

**THE SOCIAL CONTEXT FOR HIGH-POTENTIAL
ENTREPRENEURSHIP IN THE U.S.:
AN HISTORICAL-INSTITUTIONAL PERSPECTIVE**

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ABSTRACT

This paper seeks to explain why the U.S. has a high rate of high-potential entrepreneurship (HPE) relative to other nations. I develop a conceptual framework for understanding HPE as a path-dependent historical process at the national level. The cumulative interactions of cultural, economic, political, and educational institutions of a nation create a social context for entrepreneurship that generates high-potential opportunities. This social context also produces (or attracts from abroad) individuals who are sufficiently well-endowed to recognize these opportunities, provides these individuals with incentives to try to create new businesses to exploit them, and channels additional resources into these businesses to accelerate their growth. The paper applies this framework to the U.S. and briefly considers in conclusion the potential future path of development.

**HIGH-POTENTIAL ENTREPRENEURSHIP IN THE U.S.:
VIBRANT, RESILIENT, AND HARD TO COPY**

The rise of the United States to global industrial leadership in the late nineteenth century was powered by sustained, rapid growth of firms founded to exploit the new opportunities presented by the conjunction of mass production technology and the large, homogeneous U.S. market (Chandler 1977, Nelson & Wright 1992). In the first half of the twentieth century, American business seemed to many observers to have congealed into oligopolistic (or even monopolistic) structures. The conventional wisdom hailed this development, viewing oligopoly as both stable and innovative. Galbraith (1952: 91), for instance, described the large firm as an “an almost perfect instrument” of technological development in *American Capitalism*.

In the years after World War II, U.S. firms extended their reach globally. Economic policy-makers in western Europe sought to respond to this “American challenge” (as Servain-Schreiber (1967) characterized it) by creating national “champions” of a comparable scale and scope. The conventional wisdom was not, however, entirely accurate about the sources of American economic dynamism in this period. Beneath the giant redwoods of the Fortune 500, the industrial landscape of the U.S. contained a thriving undergrowth of smaller and newer firms (Scranton 1997, Acs & Audretsch 1990), including some seedlings that would grow into giants themselves, toppling their elders as they did so. Indeed, the environment in the U.S. for high-growth start-up firms grew more hospitable as the twentieth century wore on, culminating in the entrepreneurial frenzy of the dot-com boom that brought the century to a close.

High-potential entrepreneurship (HPE, a term I will define more precisely below) now stands as a new American challenge to its economic competitors – the mirror image of Servan-Schreiber’s challenge of four decades ago. The dot-com bust notwithstanding, many governments around

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the world seek to emulate the U.S.'s capacity for HPE (OECD 2008). Policy-makers have targeted intellectual property laws, academic research programs, venture capital investors, and equity markets, among other things, to try to catalyze HPE (OECD 2005). By doing so, they aim to capture some of the growth and innovation that has characterized the U.S. in recent years. Yet, with a few exceptions, the results of these efforts have not so far lived up to the hopes that sparked them.

HPE in the U.S., meanwhile, is rebounding smartly from its low point in the early years of this decade. Venture capital investments (to take just one indicator) recorded a second straight year of double-digit growth in 2007, rising to approximately \$29 billion. While far below the \$100 billion peak of 2000, this figure is more than seven times that of 1994, the year before Netscape's initial public offering (IPO) of stock triggered the dot-com boom (NSB 2008: appendix table 6-55, PWC & NVCA 2008). In this article, I seek to explain why HPE in the U.S. is so vibrant, resilient, and hard to copy. I argue that HPE is a complex phenomenon, rooted in the cumulative, historical interaction of many social institutions. This complexity and its evolutionary sources present significant barriers to imitation.

The article begins by defining HPE, distinguishing it from other forms of entrepreneurship and connecting it to highly-valued economic outcomes. I then lay out a general conceptual framework for explaining HPE, centered on the concept of path dependence. Subsequent sections describe the key elements of the framework, both in the abstract and in the empirical case of recent U.S. history. I conclude with a brief look toward the future of HPE in the U.S.

HIGH POTENTIAL ENTREPRENEURSHIP: WHAT IT IS AND WHY IT MATTERS

Shane and Venkataraman (2000) define entrepreneurship as the discovery, evaluation, and exploitation of opportunities to supply future goods and services. This definition directs attention beyond the individual entrepreneurs who had been the exclusive focus of most work in this field before the late 1990s. It encompasses the social context that is the source of entrepreneurial opportunities and the organizational capacities required for evaluating and exploiting them effectively.

Building on this definition, HPE may be defined as the creation, recognition, and exploitation of opportunities to supply future goods and services whose consumption is expected to grow rapidly for an extended period of time. The ambitions of the individuals who recognize opportunities for HPE are grander than those of other entrepreneurs, and their attributes are different. More important for my purposes in this chapter, opportunities for HPE arise in somewhat different social contexts than do those for plain old entrepreneurship (POE). The effective exploitation of these opportunities also requires somewhat different institutional arrangements.

Shane and Venkataraman (2000: 219) point out that their definition "does not require, but can include, the creation of new organizations." If established businesses were so perceptive and so nimble that they recognized and seized all the available opportunities, POE and HPE would be at their maximum levels without any new business start-ups at all. In practice, the standard operating routines of established businesses make it difficult for them to recognize and act on new opportunities, especially high-potential opportunities (Nelson & Winter 1982, Christensen

1997). In addition, measuring entrepreneurship within established businesses is very difficult. For these reasons, I equate business start-ups with entrepreneurship in this article, but it is appropriate to see this measure as a proxy for the broader concept articulated by Shane and Venkataraman (2000).

Using this measure, the rate of entrepreneurship is high in the U.S. The Global Entrepreneurship Monitor (GEM), a survey of some forty countries, for instance, reports that 12.4% of Americans between the ages of 18 and 64 were actively planning or actually involved in starting a business in 2005. That rate is roughly double that of the other G-7 countries, putting the U.S. “in a league of its own.” (Bullvaag *et al.* 2006: 6)

The GEM operationalizes HPE as the entrepreneur’s expectation that her business will employ 20 or more people within five years. About 1.5% of the surveyed population in the U.S. fell into this category between 2000 and 2004; that was roughly three times the rate of continental European and highly-developed Asian countries. Obviously, entrepreneurial expectations are not always fulfilled; indeed, entrepreneurs of all stripes fail more often than they succeed. On the other hand, some start-ups succeed well beyond their founders’ expectations. Nonetheless, as Wiklund and Shepherd (2003) and Autio (2005) show, there is a correlation, albeit imperfect, between initial expectations and eventual growth.²

These data, then, support the widely-held view of the U.S. as an entrepreneurial society in general and one that is particularly capable of generating high-potential start-up firms HPSFs. Recent research links both POE and, more tentatively, HPE to a variety of important economic outcomes. Several studies (e.g. Wennekers & Thurik 1999, Acs, Audretsch, Braunerhjelm & Carlsson 2006), for instance, have shown that business start-ups are associated with economic growth at the regional and national levels. John Haltiwanger (2008) provides evidence that firms that are less than five years old account for nearly all net job creation in the U.S., although he also points out that this net figure obscures a great deal of volatility.

The growth and jobs effects of POE seem to stem in large part from the disproportionate impact of HPE. Wong, Ho & Autio (2005) and Autio (2005) summarize a variety of studies showing that 1-10% of new firms generate 40-75% of new jobs. One key reason for this disproportionate impact is that new firms are more able than established businesses to create and to absorb radical technological innovations that open up new markets and support new business models (Christensen & Rosenbloom 1995). Competition from successful new entrants, in turn, forces their older rivals to adapt or face extinction. This dynamic can drive productivity growth across the broader economy, as it seems to have done in the U.S. over the past decade (Cotis 2007).

Sustaining a healthy level of HPE is likely to become even more important in the future, particularly for high-income nations. An increasing share of economic activity in these countries depends on the commercialization and effective utilization of new ideas and technologies. Production processes are more easily standardized and modularized than in the past and therefore more easily offshored and imitated. Like the Red Queen in Lewis Carroll’s *Alice in*

² Autio uses the term “high-expectation;” Zoltan Acs in Bullvaag *et al.* (2006) the U.S. GEM report cited above uses the term “high-potential.” The data here are aggregated across five waves of GEM surveys because HPE is such a rare occurrence.

Wonderland, the rich will have to run faster just to stay in the same place. HPE is one crucial way to do so.

**HISTORICAL-INSTITUTIONALISM:
A GENERAL FRAMEWORK FOR UNDERSTANDING HPE
IN COMPARATIVE INTERNATIONAL CONTEXT**

HPE is a complex phenomenon. Although the decision to “take the leap” and launch a high-potential start-up firm (HPSF) may be an act of individual (or team) courage and willpower, the definition supplied above suggests that the social context must fulfill a variety of conditions for such a choice to be posed at all. If high-potential opportunities are to be created, society must be rich in intellectual and economic resources and open to innovation. If they are to be recognized, society must possess a diverse array of sophisticated and ambitious individuals. If they are to be exploited, society must value risk-taking and be able to redirect substantial resources to particularly promising new enterprises.

This complexity undermines single-factor theories of HPE and should dissuade policy-makers from the temptation to search for a “magic bullet” to stimulate it. For instance, secure property rights, including intellectual property rights, embedded in a well-functioning legal system, may be necessary but not are sufficient to explain HPE. Among other things, property rights do not provide adequate incentives for knowledge creation. On the other hand, a thriving system of non-proprietary academic and governmental research may make a society knowledge-rich, but its presence may not be sufficient to ensure that the high-potential opportunities it generates will be exploited. A ready supply of high-risk venture funding, to pick a third possible “magic bullet,” may be necessary if HPSFs are to be scaled up rapidly, but cheap finance alone may not be sufficient to induce would-be entrepreneurs to shoulder non-pecuniary risks to their social status or career prospects that “taking the leap” would entail.

HPE requires a more comprehensive explanatory framework in order to accommodate this complexity. Multiple institutional systems – cultural, political, economic, and educational – interact to produce a social context that is propitious for HPE. These institutional systems co-evolve; they shape one another over time. Where HPE emerges, it may become self-sustaining by reinforcing the institutional conditions that initially gave rise to it. In other words, HPE is path-dependent. This sort of historical-institutional perspective has helped scholars make sense of such complex phenomena as political development (Pierson 2004), technological innovation (Murmann 2003), and large-scale economic transformation (Greif 2006). HPE fits comfortably in such company.

In the next three sections of this article, I elaborate on some of the key institutions that affect a society’s level of HPE and discuss how they have co-evolved to foster relatively high levels of HPE in the contemporary U.S. Before doing so, I address in the remainder of this section several potential sources of confusion. First, I believe that the historical-institutional perspective may be helpful for understanding POE as well as HPE (Baker, Gedajilovic & Lubatkin 2005). However, because HPE depends on a different mix of institutions than POE, a paper like this one on POE would differ in many of the particulars. To take just one example, higher education likely figures less significantly in the social context for POE than in the social context for HPE.

Second, this article approaches its subject at the national level. In part, this choice is a matter of convenience. Data, such as those presented above from the GEM, are often gathered at this level. The national level of analysis is, fortunately, also defensible on more principled grounds. Many institutions that are crucial to an historical-institutional explanation of HPE, such as the legal system, vary mainly across nations. The reader should note, though, that there are often relevant institutional variations within nations, contributing to an uneven distribution of HPE at the regional level. To some extent, cross-national variations in HPE may be explained by the number and scale of regional entrepreneurial hotspots within nations. Such an explanation, however, would be incomplete if it did not embed these regional success stories within a broader national narrative that encompasses the factors emphasized here.

The term “institution” is a third potential source of confusion. Following North (1994), I define an institution as a durable, human-created constraint on the choices of individuals and organizations. Such a constraint need not be perceived by those subject to it. The definition therefore embraces, for example, the taken-for-granted assumptions that comprise culture as well as the conscious restrictions imposed by law and public policy. However, the definition does not include what in common parlance are sometimes referred to as “institutions,” such as universities, businesses, and government agencies. In North’s scheme, these entities are “organizations.” Organizations and individuals are agents that make choices and take actions. Each agent is subject to a nexus of institutional influences that jointly constrain its choices.

It is the interaction of institutional systems, mediated by these agents, that produces path dependence, the last concept I wish to address in this section. Agents generally adapt their behavior, including their routines for making and enforcing institutional norms and rules, to reduce conflicting institutional influences. Institutions thus tend to co-evolve to fit together harmoniously from the agents’ point of view. In such a setting, simultaneous change in multiple institutional systems, as seems to be required to alter something as complex as the rate of HPE in a society, is very difficult to motivate and coordinate. The future is strongly conditioned by the past. Yet, we should bear in mind that this is a matter of dependence, not determinism. Especially when powerful external pressures are present, the trajectory of institutional change may deviate from its historical path.

POLITICAL ECONOMY AND THE CREATION OF HIGH-POTENTIAL OPPORTUNITIES

My detailed argument for the historical-institutional approach to HPE begins with a discussion of political economy. In order for high-potential opportunities to be created, much less recognized and exploited, the social context for entrepreneurship must be changing more rapidly or profoundly than existing businesses can respond to. Firms, like other agents, tend to continue doing what they have done in the past. The more a new opportunity would require changing existing routines, the less likely incumbents are to seize it. The prospect of new competition, moreover, may prompt them to seek protection through the political system. Opportunities for HPE will appear more frequently in highly dynamic economic systems where political protection for existing businesses is scarce.

The emergence of new markets, either through the introduction of new customers or as a result of changing tastes, is one source of change with which existing businesses may have trouble

coping. For example, the opening of a large new foreign market could be a powerful stimulus to HPE, especially if the demands of the new customers are different from those at home. Changing tastes in the domestic market, especially sudden and dramatic ones, are likely to be even more powerful stimuli for HPE. Such changes in taste may arise for a variety of reasons, such as saturation of existing demand, the whims of fashion, and, perhaps most important, product and process innovation.

Innovation, in turn, stems in large part from the creation of new knowledge. The extent and location of knowledge creation depends significantly on economic and political institutions. These institutions (such as financial markets and tax law) may provide incentives for existing businesses to create new knowledge even as their established routines (such as the “wall” that often separates R&D from production within firms) interfere with these businesses’ ability to recognize the value that it has created. The greater the tension between knowledge creation and opportunity recognition within existing businesses, the more likely it is that disgruntled employees will depart to pursue HPE based on ideas rejected by their employers. (Auerswald & Branscomb 2003)

Opportunities based on new knowledge created by non-business organizations, such as academic or government laboratories, tend to be even more difficult for existing businesses to recognize. These organizations are supported primarily by political institutions, either directly through government appropriations or indirectly through tax incentives for charitable contributions. The routines of laboratory researchers are distinct from most business routines, and communication between the world of research and that of business is often fraught with barriers. Entrepreneurs may be better positioned than existing businesses to recognize high-potential opportunities drawing on laboratory-based science and engineering. (Rosenberg 2003)

Opportunities for HPE, however promising, are far less likely to be pursued if government agencies or existing businesses, however clumsy, are perceived by potential entrepreneurs to be likely to place a “thumb on the scales” and alter market outcomes arbitrarily to suit their interests. Such a bias in favor of existing businesses may be caused by onerous taxes on entrepreneurs, by regulations that protect incumbents, by unfair trade practices of incumbents for which new entrants have no recourse, or by collusion between government and incumbents. Effective systems of real and intellectual property rights, policies that control excessive market power, and political practices that allow potential and new interests to be expressed in the policy process limit the chances that the economic system will be rigged against HPSFs.

To this point in this section, I have laid out a variety of abstract political-economic factors that provide fertile ground for opportunities for HPE to arise. In the remainder of the section, I offer empirical substantiation of these claims with reference to the contemporary U.S. To begin with, domestic economic growth has been more rapid in the U.S. in recent decades than in most high-income nations. In more than two-thirds of the years between 1980 and 2005, for instance, U.S. GDP growth was higher than the OECD average (World Bank 2006). Flexible factor markets, political institutions that reward loose fiscal policy, and an autonomous and accommodative Federal Reserve have contributed greatly to this surge.

The relatively open global trade regime has also provided U.S. producers with access to the rapidly growing markets abroad that have emerged in the past quarter-century. Exports by U.S. high-technology manufacturing industries, for instance, were five times larger in 2005 than in 1985 (NSB 2008: appendix table 6-15). To be sure, this regime has created opportunities for entrepreneurs outside the U.S. as well as inside. U.S. high-tech exports, for instance, have recently sagged in the face of competition from producers in emerging economies; on the other hand, U.S.-based firms are often the flagships of global production networks that rely on international trade. (Ernst & Kim 2002)

The preferences of U.S. consumers, businesses, and other organizations (including government agencies), especially their willingness to adopt new technologies, also contribute powerfully to a social context conducive to HPE. This “venturesome consumption,” as Amar Bhidé (2008) has recently labeled it, reduces barriers to entry facing HPSFs. In recent years, new firms in sectors that produce and use information and communications technology (ICT) have benefited particularly from this characteristic of American society.

These new technologies, in turn, draw on knowledge generated both within and outside U.S. firms. The U.S. as a whole invests about 2.7% of its gross domestic product (GDP) in R&D, and some 70% of these funds are supplied by industry (NSB 2008). These rates place the country in the top tier globally. U.S. firms came under heavy criticism in the 1970s and 1980s for their inability to appropriate benefits from these investments. While they seem to have improved their performance in this regard, many have also accepted that spinning off start-up firms may be a more effective way of commercializing new knowledge that they create than doing it themselves, and so have invested their own venture capital in such firms (Auerswald & Branscomb 2003).

American universities and, to a lesser extent, governmental and non-profit laboratories are also important sources of new knowledge that create opportunities for HPE. These organizations account for about a quarter of national R&D spending, of which academia constitutes about half. The U.S. share of global scientific publications has actually declined since the late 1980s, but there is some evidence that American academics are pursuing work of greater economic relevance than they used to. University patenting, for instance, has risen steadily since the Bayh-Dole Act of 1980 (which granted universities exclusive rights over inventions derived from federally-funded R&D), and a rising fraction of all patents cite academic scientific publications. Industrial funding of academic research, on the other hand, leveled off as a share of academic R&D funding during the 1980s and has declined in the current decade (Britt 2007). Taken together, these indicators suggest that existing businesses have difficulty reaping the economic benefits derived from new knowledge generated in U.S. universities, leaving space for entrepreneurs to pursue high-potential opportunities.

U.S. political and economic institutions, then, have fostered over the past several decades an economy that is wealthy, growing and changing relatively rapidly, and producing much new knowledge. The U.S. political economy, moreover, is less biased against new entrants than both popular and academic conventional wisdom assume. “Protection for Sale,” as one of the most widely-cited articles in this area is titled (Grossman & Helpman 1994), is not an accurate depiction of the situation.

It is certainly the case that U.S. legislative institutions are highly accessible to private interests. These institutions place a heavy weight on service to constituents in a member of the legislature's geographically-defined district and on accumulating member-specific electoral resources. Existing businesses, especially those that make campaign contributions, tend to be listened to. Yet, legislative action typically requires the agreement of multiple chambers, sometimes with super-majorities, as well as the chief executive. In such a fragmented system, it is easier to block than to move bills. Much legislation that aims to protect existing businesses is blocked, either by entrepreneurial interests themselves, who can also easily gain access to legislators, or by proxies who speak on their behalf, who are motivated by classical liberal political and economic principles that are deeply-rooted in U.S. history. In short, access and success are not equivalent (Leech, Baumgater, Berry, Hojnacki & Kimball 2007).

I would also accept the premise that existing businesses tend to have significant resource advantages in administrative and judicial proceedings that might affect the viability of entrepreneurial competitors. Incumbents can retain more and better lawyers, one presumes, and commission more and better expert studies. Yet, in these venues, too, important countervailing factors exist. The unusual American institution of antitrust law, enforced by both private and public rights of action, is representative of the liberal principles noted above, which are embedded in law and thus often negate the incumbents' resource advantages. (Hart 2001) Since the late 1970s, too, the movement for economic deregulation in such fields as communication, transportation, and finance, has reduced the reach of some institutions that were most amenable to incumbent firms' interests. (Derthick & Quirk 1985)

High-potential entrepreneurs pose a larger threat to existing businesses than other entrepreneurs and are therefore more likely to prompt existing businesses to seek protection through political action. Yet, in the American context, these efforts have often been foiled. Other national systems of political economy that are more centralized, less transparent, and less liberal may be more friendly to existing businesses with both direct and deterrent effects on HPE. The relative absence of political protection, combined with the dynamism of the market, leads relatively more high-potential opportunities to be created in the U.S. than elsewhere.

CULTURE, HUMAN RESOURCES, AND THE RECOGNITION OF HIGH-POTENTIAL OPPORTUNITIES

While the economic and political institutions of nations shape the relative availability of opportunities for HPE, the extent to which entrepreneurial individuals recognize and seize them depends on cultural factors as well. High-potential opportunities, especially those resulting from the development of new knowledge, are more likely to be recognized by people with high levels of education and experience. Cultural diversity also enhances recognition by widening the range of evaluations placed on uncertain opportunities. A society with a strong and diverse human resource base might nonetheless experience relatively low rates of HPE if potential high-potential entrepreneurs perceive financial disincentives and discouraging cultural cues about risk-taking.

HPE marries extreme ambition with technical expertise and market savvy. While the scale of an individual's ambition may not depend closely on his education and experience, his level of expertise and savvy are likely to. Education allows a potential entrepreneur to access and

appreciate new knowledge; business experience provides insights into how it might be applied. The Global Entrepreneurship Monitor (Bullvaag *et al.* 2006) finds, not surprisingly, that high-potential entrepreneurs are better educated, better off, and better connected than other entrepreneurs. The educational and occupational mix of a society thus shapes its capacity for HPE. These demographic patterns tend to change only slowly over time, shaped by a society's collective resources and commitments.

Cultural diversity, too, tends to be relatively fixed in the short-run, due to historic patterns of immigration and social mobility. Holding education and experience constant, diversity affects HPE by increasing the likelihood that unexploited market niches and technical combinations will be perceived as opportunities, rather than ignored. As Carlsson and Jacobson (1997) put it in a different context, the blending of cultures enlarges the "search space" in which opportunities are sought. People holding diverse values will resolve uncertainties about these opportunities differently, driving disagreements that lead to spin-offs and start-ups. Florida (2003, 2005) provides evidence of a strong association between diversity and high-potential entrepreneurship at the regional and, to a lesser extent, national levels.

High-potential entrepreneurs typically risk more than plain old entrepreneurs. Their education and experience make it likely that they have reasonably secure and remunerative career options within existing businesses as alternatives to going out on their own. The cost of entrepreneurial failure to these individuals involves more than the loss of a salary and any capital invested. They stand to lose in addition organization-specific human and social capital if return to their prior career track is prohibited in the case of failure. Where the individual opportunity costs of entrepreneurial behavior are low, HPE will thrive.

HPE involves non-pecuniary as well as financial risks and payoffs. The non-pecuniary benefits of HPE might include the esteem of family and friends, the expansion of social networks, and the pleasures of acquiring new knowledge and tackling a challenge – even if the venture fails in the end. Whether such rewards can be expected depends in the first place on the values that potential entrepreneurs have absorbed throughout their lives. These expectations may be shaped as well by cultural cues, including the status accorded entrepreneurs in the media.

As in the previous section, I turn now to examine how the theory laid out above applies in the U.S. case. To begin with, the U.S. has a large pool of people with the education and experience to undertake HPE. About a third of the U.S. college-age population gets a college degree, on a par with other leading countries. The U.S. produces proportionally fewer natural science and engineering majors among these degree recipients than some of its competitors. On the other hand, about 20% of those who receive such degrees in the U.S. eventually hold management jobs; about 7% receive a master's in business administration. (NSB 2006, Regets 2006) The combination of technical training and business experience lends itself to HPE. Perhaps most important, experience in HPE is itself very valuable training for further HPE. In this respect, the high rates of HPE in the U.S. are strongly self-reinforcing.

A large stream of highly capable temporary and permanent immigrants adds to the U.S. human resource base available for HPE and to the country's already rich cultural diversity. The U.S. remains the preferred destination for foreign students, especially for the top graduate students in

science, engineering, and business. Many of these students stay; about three-quarters of foreign doctoral degree recipients in 2003 planned to do so. (NSB 2006) The U.S. is somewhat less dominant as a destination for already highly-educated immigrants, lacking the targeted policies of Australia, Canada, and New Zealand (but outpacing such large competitors as France, Germany, and Japan in this respect). (Hart 2006) Recent research (Saxenian 1999, Wadhwa, Saxenian, Rissing & Gereffi 2007) indicates that immigrants play a substantial role in HPE in the U.S., particularly in Silicon Valley, where more than half of the founding teams of engineering and technology start-up companies in the past decade included at least one foreign-born individual.

The opportunity costs faced by high-potential entrepreneurs in the U.S. seem to be lower than those in other countries. In one respect this situation is troubling; some immigrants to the U.S., as well as native-born women and minorities, found companies because they believe that discrimination blocks their promotion to higher positions within established businesses. (Saxenian 1999) Yet, at least those who confront such a “glass ceiling” in the U.S. have this exit option, which is not as available in other countries. A more heartening and hopefully more pervasive element in the opportunity cost equation is that internal career ladders tend to be less rigid in the U.S. than elsewhere and lateral entry of highly-experienced personnel is common. Indeed, in some settings, a failed experience in entrepreneurship may be more of an asset to a job-seeker than the equivalent period within an established firm. (Bahrami & Evans 2000)

U.S. society and culture appear to provide ample and perhaps growing non-pecuniary rewards for HPE. Americans, for instance, value autonomy and individual expression more than most cultures. Such values may even be strengthening, particularly among Americans who have the education and experience to become high-potential entrepreneurs. Inclinations toward entrepreneurship are reinforced as well by the high status accorded entrepreneurs. Successful new businesses and their founders, for instance, receive extensive and favorable media coverage in the U.S.

Economic dynamism and barriers to protectionism in the U.S. create opportunities for HPE; the country’s people recognize these opportunities because they are well-trained and well-motivated to do so. At one level of analysis, individual investment in training and the motivation to become an entrepreneur stem from an economic calculation of costs and benefits. At another level, deeply-rooted cultural values and traditions, including openness to immigration and individualism, explain the distribution of costs and benefits that drive decisions to different conclusions cross-nationally. Opportunity recognition and decisions by individual entrepreneurs to pursue HPE, however, are not the end of the story. Exploitation, the final element in the definition of entrepreneurship, bring an additional set of institutions into our understanding of HPE.

EMBEDDING THE ENTREPRENEUR IN ORGANIZATIONS AND INSTITUTIONS: THE EXPLOITATION OF HIGH-POTENTIAL OPPORTUNITIES

The exploitation of high-potential opportunities requires that entrepreneurs draw on more substantial and more diverse outside resources – including money, talent, connections, and knowledge – than POE. HPE is defined by rapid and extended growth, driving demands for these resources on a scale that quickly outstrips the personal capacities of even the most

experienced and well-heeled founders. Scaling up brings qualitative as well as quantitative changes in resource requirements, particularly managerial skills. In societies with high rates of HPE, entrepreneurs are embedded in an institutional framework that nurtures organizations and individuals – in addition to the entrepreneurs themselves – who are able to evaluate high-potential opportunities well and to leverage their control of critical resources to enhance exploitation.

The most obvious resource required by HPSFs is money. The “burn rate” (monthly or quarterly spending) varies substantially across sectors and over time, but regardless of the initial level, it accelerates quickly when these firms are successful. Manufacturing firms that move from prototyping to production, for instance, typically face a step change in costs. When the pockets of the founders and their “family and friends” are emptied, new investors must be solicited. This solicitation process must overcome substantial transaction costs, especially negotiating an appropriate valuation for the firm and control rights over it. (Gompers & Lerner 2001) National financial institutions, including private and public markets and government grant and loan programs, may be more or less effective in surmounting these obstacles.

HPSFs also need to recruit a rapidly-changing array of high-level technical and managerial talent. Skills and strategies that are critical in a firm’s earliest phases tend to become less so as it grows and may even become irrelevant or counterproductive. The decision to join an HPSF once it is already up and running is similar to that of engaging in HPE, as discussed in the previous section, albeit with more information and perhaps lower risk. A deep and mobile talent pool will make HPE easier. Well-developed social networks that may involve entrepreneurs, investors, and specialized service providers can facilitate recruitment as well.

Knowledge, beyond that brought to the firm by new employees, is a third external resource upon which HPE is more dependent than POE. Social networks are a crucial means to access such knowledge. For instance, highly-competitive and rapidly-moving technical fields in which many HPSFs are involved rely more heavily on such networks for information exchange than formal vehicles such as conferences and publications. Current business information, too, is transferred through informal relationships as well as through specialized media. Other things equal, societies rich in social capital, particularly among elites, will likely give rise to more HPE.

Institutions that channel money, talent, and knowledge into fast-growing young firms, rapidly and in bulk, contribute significantly to a full explanation of the high rate of HPE in the U.S. The financial system that services HPSFs in the U.S., to begin with, continues to expand and diversify. The modern venture capital industry is an American creation. It remains far larger in the U.S. than any other country and, although cyclical, has continued to grow over time. (Bygrave 2006, Jeng & Wells 2000) U.S. equity markets make venture capital investing more appealing by allowing young firms to list their shares in initial public offerings (IPOs) relatively easily. “Angel” investing, which is a particularly important source of funds in the earliest stages of HPE, now rivals conventional U.S. venture capital industry in size and has become institutionalized in its own right. (Sohl 2007) Some 44 state governments also make or subsidize venture capital investments, usually focusing on early stage firms in high-technology sectors. (NASVF 2007)

I described the talent pool available to HPSFs in the U.S. in general terms in the previous section. U.S. workers, especially younger and highly-educated workers who are likely to be most valuable to young ambitious firms, are very mobile. The opportunity costs facing such potential recruits are lower in the U.S. than in countries characterized by long-term employment and strong internal career ladders. (Kodrzycki 2001) On the other hand, health care benefits are more closely tied to jobs and more valuable in the U.S. than elsewhere, which may impede some risk-taking. (Litan 2007)

Many HPSFs in the U.S. tap into the talent pool for senior managers as well. Nearly two-thirds of all venture capital-backed start-up companies, according to one recent study, replace their founding CEOs. Indeed, such turnover is often expected, and an institutional system, involving investors, “headhunting” consultants, and the managers themselves, has emerged to reduce the cost and speed the process. (Levehnsohn 2006) The routine replacement of entrepreneurs emphasizes the fact that HPE depends on the social context in which entrepreneurs are embedded and not merely their personal qualities and decisions.

The level of social capital in the U.S. in comparative context is a hotly contested question. Robert Putnam (2000) put the subject on the policy agenda by expressing concern about its decline. Francis Fukuyama (1995), on the other hand, views the U.S. as a high trust society, with salutary consequences for economic dynamism. More consensus on this subject can be found in research at the regional level that focuses on high-technology industries. Silicon Valley holds a paradigmatic place in this literature, a region in which entrepreneurship is enabled by an unusual degree of networking, both within and outside the workplace and extending particularly to the region’s universities. (Saxenian 1994, Cohen & Field 2000) Although other regions in the U.S. stand in the shade of Silicon Valley on this score, it seems likely that when these regions are aggregated to the national level, the country as a whole has a high density of this rare form of social capital.

HPSFs draw on knowledge that flows through formal as well as informal relationships. The U.S., especially in its highly entrepreneurial regions, has a healthy sector devoted to providing services and information to HPSFs. In addition to venture capitalists and headhunters, specialty practices in law, accounting, management consulting, and other professions, as well as a variety of media outlets, are available to firms that are coping with or anticipating rapid growth. (Suchman 2000) Only in an environment like the U.S., where potential clients are sufficiently dense, can such practices thrive. By learning from prior entrepreneurial experience and sharing what they have learned with new entrants, these service providers positively reinforce HPE where it is already well-established. (Kenney and von Burg 2000)

VIRTUOUS CIRCLE:

THE HISTORICAL PATH OF HPE AND ITS SOCIAL CONTEXT IN THE U.S.

The positive reinforcement of HPE over time that results from the interactions between specialized service providers and HPSFs in the U.S. is a good example of path dependent institutional co-evolution. The availability of advice that lowers the cost of growing young businesses rapidly, and raises the odds that they will succeed, induces more people to found and join such businesses. The more such businesses are created, the better the advice becomes.

Institutional interactions like this one, mediated by agents, in this case entrepreneurs and service providers, lie at the core of the historical-institutional approach to explaining HPE. In this section, I draw out briefly, from material presented in preceding sections, examples of path dependent processes of institutional co-evolution at three different time scales. Together, these processes, and others like them, comprise a virtuous circle in which HPE enhances its own social context, which in turn gives rise to more HPE.

The shortest of the three time frames dates back to the mid-1990s when commercial uses of the Internet were first sanctioned and the dot-com bubble began to inflate. Many specialized service providers got their starts in this period, along with many angel investors, entrepreneurship-oriented media outlets, and government programs aimed at supporting entrepreneurship. Most important, consumers in the U.S. and abroad adopted new habits as new goods and services became available. Not all of this novelty was sustainable, but even after the shake-out of the past few years, more money, talent, and experience are available for HPE than before the bubble. These resources can be mobilized for HPE more easily as well, thanks to the organizational templates and cultural norms that the dot-com period laid down.

The period since World War II is another time scale on which the path dependent development of HPE in the U.S. can be observed. Federal support for higher education and academic research became entrenched in this period. This support, along with changes in social norms and in immigration and civil rights law, enriched and diversified the talent pool. It also gave rise to much useful knowledge on which high-potential entrepreneurs have capitalized more easily than established businesses. The venture capital industry, too, can be traced back to the postwar period, stimulated at the start and occasionally thereafter by public policy decisions. The resulting institutional complex involving academic research, venture capital, and HPSFs has moved from one high-technology field to another over the past few decades, with nanotechnology and alternative energy emerging as the latest foci.

The third and most profound set of institutional interactions dates back to the founding of the U.S. and involves culture on the one hand and political economy on the other. The American Revolution gave birth to a society that was skeptical of concentrated authority and inclined toward equality among its members. The fragmented political system created by the U.S. Constitution reinforced these tendencies. The result, viewed from the perspective of more than two hundred years of political development, has been to restrain the power of government and established businesses, and enlarge through enfranchisement and immigration the fraction of society with the skills, resources, and motivation to engage in HPE.

LOOKING FORWARD: THE FUTURE PATH OF HPE IN THE U.S.

Positive feedbacks of the sort described above impart considerable momentum to HPE in the U.S. Momentum is not destiny, however. A complex system may give rise to novel internal interactions that alter its developmental course. External forces may also reorient such a system. In this concluding section, I take a brief look at such possibilities in the case of HPE in the U.S. While not discounting them entirely, my sense is that HPE will remain robust in the U.S. in the future, even as it grows in other nations.

Two important domestic challenges stand out. First, rising inequality of income and wealth, combined with the spiraling cost of higher education, may thin the pool and decrease the diversity of talented people who have the requisite background for HPE. This challenge will be deepened to the extent that other nations are more successful at attracting or retaining highly-qualified non-Americans and that anti-immigration forces in the U.S. succeed in excluding them. The second challenge is the maintenance of federal support for academic research in the coming years, as fiscal pressures from entitlement and military spending mount. In the long run, excessive concentration on current consumption to the detriment of future investment would sap the vitality of HPE by reducing knowledge-based opportunities.

I expect domestic inequality to be sustained or even continue to rise in the near future. No political movements like the trade unions associated with the New Deal of the 1930s or the civil rights revolution of the 1960s, which would temper this trend, are on the horizon. On the other hand, I think the U.S. will remain a major destination for bright immigrants, as youthful populations abroad continue to grow. Domestic pressure for exclusion of immigrants is focused on the less-skilled, which may well lead to an immigration policy that is more receptive to those who are more capable of engaging in HPE.

My guess about federal support for academic research is that it will weather the current pause in growth as it has on occasion in the past. Powerful constituencies have been built up to fight for research spending, and they will be mobilized if the fiscal threat is sustained. One of their most powerful weapons is the growth of comparable spending in other countries, such that U.S. economic competitiveness and military leadership are seen to be in peril. As with immigration, international pressures may well interact with domestic politics in the research funding domain so as to sustain the social context for HPE.

External forces, rather than internal ones, seem to me a bit more likely to disrupt the developmental path of HPE in the U.S. Two prospects here are worth highlighting. One is that the U.S. advantage in HPE may erode as other countries improve their social contexts for it. Domestic momentum for HPE is building in some important countries as the twenty-first century unfolds. The other is that foreign entrepreneurs may be able to take increasing advantage of ideas, investment, and services that originate in the U.S. The U.S. social context, it appears, may support of HPE on a global, rather than merely national, basis.

The most striking shifts in the domestic social contexts for HPE outside the U.S. have occurred in the large developing countries of India and China and in a few smaller, wealthier countries, such as Singapore and Israel. As the historical-institutional approach would suggest, each has followed a different evolutionary path to its present position. (Gerschenkron 1962) In each location, institutions that perform equivalent functions to those observed in the U.S. have evolved over a period of decades to foster HPE. (Rodrik 2005) In an interdependent global economy, HPE abroad means more competition for American HPSFs. Yet, even if their shares of the market grow thinner, the overall pie for which these firms compete ought to grow, as the rest of the world gets wealthier. HPE on a global basis ought to be a positive-sum game.

As interdependence continues to deepen in the coming years, global competition will extend beyond product markets to factor markets, as HPSFs born abroad tap into the social context that

has sustained HPE in the U.S. American investors, for instance, are more likely than ever to seek opportunities overseas, even as American knowledge producers continue to ramp up international collaborations. The distinction between foreign and domestic HPSFs is itself increasingly obsolete. The first ten employees of a “micro-multinational” (Copeland 2006) founded by Israeli engineers may well include computer programmers in Russia and marketing experts in the U.S.

This blurring of boundaries, like the improvement of social contexts for HPE abroad, points to new opportunities for Americans as well as undeniable challenges. New forms of collaboration among institutions and organizations may produce gains that outweigh the losses entailed by new forms of competition. That hope may be realized through the adaptive responses of organizations and individuals to changing institutional circumstances. Some conscious crafting of the institutional environment at the global level, however, may also be of value in the process. (Ernst & Hart 2007)

Bearing these challenges in mind, the historical-institutional perspective on HPE in the U.S. taken in this paper suggests that it will remain vibrant and resilient for a long time to come. The U.S. needs to pay attention to developments abroad, to learn from them, and to seize emergent opportunities at the global level. But there is at this point little cause for alarm.

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