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CHAPTER 1

Introduction

The financial crisis of 2008 opened the door to massive public interventions in the Western economies. In many nations, governments responded to the threats of illiquidity and insolvency by making huge investments in troubled firms, frequently taking large ownership stakes.

The magnitude of these investments boggles the imagination. Consider, for instance, the over $150 billion invested by the U.S. government in AIG (American International Group) in September and November 2008 in exchange for 81 percent of the firm's stock, without any assurances that the ailing insurer would not need more funds. Or the Swiss government's infusion of $60 billion into UBS in exchange for just under 10 percent of the firm's equity: this capital represented about 20 percent of the nation's gross domestic product.[1] Moreover, the pressures in Western nations to rescue other failing sectors—beginning with their automakers—seem unrelenting and suggest that yet more transactions are to come.

Many concerns can be raised about these investments, from the hurried way in which they were designed by a few people behind closed doors to the design flaws that many experts anticipate will limit their effectiveness. But one question has been lost in the discussion. If these extraordinary times call for massive public funds to be used for economic interventions, should they be entirely devoted to propping up troubled entities, or at least partially designed to promote new enterprises? In some sense, 2008 saw the initiation of a massive Western experiment in the government as venture capitalist, but as a very peculiar type of venture capitalist: one that focuses on the most troubled and poorly managed firms in the economy, some of which may be beyond salvation.

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Meanwhile, in a different part of the globe, in Dubai, the bittersweet fruits of a different type of public intervention can be seen. The emirate experienced truly extraordinary growth in its entrepreneurial environment for much of the past decade. This transformation could be seen through several metrics: new business creation rates, the in-migration of talented and creative individuals from around the region and the world, and the establishment of a regional hub of venture capital, growth equity, and investment banking activity. To cite one, albeit quite noisy, indicator, in the 2007 Global Entrepreneurship Monitor survey, the United Arab Emirates was ranked first among the forty-two countries rated for hosting start-ups geared primarily toward export markets.[2] Among the overall ranking in the number of start-up businesses begun in 2007, the nation moved up to the seventeenth position from the twenty-ninth spot the year before.

The role of the public sector in effecting this transformation in Dubai is unquestionable.[3] The initial vision for the potential of the government's capital and leadership in transforming the city can be traced back to the 1950s, when the late Sheikh Rashid bin Saeed Al Maktoum dredged the Dubai Creek. The waterway was crucial to Dubai's trading and reexport businesses. (These activities had emerged as the city's primary industries after the collapse of the pearl trade in the aftermath of the Great Depression and the invention of cultured pearls in Japan.) At the time a city of roughly 20,000 residents with few natural resources, Dubai was unable to afford the dredging and expansion project itself. To finance the effort, the sheikh essentially had to mortgage the emirate to the emir of Kuwait. Once the dredging work was complete, trading volume promptly increased and Dubai was able to rapidly repay the loan.

This successful project was only the first of a series of investments made by Sheikh Rashid. The most dramatic of these was undoubtedly the decision in 1972 to build a huge new port at Jebel Ali, massive enough to accommodate global shipping vessels, large cruise ships, and aircraft carriers. It was—and remains—the largest port in the region by far. The project, widely seen as hopelessly uneconomic at the time, created one of the world's most successful ports and a key transshipment point for trade between the West and China. Numerous

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other investments followed, such as initiatives to catalyze development of a major airport and the flag carrier Emirates Airlines, hotel and resort projects, and major sporting arenas and events.

Another illustration of this aggressive policy can be seen in the creation of Dubai's Internet City (DIC).[4] This effort was announced in 1999. At the time, technology investment worldwide was booming, and the effort was seen as a way to diversify Dubai's economy from its dependence on the emirate's rapidly dwindling petroleum supply. In addition to developing office space, DIC offered a wide variety of incentives to companies that located there, including tax-free status for corporate earnings (guaranteed for fifty years), exemptions from customs duties, and the right to repatriate profits fully. DIC also offered tenants renewable, fifty-year leases on the land, enabling them to plan long-term projects.

A major focus was on providing amenities in addition to office space. These incentives included computer hardware, such as a world-class network built in collaboration with technology giant Cisco Systems. Many more intangible benefits were provided by DIC as well. These goodies included a three-day incorporation process (which allowed accelerated access to the many legal benefits that firms resident in the center obtained), a simplified immigration process for knowledge workers, help lines to answer any questions the new corporate residents had, and many opportunities for knowledge-sharing and networking among the resident firms. Certain services were geared to entrepreneurial firms, such as the availability of furnished one-room offices for rent on a month-to-month basis, with shared conference space. These services were initially provided by the management of the Internet City itself, and then spun off into an independent company. Throughout, the services were priced at a slight premium in comparison to like facilities, reflecting the particular desirability of this location.

Just as with the Jebel Ali port project, this venture attracted considerable skepticism. The catcalls intensified after the decline in technology and telecommunications stocks in the spring of 2000. But by the time the center opened, a year after being announced, it had attracted about 180 tenants, including major international players in the sector

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such as Cisco, Hewlett Packard, IBM, Microsoft, Oracle, and Siemens, as well as a variety of start-ups. The cluster continued to grow rapidly in the ensuing years, as many corporations chose the location as a regional hub for their business in the Middle East, Africa, and the Indian subcontinent, and new firms in the region gravitated to the facility.

But public intervention also has its dark side in Dubai, as recent events have revealed. While exact data are hard to come by, numerous analysts suggest that the Dubai government—and its government-linked corporations—is awash in a sea of red ink. In the last decade, public funds appear to have been used more and more indiscriminately for a wide array of highly levered real estate development projects, many of which were "me too" efforts with few broad social benefits or even the promise of attractive private returns.

The consequences of this excessive leverage were apparent in the aftermath of the financial crisis that began in 2008. As construction projects ground to a halt and employers contracted, many recent migrants drifted away in search of greener pastures. The debt incurred from the undisciplined pursuit of growth will be a drag on the emirate in the years to come.[5]

Moreover, in many other parts of the Middle East, governments are facing an even worse outcome: debts from large public expenditures with little new growth to show for their efforts. Numerous governments plowed their newfound oil riches into emulating the Dubai model. But in many cases, instead of seeking to copy the key *principles* behind Dubai's success, they slavishly imitated the same distinct steps that the emirate took, regardless of whether their replication could pass a test of economic logic.

Consider, for instance, the efforts to emulate Dubai by creating regional transport and financial hubs. A plethora of economic analyses have suggested that these businesses have strong network effects, where the dominating position afforded an initial mover with a strong competitive position is very difficult to attack. But rather than identifying and exploiting underserved market opportunities—as Dubai's neighboring emirate, Abu Dhabi, has done with its focus on cultural tourism—far too often the approach of neighboring governments has

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been to imitate what has worked for Dubai, no matter how modest the chance of repeated success. It is natural to wonder how many viable airport gateways, financial centers, and high-technology hubs can coexist within a few hundred miles of each other.

This two-sided picture of public investment represents the basic puzzle at work here. When we look at the regions of the world that are, or are emerging as, the great hubs of entrepreneurial activity—places such as Silicon Valley, Singapore, Tel Aviv, Bangalore, and Guangdong and Zhejiang provinces—the stamp of the public sector is unmistakable. Enlightened government intervention played a key role in creating each of these regions. But for each effective government intervention, there have been dozens, even hundreds, of failures, where substantial public expenditures bore no fruit.

This account of the results of public investment might lead the reader to conclude that the pursuit of entrepreneurial growth by the public sector is a massive casino. The public sector is simply making bets, with no guarantees of success. Perhaps there are no lessons to be garnered from the experiences of the successful and the failed efforts to create entrepreneurial hubs.

The truth, however, is very different. In many, many cases, the failure of efforts by governments to promote venture and entrepreneurial activity was completely predictable. These efforts have shared a set of flaws in their design, which doomed them virtually from the start. In many corners of the world, from Europe and the United States to the newest emerging economies, the same classes of problems have reappeared.

The Focus of This Book

Before we plunge into the substance of the book, it is worth highlighting the economic institutions on which we will focus, and mentioning those we won't address.

Fast-growing entrepreneurs have attracted increasing attention both in the popular press and from policymakers. These business creators and the investors who fund them play a dramatic role in creating new

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industries and revitalizing economies. Many nations have launched efforts to encourage this activity. Such attention is only likely to intensify as nations seek to overcome the deleterious effects of the credit crunch and its recessionary aftereffects. This book is an effort to shed light on the process by which governments can avoid heading down an avenue of false hope, making all too common mistakes in an attempt to stimulate entrepreneurship.

One limitation is that we won't be looking at all efforts to boost entrepreneurship. In recent decades, there has been an explosion in the number of efforts to provide financing and other forms of assistance to the poorest of the world's poor, in order to facilitate their entry into entrepreneurship or the success of the small ventures they already have. Typically, these are "subsistence" businesses, offering services such as snack preparation or clothing repair. Such businesses typically allow the owner and his or her family to get by, but little else. The public policy literature—and indeed academic studies of new ventures—has not always made this distinction between the types of businesses that are being studied.

Our focus here will be exclusively on high-potential new ventures and the policies that enhance them. This choice is not intended to diminish the importance or relevance of efforts to boost microenterprises, but rather reflects the complexity of the field: the dynamics and issues involving micro-firms differ markedly from those associated with their high-potential counterparts. As we'll see, a substantial literature suggests that promising entrepreneurial firms can have a powerful effect in transforming industries and promoting innovation.

It might be obvious to the reader why governments would want to promote entrepreneurship, but why also the frequent emphasis on venture funds as well? The answer lies in the challenges facing many start-up firms, which often require substantial capital. A firm's founder may not have sufficient funds to finance projects alone, and therefore must seek outside financing. Entrepreneurial firms that are characterized by significant intangible assets, expect years of negative earnings, and have uncertain prospects are unlikely to receive bank loans or other debt financing. Venture capital—independently managed, dedi-

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cated pools of capital that focus on equity or equity-linked investments in privately held, high-growth companies—can help alleviate these problems.

Typically, venture capitalists do not primarily invest their own capital, but rather raise the bulk of their funds from institutions and individuals. Large institutional investors, such as pension funds and university endowments, 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. Thus, they invest in partnerships sponsored by venture capital funds, which in turn provide the funds to young firms.

In this book, we'll explore efforts to promote the growth of high-potential entrepreneurial ventures, as well as the venture funds that capitalize them. While the public sector is important in stimulating these activities, I will note that far more often than not, public programs have been failures. Many of these failures could have been avoided, however, if leaders had taken some relatively simple steps in designing and implementing their efforts.

It is also important to note that this book focuses on new ventures, rather than restructurings, leveraged buyouts, and other later-stage private equity investments. Later-stage private equity resembles venture capital in a number of respects, sharing similar legal structures, incentive schemes, and investors. Such equity funds also invest in a type of enterprise that often finds external financing difficult to raise: troubled firms that need to restructure. Like venture capitalists, buyout funds protect the value of their equity stakes by undertaking due diligence before making investments and by retaining powerful oversight rights afterward. The organizations that finance these high-risk, potentially high-reward projects in mature firms pose a different—but quite interesting—set of issues. They are thus the topic for another book!

This book also shies away from the answer to the often-asked question of what makes a good industry for a given nation to promote at a particular time. These questions have, of course, no "one size fits all"

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answer, but are very specific to the individual circumstances. While the analyses of industrial organization and strategy needed to answer these questions are fascinating, they would take us too far afield.

The Boulevard of Broken Dreams

As I suggested in the preface, our understanding of the ideal policies to promote new ventures is still at an early stage. But the desire for information on how to encourage entrepreneurial activity is very real. Particularly in an era of economic turmoil and recession, governments look to entrepreneurial ventures as economic spark plugs that will reignite growth. This book seeks to address this need, synthesizing approaches that we know work—and warning against those that don't.

The Broad Backdrop

The first three chapters explore why public intervention to boost new venture activity might make sense. If we have heard pronouncements by Silicon Valley patriarchs, we may begin with the view that the government has nothing to contribute to new ventures. Isn't this the realm of heroic entrepreneurs and investors, far removed from pointy-headed government bureaucrats?

In chapter 2, we take an initial look at this issue by reviewing the history of Silicon Valley and several of the pioneering venture capital groups. We find that reality is far more complex than our libertarian entrepreneurial friends might have us believe. In each case we look at, government was an initial catalyst in the growth of the region, sector, or firm.

This is not to minimize that miscues were made along the way. As we'll discuss, a number of challenges faced these entrepreneurs and their investors:

- Silicon Valley's pioneers labored with a "stop and start" pattern of government funding: wartimes would see a surge of funding for research and procurement, which would frequently disappear upon the cessation of hostilities.

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- The founders of pioneering venture groups, such as American Research and Development and 3i, did not clearly distinguish in their early years between social goals and financial objectives, which led to a muddled mission and confused investors.
- The Small Business Investment Company was poorly designed initially, with counterproductive requirements, and then implemented inconsistently.

Despite these caveats, it seems clear that the public sector—or in the case of American Research and Development, individuals operating with a broader social framework in mind—proved a critical catalyst to growth in Silicon Valley.

In the third and fourth chapters, we explore the same questions about the role of the public sector, but now in a more systematic manner. We look at the academic literature to explore the arguments for and against government interventions to stimulate entrepreneurship. The third chapter explores the rationales for government investment, which rest on three pillars. First, the role of technological innovation as a spur for economic growth is now widely recognized. Indeed, statements of policy by governments worldwide highlight the importance of innovation in sustaining economic growth and prosperity.

Second, academic research has highlighted the role of entrepreneurship and venture capital in stimulating innovation. Venture financiers and firms have developed tools that are very well suited to the challenging task of nurturing high-risk but promising new ideas. One study estimates that because of these tools, a single dollar of venture capital generates as much innovation as three dollars of traditional corporate research and development. Venture capital and the entrepreneurs it funds will never supplant other wellsprings of innovation, such as vibrant universities and corporate research laboratories (in an ideal world, these components of growth all feed each other). But in an innovative system, a healthy entrepreneurial sector and venture capital industry will be important contributors.

If that were the whole story, the case for public involvement would

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be pretty compelling. And we probably would not need this book! But the case for public intervention rests as well on a third leg: the argument that *governments* can effectively promote entrepreneurship and venture capital. And as we see in chapter 4, this is a much shakier assumption.

To be sure, entrepreneurial markets have features that allow us to identify a natural role for government in encouraging their evolution. Entrepreneurship is a business in which there are increasing returns. To put the point another way, it is far easier to found a start-up if there are ten other entrepreneurs nearby. In many respects, founders and venture capitalists benefit from their peers. For instance, if entrepreneurs are already active in the market, investors, employees, intermediaries such as lawyers and data providers, and the wider capital markets are likely to be knowledgeable about the venturing process and what strategies, financing, support, and exit mechanisms it requires. In the activities associated with entrepreneurship and venture capital, the actions of any one group are likely to have positive spillovers—or, in the language of economics, "externalities"—for their peers. It is in these types of settings that the government can often play a very positive role as a catalyst.

This observation is supported by numerous examples of government intervention that has triggered the growth of a venture capital sector. For instance, the Small Business Investment Company (SBIC) program in the United States led to the formation of the infrastructure for much of the modern venture capital industry. Many of the early venture capital funds and leading intermediaries in the industry—such as law firms and data providers—began as organizations oriented to the 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 I also consider in the fourth chapter why there are reasons to be cautious about the efficacy of government intervention. In particular, I highlight two well-documented problems that can derail government programs. First, they can simply get it wrong: allocating funds and support in an inept or, even worse, a counterproductive manner. An ex-

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tensive literature has examined the factors that affect the quality of governmental efforts in general, and suggests that more competent programs are likelier in nations that are wealthier, with more homogeneous populations, and an English legal tradition.

Economists have also focused on a second problem, delineated in the theory of regulatory capture. These writings suggest that private and public sector entities will organize to capture direct and indirect subsidies that the public sector hands out. For instance, programs geared toward going to nascent entrepreneurs may instead end up boosting cronies of the nation's rulers or legislators. The annals of government venturing programs abound with examples of efforts that have been hijacked in such a manner.

I will discuss examples of both problems in the history of public venturing programs. A few instances are as follows:

- In its haste to roll out the Small Business Investment Company program in the early 1960s, the U.S. Small Business Administration chartered—and funded—hundreds of funds whose managers were incompetent or crooked (chapter 2).
- The incubators taking part in Australia's 1999 BITS (Building on Information Technology Strengths) program frequently captured the lion's share of the subsidies aimed toward entrepreneurs, by forcing the young firms to purchase their own overpriced services (chapter 4).
- Malaysia opened a massive BioValley complex in 2005 with little forethought about whether there would be demand for the facility. The facility soon became known as the "Valley of the Bio-Ghosts" (chapter 6).
- Britain's Labor and Conservative governments subsidized and gave exclusive rights in the 1980s to the biotechnology firm Celltech, whose management team was manifestly incapable of exploiting those resources (chapter 7).
- Norway squandered much of its oil wealth in the 1970s and 1980s propping up failing ventures and funding ill-conceived new busi-

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nesses begun by relatives of parliamentarians and bureaucrats (chapter 8).

Strategies and Their Limitations

In the fifth through seventh chapters, I look across the policies that governments employ to encourage venture capital and entrepreneurial activity. These take two forms: those that ensure that the economic environment is conducive to entrepreneurial activity and venture capital investments and those that directly invest in companies and funds.

First, it is necessary to ensure that entrepreneurship itself is an attractive option. Often, in their eagerness to get to the "fun stuff" of handing out money, public leaders neglect the importance of setting the table, or creating a favorable environment.

Such efforts to create the right climate for entrepreneurship are likely to have several dimensions. Ensuring that creative ideas can move easily from universities and government laboratories is critically important. However, many entrepreneurs come not from academia, but rather from corporate positions, and studies have documented that, for these individuals, the attractiveness of entrepreneurial activity 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 is likely to 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 midcareer professionals is also likely to pay dividends.

Second, it is important to ensure that international investors find the nation or province an attractive one in which to invest. In most of the successful entrepreneurial hubs established in the past two decades, the critical early investments have not been made by domestic institutions, but rather by sophisticated international investors. These investors are likely to have the depth of knowledge and experience that enables them to make substantial bets on the most promising organizations. But these players are likely to be very reluctant to take part if

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local regulatory conditions are not up to global standards, or if there are substantial doubts 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 above, these programs must be designed thoughtfully, so as to be sensitive to the private sector's needs and to the market's dictates. Because entrepreneurship brings "increasing returns," efforts by governments can play an important role in the industry's early days.

At the same time, governments must avoid the common pitfalls that threaten publicly supported ventures. In the sixth and seventh chapters, I highlight what can go wrong. I divide these pitfalls into two categories: conceptual failings, which doom a program from its very start, and implementation failures, which create problems as the programs enter operation.

One common conceptual failing is to ignore the realities of the entrepreneurial process. For instance, many public venture capital initiatives have been abandoned after a few years: the programs' authors have apparently not understood that these initiatives take many years to bear fruit. Other programs have added requirements—such as the stipulation that portfolio companies focus only on "precommercial" research—that may seem reasonable as public policy but run counter to the nature of the entrepreneurial process. In other cases, reasonable programs have been too tiny to have an impact, or so large that they swamp the already-existing funds.

A second frequently encountered conceptual problem is the creation of programs that ignore the market's dictates. Far too often, government officials have encouraged funding in industries or geographic regions where private interest simply did not exist. Whether these choices have been driven by political considerations or hubris, the result has been wasted resources. Effective programs avoid this problem by demanding that credible private sector players provide matching funds.

If ignored, these broad problems of design can doom a program even before it is started. But plenty of pitfalls remain once programs

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begin. One common implementation problem is a failure to build in incentives. Far too often, participants in public schemes to promote entrepreneurship do well financially whether or not the program meets objectives. In fact, in many instances, they do well even if the companies go belly-up! The contrast with the best practices among private investors, where scrupulous attention to incentives is commonplace, could not be more striking. Managers of public initiatives must pay attention to various possible scenarios, and avoid incentives, or a lack of incentives, that can lead to problematic behavior.

Another danger in implementation is the failure to design appropriate evaluative mechanisms. Ideally, programs will undergo careful scrutiny at two levels. First, the program itself will be carefully analyzed. While designers should recognize that any initiative will take time to bear fruit, it is important to periodically take stock of which of its aspects appear to work well and which do not. Second, fund managers and firms participating should be scrutinized. It is important to ensure that the groups benefiting from government programs are the most promising in the industry in terms of market performance and can most benefit from public investment, rather than being those most adept at currying favor with the people who are handing out public funds.

A final frequent failing is to ignore the international nature of the entrepreneurial process. Today's venture industry is a global one on many levels. 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 and unsuccessful sector. Yet in many instances, international participation is actively *discouraged*.

A Special Case

In the eighth chapter, we turn to considering a special, but highly visible, manifestation of the government as entrepreneur: the sovereign wealth fund. These institutions have been experiencing remarkable growth, and an even greater increase in scrutiny from business and political leaders worldwide.

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A sovereign fund can be defined as a state-owned fund that invests in various financial assets. The visibility, diverse goals, and (in many cases) substantial size of these funds mean that managing them is not a simple task.

To be sure, many of the challenges facing sovereign wealth funds are similar to those encountered in the other public venture capital and entrepreneurial promotion schemes that I consider elsewhere in this volume and have already summarized. But these organizations must struggle as well with added issues, which make the effective leadership of sovereign funds especially challenging.

First, these organizations face political scrutiny, particularly in Europe and the United States. One might assume that sovereign funds, which have been part of the economic landscape for more than half a century, are too familiar to cause worry. But the rapid growth of these funds in recent years and their role in a few high-profile transactions have called attention to them and inflamed public anxieties.

Careful scrutiny suggests that many of the criticisms of sovereign funds have been misleading. For instance, many critics have depicted them as concentrating their investments in the most developed nations, while in fact the bulk of their activities have focused on domestic deals and developing nations. At the same time, the sovereign funds—by surrounding themselves with a veil of secrecy, in many cases—have not assuaged anxiety about their role. In this book I argue that greater visibility in funds' objectives and activities could allay some—though probably not all—of this anxiety, but would also impose real costs.

The second major challenge relates to the need to generate good returns on investments. Groups—particularly the larger ones—must struggle with the cruel mathematics of investment management: strategies that may be attractive for a small capital pool become much more difficult to implement with more capital under management. This problem is most acute in alternative investments, such as private equity and real estate, on which many sovereign funds have increasingly focused.

I highlight three responses to this second challenge. First, funds must be creative in choosing their investment classes. Categories that

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have been successful for previous generations of investors are unlikely to remain lucrative, and it is critical to creatively scan the investment horizon, identifying areas where one can gain a comparative advantage. Second, it is important to realize that building a successful investment program is a major, long-run investment. Identifying and implementing a strategy, and fine-tuning one's approach, cannot be done effectively unless key managers are recruited and retained. Finally, breaking the fund into smaller pieces may yield better returns.

Final Thoughts

This book, then, ends with a nuanced message. To be sure, government has a role in stimulating a vibrant entrepreneurial sector, given the early stage of maturity of entrepreneurial activities in most nations. But at the same time, it is easy for the government to overstep its bounds and squander its investments. Only by designing a program that reflects an understanding of, and a willingness to learn from, the entrepreneurial process can governments be effective.

In particular, I highlight in the final chapter several guidelines for policymakers who want to facilitate entrepreneurship:

- Remember that entrepreneurial activity does not exist in a vacuum: building an environment where new ventures can thrive is a critical first step.
- Leverage the local academic, scientific, and research base effectively.
- Respect the need for conformity to global standards: adopting rules that resemble those found in leading nations will help attract critically important overseas investors.
- Be sure to let the market provide direction when providing subsidies.
- Resist the temptation to "overengineer" public venture initiatives.
- Recognize the long lead times these initiatives require.

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- Avoid programs that are too small to make a noticeable difference or too big for the market.
- Understand the need for, and actively encourage, strong interconnections with entrepreneurs and investors overseas, rather than focus only on domestic activity.
- Institutionalize careful evaluations of initiatives.
- Realize that the programs to promote entrepreneurship need creativity and flexibility; sometimes they must be refined or killed off.
- Recognize that "agency problems"—when individuals and organizations act to benefit themselves, rather than the broader social good—are universal, and take steps to minimize their danger.
- Make education part of the initiative, including that of overseas investors, local entrepreneurs, and the public sector.

At the same time, there are prescriptions for creating new entrepreneurs that may be seductive, but are best avoided:

- Mandates to local institutional investors to make larger allocations to venture capital, regardless of the nature of the opportunities
- Substantial up-front tax incentives for investments, which can introduce distorted incentives
- A reliance on financial intermediaries to manage these programs, since they are likely to have different incentives
- Matching ill-considered incentives offered by other governments

A Critical Challenge for All of Us

Programs to boost new ventures might seem like an esoteric corner of public policy, far less important than the big issues of war and peace

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and health benefits, not to mention the rescue of giant firms that are on the ropes. But this perception can be misleading because of the magnitude of changes that can occur when venture programs are done well.

To understand their importance, we can contrast Jamaica and Singapore.[6] Both are relatively tiny states, with under five million residents apiece. Upon Singapore's independence in 1965—three years after Jamaica's own establishment as a nation—the two nations were about equal in wealth: the gross domestic product (in 2006 U.S. dollars) was $2,850 per person in Jamaica, slightly higher than Singapore's $2,650. Both nations had a centrally located port, a tradition of British colonial rule, and governments with a strong capitalist orientation. (Jamaica, in addition, had plentiful natural resources and a robust tourist industry.) But four decades later, their standing was dramatically different: Singapore had climbed to a per capita GDP of $31,400 (2006 data, in current dollars), while Jamaica's figure was only $4,800.[7]

What accounts for the amazing difference in growth rates? There are many explanations: soon after independence, Singapore aggressively invested in infrastructure such as its port, subsidized its system of education, maintained an open and corruption-free economy, and established sovereign wealth funds that made a wide variety of investments. It has also benefited from a strategic position on the key sea lanes heading to and from East Asia. Jamaica, meanwhile, spent many years mired in political instability, particularly the disastrous administration of Michael Manley during the 1970s. Dramatic shifts from a market economy to a socialist orientation and back again, with the attendant inflation, economic instability, crippling public debt, and violence, made the development and implementation of a consistent long-run economic policy difficult.

In explaining Singapore's economic growth, it is hard not to give considerable credit to its policies toward entrepreneurship. As we'll discuss in more detail below, the government has experimented with a wide variety of efforts to develop an entrepreneurial sector:

- The provision of public funds for venture investors seeking to locate in the city-state
- Subsidies for firms in targeted technologies

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- Encouragement of potential entrepreneurs and mentoring for fledgling ventures
- Subsidies for leading biotechnology researchers to move their laboratories to Singapore
- Awards for failed entrepreneurs (with a hope of encouraging risk-taking)

While much of the initial growth in Singapore can be attributed to sound macroeconomic policies, political stability, and various other factors, the nation's entrepreneurship initiatives have played an increasingly important role in stimulating growth.

The contrast with Jamaica is striking. Jamaica has long had a high rate of subsistence entrepreneurship: for instance, the 2006 Global Entrepreneurship Monitor survey placed it among the highest of the forty-two nations it examined in various rates of entrepreneurial activity.[8] Yet other data collected by the Monitor—and corroborated in anecdotal accounts—suggests that early-stage entrepreneurship is translated into full-fledged business activity at a very low rate. On this measure, the island nation ranked among the lowest nations (twenty-eighth among the thirty-five countries ranked by GEM in 2005).[9]

Some of the reasons for the inability of Jamaican entrepreneurs to grow can be seen in the World Bank's reports on the barriers to entrepreneurs. The "Doing Business" series assesses, across 178 countries, the obstacles faced by an entrepreneur in performing various standardized tasks (thereby avoiding some of the subjectivity associated with other attempts to rank entrepreneurship).

In several critical indicators, Jamaica ranked extremely low in the World Bank's 2008 analysis.[10] These suggest some of the barriers that hold back the growth of entrepreneurial enterprises:

- Of the 178 countries studied, Jamaica ranked 170th in the burden of complying with tax regulations. The ranking reflects not just the cost of the taxes themselves, but also the administrative burdens associated with complying with the tax code. The World Bank's analysis suggests that the total cost of complying with all

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tax laws in Jamaica amounts to just over one-half of gross profits for the typical entrepreneur. Numerous studies have suggested that one of the most important sources of financing for the typical entrepreneur is cash flow generated by the business itself, which is plowed back into the business. If so much of entrepreneurs' income is going to meet tax obligations, business owners are unlikely to have the resources to invest in their enterprises. By way of contrast, Singapore ranked second worldwide, with a burden of just 23 percent.[11]

- Similarly, when the cost of registering property is compared, Jamaica ranked 108th out of 178: the cost of registering property was equal to 13.5 percent of the value of the property. (By comparison, the ratio in the United States is 0.5 percent of the value.)[12] The high cost of registering property means that fewer people register their holdings, which in turn leads to less secure property rights. Most critically, entrepreneurs who do not hold a firm legal title to property are unlikely to be able to borrow against this holding from a bank. Once again, this comparison suggests that entrepreneurs have fewer resources for growing their enterprises.

One of the most visible manifestations of this lack of activity may be in Jamaica's productivity: from 1973 to 2007, the nation actually experienced *negative* productivity growth.[13] Making this poor performance even more striking is the fact that during this period the developed nations experienced substantial growth through the implementation of information technology, and many developing markets experienced even faster growth as they caught up with technologies adopted earlier in the West.

This disparity may change in future years: Jamaica enjoyed a surge in income with the rise of energy and commodity prices, and the most recent prime ministers have shown a greater awareness of, and willingness to lower, barriers to entrepreneurship. But the disparate experiences of Singapore and Jamaica over the past four decades demonstrate why all of us should care about entrepreneurship.

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The promotion of business ventures is of critical importance to all of us. While the challenges facing government initiatives may seem arcane and technical, well-considered policies are likely to profoundly influence our opportunities, as well as those of our children and grandchildren. Misguided policies, unfortunately, will also help determine the future. However challenging the encouragement of entrepreneurship may seem, it is truly too important to be left to the policy specialists!