate entrepreneurial activity. The truth, however, is that the disappointing outcomes of many government efforts to promote venture and entrepreneurial activity were all too predictable. These efforts shared flaws that doomed them virtually from the start. The same flaws have appeared the world over—from Europe and the United States to the newly emerging economies.

Fast-growing entrepreneurs—and the investors who fund them—have attracted more attention both in the popular press and from policy makers, who see them as having played a large role in creating new industries and revitalizing economies. Many countries have launched efforts to encourage entrepreneurial activity. This attention will likely intensify as countries seek to overcome the deleterious effects of the credit crunch and its recessionary effects.

This paper sheds light on how governments can avoid mistakes in stimulating entrepreneurship. In recent decades, efforts have increased to provide the world’s poorest with financing and other assistance to facilitate their entry into entrepreneurship or the growth of their small ventures. These are typically subsistence businesses offering services like snack preparation or clothing repair. Such businesses typically allow business owners and their families to get by, but little else. The public policy literature—along with academic studies of new ventures—often does not distinguish among the types of businesses being studied.

We will focus here exclusively on high-potential new ventures and the policies that enhance them. This choice, not intended to diminish the importance of efforts to boost microenterprises, reflects the complexity of the field: the dynamics and issues involving microfirms are quite different from those of their high-potential counterparts.¹ A substantial literature suggests that promising entrepreneurial firms can have a powerful effect in transforming industries and promoting innovation.

The importance of entrepreneurial innovation

The world has an enormous appetite for growth. And the need for growth leads inexorably to a hunger for innovation. The United States and other developed countries are confronting a grim economic calculus: huge unfunded liabilities, plus a lack of economic growth, portend a much bleaker future.

In the United States today, public spending and ongoing deficits push the limits of sustainability. And the official balance sheets, if anything, understate the problem: unfunded liabilities, not reflected on the government's official balance sheet, for the two main healthcare entitlement programs alone, Medicare and Medicaid, are an estimated \$58 trillion.²

Nor do these problems show any signs of easing: recent Congressional Budget Office estimates show the U.S. government running a deficit until at least 2080.³ Meanwhile, persistently high unemployment drains the limited resources for social services and shrinks the tax base. The situation in other advanced economies might be worse: Japan, the United Kingdom, and the Eurozone face a toxic mixture of low growth, huge debts, and high unemployment.

The quick fix, of course, is to simply cut costs—whether wasteful public programs or excessive entitlements. But this strategy—however necessary in some cases—is not as effective as some would have you believe. As in a number of countries, excessive spending cuts may actually perpetuate the downturns that caused the financial crisis, depressing growth and sapping consumer confidence.

This dilemma is not confined to the developed world. Emerging economies have come under enormous stresses and face social unrest and outright revolution. In many cases, uneven economic progress has been a key driver of discontent—as growth has not been substantial or widely distributed.

Economic growth leads to more working people and fewer unemployed, more tax revenue, and a great easing of pressures. And there are essentially two ways to achieve such growth, at least in advanced economies that cannot simply imitate breakthroughs elsewhere. One is simply to add more inputs: having workers, for instance, retire later or run plants for longer hours. But this strategy is a game of diminishing returns: countries can only push people so far to work longer and harder. Nor, in a world of diminishing resources, is it clear that producing more is always desirable.

The alternative route is much more appealing: to get more out of existing inputs through innovation. Such innovation can take many forms, from new goods and services to new production processes to improved organization and management. The pioneering work of Moses Abramowitz and Robert Solow in the 1950s⁴ finds that technological change is critical to economic growth: innovation has not just made our lives longer and more comfortable but has made us richer as well. Many studies have documented the strong connection between technological discoveries and economic prosperity across countries and over time. This relationship is strongest in advanced countries—that is, those that cannot rely on copying others or on a rapidly increasing population to spur growth.

Technological innovation is also critical for tackling the many challenges the world will likely face over the next decades: environmental degradation, global warming, proliferating pandemics,

and terrorism, just to name a few. Our responses—many requiring advances in science and engineering—will shape our future and that of our children.

Moreover, there appears to be a strong relationship between entrepreneurship and innovation. The role of start-ups in emerging industries has been highlighted in both case studies and systematic research. Acs and Audretsch (1988) found that new, small firms developed more than half the 20th century's most important innovations.⁵ But the contribution of small firms was not central in all industries. Rather, their role was a function of industry conditions—greatest in immature industries in which market power was relatively unconcentrated.

What explains the apparent advantage of smaller firms? Much of it stems from the difficulty of large firms in fomenting innovation. Using extensive case study evidence, Jewkes, Sawers, and Stillerman (1958) note that:

It is erroneous to suppose that those techniques of large-scale operation and administration, which have produced such remarkable results in some branches of industrial manufacture, can be applied with equal success to efforts to foster new ideas. The two kinds of organization are subject to quite different laws. In the one case the aim is to achieve smooth, routine, and faultless repetition, in the other to break through the bonds of routine and of accepted ideas. So that large research organizations can perhaps more easily become self-stultifying than any other type of large organization, since in a measure they are trying to organize what is least organizable.⁶

But this observation still begs a question. What explains the difficulties of larger firms in creating true innovations? Answers explored in recent work include at least three reasons entrepreneurial ventures are more innovative.

The first has to do with incentives. Normally, firms provide incentives to many types of employees, from salespeople to waiters. Yet large firms are notorious for offering employees little more than a gold watch for major discoveries. Why would the design of incentive systems for innovative tasks differ from that for mundane tasks? The weak incentives in large firms may reflect the inherent riskiness and unpredictability of innovative projects, their length and complexity, and the number of parties that could make crucial contributions. Whatever the reason, there is a striking contrast between the very limited incentives at large corporate labs and the stock-option-heavy compensation packages at start-ups.

Second, large firms may simply become ineffective at innovating. Incumbent firms frequently have blind spots that stem from their single-minded focus on existing customers.⁷ As a result, new entrants can identify and exploit market opportunities that the established leaders fail to see.

Finally, new firms may choose riskier projects. New firms are more likely to pursue high-risk strategies, while established firms rationally choose more conventional approaches.⁸ So while small firms fail more frequently, they are more likely to introduce more innovative products. New firms are better at creating new software categories, while established firms have a comparative advantage in extending existing product lines.⁹

So it might be clear why governments would want to promote entrepreneurship, but why the frequent emphasis on venture funds? The answer lies in the challenges facing many start-ups, which often require substantial capital. A firm's founder may not have the funds to finance these projects alone, and so must seek outside financing. Entrepreneurial firms with significant intangible assets expect years of negative earnings, have uncertain prospects, and are unlikely to receive bank loans or other debt financing. Venture capital—as independently managed, dedicated pools of capital that focus on equity or equity-linked investments in private, high-growth companies—can help alleviate these problems.

Typically, these investors do not primarily invest their own capital. They usually raise the bulk of their funds from institutions and individuals. Large institutional investors, such as pension funds and university endowments, are likely to want investments in their portfolio that have the potential to generate high yields, such as venture capital, and typically do not mind placing a substantial amount of capital in investments that cannot be liquidated for extended periods. Often, these groups have neither the staff nor the expertise to make such investments themselves, so they invest in partnerships sponsored by venture capital funds, which in turn provide the funds to young firms.

We will explore efforts to promote the growth of high-potential entrepreneurial ventures, as well as the venture capitalists that fund them. While the public sector is important in stimulating these activities, far too often public programs have not met their goals. Many of these disappointments could have been avoided, however, if the leaders had taken some simple steps in designing and implementing these efforts.

The role of the public sector

If we have heard too many pronouncements of Silicon Valley leaders, we might begin with the view that the government has nothing to contribute to new ventures.¹⁰ Is this not the realm of heroic entrepreneurs and investors, as far removed from government bureaucrats as imaginable?

The history of Silicon Valley and several of the pioneering venture capital groups suggests that reality is far more complex than some of our more libertarian entrepreneur friends might have us believe. In each case, the government's catalyzing role was critical in stimulating the growth of the region, sector, or firm.

This is not to minimize the miscues along the way. There were many challenges with these efforts: Silicon Valley's pioneers labored with a stop-and-start pattern of government funding: wartimes would see a surge in funding for research and procurement that would just as soon disappear when hostilities ended.¹¹ And in their early years, the founders of pioneering venture groups, such as American Research and Development and 3i, did not clearly distinguish social goals from financial objectives, leading to a muddled mission and confused investors.¹²

Despite these caveats, it seems clear that the role of the public sector—or, in the case of American Research and Development, individuals operating with a broader social framework in mind—has proven critical for catalyzing growth.

To be sure, entrepreneurial markets allow us to make a credible intellectual case for a natural government role in encouraging their evolution. Entrepreneurship is a business with increasing returns. Put another way, establishing a start-up is far easier with 10 other entrepreneurs nearby. Firm founders and venture capitalists benefit from their peers. For instance, if entrepreneurs are active in the market, investors, employees, lawyers, data providers, and the wider capital markets are likely to know about the venturing process and what it takes in terms of strategy, financing, support, and exit mechanisms. In entrepreneurship and venture capital, the actions of any one group are likely to have positive spillovers—or “externalities”—for their peers.

Examples abound of government intervention triggering the growth of a venture capital sector. For instance, the U.S. Small Business Investment Company (SBIC) led to the formation of the infrastructure for much of the modern venture capital industry.¹³ Many of the early venture capital funds and leading intermediaries—such as lawyers and data providers—began as organizations oriented to SBIC funds and then gradually shifted their focus to independent venture capitalists. Similarly, public programs played an important role in triggering the explosive growth of virtually every other major venture market around the globe.

But at least two well-documented problems can derail government intervention programs. First, the programs can simply get it wrong, allocating funds and support in an inept or, even worse, a counterproductive manner. Competent programs are more common in wealthier countries with more heterogeneous populations and an English legal tradition.

A second problem, delineated in the theory of regulatory capture,¹⁴ is that private and public sector entities will line up to capture direct and indirect subsidies that the public sector hands out. For instance, programs geared toward boosting nascent entrepreneurs might instead end up boosting cronies of the country’s rulers or legislators.

There is no shortage of examples of both problems in the history of public venturing programs:

- In its haste to roll out the SBIC program in the early 1960s, the U.S. Small Business Administration chartered—and funded—hundreds of funds whose managers were incompetent or crooked.
- The incubators taking part in Australia’s 1999 Building on Information Technology and Strengths program frequently captured the lion’s share of the subsidies meant for entrepreneurs by forcing the young firms to purchase their own overpriced services.
- Malaysia opened a massive BioValley complex in 2005 with little forethought as to whether there would be any demand for it. The facility soon became known as the “Valley of the Bio-Ghosts.”

- In the 1980s, the British Labor and Conservative governments subsidized and gave exclusive rights to publicly funded biotechnologies to the firm Celltech, whose management team was incapable of exploiting those resources.
- Norway squandered much of its oil wealth in the 1970s and 1980s propping up failing ventures and funding ill-conceived new businesses begun by relatives of parliamentarians and bureaucrats.

Strategies and their limitations

Policies that governments employ to encourage venture capital and entrepreneurial activities take two forms: those that ensure an economic environment conducive to entrepreneurial activity and venture capital investments; and those that invest directly in companies and funds.

First, it is necessary to ensure that entrepreneurship is attractive. Often, in their eagerness to get to the “fun stuff” of handing out money, public leaders neglect to set the table—to create a favorable environment.

Making entrepreneurship attractive will likely have several dimensions. Ensuring that creative ideas can move easily from universities and government laboratories is critical. But many entrepreneurs come not from academia but from corporate positions, and studies have documented that the attractiveness of entrepreneurial activity for these individuals is very sensitive to tax policy. Also important is ensuring that the law allows firms to enter into the needed contracts—for instance, with a potential financier or a source of technology—and that these contracts can be enforced. Finally, education will likely be critical. Ensuring that business and technology students are exposed to entrepreneurship classes will allow them to make more informed decisions, and creating training opportunities in entrepreneurship for mid-career professionals will also likely pay dividends.

Second, it is important to ensure that international investors find the country or province attractive for investment. In most entrepreneurial hubs emerging in the past two decades, international investors, not domestic institutions, have made the critical early investments. These investors are likely to have the depth of knowledge and experience that enables them to make large bets on the most promising organizations. But these players are likely to be reluctant to take part if regulatory conditions are not up to global standards, or if there are substantial concerns about the ability of investors to exit investments. Reaching out to interested and skilled individuals overseas—most often, expatriate entrepreneurs—can also provide a source of capital and expertise.

A final important—though very challenging—role for government is to intervene directly in the entrepreneurial process. As noted, government programs must be designed thoughtfully to be sensitive to the private sector’s needs and the market’s dictates. Because of the “increasing returns” nature of entrepreneurship, these efforts can play an important role in an industry’s early days.

At the same time, governments must avoid the common pitfalls of public venture initiatives. I divide these pitfalls into two categories: conceptual issues, which doom a program from its very start, and implementation issues, which create problems as the programs enter operation.

One common conceptual problem is to ignore the realities of the entrepreneurial process. For instance, many public venture capital initiatives are abandoned after a few years: the programs' designers apparently did not understand that these initiatives take many years to bear fruit. Others have added requirements—such as the stipulation that portfolio companies focus only on explicitly “precommercial” research—that, while seemingly reasonable from a public policy perspective, run counter to the entrepreneurial process. In other cases, reasonable programs have been created that are too tiny to have any impact or so large that they swamp already existing funds.

A second common conceptual problem is to ignore the market's dictates. Far too often, government officials have sought to encourage funding in industries or geographic regions with a lack of private interest. Whether driven by political considerations or hubris, these efforts have wasted resources. Effective programs address this problem by demanding that credible private sector players provide matching funds.

These broad conceptual problems can doom a program even before it starts. But there are also plenty of pitfalls once programs begin. One common implementation problem is not worrying about incentives. Participants in public schemes to promote entrepreneurship can do well regardless of whether the program meets the public sector's objectives. In many instances, they do well even if the companies go belly up. The contrast with the best practices among private investors, in which incentives are commonly given scrupulous attention, could not be more striking. Public initiative managers should pay more attention to what will happen in various scenarios and how incentives can lead to problematic behavior.

Another implementation pitfall is the absence of appropriate evaluation mechanisms. Ideally, programs will undergo careful scrutiny at two levels. First, each program will be carefully analyzed. While recognizing that any initiative will take time to bear fruit, it is important to periodically take stock of what appears to be working and what is not. Second, fund managers and firms participating in the programs should also be scrutinized. It is important to ensure that the groups benefiting from these programs show the most promising market performance and have the most potential to benefit, rather than simply being most adept at garnering public funds.

A final common implementation issue is to ignore the international nature of the entrepreneurial process. In today's global venture industry, limited partners' capital commitments, venture capitalists' investments, and entrepreneurial firms' spending increasingly flow across borders and continents. To attempt to build a local entrepreneurial sector and venture capital industry without strong global ties is a recipe for an irrelevant sector without much economic impact. Yet in many instances, international participation is actively discouraged.

Research and case study findings on program outcomes

Many policy makers suggest that they are interested primarily in enhancing the growth and dynamism of entrepreneurial companies in their region as a lever for overall regional or national economic performance. A few policy levers are consistent with achieving that objective.

Remember that entrepreneurial activity does not exist in a vacuum

Entrepreneurs depend heavily on their partners. Without lawyers to negotiate agreements, marketing gurus and engineers to work for low wages and a handful of stock options, and customers to take a chance on young firms, new ventures are unlikely to grow. But despite the importance of the entrepreneurial environment, government officials often hand out money without considering the other barriers entrepreneurs face. This behavior is unlikely to address the problems of young firms. In some cases, crucial aspects of the entrepreneurial environment may initially seem tangential, such as robust public markets for young firms to spur venture investment. Singapore took a broader view, addressing not just a lack of capital but also the many other barriers impeding the creation of a productive arena in which entrepreneurs can operate.

Leverage the local academic scientific and research base more effectively

One precondition of entrepreneurship deserves special mention: in many regions, the low level of entrepreneurial activity and venture capital financing does not match the strength of the scientific and research base. The role of technology transfer offices is critical here. Effective offices do far more than simply license technologies; they also work closely to educate nascent academic entrepreneurs and facilitate introductions to venture investors. It is crucial to build the capabilities of local technology transfer offices and ensure that both potential academic entrepreneurs and technology transfer personnel have opportunities to train in the nature and mechanics of forming a new firm. All too often, technology transfer offices are encouraged to maximize the short-term returns from licensing transactions. This leads to more transactions with established corporations that can make substantial upfront payments, even though considerable evidence suggests that licensing new technologies to start-ups can yield substantial returns in the long run, both to the institution and to the region as a whole. If policy makers are serious about developing an entrepreneurial sector, they must think seriously about how technology is transferred, the incentives offered, and their consequences.

Respect the need for conforming to global standards

It is natural to want to hold onto long-standing approaches in such matters as securities regulation and taxes. These approaches have evolved to address specific problems and have proven effective. Despite the reluctance to change, there is a strong case for adopting the de facto global standards if a country is serious about promoting entrepreneurship and venture capital. Global institutional investors and venture funds will likely be discouraged if the customary partnership and preferred stock structures cannot be employed in a given country. Even if a perfectly good alternative exists, they might be unwilling to devote the time and resources to

explore it. Unless one is in a country like China—where global investors will feel compelled to master the system, no matter how complex, because of the size of the market opportunity—there is much to be said for allowing transactions that conform to the models widely accepted as best practice.

Let the market direct where subsidies should go to stimulate entrepreneurial and venture activity

Two efforts that have largely met their goals (at least so far) are Israel’s Yozma program and New Zealand’s Seed Investment Fund. While these programs differed in their details—the first was geared toward attracting foreign venture investors while the second encouraged local, early-stage funds—each used matching funds to determine where public subsidies should go. In undertaking these efforts, the following should be kept in mind:

- The right firms or funds will not likely be identified overnight. Rather than funding dozens of groups immediately, it makes more sense to first fund a handful of entities. As feedback is received from the early participants, it may be appropriate to launch a second and third batch, or instead to supplement the capital of the pioneering firms and funds.
- These initiatives should not compete with independent venture funds or engage in the protracted financing of substandard firms that cannot raise private financing. It would thus help if these efforts, emulating initiatives that have succeeded in the past, required a large amount of funds to be raised from nonpublic sources.
- In selecting which venture funds to provide with capital, it may be a challenge to interest top-tier venture groups. Rather, the expectation should be that a region can attract solid groups with a particular interest in industries where there is already real local strength.
- In the same spirit, policy makers might cast their net broadly in terms of the types of firms and funds they seek to attract. In addition to conventional standalone start-up venture funds, they might also consider encouraging corporate spin-offs and venture funds.
- In encouraging seed companies and groups, extensive intervention might be needed before these groups should get funding. This could entail working closely with the groups to refine strategies, recruit more partners (perhaps even from other regions), and identify potential investors. Moreover, the firms and groups must retain enough “dry powder” not to go belly up once the government subsidies run out. Having the right leader is critical for these interventions to be effective.
- Policy makers can encourage success by publicizing in advance their evaluation criteria for prospective firms and funds and if the criteria are close to those in the private sector.

Resist “overengineering” entrepreneurship and venture capital initiatives

Government requirements that limit the flexibility of entrepreneurs and venture investors can be very detrimental. It is tempting for policy makers to restrict where firms can operate, the types of securities that venture investors can use, or the evolution of the firms going forward (for

example, restrictions on acquisitions or secondary sales of stock). The government should eschew such efforts to micromanage the entrepreneurial process. While it is natural for firms and groups receiving subsidies to retain a local presence or to continue targeting the local region for investments, it can help to minimize these requirements.

Recognize the long lead times of public venture initiatives

Impatience is one of the common challenges of public entrepreneurship and venture capital initiatives. Building an entrepreneurial sector is a long-term endeavor. Promising programs must have enough time to grow. Far too often, promising initiatives have been abandoned on the basis of incomplete (and often, not the most critical) indicators, such as low interim rates of return of initial program participants. Moreover, many politicians have unrealistic expectations about the likelihood of job growth from these efforts in the short and medium terms. Young, high-impact firms are no doubt an engine of job creation, particularly at the regional level.¹⁵ But even substantial innovation-driven entrepreneurship might be unable to quickly overcome a jobs problem. As the last few years have shown, massive layoffs in automobile manufacturing and construction cannot be solved with even an extremely well-run biotech incubator. Unrealistic expectations and little patience—and consequently the creation of rules that force program participants to focus on short-term returns—are a recipe for disappointment.

Find the right size for initiatives

Policy makers must walk a fine line in finding the right size for venture initiatives. Too small a program will probably have little impact on the challenging environment facing pioneering entrepreneurs and venture funds. Moreover, inflated expectations might create a backlash that will make future efforts difficult. But too large a program risks swamping the local markets. The imbalance between plentiful capital and limited opportunities could introduce pathologies. Consider the Canadian labor fund program. It not only backed mostly incompetent groups that did little to spur entrepreneurship but also crowded out some of the most knowledgeable local investors.

Understand global connections

Entrepreneurship and venture capital are increasingly emerging as global enterprises. This evolution has two important consequences. First, no matter how eager policy makers are to encourage activity in their own backyard, they must realize that to meet their goals, firms must have a greater international presence. Restricting firms to local hiring and manufacturing are likely to be profoundly self-defeating. Second, to promote successful firms, it can help to involve foreign investors as much as possible. Substantial benefits can come to local companies in relationships with funds that are based elsewhere but that invest capital locally. Moreover, initial investments that do well will attract more foreign capital. In addition, local affiliates of a fund based elsewhere—having developed an attractive track record—will gain the credibility they need to raise their own funds. That said, when using public funds to subsidize activities by

overseas parties, these entrepreneurs and groups should commit to recruiting local personnel and reveal the extent to which the partners based elsewhere will manage the local groups.

Institutionalize careful evaluations of these initiatives

In the rush to succeed, many policy makers make no provision for evaluating their efforts. The future of these initiatives should be determined by the extent to which they meet their goals, rather than other considerations (such as the vehemence with which program supporters argue for their continuation). Careful program evaluations will lead to better decisions. These evaluations should consider not just the participating funds and companies but also the broader context, including:

- Gathering and publicizing accurate data on the extent of high-potential entrepreneurship and formal and informal venture capital activity. Some of this information can be collected immediately; other information can be gathered only after some activity. These data will be important not only for program evaluations but also to publicize the growing size and dynamism of the local venture market to prospective investors.
- Comparing publicly supported firms and venture groups with their peers to determine the difference the program has made.
- Tracking the performance of the companies that are and are not participating in the program, including not just financial returns but also such elements as sales and employment growth.

The evaluators might also consider whether it would be feasible to randomize at least some awards, or explore the use of regression discontinuity analysis in the evaluations.

Realize that the programs to promote entrepreneurship and innovation need creativity and flexibility

Many public venture initiatives are like the villain in a horror film—as much as one tries, they cannot be killed off. Their seeming immortality reflects the capture problem discussed above: powerful vested interests soon coalesce behind these initiatives, making them impossible to get rid of. The countries that have had the public programs with the greatest impacts, on the other hand, have been willing to substitute new incentives for programs not doing well. They have also been willing to end programs because they are *too* successful—they have met their goals and thus no longer need public funding. Moreover, program rules may have to evolve, even if it means eliminating important classes of participants. If government is going to be promoting entrepreneurship, it needs some of the same qualities itself.

Recognize that “agency problems” are universal, and take steps to minimize their danger

The temptations of directing public subsidies in problematic ways are not confined to any region, political system, or ethnicity. While we might wish that humanity would commit to maximizing the public welfare, more selfish interests are all too common. In designing public programs to promote venture capital and entrepreneurship, limiting the possibilities for such behavior is

clearly essential. Defining and adhering to clear strategies and procedures for venture initiatives, creating a “fire wall” between elected officials and program administrators, and carefully assessing the programs can help limit these interests.

Make education a greater part of the mix

It helps if there is an emphasis on education, with at least three dimensions:

- The first is building outsiders’ understanding of the local market’s potential. A lack of information is one of the critical barriers to venture investment in a country. Visiting a racetrack for the first time, it is nice to know whether the track favors front-runners or late closers and who the hot local jockeys are. In the same way, institutions often feel much more comfortable investing if they can access information about the level of entrepreneurial activity in local markets, the outcomes of the investments, and so forth. An important role for government is to gather this information directly or to encourage (and perhaps fund) a local trade association to do so.
- Second, in many emerging venture markets, some entrepreneurs have a great deal of confidence but little understanding of the expectations of top-tier private investors, potential strategic partners, and investment bankers. The more that can be done to fill these knowledge gaps, the better.
- Finally, a broad understanding in the public sector of the challenges of entrepreneurial and venture capital development is very helpful. In many instances, policy makers have made expensive errors in promoting these activities out of a lack of understanding of how markets really work.

Less consistent approaches

Not all suggestions are good. Some are heard frequently—indeed, touted by consultants and intermediaries—but do not align with the global evidence on the right steps to build an entrepreneurial sector or venture capital industry.

Local entrepreneurs and venture investors frequently demand that local pools of government funds—whether sovereign funds owned by the states or pension funds for public employees—be allocated largely to domestic entrepreneurs or venture funds. This suggestion, while initially plausible, is problematic for several reasons:

- The creation of dynamic markets appears to be driven largely by global private equity limited partners, not local players. Early-stage venture funds—assuming that they can develop a good track record—are likely to attract considerable interest from institutional investors. By directing funds to local groups that cannot raise money, governments are likely to be rewarding precisely the groups that do not deserve funds.
- As highlighted above, public programs are in real danger of flooding the market with far more capital than they can reasonably deploy. Such well-intentioned steps can actually end up hurting entrepreneurs and venture capitalists.

- It flies in the face of the principle that public venture capital funds should rely on the market to identify attractive opportunities, rather than mandating activity. While it is hoped that local pension and investment funds will eventually play an important role here, it should be at a pace comfortable for them.

A second, less helpful suggestion is the common demand for provisions that would give investors an immediate tax deduction when a venture capital investment is made. A frequently cited model is the CAPCO program, pioneered in Louisiana and adopted by a number of other states. Unfortunately, these efforts have met few of their goals. This suggestion, while initially appealing, raises concerns for two reasons:

- The evidence suggests that tax policy encourages venture capital primarily through the demand side: the incentive that entrepreneurs have to (typically) quit their salaried jobs and begin a new firm instead. Little evidence suggests that tax policy can dramatically affect the supply of venture capital by the types of sophisticated institutional investors that provide capital to the world's leading venture industries. Indeed, many dominant venture capital investors—such as pension funds and endowments—are tax-exempt in most countries.
- One of the powerful features of the venture capital process is the alignment of incentives. No one—whether limited partner, venture capitalist, or entrepreneur—achieves substantial gains until the company is sold or goes public. Economists argue that such an alignment keeps everyone focused and minimizes the danger of strategic behavior that benefits one party but hurts the firm.¹⁶ Giving substantial tax incentives at the time of the investment could distort this alignment of incentives.

A third suggestion that raises concerns is relying on an outside investment firm to manage a fund-of-funds for that locale. It has been tried in a number of American states but is problematic for several reasons:

- The fees charged by these intermediaries are often substantial. These services, while they might appear small (only 1 percent of capital under management), often end up eating a huge fraction of the returns.
- The investments by the intermediary might not be driven primarily by the local government's priorities. Intermediary fees can also create incentives to do deals for the intermediary's own sake, rather than taking the steps that advance the mission of the fund. Thus, a financial institution may be tempted to put the money to work quickly so it can raise another fund (and generate more fees).
- There may be funds that the intermediary has a "special relationship" with (for example, an investment bank's fundraising group may be gathering capital for that group). In these instances, divided loyalties will come into play, and the government's best interests might not be served. It is thus no surprise that U.S. states that have tried such efforts have seen only very limited growth in their venture industries.

Another persistent theme—perhaps the hardest to resist—is the desirability of blindly duplicating programs and incentives provided elsewhere. For instance, many Persian Gulf states have borrowed concepts from Dubai, even if the very fact that the strategies worked for Dubai means that they are less likely to work elsewhere (such as the creation of a major air travel hub).

Moreover, there has been a strong temptation to emulate even ill-considered programs. For instance, despite having been widely emulated, incentive schemes in other regions that gave large tax benefits to those investing in entrepreneurial firms have typically not met policy makers' goals in promoting entrepreneurship. Similarly, we have seen that the widely adopted strategy of instructing local pension fund managers to make economically targeted investments with employees' funds has had mixed results.

Ill-considered steps to promote entrepreneurship and venture capital can be profoundly distorting, attracting inexperienced operators and leading to ill-fated investments. The resulting poisonous legacy can discourage legitimate investors from entering the market for years to come and set back the creation of a healthy industry. So, tempting as it is to match these investment incentives offered by others, if a strategy appears ill considered, it is best avoided.

Final thoughts

The quest to encourage venture activity can seem like a sideshow among governments' many responsibilities, from waging war to ensuring the stability of major financial institutions. Certainly, the annual spending on public venture capital programs—while substantial in absolute terms—pales in comparison to defense and health care spending. But the picture changes when looking at the long-term consequences of policies that facilitate or hinder the development of a venture sector—that is, a vital entrepreneurial climate's impact on national prosperity. In the long run, the significance of these policies looms much larger.

In many cases, there is likely to be a government role in stimulating a vibrant entrepreneurial sector, given the early stage of maturity of these activities in most countries. But it is easy for the government to overstep and squander its investments in this arena. Only by designing a program that reflects an understanding of, and a willingness to listen to, the entrepreneurial process can government efforts be effective.

There is also a great need for more academic research in this area. The paucity of research reflects in part the fact that these programs are difficult to evaluate. In undertaking these assessments, one has to ask what would have happened without the subsidies. This may seem pretty daunting: we need to look inside a crystal ball and figure out what would have happened in the parallel universe in which the program did not exist.

Of course, a lack of research is a problem in many fields, whether evaluating new pedagogical approaches or testing new pharmaceuticals. By conducting randomized trials, in which some otherwise undeserving entities are selected for awards while some otherwise deserving entities

are passed over, the impact of the program can be understood. The entrepreneurs who receive awards but are below the cut-off score, and those who are above the line but do not receive awards, are compared with their peers to get a sense of the program's impacts. In this way, any unobserved differences between the entrepreneurs who received awards and the controls are eliminated. That the entrepreneurs who take part in a government program do better than their peers does not mean the program has made a difference. Rather, the applicants could have been disproportionately the best and the brightest entrepreneurs, smart enough to learn about the program and find the time to fill out the application. Moreover, if there is a competition for the awards, the screening process should pick out the better groups.

Yet such trials—however widely adopted in other areas—remain quite rare when assessing public efforts to promote entrepreneurship. A frequent objection to randomization is that it is wrong to knowingly give public money to an inferior entrepreneur. While we have long been comfortable with the use of randomized trials in medical research, in which one set of cancer patients gets the experimental drug and another gets the traditional treatment, the introduction of random choices in economic settings makes many leaders nervous. Whatever the merits of their reluctance, it has blocked attempts to use randomization while assessing public venturing programs.

Fortunately, there is an alternative: regression discontinuity analyses. This type of analysis accounts for the fact that when program managers assess potential participants, there will always be some applications that fall just above the cut-off or just below. By comparing these entrepreneurs or venture funds, which are likely to be very similar except that some were chosen for the program and others not, one can get a good sense of the program's impact without a randomization procedure. As Adam Jaffe, one of the most vocal advocates of better evaluation approaches, has observed: "I and others have previously harped on randomization as the 'gold standard' for program evaluation. I now believe that [regression discontinuity] design represents a better tradeoff between statistical benefits and resistance to implementation."¹⁷ But even getting access to data on rejected applicants can be a sensitive process. Getting better research will require that policy makers be more open to policy experiments; it will also take academics willing to work with government officials to address their concerns.

While these critical issues can seem arcane and technical, well-considered—or misguided—policies are likely to profoundly influence our opportunities, as well as those of our children and grandchildren. However challenging the encouragement of entrepreneurship might seem, it is too important to be left entirely to policy specialists.

Notes

¹ For a discussion of these issues, see Schoar (2010).

² Meeker 2011.

³ U.S. Congress 2011.

⁴ Abramowitz 1956; Solow 1957.

⁵ Acs and Audretsch 1988.

⁶ Jewkes, Sawers, and Stillerman 1958.

⁷ The first example of arguments along these lines I am aware of is Foster (1986).

⁸ See, for instance, Aron and Lazear (1990).

⁹ Prusa and Schmitz Jr. 1994.

¹⁰ See, for instance, Rodgers (2000).

¹¹ See Leslie and Kargon (1996); Saxenien (1994); and especially Sturgeon (2000).

¹² Ante 2008; Liles 1978.

¹³ Noone and Rubel 1970; Bean 2001; and Liles 1978.

¹⁴ The articulation of this model in the economics literature is frequently attributed to Olson (1965) and Stigler (1971), and its formal modeling to Peltzman (1976) and Becker (1983).

¹⁵ See earlier papers in this series, most recently Haltiwanger (2012).

¹⁶ For a detailed review of the academic literature, see Gompers and Lerner (2004).

¹⁷ Jaffe 2002.

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