Chapter 1
Innovative Entrepreneurship and Policy: Toward Initiation and Preservation of Growth

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Abstract A wide range of United States political policies influence the level of innovative entrepreneurial activity in the country, that is the number of new businesses started each year that bring truly new products and ideas to the market. These policies begin with an educational system that fosters a creative, inventive, and educated population with the skills to start new businesses. Immigration policies, too, contribute to an entrepreneurial population by welcoming additional talent. The government also plays an important role in creating incentives for the utilization and commercialization of new products, from rights of property and contract that protect new businesses and patent laws that protect new ideas without creating roadblocks to further innovation, to tax policies that focus on consumption rather than income. Finally, the government can mitigate disincentives for starting new businesses, such as an employer-based health system that discourages potential entrepreneurs from leaving their employment, overly onerous regulations that create burdens for young and small businesses, and a litigious environment that creates more risk for new businesses than is necessary to protect consumers.

1.1 Introduction

Entrepreneurs – the missing actors in economic textbooks and much economic writing – are gaining attention and respect among mainstream economists. Growing numbers of articles on the subject are appearing in the major economic journals. The recent publication of an important biography of perhaps the leading expositor of the subject, the late Joseph Schumpeter, has also raised the public's awareness of the importance of entrepreneurs to the wider economy (McCraw, 2007).

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There is much debate and confusion, however, over the definition of the "entrepreneur." The outcome matters. Who is given the label frames the way the public and policymakers think about them, and more importantly, their contribution to economic performance.

We believe that management expert Peter Drucker was right when he noted that "not every new small business is entrepreneurial or represents entrepreneurship" (Drucker, 1985, p. 21). Some "entrepreneurs" innovate by commercializing new products or services or using new techniques to produce or deliver existing products and services. Other "replicative" entrepreneurs produce or sell goods and services already present in the marketplace, but in different locations.

By far the largest numbers of "entrepreneurs" are replicative. We do not mean to minimize their importance. Being able to launch and maintain such businesses offers many people a route out of poverty, or even a profitable living. But we submit that "innovative" entrepreneurs hold much more interest for economists and for policymakers, since the new products, services and techniques they bring to market generate beneficial externalities for the economy as a whole. Innovative entrepreneurship, in other words, is an important means by which technical change – the unexplained residual in standard growth equations – gets translated into economic growth.

Given the importance of understanding and encouraging growth, we concentrate in this essay on policies that promote innovative entrepreneurship. That is, we explore the policies that would promote the continuation and expansion of a community's innovative entrepreneurial activities and their contribution to economic growth most effectively. And we identify the policies that are necessary to counter the threats to such entrepreneurial activity, those existing now or looming on the horizon.

We focus in this paper upon policies suitable for the United States, the country whose economy we know best and the country where innovative entrepreneurship so far has been most successful and evident (although other countries are now also moving in this direction). In doing so, we note that policies at multiple levels of government can affect innovative entrepreneurship. We choose to focus here primarily on policies at the national or federal level, which have the broadest impact. However, there is also a limited but growing literature on appropriate local, state and regional policies for promoting new business formation, and indeed for fostering more localized economic growth.[1]

The notion that promoting entrepreneurship is a separate policy goal to be achieved by specific policy tools is a relatively recent one, and as such the subject has not yet clearly been defined. In particular, does "entrepreneurship policy" entail refining existing policy instruments – such as regulatory, tax or trade policies – that have broader objectives, or does it mean crafting entirely new, but targeted policies specifically to promote entrepreneurship? To date there are no

[1] See Acs (2008), Glaeser and Saiz (2003), Glaeser (2007a), Glaeser et al. (1992), and Glaeser (2007b).

bounds on "entrepreneurship policy." We make an effort to bring greater focus to this topic by concentrating on policies that affect incentives of individuals to form and grow innovative, for-profit enterprises.[2] In doing so, we draw on recent efforts by the Kauffman Foundation, the nation's largest foundation devoted to advancing understanding of entrepreneurship and an entity with which all of the authors are affiliated in one manner or another, to concentrate on the policy subjects that innovative entrepreneurs reportedly believe to be the most important to further such entrepreneurial activity. This effort began with formal and informal consultations with innovative entrepreneurs (Kauffman Foundation, 2007). We continued to refine these policy recommendations as we received ongoing feedback from entrepreneurs and the results of research on the subject conducted by Kauffman Foundation grantees and others. As we describe these policy subjects, we explain their relevance, offer our own views on some key implications, and identify the existing research that relates to them. At the same time, we also acknowledge that much further research is required on each of these topic areas, and we note some important areas for future work.[3]

1.2 Policies Relating to Education and Worker and Entrepreneurial Skills

At its most fundamental level, entrepreneurship is about the successful development and commercialization of novel ideas. This process requires highly educated individuals who will refine and improve the new products and processes provided to them by the nation's inventors and their entrepreneurial partners. A strong educational system – primary, secondary, college, and post-college – plays a vital role in the creation of the human capital necessary to ensure the availability of the requisite talent. There is good reason to conclude that the U.S. owes much of its economic success to its enviable record in providing universal primary and secondary education to its citizens and, perhaps even more important, to its university system and the postgraduate education that it offers not only to its own community but to the leaders in research throughout the world.

There are, however, attributes of American education – principally at the primary and secondary level – that have led to concern about the future prospects of the U.S.

[2]Much attention has been given in recent years by various scholars and universities to the teaching and practice of "social" entrepreneurship, a term we believe lacks clear definition, but which, according to the conventional wisdom, seems to involve mostly non-profit enterprises aimed at providing various public goods or addressing market failures. Our own view is more expansive: for-profit enterprises, too, generally advance "social interests" by serving the needs of consumers and society. In this survey, we restrict our attention to innovative entrepreneurship pursued by private, for-profit entities, without getting involved in the discussion over what constitutes social entrepreneurship, and how, if at all, policy should be designed to further it.

[3]For other entrepreneurship policy studies, see Hart (2003) and Holtz-Eakin and Rosen (2004).

economy and its continued leadership in innovation. As a number of recent reports have documented[4]:

- American pre-college students lag well behind students in other countries in international tests in mathematics and science.
- Nearly one-third of high school students in the U.S. do not finish within the standard 4 years or drop out altogether.
- There are wide and, by some accounts widening, disparities in educational achievement among students of different racial, ethnic, and socioeconomic backgrounds in the U.S.

These trends have raised doubts in the United States about the continued ability of the U.S. economy to prepare a creative and skilled workforce that will generate future innovation and growth. But, at the same time, there is also reason for concern that educational systems in the rest of the world – where students may be outperforming U.S. students on standardized tests – may be ineffective in fostering the imagination and creativity that are indispensable for invention and innovative entrepreneurship. Indeed, there are reasons to suspect (but with little systematic evidence) that the more rigid educational approaches that characterize teaching in a number of countries provide good technicians but a paucity of entrepreneurs and inventors with radical breakthrough contributions. The fact is that there is no systematic information that tells us how these abilities can be imparted effectively by the educational process. Indeed, there is evidence suggesting that many current educational practices in the United States also inhibit the heterodox thinking that such progress requires.[5]

This important issue – exactly how education should be structured to maximize creativity, skills and knowledge of students all at the same time – has not been adequately explored and is characterized by divergent conclusions. On the one hand, there are studies suggesting that before being able to contribute a significant insight to a field, an individual must first have substantial preparation in that field, and have built huge reservoirs of discipline-relevant information (Simonton, 1999a, b). Simon and Chase even quantified the required expertise by studying chess grand masters and other experts, concluding that individuals need approximately 50,000 "chunks" of richly connected information before making a fruitful discovery (Simon and Chase, 1973). Other researchers have observed that individuals typically require at least a decade of intense study in a particular domain of knowledge before they can provide any significant contribution in that domain (Gardner, 1993; Hayes, 1989; Simonton, 1999a, 1999b). The more knowledge individuals possess in a particular domain, the more likely they are to understand the nature of the relationships among

[4]See, e.g., National Center on Education and the Economy (2006) and National Academy of Sciences (2007).

[5]We are grateful to Professor Melissa Schilling of NYU for the material in the following paragraphs.

different ideas. As associations within the domain are challenged or reinforced over time, recognition of the pattern of associations should become more accurate, and the individual should become more efficient in searching for relationships among them (Dosi, 1988).

On the other hand, there are studies suggesting that an individual's substantial previous experience in a domain can also inhibit creative problem solving (Wertheimer, 1945/1959). Individuals who acquire highly specialized knowledge within a particular domain are prone to "einstellung," whereby learners who have earlier learned to solve a problem in a particular way will adopt a pattern that mechanizes their problem solving, inhibiting them from arriving at creative solutions (Luchins, 1942; Mayer, 1995). Many forms of learning can become routinized to an extent that, when faced with a variant issue, individuals automatically recall and tend to use a conventional approach; it is difficult for them not to do so (Gick and Lockhart, 1995). When individuals have well-reinforced expectations about the direction a search path should take, this constrains their ability to explore different possibilities, and may prevent them from generating "pre-inventive forms" with a more natural or universal structure (Finke, 1995: 262). Similarly, individuals who are deeply immersed in the established orthodoxy of a field of study may find their creativity stifled by extant paradigms and institutional pressures to conform (McLaughlin, 2001).[6]

Extensive training in a particular field can thus impede cognitive insight. Here it is notable that both Einstein and Piaget claimed that formal schooling detracted from their intellectual development (Feldman, 1999). Sociologically inspired work on the "marginal man" provides support for that contention. This work argues that marginal intellectuals (those who may participate in multiple intellectual domains but are central to none) are more likely to introduce creative breakthroughs than well-established experts in those fields (Ben-David and Collins, 1966; Dogan and Pahre, 1990; Edge and Mulkay, 1976; Martindale, 1995:252; McLaughlin, 2001). The two primary theoretical explanations for this relationship between marginality and innovation are that marginal scientists use different assumptions or skills than specialists in the field, permitting more novel outcomes, and marginal scientists are motivated to undertake riskier areas of research as a faster route to recognition and resources (Gieryn and Hirsh, 1983).

Consistent with this line of reasoning, an early study by Channon (1979) observed that entrepreneurs were likely to come from relatively humble origins, and receive an education through secondary school only. Similarly, a study by Collins and Moore (1970) concluded that it was common for entrepreneurs from relatively disadvantaged backgrounds to pursue aggressive, often flamboyant strategies, presumably in order to achieve recognition and esteem. Earlier writings, some of them also rather dated, also support the idea that individuals who are "self-made" are

[6]This is also argued by Simonton, who pointed out that excessive specialization can inhibit cognitive insight: "Too often, persons fail to make significant insights because they exclude whole domains of elements from entering into the combinative hopper. Yet what appears logically irrelevant may actually provide the missing piece of the puzzle" (1995:473).

more risk prone and more likely to pursue innovation than people who receive a professional education in management (such as an MBA) (Collins and Moore, 1970; Hambrick and Mason, 1984).

In any event, the U.S. educational system is a long way from embracing entrepreneurship and innovative thinking as central organizing principles.[7] There is an abundance of evidence that the quality of public education is highly uneven, and state laws inhibit the formation and equitable funding of charter schools that could introduce innovative educational methods and healthy competition. At best, it seems generally agreed that a central task for educators and policymakers is to give students the key skills to thrive in any work environment – reading, math, science, technology and history – and, where possible, also to nurture whatever creative and entrepreneurial skills each of us has by birth. Programs that teach basic entrepreneurial skills to middle and high school students may be especially valuable for children from disadvantaged backgrounds, and may be one way to encourage their interest in academic achievement more generally. At the college level, more universities have been attempting to infuse entrepreneurship and creativity more deeply into their curricula, for both students majoring in business and those in other subjects. And a number of universities have added an "entrepreneurship door" to their career counseling centers. These programs legitimate entrepreneurship as a worthy career path and offer mentoring and networking opportunities for students seeking to develop their interest.

But the conclusion suggested by the preceding review of the evidence is that we do not yet have adequate information on the best ways to organize a comprehensive educational system that optimally prepares future inventors and innovative entrepreneurs. This, surely, is an arena in which the gathering of evidence and rigorous research is a priority. Arguably, the U.S. government has the resources and is in the best position to fund this research and take steps necessary to help reverse the disappointing national trends in math and science achievement by students in primary and secondary schools.

1.3 Entrepreneurship-Friendly Immigration Policy

Immigration represents an opportunity to bring additional talent into the country. Foreign-born scientists and engineers historically have contributed significantly to the growth of U.S. high-tech industries. The U.S. nuclear and space programs, for example, benefited enormously from the immigration of foreign scientists both before and after World War II.

The United States continues to attract foreign-born scientists today, often through the science programs in American universities. In the last several decades, in

[7] For an excellent set of papers on how to enhance entrepreneurship in K–12 education, see Hess (2006) and Gordon et al. (2006).

fact, roughly half of all those who earned an undergraduate or graduate degree from American universities in science, engineering, computer science, and other technology-related fields were foreign students (Freeman, 2006). But with Asia and Europe now wooing highly-qualified students (and even senior-level researchers) from other countries to their universities and easing restrictions on the entry of skilled workers, the United States faces increased competition in drawing the world's best and brightest to study, work, and start businesses here ("The Battle for Brainpower," 2006; Freeman, 2005).

Immigrants, especially those who have or seek technical skills in the United States, already play a key entrepreneurial role in the U.S. economy:

- Census data indicate that immigrants as a group have had consistently higher rates of business formation than native-born individuals for many years (Fairlie, 2008).
- Immigrants from China and India helped to create 24% of technology companies launched in Silicon Valley between 1980 and 1998 (Saxenian, 1999).
- According to the National Venture Capital Association (NVCA), since 1990, one in four venture-backed firms in the entire country has been started by immigrants. The NVCA estimates that these firms have created more than 400,000 jobs and collectively represent a market capitalization of roughly $500 billion (Anderson and Platzer, 2006).
- A team of researchers at Duke University and the University of California at Berkeley found that between 1995 and 2005, immigrants founded or co-founded 25% of all the high-tech firms in the United States, and accounted for 24% of international patent applications from the United States in 2006 (Wadwha, et al., 2007).

Despite the clear importance of skilled immigrants for technical progress and the generation of new firms in this country, the U.S. has tightened legal immigration in the name of national security and on other grounds, even before the terrorist attacks of September 11, 2001. In 1990, for example, Congress imposed an annual ceiling of 65,000 skilled foreign workers for temporary periods (up to 6 years) under the H1-B visa program. *Any* such ceiling imposes a self-inflicted wound on our economy. Already there is evidence that entrepreneurial firms have put more of their personnel abroad because of an inability to obtain H1-B visas for foreign workers (Anderson and Platzer, 2006). Further, because the H1-B visa is of limited duration, it makes it practically impossible for workers who come into the United States to work to start their own companies.

One measure that would address this difficulty, without costing the federal government much in the way of additional resources, would be to grant permanent residency and work status, and perhaps even automatic citizenship, to those immigrants who come here to study mathematics, engineering, or the sciences, upon

receipt of their degrees from qualified institutions of higher learning.[8] The promise of a permanent work permit and perhaps citizenship upon satisfactory completion of their studies may prove to be a powerful incentive for many to come. Even if some decide to return to their home countries – as increasing numbers appear to be doing, and which is beneficial for these economies – the United States would have the benefit of their skills and entrepreneurial energy for as long as they remain here.[9] The provisions of the EB-5 visa, the "entrepreneur's visa," could also be relaxed, requiring prospective immigrants to bring much less cash into the country. Or a renewable "job creator's visa" could be created for graduates or foreign residents already in the U.S. on a temporary (H1-B) visa who have founded a company that employs at least one other individual.

In short, in a world where brainpower and skills lead to economic power, it is difficult to defend a policy that discourages talented, skilled workers from coming to the United States, to study, work, or launch new companies.

1.4 Policies Directly Promoting Innovation and Entrepreneurship

Even when invention is abundant, innovative entrepreneurship is at its most effective when there are strong incentives for the effective utilization and commercialization of new products, new productive techniques and new forms of organization. This requires institutions, such as the patent system, which ensure that inventors and their entrepreneur partners are not precluded from appropriate compensation by unrestricted and rapid imitation. But, at the same time, it is important that dissemination and widespread utilization of significant novelties not be handicapped and delayed. Unimpeded entry is particularly critical to advancing innovation, given such evidence that firms with fewer than 500 employees produce 13 times more patents per employee than larger firms, and that these patents are twice as likely as patents taken out by large firms to be among the 1% most cited (citations being a good measure of the commercial importance of a patent) (U.S. Small Business Administration, 2008).

At the same time, it is essential that *only truly non-obvious innovations* receive patent protection and that the length of the period of exclusive property protection is not too long. Otherwise, the legal system will enable patent-holding firms to impose legal roadblocks in the way of new entrants, effectively handing out monopolies

[8]This idea would constitute one "national strategic plan" for recruiting international students, a central conclusion of a recent report by the Government Accountability Office on consensus recommendations by a panel of national education experts. See Government Accountability Office (2007).

[9]The McKinsey report commissioned by the Mayor of New York on the financial services industry in that city also highlighted among its recommendations the need to attract and retain highly-skilled immigrants to work in that industry in particular. See McKinsey & Co. (2007).

in exchange for little public benefit and making the economy less competitive and less innovative.

There is mounting, though not yet irrefutable evidence, that intellectual property protection, particularly patents, may have tilted too far in the monopoly direction – that is, toward creating inappropriate roadblocks that impede the competition that entrepreneurs and other entrants into a field can provide (Jaffe and Lerner, 2004; U.S. Federal Trade Commission, 2003; National Academy of Sciences, 2007). A significant problem here is the enormous pressure on an overburdened and overworked patent examiner staff at the United States Patent and Trademark Office (USPTO) to review the increasing number of patent applications that are filed each year. In fiscal year 2007, in fact, these applications reached an all-time high of 362,777 (U.S. Patent and Trademark Office, 2007). With limited resources, patent reviewers have little time to do a thorough search of "prior art" to make well-informed decisions in every case as to whether a patent application represents something that is truly novel. As a result, the office may be granting an increasing number of undeserving applications, a problem exacerbated by the fact that patent examiners' decisions have a legal presumption of validity if later challenged in court, an expensive and time-consuming process. Indeed, the profusion of patent applications in the U.S. is perhaps at least in part ascribable to the ease with which the low invention standard enables them to be obtained.

Various proposals for improved effectiveness of patent systems in promoting innovation have been under discussion. These include increased funding for the Patent Office; allowing third-party challenges to applications at some point *before* the patents are actually awarded (on the assumption that such challenges will be less costly and time consuming than post-award lawsuits); adoption in the U.S. of the "first to file" system for awarding patents that is prevalent in most countries rather than the "first to invent" standard applicable in the United States; limiting successful lawsuits by "patent trolls" (firms that acquire patents solely for the purpose of licensing them rather than commercially developing patented technologies) to offering compensation for damages, but not injunctions for infringement; and changing the measure of damages for infringement from lost profits to loss of reasonable royalties.

The implications of these reforms for innovation, especially innovation by entrepreneurs, are unclear at this point. For while strong patent protection can help entrepreneurs, it also can deter them from entering fields where incumbents have patent protection that may be of dubious merit but deep pockets to prosecute any litigation for infringement. Given the uncertainties, such ideas require further scrutiny before policymakers embrace them.

Moreover, these proposals do not seem to address the fundamental dilemma – provision of protection incentives to the innovator while not at the same time inappropriately impeding dissemination and rapid replacement of the obsolete. The remarkably rapid rate of expansion of voluntary (and compensatory) licensing in practice suggests that this merits encouragement as a means to overcome the basic conflict between invention incentives and facilitation of dissemination. One heterodox proposal may be worth considering here: differential taxation of the earnings

of intellectual property, favoring the earning of license fees, particularly if they are set to cover no more than the opportunity cost of the grant of a license fee by the IP holder.[10]

Another potentially promising reform may be greater reliance by the PTO on the opinions of informed third parties to judge whether a patent application is truly novel. The Peer-to-Patent pilot program, for example, allowed many individuals to view patent applications online and to comment on their "obviousness." This small-scale experiment, devised by professors at New York Law School enjoyed success during its first year, starting in June 2007, and it was extended the following year until June 2009. While the program was recognized nationally and internationally, and was identified by the White House Open Government Initiative as one of the innovations in Open Government, the PTO chose not to extend the program further. We believe that innovative programs like this one that harness technology to address a central problem in patent administration today may, in the long run, be even more important than legal reforms (Schramm and Litan, 2008).

1.5 The Availability and Cost of Health Insurance and Entrepreneurship

The employer-based health insurance system in the United States is coming under increasing strain as health care costs continue to mount. Established U.S. enterprises find it increasingly difficult to compete against firms in other advanced countries where the government shoulders the cost of health care, let alone firms in developing countries where health insurance is not widespread and, in any event, is not supplied by employers. Workers who have insurance through their employers appear increasingly anxious about the prospect of losing their jobs and being forced to accept less generous health care coverage at their new places of employment. One issue on which further research is needed is whether and to what extent workers who are currently employed are reluctant to leave to start entrepreneurial ventures because they will lose access to their employers' health care coverage; anecdotal evidence from media reports suggests that this indeed is a problem. At a minimum, individuals with preexisting conditions can find it difficult to find insurance on their own – and if they do, it may be difficult to afford. As for the entrepreneurial firms themselves, they suffer a disadvantage relative to their large firm counterparts by virtue of the entrepreneurs' smaller employee risk pools. As a result, it can be more difficult for entrepreneurs to attract the skilled workforce they need to grow as rapidly as the demand for their products or services would permit.

As pressing as these problems may be, it is important that they be considered in their proper perspective. The fact that health care costs have been rising rapidly and are widely projected to continue increasing is simply a manifestation of the "cost disease" that drives up the relative prices of products and services that can only

[10] On this, see Swanson and Baumol (2005).

be produced or delivered by "handicraft" – services whose labor content cannot be materially changed (see, e.g., Baumol, 1993). Examples abound in government-provided services such as education and trash collection; in live entertainment; and throughout much of the health care sector.

But the cost disease does not condemn society to a future in which it will be unable to afford those things that are important for quality of life, as long as productivity improvements continue throughout the economy, particularly where capital and technology can most readily economize on the use of labor. Thus, for example, health care costs go up, *not* because health care providers become less efficient but because labor in computer manufacturing constantly grows *still more* efficient, driving up wages.

Accordingly, it is the *unevenness* of growth that can save an economy from the cost disease. Increasing productivity that pervades most of an economy, even if unevenly distributed among industries, must make that economy wealthier, not poorer. It does *not* make it unable to afford things that could be afforded in the past. Increasing productivity means that a society can afford ever more of *all* things – televisions, electric toothbrushes, cell phones, *and* medical care, education, and other services (Bradford, 1969). These observations led the late Senator Daniel Patrick Moynihan to characterize the future predicted by the cost disease as "profoundly hopeful" (Moynihan, 1993). It was also he who drew attention to the fact that the services provided by government tend to be precisely those most heavily affected by the cost disease, helping to explain the pattern of rising public sector outlays over time. The same reasoning applies to health care.

Nonetheless, the resulting problems for employer-based health care – for small and large firms alike, as well as for employees anxious about job loss – are very real. It is useful to recall how this system arose, for knowledge of the answer provides some guidance toward a solution. Employer-based health care grew significantly because of one simple accident in American history: that employers began offering health insurance during World War II as a way of circumventing wage controls then in place, and employees were not required to recognize the health care benefit as part of their taxable income.[11] Once the tax treatment of health care insurance was clear, more firms began offering health care coverage, ultimately leading to the current employer-based system of health insurance, and the attendant problems just cited – which should grow in magnitude as health care costs continue to climb.

At the time of this writing, the United States is engaged in a national debate on health care reform. While the debate on this issue is much larger than the impact of healthcare on entrepreneurship, we articulate here the overarching principle that is most important from the perspective of encouraging more entrepreneurial activity in this country: untether health care insurance from employment, likely by phasing out the tax policy that led to the current employer-based health insurance system. However the decoupling of health insurance from employment is accomplished,

[11] Initially this was a ruling of the Internal Revenue Service, but it was later codified in the Internal Revenue Code by Congress in 1954. See Gratzer (2006).

any such reform must also address the problem of insurers denying coverage for pre-existing conditions. This could be done simply by prohibiting the practice (requiring what is called "guaranteed issue") or requiring health insurers to use "community rating" so that their rates are based on broad pools of insureds. These, or possible other reforms, are necessary to reduce workers' legitimate anxieties about health care coverage if they lose their jobs, while reducing any "job lock" – the fear of leaving a company to start a new enterprise because of the difficulty of finding adequate health insurance – that may now exist.

1.6 Regulation, Litigation and Entrepreneurship

All economies and the actors within them need rules of the road to guide behavior. In market economies, legal protections of property and contract are critical, especially to entrepreneurs, who could not and would not undertake the risks of launching their enterprises without such protections.

At the same time, even with secure rights of property and contract, markets can fail to deliver efficient outcomes. Information about product or workplace risks may not be voluntarily disclosed. Firms can pollute, safe in the knowledge that it is generally too expensive and time-consuming for those harmed to negotiate a better outcome collectively. These are among the reasons governments regulate the activities of private firms and why the legal system permits victims of negligence, whether committed by individuals or companies, to seek compensation for their harm.

Entrepreneurship and business activity generally can suffer, however, if regulation and litigation are carried too far or pursued in ways where costs outweigh benefits. For example, earlier in this paper it was argued that not all entrepreneurial activity is productive, and that inappropriate institutional arrangements can lead to the allocation of entrepreneurial effort into activities that do not contribute to the efficiency and output of the economy and may even serve to undercut it. Rent-seeking was cited as a prime example, with misuse of the courts for such purposes evidently not a negligible problem. An oft-cited illustration is provided by the liability rules, resulting in verdicts that set norms for behavior by firms and individuals throughout the economy. An inherent difficulty besetting such "regulation-by-litigation" is that the rules that emerge from individual, fact-specific litigated cases are decided by randomly-chosen juries, in cases that are randomly filed across the country. In a national economy, it is thus somewhat anomalous that a jury in one particular location can effectively set national norms, with the most restrictive venue thereby effectively setting the national standard.

Enterprising plaintiffs can take advantage of this decentralized legal system and find hospitable locales for bringing suit against companies doing business nationwide, thereby engaging in a process of "forum shopping." It serves to encourage the activities of enterprising law firms whose rent-seeking takes the form of launching litigation with financially-promising prospects.

Steps have been taken in recent years to reduce uncertainties about firms' exposures to liability awards, thus improving the climate for entrepreneurial endeavors.

In 2005, Congress enacted legislation to limit forum shopping in class actions filed in state courts, though it is possible that some degree of forum shopping may persist in federal courts. Various states have enacted caps on damage awards and other liability-related reforms that have taken some of the uncertainty out of liability litigation.

In our view, one additional constructive measure, aimed at deterring rent-seeking "sham" litigation, would be adoption of the English rule on payment of attorneys' fees – the loser pays – but presumably only for commercial litigation where there are commercial interests on both sides. A "loser pays" rule for all tort litigation could chill individuals or classes representing them from seeking redress for wrongs committed against them.[12] Another useful reform would bring greater clarity to punitive damage awards by immunizing defendants from liability for punitive damages where they can prove that their actions complied with prevailing regulatory standards. In combination, these measures would reduce some of the risks over which entrepreneurs have no control while preserving the rights of injured parties to recover compensation to which they are entitled.

As for regulation, many, if not most, economists advocate benefit-cost analysis as the chief policy reform, or where benefits cannot be quantified or denominated in a currency, cost-effectiveness analysis.[13]

1.7 Tax Policy and Entrepreneurship

Given the importance of incentives in encouraging entrepreneurial behavior, an obvious question is how tax policy influences entrepreneurial activity. On first thought, one would surmise that as marginal income tax rates increase on entrepreneurial income – whether realized as personal income to the entrepreneur or as income to a corporation – the after-tax rewards from engaging in entrepreneurial activity decline, and therefore so should the activity itself.[14] But the empirical and theoretical work that has been done so far on this subject yields some insights on this question that are not so obvious.

For example, one early (and now classic) article on this subject suggested that while higher marginal income tax rates may discourage economic activity in general, they may *encourage* risk-taking of the kind displayed by entrepreneurs (Domar and Musgrave, 1944). The reasoning is that as tax rates increase, the government bears more of the risk from entrepreneurial endeavors. With more risk-sharing by another party, the entrepreneurs' own risk premiums will be lower, encouraging them to take more risk.

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[12] There are different views on the incentive effects of the English rule for attorneys fees. See Johnston (2006) and Olson and Bernstein (1996).

[13] See Arrow et al. (1996).

[14] There is some evidence that this is true of corporate taxation. See Garrett and Wall (2006).

A much more recent analysis suggests that it is the *shape of the tax schedule* that is more important for entrepreneurs than the actual *level of the marginal tax rate*. In particular, as the tax schedule grows steeper – or more progressive – then the reward for entrepreneurial activity, at the margin, declines (Gentry and Hubbard, 2000). Other analyses find that the level of the marginal tax rate does in fact make a difference, but in a counter-intuitive way: higher marginal tax rates *encourage* self-employment or entrepreneurship (Bruce, 2000; Schuetze, 2000). One possible reason is that small business owners can more easily underreport their income, or find ways to deduct some personal expenses, than employees earning wages and salaries.

A further complication is the interaction of personal and corporate income tax rates with incentives to engage in entrepreneurial activity. Generally, individuals launch their enterprises as non-corporate endeavors, and have tax incentives to do so as long as the personal tax rate exceeds the corporate rate. If so, and if they experience losses in the beginning (as many, if not most, entrepreneurs do), then the tax savings are greater if the enterprise is not incorporated (so that the losses can offset the entrepreneur's personal income). When the enterprise begins to be profitable, if the corporate rate is lower than the personal rate, entrepreneurs will want to switch to the corporate form to take advantage of lower taxes (and also because the corporate form is more suitable for an enterprise with employees). Thus, somewhat paradoxically, as the personal income tax rate increases relative to the corporate tax rate, entrepreneurship may be encouraged. Conversely, cuts in the personal income tax rate relative to the corporate rate may discourage entrepreneurship.

But all this does not get us to the heart of the long-run tax issue: the ever-rising tax burden that seems to be in prospect. For the apparently inescapable role of government in matters such as health care, education, research, care of the indigent, and a variety of other activities evidently beset by the cost disease, together presage an ever-rising share of public sector revenues in GDP. Even if our analysis is correct in concluding that we will be able to afford it, it is by no means a matter to be ignored, because of the well-recognized incentive effects of such a scenario. If this argument is correct, then the realistic issue is not one of constraining taxation, which would eventually lead to a future beset by deterioration in all these arenas, as well as collapsing infrastructure and ever-poorer public services, such as garbage collection. The reader's imagination can easily show why such a future will be considered unacceptable. The available alternative is not a substantial decline in taxation, but curtailment of the undesirable incentive effects.

Economists have long argued that these effects are *not* all damaging to the general welfare. Indeed, some of the resulting incentives, most notably the "sin taxes," can be socially beneficial. The arena in which this has perhaps been emphasized longest is in the field of environmental protection, where, at least since the writings of A.C. Pigou (1912), it has been recognized that taxation of emissions is a prospective source of revenues to the government whose incentive effects are to be welcomed. It would then be a good thing to increase reliance on such sources, offsetting the resulting gains with cuts in those taxes whose incentive effects are less palatable.

But can such taxes with beneficial effects make more than a dent in the problem? This is by no means impossible, though it must entail some radical departures from current fiscal practice.[15] To be sure, groups that are asked to bear part of the growing tax burden argue, not altogether without justification, that rising imposts (and, of course, that part of the cost that falls on themselves) is unfair, counterproductive or an impediment to growth. Equally predictably, those who will escape the resulting increase in tax burden support proposed increases in business taxes enthusiastically on the ground that it is only fair for the cost to be shouldered by the wealthy firms.

But neither side's argument is of more than limited validity. Various careful studies appear to have found little correlation between the level of business taxes in general and the level of investment.[16] On the other side, it is generally not recognized by consumer groups that a substantial proportion of any increase in taxes on business activity will actually be shifted to consumers via higher prices of the products of the firms that bear the taxes.

The moral, however, is not that business taxes should be left as they are. Rather, what is called for is a program carefully tailored to recognize and take advantage of the incentive effects. For example, consider the advantages of a *regressive* business tax in which the firm is subjected to *a lower tax rate the faster the percentage rate of growth of its output and sales.* The average tax rate can be adjusted to yield as large a revenue total to the government from the business sector as seems appropriate. This arrangement clearly would not be unfair to small firms, for which a given percentage increase in sales may be easier to achieve than it is for a firm that already has a large share of the market. Yet such a tax also would provide an incentive for enhanced investment, and lead to a shift in investment from markets and industries with low growth prospects into others where the opportunities for growth are greater.[17]

Let us be clear: we are discussing additional taxes only as a last resort way to address the growing costs of entitlements. Policy measures should place their primary attention, in our view, on harnessing market forces to reduce the escalation of health care costs, which are driving the projected increases in the costs of Medicare and Medicaid (the public health insurance program in the United States for the indigent). Secondarily, policy makers should look to modifying the benefit structures of these programs (and Social Security) for future beneficiaries, or those young enough not to have had the expectations of the benefits that now exist.

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[15] See Baumol and Knorr (1961).

[16] Certainly, there is good ground for questioning whether reduction of taxes is an effective and reliable tax stimulus. If taxes were a significant barrier to more rapid growth, then how does one explain the severe and persistent slowdown in productivity growth in Japan, where taxes are among the lowest (relative to GDP) of any of the rich OECD countries?

[17] If it is felt that the program is unfair to activities such as food retailing, which provide services necessary for the community, but offer little opportunity for growth, one can remedy the problem by adopting a two-avenue tax arrangement. Each firm would be given a choice between the current tax arrangement and the growth-incentive tax program. Once its selection is made, the firm would not be permitted to switch. Then, firms with low-growth opportunities could be expected to select the current tax arrangement, while the others would elect the growth-incentive tax.

Only if reforms in these first two categories prove insufficient to meet the costs of the entitlement programs do we then suggest that policy makers explore ways to raise additional revenues. In the end, the least distorting way to enhance revenues, to the extent this is necessary, is to rely, at the margin, on taxes on consumption rather than on income. It is better, in our view, to tax consumption than to tax income and thus to penalize hard work and entrepreneurial activity.

1.8 Capital Markets Regulation and Finance

It is well-accepted that access to finance is critical for most, if not all, entrepreneurial ventures. This is the rationale for the creation for the Small Business Administration, which guarantees loans for smaller enterprises. Over the years, however, financial markets and credit in particular have been "democratized" by the increased availability of financing through mortgages and credit cards, which provide many start-ups with their initial financing (U.S. Census Bureau, 2002). In addition, the business lending market, too, has been the subject of much innovation. In light of these developments, the continued role for the SBA is a subject of some debate (See De Rugy, 2007 and Craig et al., 2007).

Focusing on innovative entrepreneurs, policy-related financing issues are not so much related to launch – there has been explosive growth in the amounts of venture and angel capital over the past several decades – but to the cost of public financing versus other sources. During the Internet boom of the 1990s, the favored course of financing for successful entrepreneurs, and the venture capitalists who often backed them, was "going public" through an initial public offering (IPO). The "bust" of this boom, reflected in the peaking of stock prices for technology companies in particular in the spring of 2000, has changed both the venture capital market as a source for early stage financing, as well as the preferred means of "exit" for initial equity funding sources of innovative start-ups. And here, there are ample public policy issues that remain to be explored.

The main issues relate to the policy reforms that were enacted in the wake of the various corporate financial reporting scandals that surfaced shortly after the Internet bust: the Sarbanes-Oxley Act of 2002 enacted by the Congress, as well as related changes in listing requirements by the various public company exchanges. Among the reforms were new corporate governance rules (such as requiring majorities of boards of directors to be "independent"); new certifications required of chief executive officers relating to the reliability of their companies' financial statements, and substantial criminal penalties in the event those financial statements are in error; new obligations for auditors to review companies' internal controls; and a new system for overseeing auditors, as well as restrictions on the activities of auditing firms designed to ensure their independence.

Space does not permit a full review of the extensive and growing literature on the wisdom and effects of these reforms. Three of the most widely publicized and debated assessments, released in late 2006 and early 2007, separately addressed the question whether the combination of the recent reforms, coupled with trends

in shareholder litigation and SEC enforcement were driving U.S. and foreign companies to list their shares on exchanges outside the United States, to the detriment of the securities and related industries in New York in particular.[18] Whatever one may believe about the appropriateness of this particular goal, these reports raise several important questions about the impact of these recent reforms on innovative entrepreneurship.

In particular, the founders and initial investors in highly innovative and successful entrepreneurial endeavors in the 1990s often liquefied their initial investments through initial public offerings, or IPOs. Since the bursting of the "Internet bubble" in stock prices in April 2000, other forms of "exit" – sales to other large companies or to private equity firms – have become increasingly popular. To what extent have the recent corporate governance and accounting reforms contributed to this trend? And regardless of the cause, what has been and is likely to be the effect of this shift in exit patterns for entrepreneurial companies? Specifically, does the sale of a young innovative company to a more established company dull its entrepreneurial spirit, or does it provide the talent and capital that the enterprise requires to grow and more rapidly reach its potential? Similar questions can be asked of the impact of sales of companies to private equity firms. Although it is likely that several more years of market experience will be required to yield the data to permit definitive answers to these questions, it is not too early to begin tackling them.

1.9 Conclusion

The policies we suggest here build on a long history of institutions and laws that have successfully promoted entrepreneurship since the beginnings of the United States. We have laws and systems that make it easy to start a new venture and facilitate the hiring of new workers and letting go of those who under-perform or whose skills do not match the constantly-evolving needs of innovative enterprises. We have removed legal barriers to entry and price controls in a number of key industries – in particular transportation and telecommunications – which has dramatically cut costs and made it easier for new firms to get started and grow.

Entrepreneurs and larger businesses alike have also benefited from our large internal market that offers economies of scale. We are open to foreign goods, services, and capital. For the most part, we welcome immigrants and the innovative ideas they bring with them. At a more fundamental level, Americans have long perceived themselves as a nation of creative self-starters who welcome challenges and value individuality and self-reliance. Our challenge now is to maintain and strengthen the entrepreneurial economy in the U.S. and the growth it brings, in order to make it easier to meet the multiple economic challenges we now face and to meet them effectively.

[18] See Committee on Capital Markets Regulation (2006), U.S. Chamber of Commerce (2007), and McKinsey& Co. (2007).

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