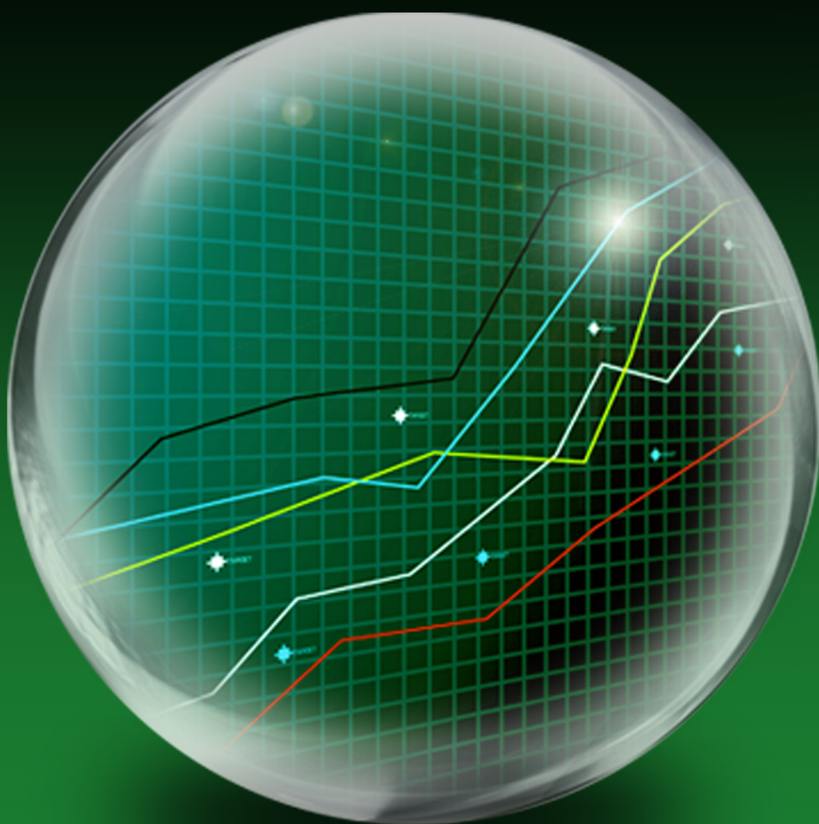


REVIVING ECONOMIC GROWTH

POLICY PROPOSALS FROM
51 LEADING EXPERTS



EDITED BY
BRINK LINDSEY

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Cato Institute

1000 Massachusetts Ave., NW

Washington, DC 20001

Published by Cato Institute Press.

eISBN: 978-1-939709-80-6

Cover design by Jon Meyers.

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Editor's Introduction

*Brink Lindsey**

If you could wave a magic wand and make one or two policy or institutional changes to brighten the U.S. economy's long-term growth prospects, what would you change and why?

That is the question I posed to the 51 contributors to this volume. These essays originally appeared in a special online forum on the Cato Institute's website, organized in conjunction with a conference on the future of U.S. economic growth held at Cato on December 4, 2014.¹ With the publication of this book, I am pleased to share this insightful and provocative collection with a new audience.²

The motivation for asking that question should be clear enough to anyone who has been following the dreary economic news of the past few years. Since the Great Recession of 2008–2009, the U.S. economy has experienced the most stubbornly disappointing expansion since World War II. As of October 2013, 70 months after the recession began, real (i.e., inflation-adjusted) gross domestic product (GDP) had grown only 5.3 percent. By contrast, after the prior six recessions, real GDP growth averaged a robust 20 percent over the same period. And although the unemployment rate has gradually fallen from its October 2009 peak of 10 percent to below 6 percent, those numbers look as good as they do only because of a precipitous drop in the labor force participation rate—from 66.2 percent in January 2008 all the way to 62.8 percent by October 2013 before stabilizing (it was still at 62.8 percent as of February 2015). The percentage of adult Americans in the workforce hasn't been that low since 1978.

*Brink Lindsey is vice president for research at the Cato Institute.

¹ The conference, the online forum, and thus this book were all made possible by generous support from the Searle Freedom Trust, the Ewing Marion Kauffman Foundation, and the Carthage Foundation. And while expressing gratitude, let me acknowledge here the invaluable contributions of my research assistant, Chelsea German, in helping to organize the conference and forum and edit this volume.

² Papers prepared for the same conference are being published as a separate Cato Institute e-book entitled *Understanding the Growth Slowdown*.

Unfortunately, this sluggishness is likely to persist. Since the emergence of the modern mass production economy in the late 19th century, the long-term growth path of the U.S. economy has been remarkably stable: through all the ups and downs of macroeconomic fluctuations, the trend line for growth in real GDP per capita has remained remarkably constant at around 2 percent a year. At the Cato Institute conference mentioned above, however, two of the nation's leading experts on productivity growth presented long-term growth projections that fall well short of this historical norm. Dale Jorgenson of Harvard University projected annual growth in aggregate real GDP of 1.75 percent, while John Fernald of the Federal Reserve Bank of San Francisco projected a slightly faster growth rate of 2.1 percent. After taking account of likely population growth, Jorgenson's projection puts annual growth in real GDP per capita at below 1 percent, while Fernald's comes in under 1.4 percent. In other words, in Fernald's more optimistic scenario, growth has fallen over a third off its historical pace, while in Jorgenson's scenario, the long-term growth rate has been cut in half.

The reasons for Jorgenson and Fernald's pessimism have nothing to do with any recent events—neither lingering effects from the severe recession nor problems with policies enacted in its wake. Rather, both recognize the impact of deep-seated demographic factors: first, a slowdown in the growth of labor hours due to the aging population and, second, an end to growth in labor skills as the educational attainment of the workforce plateaus. Furthermore, both take account of the fact that productivity growth, after a rapid spurt from 1996 to 2004, has subsided to the lower pace that has prevailed since the early 1970s.³

Of course, projections are not destiny. Productivity growth is notoriously unpredictable, and it's possible that it could rebound on its own and boost the overall growth rate. In addition, and of direct relevance to this collection of essays, these projections assume current public policies as a given—and I doubt anyone would argue that current policies are optimal for encouraging long-term growth. Here, then, is the rationale for the present volume: to offer

³ For my own analysis along similar lines, see Brink Lindsey, "Why Growth Is Getting Harder," Cato Institute Policy Analysis no. 737, October 8, 2013.

a wide-ranging exploration of policy options for reversing the U.S. growth slowdown.

The multifaceted nature of the problem makes the case for drawing upon a wide variety of perspectives and domains of expertise. First of all, economic growth has heterogeneous sources, and thus very different policy levers can be moved to adjust the growth rate. According to conventional growth accounting, the basic components of economic growth (expressed in terms of annual growth in real GDP per capita) are (a) growth in labor participation, or hours worked per capita; (b) growth in labor quality, or the skill level of the workforce; (c) growth in capital deepening, or the quantity of capital invested per worker; and (d) growth in total factor productivity (TFP), or output per unit of quality-adjusted labor and capital.

Although the long-term trend line of overall growth has been extremely steady until recently, there has been a great deal of variation in the growth rates of these four constituent elements. Thus, hours worked per capita fell steadily over the first two-thirds of the 20th century, even as TFP and labor skills were experiencing robust growth. And as productivity growth slowed mysteriously in the early 1970s, a surge in labor hours (thanks to both the Baby Boom and the rapid rise in female labor force participation) took up the slack. At the present time, however, trends across the board are unfavorable: labor hours per capita have been on a downward path since 2000; growth in educational attainment has slowed considerably and all but stopped for men; the net domestic investment rate has been trending downward in line with a falling savings rate; and TFP growth has softened after the decadelong Internet boom.

Accordingly, when thinking about how to improve economic performance, we should be considering options that target all of the components of growth. And indeed, this collection of essays contains proposals for doing just that: ideas for encouraging greater participation in the workforce, upgrading workers' skills, sharpening incentives for investment, and creating a more favorable environment for innovation.

It should be noted that economic gains from policy change can take two basic forms: improvements in the level of output and improvements in the rate of output growth. "Level" changes correct misallocations of resources and effect a one-time boost to GDP; "rate" changes improve conditions for innovation that result in a faster rate

of growth indefinitely. Since level changes take time to occur, during that transition they manifest as temporary increases in the growth rate. But for present purposes, when we are considering how to boost growth rates over the next decade or two, both level and rate changes will serve that end over the relevant time horizon. It is fitting then that this collection of essays contains proposals for policy changes of both types. While many of the proposals aim to encourage innovation and thus increase the rate of growth indefinitely, others seek a temporary boost to the growth rate by raising the levels of worker hours, worker skills, or investment.

Another angle for seeing the multifaceted nature of the problem at hand is to consider all the public policy domains that have some bearing on long-term growth prospects. The list is a long one: for starters, tax policy; budget policy that affects the overall size and structure of government spending; education and training policy; health care financing policy; financial regulations; monetary policy; health, safety, and environmental regulations; regulations on commercial entry; trade policy; immigration policy; intellectual property law; land-use regulations; and even foreign policy. Proposals that address all of these different domains can be found in the present volume. In addition, some of the contributors have advocated what might be called “meta-policy” changes—that is, reforms to the policymaking process rather than specific substantive changes to rules or programs.

Finally, the problem of reviving economic growth is multifaceted from a political perspective. Any effort to alter the policy status quo can be assured of stirring up vigorous and well-organized opposition from the interest groups that benefit from the current state of affairs. Since any successful campaign to make public policy more growth friendly will involve a wide-ranging variety of reforms, the political challenges of overcoming the inevitable multitude of hostile interests will be as intricate as they are daunting. Furthermore, even if there is a general consensus among experts that the status quo can be improved upon, there are sharp clashes among those experts about the proper direction for change. The most obvious dividing lines are ideological, as experts give different weights to different values and bring with them different fundamental assessments of the relative efficacy of government and markets in achieving social objectives. Beyond these more fundamental differences are a host of

empirical disagreements about the relative importance of different issues as well as both the sign and magnitude of the effects of policy alternatives. Accordingly, coalition building is needed at the level of ideas as much as at the level of interests.

To give some sense of the intellectual diversity of perspectives on pro-growth policy change, I purposefully sought to assemble an eclectic group of contributors for this essay collection. In particular, I wanted to make sure that views across the ideological spectrum were represented, so I recruited well-known progressive, conservative, and libertarian thinkers to participate. Many of the contributors, meanwhile, have no public ideological affiliation, or at least none that I am aware of. In addition, I also wanted to bring together people with wide-ranging areas of expertise—not just academic economists but also policy experts at think tanks and journalists who provide general commentary on economic affairs.

I make no claim that this collection of essays provides a representative sample of views: unsurprisingly for a book edited and published by the Cato Institute, the reform proposals offered here skew strongly toward reliance on private entrepreneurship and market competition as the main engines of economic dynamism, innovation, and growth.⁴ However, in selecting participants, I was not looking for people who are like-minded, but rather people whose work I find interesting and insightful. No doubt my ideological priors colored my assessments along those lines, but nevertheless I believe that the final product does offer a rich diversity of outlooks and proposals.

Accordingly, it's best to think of this collection as a brainstorming session, not a blueprint for political action. I don't agree with all the proposals made here, and I can't imagine any of the contributors do either. By bringing together thinkers one doesn't often see in the same publication, my hope is to encourage fresh thinking about the daunting challenges facing the U.S. economy—and, with luck, to uncover surprising areas of agreement that can pave the way to constructive change.

⁴ For my own recommendations for pro-growth policy changes, see Brink Lindsey, "Low-Hanging Fruit Guarded by Dragons: Reforming Regressive Regulation to Boost U.S. Economic Growth," Cato Institute White Paper, June 22, 2015. All of the policy areas I address in that paper are also covered in this volume.

1. Entrepreneurship Is the Key to Growth

*David B. Audretsch**

Americans typically assume that their country leads the world in entrepreneurship. Even in the depths of the Great Recession, *The Economist* gushed, “For all its current economic woes, America remains a beacon of entrepreneurialism.”¹ However, the facts suggest something else.² America is losing its entrepreneurial edge. What might have seemed unimaginable as recently as 15 years ago has now, in fact, occurred—a number of other countries, such as Taiwan in Asia and Denmark in Europe, have surpassed the United States in entrepreneurial vigor.³

Reinvigorating American entrepreneurship provides an opportunity to revive American economic growth and prosperity as well as to restore the role of the United States as the undisputed economic leader in the world. There are three important ways that American entrepreneurship needs to be reinvigorated. The first is as a conduit for knowledge spillovers. The second involves what we will term *Main Street entrepreneurship*. The third way is through the identification and commercialization of opportunities across the globe.

* David Audretsch is a professor of economics at Indiana University.

¹ “The United States of Entrepreneurs,” *The Economist*, May 12, 2009, <http://www.economist.com/node/13216037>.

² Ryan Decker, John Haltiwanger, Ron Jarmin, and Javier Miranda, “The Role of Entrepreneurship in U.S. Job Creation and Economic Dynamism,” *Journal of Economic Perspectives* 28, no. 3 (2014): 3–24, <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.28.3.3>.

In particular, the authors conclude: “Evidence along a number of dimensions and a variety of sources points to a US economy that is becoming less dynamic. Of particular interest are declining business startup rates and the resulting diminished role for dynamic young businesses in the economy” (p. 3).

³ José Ernesto Amorós and Niels Bosma, “Global Entrepreneurship Monitor 2013 Global Report,” *Global Entrepreneurship Monitor*, 2014, <http://www.gemconsortium.org/docs/download/3106>.

A minor army of scholars has provided compelling evidence showing that those cities, states, and entire countries with vibrant entrepreneurship generally exhibit a superior economic performance, typically measured in terms of economic growth, productivity, or unemployment.⁴ The reason why entrepreneurship drives economic growth is because it serves as one of the most important conduits for facilitating knowledge created in one organizational context to spill over and become commercialized through innovative activity in a new startup. Where would the country be had Steve Jobs not taken the ideas and inventions created at Xerox PARC, which the company itself did not think were actually worth pursuing, to launch his new startup? It is not just Apple, but also Microsoft, Google, Facebook, and thousands of other entrepreneurial startups that ensure that ideas and inventions that are costly to create actually end up being commercialized and transformed into innovations that not only revolutionize their industries but also fuel economic growth, job creation, and competitiveness in global markets.

To spur more knowledge-spillover entrepreneurship, America needs to remain vigilant so that people with important ideas, independent of their current occupational status, have access to the key entrepreneurial resources required to launch a new business: money, talent, and know-how. We have to make it as easy as possible for talented and creative people to take the leap into entrepreneurship.

The second aspect of entrepreneurship involves the seemingly mundane world of Main Street entrepreneurship. This type of entrepreneurship consists of small and medium-size enterprises that typically exhibit considerably less volatility and more stability than their high-profile, headline-grabbing, knowledge-spillover counterparts.⁵ But they matter. And they could matter a lot more. Main Street entrepreneurship provides the bulk of jobs in this country. But it remains underutilized and performs way below its potential. The reason is that small business has become the forgotten man of entrepreneurship. The high-technology counterparts grab not just the headlines

⁴ David Audretsch, *Everything in Its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States* (New York: Oxford University Press, 2015).

⁵ David Audretsch, *Innovation and Industry Evolution* (Cambridge, MA: MIT Press, 1995).

but also the policy priority, with their initial public offerings, venture capital backing, and spectacular new product introductions.

The problem confronting America's underperforming small-business sector begins with image. The glamour is in the adrenaline-fueled high-technology startups, with their boom-and-bust mentality and performance. By contrast, small business seems boring and staid. But one of the reasons that the German economy has performed better than the American economy over the past decade is not just the bedrock stability it gets from its *Mittelstand*, or small and medium-size businesses, but also the compelling source of global competitive advantage in key product niches. It is the German *Mittelstand* that are the key to the unique apprentice system that provides young workers with high levels of training, resulting in an unrivaled level of job skills, which in turn fuels productivity. America needs to rediscover its long-standing love affair with small business as the bedrock of both local communities and national economic vitality. As the Frenchman Alexis de Tocqueville reflected in 1835, "What astonishes me in the United States is not so much the marvelous grandeur of some undertakings as the innumerable multitude of small ones."⁶

The third role involves the fundamental feature of entrepreneurial thinking—discovering opportunities and then acting upon those opportunities. Given the American predominance and preeminence following World War II, along with its historical isolationist tendencies, it is perhaps not surprising that Americans have developed the habit of looking for those opportunities predominantly at home, in the United States. After all, estimates placed half of the world's wealth and two-thirds of the physical capital in the United States as World War II came to an end.

Thus, it is perhaps understandable that, when confronted by the recent economic crisis, the drop in aggregate demand triggered calls for stimulating the economy from political parties of all persuasion, albeit one side advocated increases in government spending while the other side argued for tax cuts.⁷ The perception was a lack of opportunities for American businesses to sell their products, so that spending had to be increased, one way or another, to restore those opportunities.

⁶ Ibid., p. 185.

⁷ Paul Krugman, *The Return of Depression Economics and the Crisis of 2008* (New York: W. W. Norton, 2008).

The entrepreneurial view, however, suggests scanning not just the domestic economy for opportunities. In a globalized economy, it makes sense to search for and discover opportunities not only at home but also throughout the world. That is exactly what Germany has done in its astonishing economic resilience, even while its European neighbors and other leading developed countries have struggled. The unemployment rate fell below 6 percent and in several *Bundesländer*, such as Bavaria and Baden-Württemberg, was at negligible levels. By equipping its citizens and businesses with an orientation and the skills to comprehend, interact, and ultimately thrive in other cultural and national contexts, Germany looks for, and finds, opportunities not just at home but throughout the world. Through a careful development of a global orientation, Germany has equipped its citizens and companies with the skills required to go out into the world to discover and reap global opportunities. This global entrepreneurial orientation has paid dividends in terms of growth, jobs, and competitiveness. Through a global entrepreneurial orientation, Germany has been able to fend off the Great Recession with its strong export performance.

America needs to develop a similar entrepreneurial spirit and attitude. It is not enough just to be comfortable and proficient in the context at home in the United States. Americans need to be equipped with the attitudes, orientation, skills, and competencies to go out into the world to discover, create, and act upon those opportunities. That involves acquiring the so-called soft skills of cultural and language competencies and feeling at home not just at home but also in other countries and cultures.

2. Home (Health Care) Economics

*Philip Auerswald**

Of the 10 job classifications that experienced growth following the recession, 3 were in home, outpatient, and senior health services. Every indication suggests that this fact represents a secular trend. In particular, assuming that legislators and regulators act to enable rather than obstruct the advance of distributed health services, demand for home health care focused on seniors is likely to experience continued growth, both because of the projected growth in demand for health services as a consequence of the aging population and because of the cost-reducing and service-improving potential of health care in the home. An entrepreneur- and innovation-led pathway toward distributed health service delivery in the United States thus has the potential to improve quality, reduce costs, and expand access to health services. The widespread deployment of distributed health service delivery, in turn, has the potential to increase economic growth both directly (via increased transactions required to meet the growing service demands of an aging population) and indirectly (via an increase in the effective size of the workforce enabled by improved population health).

Defining Distributed Health Service Delivery

Not too long ago, of course, most health care services were provided in the home.¹ The capital requirements of the medical profession were minimal, so there was little reason for an office. Since it cost little (if anything) to certify as a physician, barriers to entry into medical practice and the relative wage paid to physicians were both

* Philip Auerswald is an associate professor at the School of Policy, Government, and International Affairs at George Mason University. He thanks Jody Ranck and anonymous reviewers for contributing insights incorporated into this essay, James Broughel for ably overseeing production, and Steve Rossi for providing research assistance.

¹ Guenter B. Risse, Ronald L. Numbers, and Judith W. Leavitt, eds., *Medicine without Doctors: Home Health Care in American History* (New York: Science History Publications, 1977).

lower than they are today. The advent of modern medicine over the past century changed that. In 1930, house calls constituted 40 percent of physician encounters; by 1950, that number had dropped to 10 percent; by 1980, it was just 1 percent.

However, in the past two to three decades, the advantages of hospital-based care have started to erode. Part of this erosion has been due to a reversal of the advantages of hospital-based health care² because of high cost, hospital-acquired infections, and injury or death directly induced by hospital care.

At the same time, technologies and organizational innovations enabling health care provision both in the home and at a distance have improved radically in terms of both performance and cost. I employ the term “distributed health service delivery” to refer to four distinct categories of innovations in health service provision that, jointly, are creating lower-cost options of equal or greater effectiveness:

- Telehealth/remote medicine and mobile health (m-health)
- Medical house calls/home-based primary care
- Health agency care/peer-to-peer health service delivery
- Big data

Together, those four elements combine to create a very real, but as yet unrealized, potential for distributed health service delivery on a large scale.

Overall, what fraction of the services currently provided within hospitals can be offered within the home? We don’t know the answer to that question. But we do know that it is a far greater fraction than is reflected by current practice.

Recent studies of home health care provision using existing technologies have shown reductions of 15–30 percent compared with hospital-based care for similar patient populations, with savings that may potentially be realized from a full embrace of existing telehealth and home health care services over the next 25 years projected

² The implication here is that exogenous changes have made hospitals less desirable, making it more desirable to use nonhospital settings. However, as my colleague Bob Graboyes has pointed out to me, one can argue that rather than fleeing the hospitals, a better approach might be to stop implementing policies that make hospitals unappealing. I leave the exploration of that line of argument to others.

at \$200 billion. Considerably greater cost reductions may be attainable using powerful, distributed technologies currently under development, and benefiting from ubiquitous broadband that is a proximate reality. By allowing a competitive environment to evolve in which entry by distributed health service providers occurs at scale, government at various jurisdictional levels can accelerate economic growth while simultaneously addressing first-order national concerns related to the budget and the quality of life of citizens.

Enabling Distributed Health Service Delivery³

Federal policy toward home health care has undergone a steady progression, focusing first on post-acute care, gradually incorporating “housekeeping services” as part of post-acute care, envisioning home health as a substitute for nursing home care, and ultimately extending that vision to include a range of individuals above a minimum threshold of medically demonstrated need. Constants over this lengthy interval have been concerns over costs and access, all driven by the parallel growth of populations of people over 65 years of age and of people suffering from chronic illness and disabilities.

The core challenge for health care policy at present is not in increasing the uptake of one or another existing model of health service provision in the home, but rather in enabling the creation of entirely new business models aimed at helping people become and remain healthy outside of institutional settings. The key to enabling new, viable business models is a great deal of experimentation. That experimentation must be legal, it must be feasible, and it must be compensated.

Action in three specific policy domains is required, with the objective in each case being the reduction of barriers to entry that favor incumbents to the detriment of beneficial change:

- Technical/regulatory (e.g., regulatory approvals, standards for interoperability)
- Financial/regulatory (e.g., methodologies for determining eligibility for reimbursements)
- Labor market/regulatory (e.g., certification requirements)

³ Robert E. Litan, “Vital Signs via Broadband: Remote Health Monitoring Transmits Savings, Enhances Lives,” Better Health Care Together, October 24, 2008, <http://www.corp.att.com/healthcare/docs/litan.pdf>.

Technical/Regulatory Barriers to Entry

Lack of regulatory clarity is currently a significant impediment to realizing the full benefits of distributed health service delivery. Representative Mike Honda (D-CA), who in 2013 proposed legislation to create an Office of Wireless Health within the Food and Drug Administration (FDA),⁴ offers this perspective: “The tech community needs confidence in a consistent, reliable framework for wireless health. The FDA has a critical role to play. Today, there is no confidence [among people in the] industry. It’s nonexistent.”

The fundamental problem lies in the mismatched timescales in which the digital economy and the regulatory structure operate. As with the case of methodologies for determining eligibility for Medicare reimbursements, the standard operating procedures for device approvals at the FDA are as much as an order of magnitude slower than the rate of innovation in distributed health service provision. Institutional innovations to reduce this gap are an urgent priority for federal action.

Policymakers and regulators in health care at all levels also must get past the notion that health care is exceptional when it comes to privacy. Other industries—financial services and education, notable among them—also face privacy issues that must be balanced against the considerable gains attainable from the data aggregation. While these issues are well beyond the scope of the current paper, a general takeaway for policymakers is well stated in the 2012 report of the Kauffman Foundation’s Task Force on Cost-Effective Health Care Innovation:

We believe current data-sharing rules within the medical system are more overprotective than they need to be. The consensus of the task force is that health care data, suitably anonymized, should be treated as a “public good”—something that benefits society broadly and whose benefits cannot be restricted to just a few.⁵

Even if, and when, industry and government actors converge on the technical, organizational, and regulatory parameters for open

⁴ Health Care Innovation and Marketplace Technologies Act of 2012, H.R. 6626, 112th Congress (2012), <https://www.congress.gov/bill/112th-congress/house-bill/6626>.

⁵ Jared Konczal, John Tyler, Dane Stangler, Lesa Mitchell, and Dominique Pahud, “Valuing Health Care: Improving Productivity and Quality,” Kauffman Foundation, April 19, 2012, p. 24, <http://www.kauffman.org/what-we-do/research/2012/04/valuing-health-care-improving-productivity-and-quality>.

data exchange that will enable genuine interoperability of systems, the actual implementation of such systems is likely to be a slow and laborious process.

Our federal system of government, a source of strength in many respects, creates another set of challenges for innovators who must contend with 50 different state laws related to telehealth licensure⁶ and 50 different state laws concerning privacy. A priority for policy at the state level is to reduce the impediments such laws create for innovators by reducing their complexity and increasing their consistency across municipalities.

Finally, in an era of flat or declining federal government spending on research and development, the federal government's own procurement spending can represent a significant lever for innovations. Recent controversies over access to care within the Department of Veterans Affairs (VA) health care system highlight endemic shortages that are unlikely to be resolved through modifications to existing procedures within institutional settings. The most promising pathway for improving access to care within the VA system without increasing costs is the same as that for the health care system as a whole: distributed health service delivery. By making further, coordinated investments to expand distributed health service delivery, the VA will be accomplishing two priority national objectives: providing timely, quality care to veterans and creating prototype systems that can spread to the private sector.

Financial/Regulatory Barriers to Entry

In principle, whether in the case of health care or in other areas, governments at all levels should be paying for only privately provided services that are effective and competitively priced. Given a fixed portfolio of clinical interventions, medical science has well-developed methodologies for assessing the effectiveness of existing, well-established protocols. These methodologies center on the randomized controlled trial (RCT). However, such methodologies are not particularly well suited either to assessing new integrative models of health service delivery with a social dimension (as opposed to specific clinical interventions) or to establishing the value of diagnostic

⁶ "Telehealth Licensure Report," Special Report to the Senate Appropriations Committee, U.S. Department of Health and Human Services, November 2010, <http://www.hrsa.gov/healthit/telehealth/licenserpt10.pdf>.

tools aimed at the management of chronic disease or improved general wellness. Innovations in distributed health services are not conventional clinical interventions, because (for starters) they don't take place in clinics, and they mostly are not interventions. RCTs are simply too costly, and too slow, to keep up with the pace of innovation in business models focused on providing people with health services. The government must instead focus its efforts on partnerships with the private sector that enable entrepreneurial teams to build businesses that provide people with increased options.

The lack of clarity of policy at the federal and state levels with regard to reimbursement for the use of diagnostic tools is another barrier to the full realization of the benefits of distributed health service delivery. Population-based approaches initiated in the Affordable Care Act via accountable care organizations go some way toward creating incentives for service providers to deploy low-cost, digital diagnostic tools in the communities within which they work. But federal and state governments can do more to validate and support the many companies developing and deploying a new generation of digital diagnostic tools.

Overall, a strong consensus exists that improvements in health service delivery require reimbursements to be value based rather than fee-for-service based. The acceptance of a varied portfolio of proven assessment methodologies—notably including ones appropriate to entrepreneurial ventures—accomplishes this goal in a manner that allows for innovation.

One dimension of the Affordable Care Act that is strongly unfavorable to innovation in distributed health services is the 2.3 percent revenue tax on medical devices. In recent congressional testimony, Dr. T. Forcht Dagi, a partner at HLM Venture Partners in Boston, described the particularly deleterious distortionary impacts of this tax: ⁷

The tax of 2.3 percent sounds modest but it is not. This is a tax on revenue. It is not a tax on profits. The vast majority of entrepreneurial ventures developing [mobile medical apps] are very small and very early. Some of the companies in

⁷ T. Forcht Dagi, "Health Innovation Technologies: Harnessing Wireless Innovation," Testimony before the Subcommittee on Communications and Technology of the U.S. House of Representatives Committee on Energy and Commerce, 113th Cong., 2nd sess., March 19, 2013, <http://democrats.energycommerce.house.gov/sites/default/files/documents/Testimony-Dagi-CT-Health-Info-Wireless-Innovations-2013-3-19.pdf>.

which we invest may in fact generate some revenue but [are] very unlikely to generate profit. Revenues are plowed back into the company for growth, and therefore the 2.3 percent tax on small startup companies delays their ability to reach profitability and increases the amount that must be invested before a company can become cash flow positive.

The principle of ensuring that the Affordable Care Act was budget neutral was a laudable one. However, imposing a tax with the potential to adversely affect a nascent industry of first-order significance to the overall fiscal health of the country was not the best approach for accomplishing that objective. The medical device tax within the Affordable Care Act should thus be repealed, or its interpretation by the Internal Revenue Service sufficiently narrowed that it does not adversely affect the development of interrelated market areas focused on distributed health service delivery.

Labor Market/Regulatory Barriers to Entry

The access-to-care controversy in the VA system is arguably, to a significant extent, simply a reflection of a broader skilled labor scarcity in medicine, particularly in primary care. Part of the solution to this problem may be a relaxation of binding constraints on primary care residency training created by Medicare's decade-and-a-half-long freeze on subsidized residency slots.⁸ However, a more comprehensive approach to addressing workforce shortages in the health sciences would adjust reimbursement requirements to allow nurse practitioners to provide a broader range of activities that they are—with proper physician oversight and technological support—capable of providing. Yet even that is not likely to comprise an adequate solution, as “the number of home-bound adults who could benefit from house calls is overwhelming in comparison to the number of qualified and willing providers.”⁹

In the longer term, then, realizing the full benefits of distributed health service delivery will require the creation of a new category of

⁸ Catherine Rampell, “Solving the Shortage in Primary Care Doctors,” *New York Times*, December 14, 2013, http://www.nytimes.com/2013/12/15/business/solving-the-shortage-in-primary-care-doctors.html?_r=3&.

⁹ Jennifer Hayashi, Linda DeCherrie, Edward Ratner, and Peter A. Boling, “Workforce Development in Geriatric Home Care,” *Clinics in Geriatric Medicine* 25, no. 1 (2009): 110, <http://www.ncbi.nlm.nih.gov/pubmed/19217496>.

certified, digitally empowered health workers, who act simultaneously as health coaches, social support caseworkers, and frontline diagnosticians. The creation of such a job category would potentially serve both to attract new, tech-savvy talent to the health service field and to provide a pathway toward formalizing and extending the skills of home health workers, personal care aides, and family caregivers who “are the front line of keeping patients at home, though they receive little or no training.”¹⁰ In this way, the national objective of “bending the cost curve” in health care will intersect with that of increasing opportunity in the workforce—particularly among young people, who have a comparative advantage in the use of technology, and among a growing number of workers over 60, who have a comparative advantage in the care of generational peers (or near-peers).

Conclusion

Economic disruption creates both winners and losers. For that reason, the impacts of disruption within any particular industry on growth prospects can be ambiguous in the near to medium term. However, in the long term, disruption enhances growth because of second- and third-order impacts on the vitality of economies. Of no industry in the United States is disruption more likely to create beneficial impacts than health care service delivery. The inefficiencies of the U.S. health care system have, for over a generation now, acted as a significant drag on entrepreneurial initiative in the United States and created enormous—and in many cases unmanageable—liabilities for established U.S. businesses. Initiatives from existing institutional providers notwithstanding, the pace of change in the health care industry lags well behind the magnitude of the opportunity to improve the quality and lower the cost of health service provision. Action—or in many cases restraint—by government operating at multiple scales is required to realize the full disruptive potential of distributed health service delivery. The benefits for the country will be both the improved well-being of its citizens and enhanced prospects for economic growth in the long term.

¹⁰ Citing a 1998 study from the Department of Health and Human Services, the authors further note that “over three-quarters (78%) of adults receiving long-term care at home rely exclusively on informal caregiving.” *Ibid.*, p. 114.

3. How Land-Use Restrictions Block Growth

*Ryan Avent**

It would be nice if we had a better idea of just what causes economies to grow. Adding more people or capital or resources into the mix will do it, of course, but to really make people richer one has to raise gross domestic product (GDP) per person, and that's the bit economists are less clear on. Generally speaking, such rises come from improvements in "technology," but technology is a catchall for an entire set of productivity-boosting things we don't understand, nor do we have a good sense of how best to increase the rate at which new technology arrives.

But if we aren't exactly clear on how to get from point A to point B, we aren't completely lost either. We can sift through modern economic history and observe where fast growth has tended to occur—or still better, where it is occurring now. In the absence of a clear and reliable recipe for creating growth *ex nihilo*, the most sensible approach to getting more may simply be to do more of what's already working, even if we aren't precisely clear on why it's working. The best strategy, in other words, is reallocation.

Productive firms should get bigger, and absorb market share, capital, and workers from competitors that aren't up to snuff. But for this reallocation process to work effectively, workers must be able to move from slow-growing places to fast ones. Perhaps the biggest constraint on growth over the last generation has been the inability of the rich world's most productive cities to accommodate all the workers who would like to live in them.

Urbanization has always been a critical part of modern economic growth. Early industrialization occurred alongside a mass migration from the countryside and small villages to booming industrial cities. London was already one of the world's largest cities in 1750, when its population reached about 750,000. Yet over the next two centuries, the number of people living in London exploded, to over 8 million.

*Ryan Avent is an economics correspondent for *The Economist*.

Cities around the industrial world—Manchester and Liverpool, New York and Chicago—experienced similar booms.

Big manufacturers needed to be as near as possible to suppliers and customers, because of the exorbitant cost of moving things over land. In practice, that meant locating near coalfields and port cities (into which raw materials could be shipped in and processed goods shipped out). Labor poured into cities in search of work, and the pool of available labor became an attractive force in itself. Urban growth was self-reinforcing. Concentrations of industry encouraged innovation in manufacturing, as firms tinkered with ways to improve productivity. Booming cities seemed to provide a double boost to growth: as people moved from less productive towns and farms to more productive manufacturing cities, and as economies of scale within the cities themselves raised productivity. The Industrial Revolution would have looked very different had urban growth been held in check, delivering less growth in output and incomes and less societal transformation.

That's an important lesson for economies today. Technological change is again transforming economic activity. From the early 1980s, advances in computing and information technology squeezed employment in middle-skill occupations, via automation as well as the expansion in global trade that new communication technologies allowed. In the many cities that had built their economies on mass employment of modestly skilled workers in industry or routine business services, that development was a killer blow.

But those technological advances were very good for different workers in different cities. Economists Edward Glaeser and Giacomo Ponzetto argue that the “death of distance” was very hard on industrial cities like Detroit, but a reinvigorating force in “idea-producing” cities like New York.¹ By expanding the markets in which good ideas can be deployed, information technology magnified the return to knowledge and to the skilled workers who contribute to it. A globalized financial market means that successful trading strategies generate enormous returns, and the concentrations of financial activity that generate those strategies have benefited correspondingly.

¹ Edward L. Glaeser and Giacomo A. M. Ponzetto, “Did the Death of Distance Hurt Detroit and Help New York?” National Bureau of Economic Research Working Paper no. 13710, December 2007, <http://www.nber.org/papers/w13710.pdf>.

Workers in technology clusters like the San Francisco Bay Area have done very well as a result of their ability to provide their products to users around the world: from e-commerce to online gaming.

Successful cities have also shown the potential to drive employment growth. Economic historians Thor Berger and Carl Benedikt Frey tracked the creation of new job categories in American cities over the past few decades.² They discovered that newly created work changed in nature between the 1970s and 1980s, from fairly routine tasks to brainier work that relied on more skilled or creative labor. They connect this shift with a geographical change: from the 1980s, new employment categories overwhelmingly pop up in highly educated cities like Boston and San Francisco. It isn't just the brainy who find work in such places, however. Enrico Moretti, an economist at the University of California, Berkeley, has calculated the "local employment multiplier" for various sorts of jobs. A new manufacturing job tends to correspond to the creation of one to two additional jobs in the local economy. For more skilled work, this multiplier is higher, rising to four to five jobs for each new tech-industry position.³

Experience and theory suggest that cities whose economic purpose has been destroyed by technology ought to be losing people, the young and ambitious especially, to cities to which technology has provided new life. The population ought to be reallocating itself, in other words, toward places with high levels of productivity and high wages, the better to boost economic growth and lift household incomes.

But that is not at all what has happened. In 2000, slightly more people were employed around the San Francisco Bay Area than in Dallas or Houston. Since that time, personal incomes in the Bay Area have grown about as much as those in the big Texas cities, even though Bay Area incomes were far higher at the beginning of the period. The real output of the Bay Area has also risen by about as much as that of Dallas and Houston.

The employment picture, however, could not be more different. Since 2000, employment in the Bay Area has grown by roughly

² Thor Berger and Carl Benedikt Frey, "Technology Shocks and Urban Evolutions: Did the Computer Revolution Shift the Fortunes of U.S. Cities?" Oxford Martin School, 2014, <http://www.oxfordmartin.ox.ac.uk/downloads/academic/Technology%20Shocks%20and%20Urban%20Evolutions.pdf>.

³ Enrico Moretti, "Local Multipliers," *American Economic Review: Papers and Proceedings* 100 (2010): 1–10, <http://eml.berkeley.edu/~moretti/multipliers.pdf>.

20,000 jobs. In Dallas, by contrast, employment has risen by more than 400,000 jobs and in Houston by more than 600,000. This remarkable divergence is part of a broader phenomenon in which Americans migrate away from the most productive cities. Between 2000 and 2009, the metropolitan areas of Boston, New York, San Francisco, San Jose, and Washington, D.C., lost nearly 3 million people, on net, to other American cities. The 10 biggest recipients of net internal migration, on the other hand, absorbed over 3 million Americans during that time, despite the fact that the average wage in the gaining cities was 25 percent below that in the losing cities.⁴

People are moving toward lower-productivity places, and the reason for the phenomenon is clear: housing. The median value of a home in Harris County, Texas, the center of the Houston metro area, is just under \$130,000. In Santa Clara County, in the middle of Silicon Valley, the figure is nearly \$660,000. Wages in highly productive places are high, but often not high enough to offset the exorbitant cost of housing. And so people migrate, because the pay cut that results nonetheless entails a net rise in disposable income.⁵

Housing is more costly in the most expensive cities because so little of it is built. In the 2000s, Houston's housing stock grew by more than 25 percent while that in the Bay Area grew just over 5 percent. In 2013, Houston approved 51,000 new homes, while San Jose okayed fewer than 8,000, despite the booming Silicon Valley economy. Glaeser and Kristina Tobio find that since the 1980s, the extraordinarily rapid growth in the population of Sunbelt cities is due primarily to the receptiveness of those cities to new construction.⁶ A strengthening economy in places like Texas and Georgia leads to a construction boom and rapid population growth, while economic booms in coastal cities lead to very little population growth but soaring housing costs.

The net effect on the economy is difficult to estimate precisely but is probably huge. Chang-Tai Hsieh and Moretti reckon that America's

⁴ Ryan Avent, *The Gated City*, 2011, Kindle edition, <http://www.amazon.com/The-Gated-City-Kindle-Single-ebook/dp/B005KGATLO>.

⁵ "Home Economics," *The Economist*, October 4, 2014, <http://www.economist.com/news/special-report/21621157-sky-high-house-prices-most-desirable-cities-are-holding-back-growth-and-jobs-home>.

⁶ Edward L. Glaeser and Kristina Tobio, "The Rise of the Sunbelt," Harvard Institute of Economic Research, 2007, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=982392.

inability to move people to the best opportunities means that over the last half century its GDP has fallen 13 percent below the level it might otherwise be: a tremendous loss in a \$16 trillion economy.⁷ Were builders able to respond to demand, employment in the New York metropolitan area might be eight times higher than it currently is, while employment in the Bay Area would be two to three times higher.

Those figures provide a big clue to what is constraining housing supply in productive places. Were the New York metro area to accommodate all the people who probably should be working there, its population would grow about as rapidly as it did in the 19th century. But that earlier population explosion occurred on a much smaller base and led to overcrowded slums, disease, and other urban ills. Avoiding those problems while growing at the necessary clip would force expanding places to spend massively on new infrastructure and to tolerate the almost complete reconstruction of their cities. The residents of places like Boston, New York, and the Bay Area don't want the trouble, don't want the crowding, and don't want the expense. So they have organized methods to block new construction: through strict zoning codes, through historical and environmental protection laws, and through overt political pressure.

If one had a magic wand to wave and wanted to boost growth, magically neutralizing opposition to new development in the most productive cities would be one's best bet. In the absence of a magic wand, solving the problem probably requires a two-pronged approach. On the one hand, it must be made easier for big cities to invest in big infrastructure projects, such as the ones that allowed them to get so large in the first place. That means simplifying the regulations that constrain such investments and raise their costs. It means designing project bidding in ways that encourage competition and create the incentives for efficient, on-time construction. It means reforming the federal government rules that channel infrastructure money toward places that don't need it, and, yes, it means using the federal government's ability to borrow at remarkably low interest rates to make an economically justified investment in America's future.

⁷ Chiang-Hai Hsieh and Enrico Moretti, "Why Do Cities Matter? Local Growth and Aggregate Growth," National Bureau of Economic Research Working Paper no. 21154, May 2015, <http://www.nber.org/papers/w21154>.

On the other hand, infrastructure alone will not solve the problem. Instead, metropolitan areas may need institutional reforms that better balance the economic interests of the metropolitan area (and the country as a whole) with the interests and preferences of those living in neighborhoods that are likely to be affected by new development. When land-use decisions are made at a hyperlocal level—giving local council members or commissions extensive influence over which projects are approved, or focusing negotiation between residents and developers at the street level rather than the metropolitan level—the result will typically be far too little development. Those living immediately around a project enjoy some of its benefits but bear nearly all of its costs, in terms of disruption and congestion; they are therefore highly motivated to block projects and can succeed when local institutions enable them.

Political reforms could improve the situation. Roderick Hills and David Schleicher propose that metropolitan areas change the way they use city plans to make them “stickier,” so that they function more as development budgets that lay out how much new construction the city could use and where it should occur.⁸ To keep to the overall budget, they reckon, more political bargaining over how to share the costs and benefits of growth would occur at the city level, rather than within individual neighborhoods. And because more of the benefits of new development are captured within the city as a whole, this negotiation framework ought to mean that more of the allowable construction in a given city plan is realized than occurs under the typical planning arrangement.

Fixing planning regimes won’t be easy. But the return to getting it right is likely to be handsome: more people working in more productive cities, generating more economic growth.

⁸ Roderick M. Hills Jr. and David Schleicher, “City Replanning,” George Mason Law & Economics Research Paper no. 14-32, August 6, 2014, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2477125.

4. Doctors and Drugs: Promoting Growth and Equality through Free Trade

*Dean Baker**

Economists almost always claim to support the removal of barriers to trade with the argument that it will increase growth, thereby making the trading partners richer. In general, this is true, but there can be losers from trade. In the United States, much of the workforce has likely been hurt by policies that were explicitly designed to put manufacturing workers in direct competition with low-paid workers in developing countries. That would be true even if those deals may have led to gains for the economy as a whole.

However, it is possible to liberalize trade in ways that lead to economy-wide gains and are structured to disproportionately benefit those at the middle and bottom of the income distribution. The most obvious items on this list are opening up highly paid professional services to international competition and ending patent protection for prescription drugs. The potential savings to consumers would be in the hundreds of billions of dollars annually, dwarfing the impact of almost any other policy.

Importing More Doctors

Highly educated professionals in the United States, especially doctors, get paid far more than their counterparts in other wealthy countries. That circumstance is in contrast with manufacturing workers in the United States, who generally earn much less than their counterparts in northern Europe.¹ This fact suggests substantial opportunities for economic gains from increased trade in the services provided by these professionals.

* Dean Baker is codirector of the Center for Economic and Policy Research.

¹ The Bureau of Labor Statistics reports that the hourly compensation of manufacturing workers is more than 30 percent higher in Germany than in the United States. It is nearly 20 percent higher in France. "Economic News Release," U.S. Bureau of Labor Statistics, December 19, 2012, <http://www.bls.gov/news.release/ichcc.t01.htm>.

As it stands, these politically powerful groups have created an array of licensing and immigration barriers that make it difficult for their foreign counterparts to work in the United States. Good trade policy would seek to knock down the barriers to trade in professional services in the same way that it eliminated barriers to trade in manufactured goods in prior decades.

The goal should be to determine the set of education and training requirements to ensure quality and public safety. (These standards would obviously be higher for doctors and dentists than for lawyers.) These requirements should then be made as transparent as possible, so that people anywhere in the world would know what skills they would have to acquire to work in the United States. To minimize costs, people should have the opportunity to test in their home country, by U.S.-certified test givers. Any person who met the requirements in his or her chosen profession would then be able to practice as a doctor, lawyer, and so forth, in the United States under the same conditions as someone who was born and educated in the United States.

There are more than 800,000 physicians practicing in the United States. If opening the profession to trade allowed for an average savings of \$100,000 per physician (which would still leave physicians' compensation above the average levels in western Europe), that would come to \$80 billion a year in savings. Much of that savings would accrue to the government in the form of lower payments for Medicare, Medicaid, and subsidies in the health care exchanges. The potential savings from lower pay to dentists, lawyers, architects, and other professionals that benefit from protectionist measures could easily double that amount, implying annual gains of close to \$500 per person.

Bringing the bloated pay for these protected professions down to earth would also have substantial secondary benefits, most importantly in education. One of the problems that schools face in the United States is that teachers' pay is much lower relative to other measured professions. As a result, most high-performing students don't consider teaching as a career. If the ratio of doctor's pay to teacher's pay was closer to two to one than five to one, it is likely that many more top students would become teachers.

To ensure that this expansion of trade did not hurt developing countries, it would be desirable to have a policy of reimbursing them

for the cost of education. It would be a relatively simple matter to specify that the taxes paid by foreign-trained doctors from developing countries are sent to those countries. This approach should allow them to educate two or three physicians for every one that leaves to practice in the United States.

Cleaning Up the Drug Market

If eliminating barriers to trade in professional services offers large potential gains, the elimination of patent protection for prescription drugs could offer even greater benefits. In 2013, the country spent over \$380 billion (2.2 percent of gross domestic product [GDP]) on pharmaceuticals.² In almost all cases, drugs would be cheap to produce without patent and related protections. It is likely that drugs would have cost only 10–20 percent of that amount if they were sold in a free market in the same way as other products. We would likely also get better drugs. It is necessary to have an alternative mechanism for financing drug development, but it would be difficult to have a worse mechanism than awarding patent monopolies.

If drugs were sold in a free market, there are few drugs that would sell for more than \$10–\$20 per prescription. For the vast majority of people, that would make the cost of drugs easily manageable. And the cost to the government of picking up the tab for those who would have difficulty paying even generic prices would be just a fraction of what it is now spending on drugs. Furthermore, moral dilemmas from very high priced drugs, such as the \$84,000 price tag for the hepatitis C drug Sovaldi, would quickly disappear if drugs were sold at generic prices. No one would be debating whether we should pay to cure patients of hepatitis C if it involved paying \$900 for the generic version of the drug.

The elimination of patent and related protections is also likely to lead to better health care. Patent monopolies allow drug companies to charge prices that are several thousand percent above the marginal cost of producing drugs. By creating a huge gap between the sale price and the marginal cost, we are giving companies enormous incentives to misrepresent the safety and effectiveness of their drugs.

² “National Income and Product Accounts Table,” U.S. Bureau of Economic Analysis, August 5, 2014, <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1>.

And drug companies respond just as economic theory predicts. It is rare that a month goes by without a story about a drug company concealing evidence that its drug might not be as effective or as safe as it claimed. With hundreds of millions or even billions of dollars of profit at stake, it would be shocking if companies did not try to push their drugs even in cases where they may not be the best treatment for specific conditions or certain types of patients.

Drug companies also use the legal and political system to try to maximize the value of their patent protection, just as they would with a tariff that protects them from international competition. They use the courts to harass generic competitors, using tactics like spurious claims to secondary patents in order to delay entry into the market. Since there is an inherent asymmetry in that sort of litigation (the brand-name drug producer is suing to protect a monopoly; the generic producer is trying to get the right to sell a drug at the free-market price), the brand-name drug producer can often force generics out of the market even with bogus legal claims.

It is not difficult to envision alternative mechanisms to pay for the research currently being incentivized with patent monopolies. Several economists have proposed a patent buyout system, where the government would buy out patents and place them in the public domain. A simpler method, however, would be to have direct public funding. The government already spends more than \$30 billion a year to finance biomedical research through the National Institutes of Health (NIH). It would probably be necessary to increase that amount by \$50 billion to \$60 billion a year in order to replace the funding currently supported through patent monopolies.

That additional funding could probably best be channeled through a mechanism other than the NIH, with private companies bidding for major contracts to support research in a variety of areas. By having a relatively limited number of prime contractors, which could then contract out as they please, we would avoid having a situation of the government micromanaging research. The contracts could then be renewed or expanded, depending on the company's track record. The conditions for getting the funding would be twofold: (a) all patents are placed in the public domain, and (b) all research findings are made publicly available on the Internet as soon as practical.

This system would have three enormous advantages over the current system. First, research findings would be broadly shared among

the scientific community as soon as they become available, which would eliminate much unnecessary duplicative research. Second, doctors would have access to the full set of test results on various treatment options. That access should allow them to make better decisions for the specific conditions faced by their patients. Third, unlike in the current system, researchers would be free to pursue lines of research that may not lead to the development of a patentable product.

This approach is in sharp contrast to the existing system. If researchers at a major drug company discover evidence that a natural substance or long-existing drug like aspirin could provide an effective treatment for a specific condition, they have no incentive to do further research in the area. The drug company might opt to make its findings available to the scientific community as a public service, but it certainly would have no obligation to do so, and might choose not to out of fear that it would be creating competition for patentable drugs it hopes to develop.

However, if research no longer depends on patent support, a contractor could use research findings leading to treatments based on nutrition, exercise regimens, or old drugs as a basis for further funding. There would no longer be the discontinuity that exists today, which could result in many promising leads not being pursued.

The Economic Score

The impact of those two changes on both growth and inequality is likely to be enormous. The combined savings could easily be as much as 2–3 percent of GDP. Those savings dwarf the potential gains from the trade agreements of the past three decades and most other major policy initiatives. And the gains also come with redistribution from the top to those at the middle and bottom of the income distribution. It is difficult to envision a better way to boost the economy while at the same time reducing inequality.

5. To Grow Our Economy, Start with Paid Leave

*Heather Boushey**

Today's families are a lot different from what they were 50 years ago. Yet they must make do with a basket of workplace policies implemented at a time when the vast majority of women didn't work and there was someone at home to provide care for children or the elderly. Most families today struggle trying to balance employment and care because most workers are also caregivers. A national paid leave program would enable workers to take temporary leave to recover from a serious illness, care for a newborn or ill family member, or fulfill certain military obligations, which in turn would boost family economic security, worker productivity, the supply of labor, and overall economic growth.

Times Have Changed

Back in the 1950s, paid leave was not a pressing issue for most families. In the majority of families, dad would go to work while someone in the home, likely the mom, took care of all of life's big and little emergencies. This model worked. Yet three major economic shifts over the past half century have changed this dynamic, making it increasingly important for workers to have access to paid leave.

First, family composition is dramatically different. Long gone are the days of *Leave It to Beaver* families. The share of children living in a married household with a breadwinner father decreased between 1960 and 2012 from 65 percent to 22 percent.¹ Today, there is

* Heather Boushey is executive director and chief economist at the Washington Center for Equitable Growth.

¹ Philip Cohen, "Family Diversity Is the New Normal for America's Children," Council on Contemporary Families, September 4, 2014, <https://contemporaryfamilies.org/the-new-normal/>.

no new norm. Families at the very top of the income ladder typically boast dual-career parents, while those at the bottom typically have one parent, likely a single mother. In the middle, parents usually work both inside and outside the home.

Second, there are so many more women in the workplace. Between 1979 and 2012, women's median hours increased by 739, or by about 18 workweeks a year.² Further, many mothers work today because most families rely on more than one income. Between 1967 and 2012, the share of mothers who are breadwinners or co-breadwinners—that is, bringing home at least a quarter of family earnings—increased from 27.5 percent to 63.3 percent.³

Third, the share of adult children providing care to aging parents has tripled over the past 15 years.⁴ By 2030, it is estimated that the share of the population age 65 and older will make up one-fifth of the U.S. population.⁵ Further, many parents are sandwiched between providing care for their children and grandchildren and for their aging family members.

Today's Care Policies Are Not the Solution

Most families up and down the income ladder lack options when it comes to balancing work and care. Additionally, differential access to both unpaid and paid leave further exacerbates economic inequality and stability.

The Family and Medical Leave Act (FMLA) provides 12 weeks of job-protected unpaid leave, yet only 6 in 10 workers are eligible under the law. The FMLA's eligibility criteria exclude many workers, in

² Eileen Appelbaum, Heather Boushey, and John Schmitt, "The Economic Importance of Women's Rising Hours of Work," Center for American Progress, April 2014, <https://www.americanprogress.org/issues/labor/report/2014/04/15/87638/the-economic-importance-of-womens-rising-hours-of-work/>.

³ Sarah Jane Glynn, "Breadwinning Mothers, Then and Now," Center for American Progress, June 2014, <https://www.americanprogress.org/issues/labor/report/2014/06/20/92355/breadwinning-mothers-then-and-now/>.

⁴ "The MetLife Study of Caregiving Costs to Working Caregivers: Double Jeopardy for Baby Boomers Caring for Their Parents," MetLife Mature Market Institute, June 2011, <https://www.metlife.com/mmi/research/caregiving-cost-working-caregivers.html#key findings>.

⁵ Aging Statistics, U.S. Administration on Aging, accessed October 16, 2013, http://www.aoa.gov/Aging_Statistics/.

particular young and part-time workers.⁶ And many eligible workers do not take leave because it is unpaid. In a recent FMLA survey, nearly half of workers—46 percent—who needed leave did not take it because they could not afford to take it without pay.⁷

Access to paid leave is even more limited. In 2013, the share of private-sector workers who received paid leave through their employer was only 12 percent.⁸ Further, access to paid leave varies by where a worker sits on the income ladder. Workers whose average wages are in the lowest fourth of the wage distribution are four times less likely to have access to paid leave through their employer than workers whose average wages are in the highest fourth of the wage distribution.⁹

A Blueprint for a Paid Family and Medical Leave Program

There is no question that family leave is critical to family security and stability. Unpaid leave under the FMLA has been used more than 100 million times by workers since it was enacted in 1993 despite its major shortcomings. What we need is an inclusive social insurance program. What would a national paid leave program look like?¹⁰ Well, we don't have to start from scratch. California, New Jersey, and Rhode Island have implemented paid family leave programs by extending their existing temporary disability insurance programs.¹¹

⁶ Heather Boushey and John Schmitt, "Job Tenure and Firm Size Provisions Exclude Many Young Parents from Family and Medical Leave," Center for Economic and Policy Research, June 2007, <http://www.cepr.net/index.php/publications/reports/job-tenure-and-firm-size-provisions-exclude-many-young-parents-from-family-and-medical-leave/>.

⁷ Jacob A. Klerman, Kelly Daley, and Alyssa Pozniak, "Family and Medical Leave in 2012: Technical Report," U.S. Department of Labor, September 7, 2012, <http://www.dol.gov/asp/evaluation/fmla/FMLA-2012-Technical-Report.pdf>.

⁸ "Employee Benefits Survey," U.S. Bureau of Labor Statistics, 2013, Table 32, <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table21a.htm>.

⁹ Ibid.

¹⁰ Heather Boushey and Alexandra Mitukiewicz, "Family and Medical Leave Insurance: A Basic Standard for Today's Workforce," Center for American Progress, 2013, <https://www.americanprogress.org/issues/labor/report/2014/04/15/87652/family-and-medical-leave-insurance/>.

¹¹ Linda Houser and Thomas P. Vartanian, "Pay Matters: The Positive Economic Impacts of Paid Family Leave for Families, Businesses and the Public," Rutgers Center for Women and Work, January 2012, <http://smlr.rutgers.edu/paymatters-cwwreport-january2012>; Temporary Disability Insurance/Temporary Caregiver Insurance website, Rhode Island Department of Labor and Training, accessed October 16, 2013, <http://www.dlt.ri.gov/tdi/>.

We have a lot of best practices from those states that we can incorporate into a national leave program. California's program has been around for a decade.

First, our proposed paid leave program, like any social insurance program, should be available to all workers, including small-business employees and the self-employed. Excluding a certain group from taking leave only exacerbates the gap between those who provide care and those who do not.

Second, eligibility should be tied to lifetime work history rather than current employment or job tenure. A paid leave program should follow the model of other social insurance programs, such as Social Security Disability Insurance, which bases eligibility on employment history and payment into the system.

Third, a national paid leave program should provide a reasonable amount of leave to all workers. Policymakers can follow the lead of the FMLA, which provides 12 weeks of leave, or 60 workdays, per year.

Fourth, paid leave salaries need to be generous enough so workers, especially low-wage workers, won't jeopardize their economic security by taking leave. We can follow what has worked at the state level. Policymakers can set benefit levels at two-thirds of a worker's weekly average wage, as in New Jersey, and cap them at a certain amount, as in California.

Fifth, the program needs to include all types of families, especially since today's families come in so many shapes and sizes.¹² The program should use a broad definition of family so workers can take leave to care for extended family, such as grandparents, aunts and uncles, and domestic partners.

Sixth, leave should be gender neutral, tied to the worker rather than the family. The FMLA provides the same amount of leave to each eligible worker, regardless of sex. Although women are increasingly the family breadwinner or co-breadwinner, men's earnings are still critical to a family's income, making it very difficult for men to take unpaid leave. Paid leave tied to the worker encourages men and women to take leave and share care responsibilities.

¹² Cohen, "Family Diversity."

Why Paid Leave Is Good for Economic Growth

Many agree that paid family and medical leave is good for families, but many don't consider how it benefits our entire economy, which it does—in spades.

Paid family and medical leave would grow and strengthen the labor force. It would allow workers who would otherwise leave their jobs because of caregiving responsibilities to remain in the labor force. One study finds that paid parental leave policies are associated with higher employment-to-population ratios and decreased unemployment—particularly among women—in North American and European countries.¹³ Further, there is evidence that individuals who aren't in the labor force will seek work with the availability of paid leave.¹⁴

Paid leave is good for business.¹⁵ As evidenced from the state programs, paid leave is not a “job killer.” In a 2009 and 2010 survey of California employers, 87 percent of employers reported that the state's paid family leave program resulted in no cost increases, and 60 percent of employers said they coordinated their benefits with the family leave program.¹⁶

Paid leave can reduce worker turnover, which is costly for employers and crimps productivity. The median cost of turnover is about 21 percent of a worker's salary.¹⁷ Further, availability of paid

¹³ Christopher Ruhm and Jackqueline L. Teague, “Parental Leave Policies in Europe and North America,” in *Gender and Family Issues in the Workplace*, ed. Francine D. Blau and Ronald G. Ehrenberg (New York: Russell Sage Foundation, 1997), pp. 133–56, <https://www.russellsage.org/publications/gender-and-family-issues-workplace>.

¹⁴ Jochen Kluge and Sebastian Schmitz, “Social Norms and Mothers' Labor Market Attachment: The Medium-Run Effects of Parental Benefits,” Institute for the Study of Labor Discussion Paper no. 8115, April 2014, <http://ftp.iza.org/dp8115.pdf>.

¹⁵ “The Economics of Paid and Unpaid Leave,” Council of Economic Advisers, Executive Office of the President of the United States, June 2014, http://www.whitehouse.gov/sites/default/files/docs/leave_report_final.pdf.

¹⁶ Eileen Appelbaum and Ruth Milkman, “Leaves That Pay: Employer and Worker Experiences with Paid Family Leave in California,” Center for Economic and Policy Research, 2011, <http://www.cepr.net/documents/publications/paid-family-leave-1-2011.pdf>.

¹⁷ Heather Boushey and Sarah Jane Glynn, “There Are Significant Costs to Replacing Employees,” Center for American Progress, November 16, 2012, <https://www.americanprogress.org/issues/labor/report/2012/11/16/44464/there-are-significant-business-costs-to-replacing-employees/>.

leave can reduce employee absenteeism from work. It is estimated that employee absenteeism due to work–family responsibilities costs employers about \$500 to \$2,000 per employee per year.¹⁸

Paid leave is critical for families' economic security. Women lose an estimated \$274,044 and men \$233,716 in lifetime wages and Social Security benefits when they have to leave the labor force early because of caregiving responsibilities.¹⁹

Paid leave provides income security to families who might otherwise need public assistance programs to help make ends meet. A study by Rutgers University's Center for Women and Work finds that women who took paid family leave after their child's birth were 40 percent less likely to tap supplemental nutrition assistance in the year following their child's birth, compared with mothers who returned to work but did not take any leave.²⁰

Paid leave is important for raising the next generation to be productive members of our society.²¹ A national program would aid children's early development by enabling parents, especially mothers, to stay in the labor force, thereby boosting household income, and by providing time for parents to stay home and bond with their new child, which helps his or her long-term development well into adulthood.²²

Families are important actors in our economy. If we want all families to be able to work, to provide and care for their families, and to contribute to our economic growth, a national paid family and medical leave insurance program is the next step. Now is the time for policymakers to wave the magic wand.

¹⁸ "After School for All: A Call to Action from the Business Community," Oregon Office of Child Care, 2004, http://www.oregon.gov/OCC/docs/After_School_Statement.pdf.

¹⁹ "The MetLife Study of Caregiving Costs to Working Caregivers."

²⁰ Houser and Vartanian, "Pay Matters."

²¹ Heather Boushey and Alexandra Mitukiewicz, "Job Quality Matters: How Our Future Economic Competitiveness Hinges on the Quality of Parents' Jobs," Washington Center for Equitable Growth, June 20, 2014, <http://equitablegrowth.org/research/job-quality-matters-future-economic-competitiveness-hinges-quality-parents-jobs/>.

²² Raquel Bernal and Anna Fruttero, "Parental Leave Policies, Intra-Household Time Allocations and Children's Human Capital," *Journal of Population Economics* 21 (2008): 779–825.

6. The Primacy of Foreign Policy

*Tyler Cowen**

At first glance, it may not seem like foreign policy is a major determinant of the American economic growth rate. Foreign trade is about 14 percent of the U.S. economy. Furthermore, most of that trade is with countries that appear quite stable in geopolitical terms, such as Canada and western Europe. Nonetheless, in the longer run, having a good foreign policy is the most important thing the United States can do to ensure its own future prosperity.

We tend to take peace for granted in most of today's world, but the broader historical record suggests that peace is an occasional luxury and is never a guarantee. Standards of living have repeatedly regressed throughout human history, and very often war and its associated catastrophes have been primary causes behind those misfortunes. It is a conflict-ridden world that is the greatest threat to the future of humanity and thus ultimately to the growth record of America.

Just as peace tends to feed upon itself, so does war. If violent conflict became more of a global norm, potential theaters of war could include eastern Europe, the South China Sea, and the Middle East, as indeed we are already seeing in today's headlines. If those regions remain enmeshed in violent conflict or even diplomatic ambiguity, as is the case with China and its neighbors, current global norms in favor of peace could crumble much further. Today's world, in geopolitical terms, is the scariest we have seen for decades, and we are learning to our dismay that progress toward greater peace is not always the dominant trend.

It is possible that we are still living inside the biggest bubble of them all, and that is called "the peace bubble." I've also heard it

* Tyler Cowen is a professor of economics at George Mason University and an adjunct scholar at the Cato Institute.

described as the bubble of “Pax Americana,” although that is a more partisan take on the role of America in global peace. You might think the chance of this being a “peace bubble” is say only 5 or 10 percent. Maybe so, but still in expected value terms, that is still the most important issue to worry about. The breaking of that peace bubble on a larger scale could endanger all of the progress and accumulated well-being of the human race, including the United States.

Let’s not forget that over the next 100 years, if the world remains relatively peaceful, it is unlikely that most global innovation will come from the United States. China in particular may assume a major role as a generator of new ideas, just as the United States supplied a wide variety of useful innovations to Great Britain starting in the mid- to late 19th century. Even if a “Fortress America” could survive geopolitical turmoil in the broader world, it would be a much poorer place. We rely on the rest of the world for inspiration, for creation, for appreciation, for increasing market size and thus the spurring of American innovations, and of course we rely on the rest of the world for innovations more directly. A future America in a chaotic world is much, much poorer and riskier than a future America in a peaceful world.

Steven Pinker suggests that the world is becoming ever more peaceful, but in reality, we have had the world’s two worst wars in the past 100 years.¹ The data are also consistent with the hypothesis that the number and frequency of wars are indeed going down, but the wars we do get are increasing in destructiveness. That would suggest that the next major war to come along will be quite a doozy, hardly a comforting thought. In any case, the recent uptick in global conflict suggests that Pinker’s take is too optimistic. One can even agree with Pinker and think he is describing the scenario most likely to be true, but again in expected value terms, we still should see war as our number one worry for a long time to come.

When electing a president or a Congress, foreign policy should be by far our number one concern. That said, I don’t think there is any simple formula for getting foreign policy right. Unlike many libertarians, I do not adhere to a strictly noninterventionist stance on foreign policy. I believe in alliances among the world’s relatively free

¹ Steven Pinker, *The Better Angels of Our Nature: Why Violence Has Declined* (New York: Penguin Books, 2012).

and (one hopes) peaceful nations. I believe that American intervention has at some critical times led to much greater freedom and prosperity. Without the current and past American security umbrella, for instance, I believe much of Asia would be a far less free place than it is today, starting but not ending with Taiwan and South Korea.

I am, however, also skeptical of conservative or hawkish claims that we simply need to get tough with the bad guys in the world. A market-oriented economist, as I view myself, should be well aware of the general arguments about the difficulty of government planning and the importance of unforeseen, unintended consequences from government action. Furthermore, government policies, once they get underway, are often hijacked by special-interest groups or by voters who are uninformed, misinformed, or who react emotionally rather than analytically. We should not be especially optimistic about the ability of our government to pull off successful foreign interventions. You can take the Vietnam War as exhibit A here, but of course there are many more examples, stretching into our Iraq policies in more recent times.

To make matters more difficult, the American public is often pretty squeamish about violence and conflict abroad. That's overall a good thing, but it means a "get tough" foreign policy isn't very easy to implement in a credible fashion. (For instance, the American public approved when President Obama neglected his "line in the sand" commitment regarding Syria and chemical weapons use.) For better or worse, the electorate stands in the way of what might otherwise be a strategically optimal foreign policy. It can be said that a nation has to run a foreign policy with the citizens it has, and that is another reason why this complex area is so difficult to manage.

I'm not going to try to solve these conundrums in an essay of this length. I'll simply put it this way: the single most important thing we can do to boost long-run American growth is to get foreign policy right. Very literally, our lives, and the lives of many others, depend on it. And that means the economists aren't nearly as important as they like to think they are.

7. Steps toward the “Good Economy”

*Bowman Cutter**

This short essay is a derivative of a much longer piece I am writing with two colleagues, Robert Litan and Dane Stangler. In that essay, we are attempting to define what we have called “the good economy.” We mean by that “an economy that works”—a sustainably growing economy that provides the Americans who will come of age over the next 30 years or who are already working with the genuine possibility of a middle-class life; an economy that provides Americans once again with a solid shot at upward mobility; an economy that begins to restore a broader degree of equity to working Americans.

The premise we begin with is that while we believe that this “good economy” can evolve from today’s relatively mediocre starting point, it will be very different from today’s economy or from the economy of the 1950s, which is often referred to as the previous golden age. And getting from here to there is not a matter of a few simple fixes.

In the absence of significant change, we are on a low-growth track driven by declining business formation and investment, unprepared workers, eroding infrastructure, and worsening governance, particularly at the federal level.

There is much more to be said about the cul-de-sac we are caught in, particularly with respect to the kinds of institutions required by what I’ve called in another context “the next American economy.” However, here I focus on two main issues and wave Brink’s magic wand twice.

Problem 1: The Wrong Economy—Declining Business Innovation and Formation

The rate of business formation has been falling for 20 years, and nobody knows why.

* Bowman Cutter is a senior fellow and director of the Next American Economy Project at the Roosevelt Institute.

It may be that Robert Gordon and the techno-pessimists are right. We have reached the technological frontier, entrepreneurial energy has successfully exploited all real opportunities, and there is little more fruit to be harvested.

But I don't believe it.

I assert that it is more likely that we have reached a different frontier—our capacity to harvest the benefits of the several major technological revolutions occurring around us. That capacity depends on new businesses, and their creation depends on structures, governance, incentives, and costs.

Because of the decline in business formation, our economy is now composed of older, larger companies. And old, big companies do not start new businesses, innovate in profound disruptive ways, or create jobs. Moreover, as business and government have grown in parallel, they have together evolved a rent-seeking crony capitalism with a strong incumbency bias.

If we had a good “ease of being an entrepreneur” index, we would see clearly what seems intuitively obvious: entrepreneurs today face more opaque government, more complicated and time-consuming rules and regulatory processes, and more difficult access to capital. As a result, their costs of capital—implicit and explicit—are probably considerably higher than they have been in previous decades. And business formation is lower.

Magic Wand 1

Bring about a long-term increase in the rate of business formation in the United States and (small subwave of the wand) establish an “ease of being an entrepreneur” index and track it in the annual report of the Council of Economic Advisers.

Reestablishing a higher business formation rate will require (a) a thorough understanding and reduction of the impact of regulation on small business costs, (b) a dramatic simplification of government, (c) an equal simplification of corporate taxation, and (d) an honest accounting of the effect of the Washington lobbying industry on incumbency bias.

And now to political economics: neither major party has the slightest interest in pursuing this course. In our current circumstances, to believe anything of significance will occur at the federal level is, as a boss of mine once said, to have the capacity to believe 37 impossible things before breakfast. But is there a possibility of emulating the

Chinese Communist Party and giving cities—which do still work—the right to create “Next American Economy” zones within which the changes required to rebuild business creation could be pursued?

Problem 2: An Unprepared Labor Force

Our educational system is designed to prepare Americans for success in the industrial economy we used to have. It does not prepare Americans for the economy that is evolving now.

More specifically, (a) the current educational system does not prepare Americans from an early age for the entrepreneurial and innovative economy that will have to be our next core, (b) the system whiffs completely in terms of providing the postsecondary and lifelong learning the next economy will need, and (c) the system is nowhere near good enough in teaching the basics of science, mathematics, literacy, and computer coding.

Magic Wand 2

Give the “high school movement” so well described by Claudia Goldin and Larry Katz in *The Race between Education and Technology*¹ a 21st-century rebirth.

This new educational revolution would focus principally on two areas: early childhood education and postsecondary lifelong learning. Creating the new educational revolution will require contending successfully with mutually exclusive and mutually hostile ideologies of the American left and right. On the one hand, more federal expenditures will be necessary. On the other hand, expenditures will be productive only if they (a) are driven by individual choice, and not by centralized decree from Washington; (b) are part of intensely local solutions; and (c) are provided largely through private and public entrepreneurs.

To restate my frustration with Brink’s constraints, these two changes are not enough to usher in the Next American Economy. But they do address two critical elements of that economy: first, the only plausible structure of our economy that could lead to high growth; and second, the quality and nature of the preparation Americans receive for participating in that economy.

¹ Claudia Goldin and Lawrence F. Katz, *The Race between Education and Technology* (Cambridge, MA: Harvard University Press, 2010).

8. Three Waves of the Magic Wand

*J. Bradford DeLong**

The problem I have with “magic wands” is that I am never sure just how powerful they are supposed to be. But let me propose three ideas, all of which require, as John Adams said, changes “in the hearts and minds of our countrymen” (and women).

Proposal 1: A Federal Reserve Committed to Nominal Gross Domestic Product (GDP)–Level Targeting, with a Trend Growth Rate in Nominal GDP of 7 Percent a Year

In my view the question of the origin of “general gluts”—demand-side business cycles characterized by (a) insufficient demand for pretty much every currently produced good and service and (b) positively—rather than negatively—correlated fluctuations relative to trends of prices and employment—was decisively and correctly answered by John Stuart Mill back in 1829. A general glut arises when, if there is full employment, workers, savers, and managers wish to hold more in the way of liquid cash and readily collateralizable safe savings vehicles than the economy is supplying. The private sector cannot produce cash and safe savings vehicles by any means short of deploying huge amounts of labor and capital to the Witwatersrand (where gold and diamonds are mined), and it cannot produce large quantities of cash and safe savings vehicles quickly in any event. Only those organizations whose solvency is not just certain, but also generally known to be certain, can issue cash and safe savings vehicles. Others can issue only assets that are almost as good as cash until the tide goes out and you see how naked they are.

When, if there is full employment, workers, savers, and managers wish to hold more in the way of liquid cash and readily collateralizable safe savings vehicles than the economy is supplying, everyone

* J. Bradford DeLong is a professor of economics at the University of California, Berkeley.

tries to build up their holdings by cutting their spending below their income. But since everyone's income is other people's spending, that does not work. Employment, production, and incomes drop until workers, savers, and managers feel so poor that they no longer wish to build up their stocks of cash and safe savings vehicles. And the economy undergoes a "general glut."

A well-functioning free-market economy thus requires more than just property rights cut at the joints to minimize externalities, Pigo-vian taxes and bounties levied to compensate for remaining externalities, tort laws, contract laws, police, and judges. It also requires a "neutral" monetary policy—that is, one that matches the economy's supply of liquid cash and readily collateralizable safe savings vehicles to the demand if there is full employment from workers, savers, and managers. The hope is that a central bank that has the power to target and does target a simple nominal GDP level feedback rule—if nominal GDP is below the target, does more in the way of standard open-market operations, lending at the discount window on collateral that is good in normal times at a penalty rate, quantitative easing, and social-credit operations—will finally accomplish a properly "neutral" monetary policy.

A look back at previous ideas for what a "neutral" monetary policy might be—Newton's fixed price of gold, Hayek's fixed nominal GDP level, Fisher's fixed-price-level commodity basket, Friedman's stable M2 growth rate, the NAIRU (nonaccelerating inflation rate of unemployment) targeting of the 1970s, Bernanke's inflation targeting—leads immediately to the conclusion that anybody who claims to have uncovered the Philosopher's Stone of a proper "neutral" monetary policy is a madman. But it is worth trying. Full employment is a very powerful boost to economic growth. And so is the elimination of future risks that businesses face as they try to calculate the chances that the profits to amortize investments will not be there because they will find themselves trying to sell into a "general glut."

Proposal 2: State and Local Governments Committed to Raising Salaries of K–12 Public-School Teachers Relative to Median Salaries by 50 Percent, in Exchange for Severe Reductions in Teacher Tenure

As Eddie Lazear tirelessly points out, our state and local governments still substantially set public-school teachers' salaries following a sociological pattern set generations ago, when the occupations

open to women were (a) housekeepers, (b) laundresses, (c) waitresses, (d) telephone switchboard operators, (e) secretaries, (f) nurses, and (g) teachers. Those days are long gone: women who would have become teachers and nurses in the 1950s are now becoming doctors, lawyers, managers, and bankers. School boards across the country have responded to the difficulties of hiring as the progress of feminism has allowed their captive female labor pool to escape by offering tenure in order to attract the risk-averse to teaching without having to require their taxpayer principals to face reality. But this is, at most, a second-best solution.

A nationwide network of good schools is both one of the very best ways to build productive capital—human capital—and a powerful step toward turning equality of opportunity in America from a sick and cynical joke to something not *that* far moved to reality.

How to actually wave this magic wand, however, is beyond me. My reading of the evidence is that charter schools have been disappointing in ways somewhat similar to those in which 401(k)s have been disappointing—too-high rewards to flash and marketing and too-little repetition for successful social learning about true quality to take place. Teachers will fight attempts to disrupt security of employment unless they have confidence that the grand bargain by which they trade security for higher salaries will be kept—which they do not have. Fiscal conservatives will fight teacher-salary increases unless they are confident that the Democratic Party–public-sector union complex will then disarm itself of its weapons—which they are not.

Proposal 3: Increasing the Number of Legal Immigrants from Roughly 1 Million per Year to 2.5 Million per Year—0.75 Percent of the Population per Year

Everywhere else in the world, social conservatives are totally and completely terrified of our culture. Whether they admire American culture or despise it, all those who are attached to their own culture and do not want their young talking about going to Mont Saint-Michel for *le weekend* or making hip-hop videos for YouTube are terrified of it. Yet we, somehow, fear that raising legal immigration above its current 0.3 percent of the population per year will in some way disrupt our culture? And we, somehow, fear that our politics is sufficiently broken that we cannot figure out a way to make increased

immigration a win-win situation for all current residents? Already, for a 20-year-old to crawl through a storm sewer from Tijuana to San Diego boosts the present value of future world GDP by \$200,000. Give each one a green card too as he or she emerges and that number is boosted to about \$400,000.

And let me note that I am not that big a fan of selling import licenses. It strikes me that the kinds of people who would make it across the U.S. border from Nicaragua on foot are likely to be at least as large political and economic assets as the princelings of the Chinese Communist Party, eager and able as the latter are to pay.

9. Incentive Pay for Congress

*Eli Dourado**

Most large enterprises use incentive pay such as performance bonuses and stock options to better align the interests of employees, especially top managers, with those of the shareholders. To be sure, those compensation systems are often gamed, and CEOs sometimes receive a large payout even if their performance disappoints. Yet despite those imperfections, incentive pay is an indispensable tool—even startups and privately held companies, which have the strongest reasons to organize efficiently, use it extensively.

We don't offer incentive pay to members of Congress, but perhaps we should. Like shareholder capitalism, representative government creates a principal-agent problem: no matter how much politicians wrap themselves in the rhetoric of public service, their interests are never quite our own. Voter irrationality compounds the problem—members of Congress usually do not literally enrich themselves at the expense of voters; rather, they play to voters' worst biases in order to get reelected, often at the expense of good policy.¹

A performance bonus would help overcome some of Congress's complacency and division in the face of decades-long economic stagnation. By linking the bonus directly with a measure of economic growth, we would create a strong incentive for Congress to search for economic policies that work, even if those policies themselves are unpopular with voters. Peer pressure from other members of Congress with money on the line might reduce the temptation

* Eli Dourado is a research fellow at the Mercatus Center at George Mason University and director of its Technology Policy Program.

¹ Bryan Caplan, *The Myth of the Rational Voter: Why Democracies Choose Bad Policies* (Princeton, NJ: Princeton University Press, 2007).

to engage in demagoguery at the expense of the policies that lead to growth.²

In order to induce a large change in congressional behavior, Congress's performance bonus should be generous. If the incentive led to even marginally more economic growth, then the proposal would be revenue-positive for any level of compensation we might reasonably select. A round number such as \$100,000 per year might work—it would cost \$53.5 million to pay all 535 members of Congress. Since about 20 percent of gross domestic product (GDP) is collected in federal taxes, about \$267.5 million in additional economic growth would be needed to fund the bonus. With GDP at over \$17 trillion, this bonus would therefore pay for itself if it generated at least an additional 0.0015 percentage points of economic growth.

To minimize any perverse incentives, it is worth carefully considering how we would measure performance. Simply tying compensation to GDP growth wouldn't be effective—because GDP counts government spending dollar for dollar, Congress can boost measured GDP any time it wants. Similarly, per capita measures of well-being are not ideal, because at the margin they would create an incentive to exclude the least productive members of society, whether through deportation, imprisonment, or murder.

One good performance metric would be total factor productivity (TFP), which measures (in principle) how much output can be produced with a fixed, diverse basket of inputs. TFP represents how economists think about the state of technology. We might be able to increase output if we all work longer hours, but that doesn't necessarily represent progress. By focusing on improvements in output that occur apart from the application of more resources, TFP gains

² Using two field experiments, one set of authors finds that team incentives are surprisingly effective. Participants on the teams they studied behaved as if they valued compensation for their teammates from two-thirds to two times as much as they valued their own. The social effect of such team compensation is therefore quite strong. Philip Babcock, Kelly Bedard, Gary Charness, John Hartman, and Heather Royer, "Letting Down the Team? Social Effects of Team Incentives," *Journal of the European Economic Association*, forthcoming.

represent more unambiguous improvements in living standards than many other economic measures.

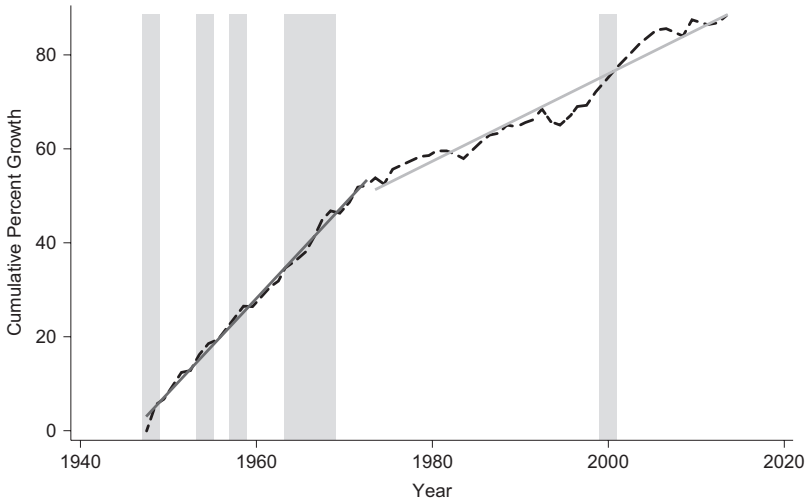
Computing TFP is nontrivial—it is not a simple accounting exercise, and statistical analysis is necessary to ensure that the basket of inputs (the quality of the labor, etc.) is actually fixed. John Fernald at the Federal Reserve Bank of San Francisco publishes a good quarterly TFP series.³ Unlike the Bureau of Labor Statistics, which also publishes a multifactor productivity measure, Fernald adjusts his TFP estimate for cyclical labor and capital utilization changes, making his series a better measure of pure technological change. In addition, the quarterly availability of Fernald's data would help keep TFP fresh in Congress's mind at all times.

Setting the target threshold at the right level is tricky. If the target is unattainable, then Congress will ignore it; but if the target is so low that meeting it is automatic, then it will simply function as a raise, not an incentive. The target should be a level that we know is possible to achieve, but that we are unlikely to hit without policy changes. A look at the historical data can be instructive. From 1948 to 1973, TFP grew at an average of over 2 percent per year; since 1973, it has grown at less than 1 percent per year. Two percent, therefore, might make a good target. To dampen any remaining cyclical factors in the data, we could even take the average of the two years of any Congress. Rather than earning a \$100,000 bonus if TFP grows by 2 percent in a single year, members of Congress would earn a \$200,000 bonus if the two-year period in which they serve averages 2 percent TFP growth.

Figure 1 shows cumulative growth in TFP since 1947. The shaded areas represent two-year Congresses in which TFP growth averaged more than 2 percent. Note the slowdown in trend TFP growth beginning in 1973, and the lower frequency of two-year periods of 2 percent TFP growth. If a performance bonus could return the United States to pre-1973 levels of growth, the policy would be an astounding success.

³ John Fernald, "A Quarterly, Utilization-Adjusted Series on Total Factor Productivity," Federal Reserve Bank of San Francisco Working Paper no. 2012-19, April 2014.

FIGURE 1
TOTAL FACTOR PRODUCTIVITY SINCE 1947



NOTE: The shaded areas represent two-year Congresses in which TFP growth averaged more than 2 percent. Growth data for 1947 are missing, but TFP growth in 1948 was so high that the 80th Congress would have surely qualified.

Skeptics might object that Congress is not all-powerful and therefore is unable to determine the long-run rate of economic growth. Growth is affected by nonpolicy factors. It is true that Congress might fail to meet the growth target through no fault of its own, or that it might get lucky and meet the target through no virtue of its own. Nevertheless, it would certainly be within Congress's power to improve policy by enough to decrease the amount of good luck necessary to hit the target. By implementing the other proposals in this collection, it might dramatically increase its chance of a bonus, even if it can't guarantee itself one. Even if Congress fails to hit the target, growth would likely be higher than without a performance bonus, and almost certainly no worse.

Another objection might be that rewarding the current Congress for growth that occurred during its term of office may unfairly fail to reward past Congresses for their contributions to that growth. Many good economic policies might take years to generate a payoff

in terms of growth. Paying a performance bonus could skew policy toward ideas with a short-term payoff. Fortunately (in this instance), average terms of service in Congress are long, and reelection rates high. The average term of service in the Senate is over 13 years, and in the House it is about 10 years.⁴ Since most members of Congress would have some expectation of reaping the benefits of future bonuses, long-term growth strategies would still be likely to earn support.

A final objection might be that economic statistics could be gamed to reward Congress without any real corresponding improvement in the economy at all. While this concern is understandable, such gaming would be somewhat difficult to pull off. TFP isn't measured—it is statistically inferred from a host of other measurements. A conspiracy to game TFP without detection would need to span multiple federal agencies. The methodology to calculate TFP is well documented, and TFP estimates are therefore replicable. There is enough low-hanging fruit in policy reform that it might be simpler for Congress to legitimately earn the bonus than to try to fraudulently claim it. Nevertheless, even allowing for a healthy amount of gaming, if the policy *also* produces at least some additional real economic growth, it will remain cost-effective and worth trying.

Incentive pay is not perfect—it isn't perfect in the private sector, nor would it be perfect in the public sector if my proposal were adopted. The chief virtue of a performance bonus for Congress is that it would be so cost-effective that it wouldn't need to be perfect. Even a tiny increase in the growth rate because of additional skin in the game for Congress would more than cover the cost of congressional bonuses. If we want a political culture that values economic growth in Washington, we might have to pay for it.

⁴ Matthew Eric Glassman and Amber Hope Wilhelm, "Congressional Careers: Service Tenure and Patterns of Member Service, 1789–2013," Congressional Research Service, January 3, 2013, <http://fas.org/sgp/crs/misc/R41545.pdf>.

10. Invest in Smarter Government

*Lee Drutman**

If one wanted to blame public policy for limiting economic growth, the tax code is a very good place to start. As Bill Frenzel, a former Congressman turned Brookings tax policy scholar, has put it: “The U.S. tax code is a hopelessly complex mess, antithetical to growth, and is crammed with conflicting incentives, which screams for reform.”¹

Those who hire armies of lobbyists, lawyers, and accountants get and then milk their special breaks and loopholes for significant profits. Those who can’t are at a disadvantage. Either way, companies make many decisions not in response to market forces, but in response to the confusing and often outdated incentives that litter the tax code. General Electric, for example, managed to pay no taxes in 2010, filing a 57,000-page tax return. As the economist Alex Tabarrok astutely noted: “Consider the resources that GE spends to lower its tax bill, not just the many millions spent on clever accounting and accountants and the many millions spent on lobbying but also the many inefficient ways that GE structures its businesses just to avoid paying taxes and the many millions it invests in socially wasteful projects just in order to produce privately valuable tax credits.”²

But here’s the funny thing: despite the near-consensus on the disaster that is the U.S. tax code, the thing only gets more complex with each passing year—more crammed with conflicting incentives, and almost certainly more of a burden on the overall economy. According to the National Taxpayer Advocate, there were 4,428 changes to the tax code between 2001 and 2010.³ At last count, the tax code was 3.8 million

* Lee Drutman is a senior fellow in the program on political reform at New America.

¹ Bill Frenzel, “The Tax Code Is A Hopeless Complex, Economy-Suffocating Mess,” *Forbes*, April 4, 2013.

² Alex Tabarrok, “The 57,000 Page Tax Return,” *Marginal Revolution*, November 21, 2011.

³ Jason J. Fichtner and Jacob Feldman, *The Hidden Costs of Tax Compliance* (The Mercatus Center, May 20, 2013).

words (about six and half times the length of War and Peace). Estimates on the compliance costs range from \$215 billion to \$987 billion per year.⁴

Why is simplification so elusive? It is certainly not for lack of consensus about the problem, or for lack of smart people thinking about it. The problem is politics: when you have a tax code so over-filled with special interest provisions, those special interests are going to lobby aggressively to defend those proposals. They all have their allies in Congress, and they all have their carefully calibrated stories about why they need these special provisions. And so tax reform always seems to fail before it can get started.

If one wanted another way in which public policy limits economic growth, how about the rules around intellectual property? One recent study found that the existing regime, which allow so-called “patent trolls” to do nothing but hold patents and file lawsuits, has caused a significant decline in research and development spending.⁵ Decent patent reform actually looked like it might pass in 2014. But after clearing the House by a substantial margin, patent reform died in the Senate, killed by trial lawyers, pharmaceutical companies, and a few other beneficiaries of the current rules.

A longer essay could provide a longer litany of public policies that retard economic growth by limiting competition and imposing heavy costs on new market entrants. But I want to make a more general point in this essay. So let’s simply posit two premises that can generalize more broadly from these two examples:

1. There are many ways in which public policies distort market outcomes and limit economic growth.
2. These growth-constricting public policies have been very hard to change.

Certainly, I’m not the first to make these observations. Both Jonathan Rauch⁶ and Mancur Olson⁷ have written excellent books on this pathology. Nor will I be the first to pose a solution to this problem.

⁴ Ibid.

⁵ Timothy B. Lee, “New Study Shows Exactly How Patent Trolls Destroy Innovation,” *Vox*, August 19, 2014.

⁶ Jonathan Rauch, *Government’s End: Why Washington Stopped Working* (New York: Public Affairs, 1999).

⁷ Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities* (New Haven: Yale University Press, 1982).

But before I get to my “magic wand” solution, let me first explain what existing thinking around this problem has missed. For the sake of brevity, I’ll generalize broadly about liberals and conservatives here. (While there are many disagreements on certain policy outcomes between liberals and conservatives, I think there ought to be reasonable consensus on a wide range of policies that would limit rent-seeking.)⁸

Liberals tend to be optimistic about the potential for government to just create better public policies if only we could take money out of politics, or get lobbyists out of Washington—then government could finally pass reforms that get rid of all these market-distorting corporate giveaways that slow economic growth and allow for rent-seeking. Conservatives, by contrast, are pessimistic about the potential of government. They see every government rule and regulation as an opportunity for rent-seeking. They don’t like placing limits on money or lobbying (which they tend to see as valuable forms of participation)—rather, they say, just make government smaller, and there will be nothing left for the special interests to lobby for.

Both solutions actually suffer from the same omission. They ignore both policy complexity and government capacity.

Conservatives tend to conflate the size of government with the complexity of government. Even if you want a limited government, you still need some government, because markets require clear and predictably enforced rules in order to work well. Uncertainty and instability are inimical to economic growth. The question is whether those rules will be straightforward and clear, and thus capable of being predictably enforced (good for economic growth), or whether those rules will be needlessly complex, and thus open to all kinds of manipulation and rent-seeking (bad for economic growth). Liberals also ignore complexity. Liberals like making rules, and they tend to see market failures more often than conservatives do. But in making new rules, they tend to ignore old rules. They tend to view new rules in isolation, ignoring the overall complexity that they add to the system, and ways in which this complexity becomes self-defeating of the very principle of government efficiency.⁹

⁸ Ralph Nader, *Unstoppable: The Emerging Left-Right Alliance to Dismantle the Corporate State* (New York: Nation Books, 2014).

⁹ Steven M. Teles, “Kludgeocracy in America,” *National Affairs*, 2013.

If we accept that complexity is a problem, the next question is how do you reduce that complexity?

To understand my “magic wand” solution, a quick review of a basic law of physics is in order—specifically, the second law of thermodynamics, which states that in any system, the amount of entropy is always increasing. In other words, everything tends towards disorder and randomness. The second law of thermodynamics is the reason why your home gets messier over time. There are infinite possible arrangements of your household items and detritus. Only a few would you consider “ordered.” If you never bothered to clean your home (the path of least resistance, and least energy), it would become more and more difficult to live your life. The chaos and the clutter would intrude on basic daily tasks. So if you’re like most people, you invest energy into keeping your home clean. You may even pay somebody to keep it clean for you. But the important point is that your home doesn’t stay clean on its own. You have to invest resources into keeping it that way. This is how the second law of thermodynamics works. The only way to reduce the disorder in a particular system is to take energy from outside the system.

Government, like all other systems in the universe, adheres to the second law of thermodynamics. Governments make laws. Over time, they make more laws. The laws become more complicated. For government to follow the path of least resistance is simply to yield to the most direct pressures it faces. These pressures tend to be the special interests that hire lobbyists to pressure government, and the narrow short-term electoral incentives that re-election minded members of Congress face. Often, special interests influence the electoral pressures. Rent-seeking public policies resistant to change are simply the path of least resistance, given the forces at stake.

Both conservatives and liberals miss this fundamental point. Conservatives simply assume that the logic of their regulation-cutting reforms is apparent. But all the trimming and cutting requires hard work and constant maintenance (like your home, or your garden). The existing physics of the political system is against it. Almost every rule benefits somebody, and that somebody will fight to defend it. Changing the status quo in a system of checks and balances requires a good deal of energy. Somebody has to invest that energy. This means government needs more resources in order to get smaller.

Liberals, meanwhile, have a tendency to subscribe to the fantasy of the Solomonic lawmaker—the idea that our politicians would be wise and just if only they could legislate without interaction with those businesses who are actually affected by their rules. This ignores the fact that to make good decisions, lawmakers actually need lots of information. They also need knowledge, and they need wisdom. These are hard to acquire—they take considerable resources.

Let's face some facts. Congress is full of many smart, dedicated, hard-working staffers. But most of them are short-termers. They work in Congress for a few years, and then they move on. The hours are long and unpredictable, the pressure is high, and the quarters are cramped. They tend to be young and stretched thin. Many hope to become lobbyists someday. After all, Congress doesn't pay nearly as well as K Street. As Congressman Jim Cooper (D-Tenn.), once put it, "Capitol Hill is a farm league for K Street."¹⁰

Congressional offices are thus stretched thin. They lack resources to develop and execute policies. What this means is that to get its work done, Congress has to rely significantly on lobbyists representing some very narrow interests, primarily large corporations and business associations who tend to benefit from the status quo. It's hard to get anything done in Washington if you don't have significant help from outside lobbyists, anyway. Lobbyists play essential roles in shepherding legislation through—drafting and vetting laws, building coalitions, and ensuring widespread support.¹¹

By my count (looking at disbursement data), the Senate spent \$490 million on compensation, and the House spends \$876 million, a total of \$1.37 billion, in 2013. If this seems like a lot of money, consider that it is 0.03 percent of the total federal budget of \$3.6 trillion. It is also less than half of the \$3.24 billion spent on direct lobbying in 2013 (which itself is probably less than half of the money actually spent on lobbying). Since the Republicans took control of the House in January 2011, they've cut committee staffs by 20 percent. Congress is being run on the cheap.

Here's what I would do with my wave of the magic wand. I would triple the amount that Congress spends on staff (keeping it still at

¹⁰ Lawrence Lessig, *Republic, Lost: How Money Corrupts Congress—and a Plan to Stop It* (Twelve Books, 2011), p. 123.

¹¹ Richard L. Hall and Alan V. Deardorff, "Lobbying as Legislative Subsidy," *American Political Science Review* 100, no. 1 (2006): 69–84.

just under 0.1 percent of the total federal budget). I'd also concentrate that spending in the policy committees. I'd give those committees the resources to be leading institutions for expertise on the issues on which they deal. I'd also give these committees the resources to hire their own experts—economists, lawyers, consultants, etc.¹² But I'd also make sure that these committees were not explicitly partisan. Rather than Republicans and Democrats having separate committee staffs, have one committee staff of professionals and experts. Staff could be a mix of political leanings. But let them be one team, where they argue and hash out ideas together.

Imagine if the Senate Judiciary Committee could hire top attorneys in the field of intellectual property. It could develop the policy capacity to develop patent reform, and feel confident in passing it through. It could convince other Senators not to listen to the trial attorneys and pharmaceutical companies. Imagine if the House Ways and Means Committee or Senate Finance Committee had the policy capacity to develop meaningful tax reform, and the resources to control and shape the process. Imagine also if committees could hire top economists and lawyers to help them develop and vet these proposals and convince other members. Congressional committees would have the energy and capacity to reduce the entropy that inevitably creeps into the public policy process, rather than merely contribute to it by following the path of least resistance. Rather than simply responding to pressure from lobbyists, they'd have authority and capacity to integrate suggestions from lobbyists and think more broadly about the system in its entirety.

Writing this essay for the Cato Institute, I hear my small-government doubters, skeptical that I want to spend more money on government. But let's face it: Congress is going to exist no matter what, and government is going to continue to write rules and regulations because new problems will continue to arise in society. Moreover, there are thousands of pages of rules and regulations that already exist, many of which are inimical to economic growth. The level of entropy in the system is already frighteningly high, and it is constricting the long-term growth prospects of the economy. The only way to simplify

¹² See, e.g., Heather K. Gerken and Alex Tausanovitch, "A Public Finance Model for Lobbying: Lobbying, Campaign Finance, and the Privatization of Democracy," *Election Law Journal: Rules, Politics, and Policy* 13, no. 1 (March 1, 2014): 75–90.

government regulation, and to fix the policies that cripple economic growth, is to invest outside energy to combat the entropy. Consider Singapore: government there pays top dollar to attract high-quality bureaucrats. As a result, the country is exceptionally well-run. And it consistently ranks atop the list of the most economically free countries in the world.

If we do government on the cheap, we get what we pay for. If we ignore the second law of thermodynamics, we get entropy. If we want a government that can maintain policies that support economic growth, we need to invest in government that has the energy and capacity to fight the paths of least resistance that draw us toward complexity, that limit competition and innovation, and allow for massive rent-seeking. To think otherwise is to ignore the basic laws of physics.

11. Reforming Regulation

*Susan E. Dudley**

I would use the magic economic growth wand Cato has given me to reform the U.S. regulatory system.

In the 125 years since Congress created the first regulatory agency,¹ the number of agencies and the scope and reach of the regulations they issue have increased dramatically. In 2014, there were over 70 federal regulatory agencies, employing over 300,000 people to write and implement regulations.² Every year, they issue thousands of new regulations, which now occupy over 168,000 pages of regulatory code.

Without a counterfactual, it is impossible to know what a more restrained regulatory environment would have meant for economic growth and well-being in the United States, though some estimates suggest the effects are very large.³ However, the World Bank observed more than a decade ago:

Although macro policies are unquestionably important, there is a growing consensus that the quality of business regulation

* Susan E. Dudley is the director of the George Washington University Regulatory Studies Center.

¹ The Interstate Commerce Act established the Interstate Commerce Commission in 1887 to regulate railroad rates. "Interstate Commerce Act (1887)," <http://www.ourdocuments.gov/doc.php?flash=true&doc=49&page=pdf>.

² Susan E. Dudley and Melinda Warren, "2015 Regulators' Budget: Economic Forms of Regulation on the Rise," Joint Report of the George Washington University Regulatory Studies Center and the Weidenbaum Center at Washington University in St. Louis, July 9, 2014, <http://regulatorystudies.columbian.gwu.edu/2015-regulators-budget-economic-forms-regulation-rise>. Note that "agencies that primarily perform taxation, entitlement, procurement, subsidy, and credit functions are excluded from this report," so these figures exclude staff developing and administering regulations in the Internal Revenue Service, the Centers for Medicaid and Medicare Services, and so forth.

³ John W. Dawson and John J. Seater, "Federal Regulation and Aggregate Economic Growth," *Journal of Economic Growth* 18 (2013): 133–77. This recent empirical analysis of the effect of regulations on economic growth reached the dramatic conclusion that "GDP at the end of 2011 would have been \$53.9 trillion instead of \$15.1 trillion if regulation had remained at its 1949 level."

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and the institutions that enforce it are a major determinant of prosperity. . . . Heavier regulation of business activity generally brings bad outcomes, while clearly defined and well-protected property rights enhance prosperity.⁴

New crises (real or perceived) inevitably lead to new legislation and new regulations. Regulations can provide a competitive advantage, so it is often in the self-interest of regulated parties to support them⁵ (often hiding behind public interest arguments⁶), even while other interests oppose them. The resulting rent-seeking contests⁷ can destroy more economic value than even the most generous assessment of the benefits of a rule.⁸ The renewable fuel standards, for example, have been shown to raise consumer prices and harm the environment,⁹ but they remain because they benefit influential agricultural interests in key election states.¹⁰

Furthermore, since regulations often favor market incumbents, once in place they gain a constituency and are almost impossible to dislodge. So we see a ratchet effect,¹¹ where new regulations are piled on top of old with little attention paid to how they might affect

⁴ World Bank Group, *Doing Business in 2004: Understanding Regulation* (Washington: World Bank, 2003), pp. viii, 83, <http://www.doingbusiness.org/~media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB04-FullReport.pdf>.

⁵ George Stigler, "The Economic Theory of Regulation," *Bell Journal of Economics* 2 (1971): 3–21.

⁶ Adam Smith and Bruce Yandle, *Bootleggers and Baptists* (Washington: Cato Institute, 2014).

⁷ James Buchanan, Robert Tollison, and Gordon Tullock, eds., *Toward a Theory of the Rent-Seeking Society* (College Station: Texas A&M Press, 1980).

⁸ Gordon Tullock, Arthur Seldon, and Gordon Brady, *Government Failure: A Primer in Public Choice* (Washington: Cato Institute, 2002).

⁹ Sofie E. Miller, "Crony Environmentalism," *Regulation* 36, no. 1 (2013): 2–7; Susan E. Dudley, "What Is the Effect of Renewable Fuels Mandates?" Federalist Society, April 2013, <http://executivebranchproject.com/what-is-the-effect-of-renewable-fuels-mandates>.

¹⁰ NBC recently ranked Des Moines, Iowa, as the richest city in America. "Des Moines, Where Regular Folks Can Live the Rich Life," *Today*, January 23, 2014, <http://www.today.com/money/des-moines-where-regular-folks-can-live-rich-life-2D11965288>.

¹¹ Susan E. Dudley and Bruce Yandle, "Is 9/11 a Crisis to Be Followed by a Leviathan?" Mercatus Center, George Mason University, September 2002, <http://mercatus.org/publication/9-11-crisis-be-followed-leviathan>.

complex market dynamics and even less effort applied to understanding their effects once in place.¹²

Given those pressures, reforming our regulatory system in a way that allows innovation to flourish and that respects individual choices may seem daunting. However, we do have a historic model for successful regulatory reform. About 40 years ago, the U.S. regulatory system underwent an important transformation. Scholarship in the fields of economics, antitrust, and law generally supported the idea that “economic regulation” of private-sector prices, product quality, entry, and exit tended to keep prices higher than necessary, to the benefit of regulated industries, and at the expense of consumers.¹³ Bipartisan efforts by policy entrepreneurs in the Ford, Carter, and Reagan administrations, in Congress, in the judiciary, and at think tanks eventually led to the abolition of whole agencies, such as the Civil Aeronautics Board and the Interstate Commerce Commission, and the removal of economic regulation in several previously regulated industries.¹⁴

This wave of deregulation is generally regarded as a success, having lowered consumer prices, increased choices, and aligned service quality with customer preferences. More competitive markets have generated real gains—and not just reallocated benefits—for consumers and society as a whole, and markets have evolved in beneficial ways that were not anticipated prior to deregulation.¹⁵

Unfortunately, we seem to have forgotten the lessons of the successful economic deregulation of the 1970s and 1980s. Economic forms

¹² Michael Mandel and Diana Carew, “Regulatory Improvement Commission: A Politically-Viable Approach to U.S. Regulatory Reform,” Progressive Policy Institute, May 2013, http://www.progressivepolicy.org/wp-content/uploads/2013/05/05.2013-Mandel-Carew_Regulatory-Improvement-Commission_A-Politically-Viable-Approach-to-US-Regulatory-Reform.pdf; Susan E. Dudley, “A Retrospective Review of Retrospective Review,” George Washington University Regulatory Studies Center, Regulatory Policy Commentary, May 7, 2013, <https://regulatorystudies.columbia.gwu.edu/sites/regulatorystudies.columbia.gwu.edu/files/downloads/20130507-a-retrospective-review-of-retrospective-review.pdf>.

¹³ George Stigler, “The Economic Theory of Regulation,” *Bell Journal of Economics and Management Science* 2 (1971): 3–21, <http://www.sjsu.edu/faculty/watkins/stigler.htm>.

¹⁴ Martha Derthick and Paul J. Quirk, *The Politics of Deregulation* (Washington: Brookings Institution Press, 1985).

¹⁵ Clifford Winston, “U.S. Industry Adjustment to Economic Deregulation,” *Journal of Economic Perspectives* 12, no. 3 (1998): 89–110.

of regulation are on the rise.¹⁶ The Affordable Care Act directs the Department of Health and Human Services to set price and quality standards, regulating what insurance plans must cover and what consumers must purchase. The Dodd-Frank Wall Street Reform and Consumer Protection Act granted newly formed agencies broad discretion to regulate the characteristics and prices of financial products and even to assume control of and liquidate financial institutions. The Departments of Transportation and Energy are busy issuing mandatory energy-efficiency levels for new cars and appliances,¹⁷ and assuring us that, though these restrict consumer choice, they will make individuals economically better off.¹⁸ And the president is urging the Federal Communications Commission to regulate broadband Internet as a public utility,¹⁹ based on 19th-century “common carrier” concepts.²⁰

Since at least the 1970s, benefit–cost analysis (BCA) has been held out as a tool to ensure that new regulations provide social benefits that are greater than their costs. In theory, careful, objective BCA could ferret out rules that cost more than they are

¹⁶ Dudley and Warren, “2015 Regulators’ Budget.”

¹⁷ Sofie E. Miller, “Public Interest Comment on the Department of Energy’s Direct Final Rule: Energy Conservation Standards for Residential Dishwashers,” George Washington University Regulatory Studies Center, September 14, 2012, http://regulatorystudies.columbian.gwu.edu/sites/regulatorystudies.columbian.gwu.edu/files/downloads/DOE_EERE_2011_BT_STD_0060.pdf; Sofie E. Miller, “Public Interest Comment on the Department of Energy’s Proposed Rule: Energy Conservation Standards for Commercial Refrigeration Equipment,” George Washington University Regulatory Studies Center, November 12, 2013, http://regulatorystudies.columbian.gwu.edu/sites/regulatorystudies.columbian.gwu.edu/files/downloads/DOE_EERE-2010-BT-STD-0003.pdf; Sofie E. Miller, “Public Interest Comment on the Department of Energy’s Proposed Rule: Energy Conservation Program: Energy Conservation Standards for Residential Furnace Fans,” George Washington University Regulatory Studies Center, December 18, 2013, http://regulatorystudies.columbian.gwu.edu/sites/regulatorystudies.columbian.gwu.edu/files/downloads/SMiller_DOE_EERE-2010-BT-STD-0011.pdf.

¹⁸ Susan E. Dudley, “OMB’s Reported Benefits of Regulation: Too Good to Be True?” *Regulation* 36, no. 2 (2013): 26–30.

¹⁹ “The President’s Message on Net Neutrality,” White House, Washington, November 2014, <http://www.whitehouse.gov/net-neutrality#section-read-the-presidents-statement>.

²⁰ Randolph May and Seth Cooper, Comments of the Free State Foundation before the Federal Communications Commission in the Matter of Protecting and Promoting the Open Internet, GN Docket no. 14-28, July 15, 2014, http://www.freestatefoundation.org/images/Open_Internet_Proceeding_Initial_Comments_071514_-_Final.pdf.

worth or that simply transfer wealth to favored interests and could focus regulators' efforts instead on rules that maximize social welfare.

BCA has not been the silver bullet that some may have hoped, however. First, many statutes ignore or explicitly prohibit analysis of tradeoffs.²¹ Second, the Hayekian knowledge problem²² is enormous, as *ex ante* BCA necessarily rests on hypotheses of how the regulatory action will alter outcomes and what they will cost, and regulators rarely look back to test those hypotheses with real data.²³ Third, agencies have strong incentives to demonstrate through analysis that their desired regulations will result in benefits that exceed costs. Regulatory impact analyses are often developed after decisions are made and used to justify rather than inform them.²⁴ BCA is increasingly used to justify massive one-size-fits-all regulatory regimes based on regulators' judgments about what individuals' values, preferences, and behavior should be.

To address that problem, at a minimum, agencies should be required to (a) present evidence showing that they have identified a material failure of competitive markets or public institutions that requires a federal regulatory solution and (b) provide an objective evaluation of alternatives (including the alternative of not regulating) and of the competitive and distributional impacts of different approaches.²⁵

Also, since most legislative and executive branch reforms have focused on analyzing and improving new regulations, agencies seldom look back to evaluate whether existing regulations are having their intended effects. Initiatives to require *ex post* evaluation

²¹ Susan E. Dudley and George M. Gray, "Improving the Use of Science to Inform Environmental Regulation," in *Institutions and Incentives in Regulatory Science*, ed. Jason Scott Johnston (New York: Lexington Books, 2012), pp. 165–98.

²² Friedrich A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35, no. 4 (1945): 519–30.

²³ Cary Coglianese, "Moving Forward with Regulatory Lookback," *Yale Journal on Regulation* 30 (2013): 57–66.

²⁴ Susan E. Dudley, "Regulatory Reform: Lessons Learned, Challenges Ahead," *Regulation* 32, no. 2 (2013): 6–11.

²⁵ Exec. Order No. 12866, 58 Fed. Reg. 190 (October 4, 1993), <http://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf>.

of regulations that are in effect have met with limited success,²⁶ largely because they did not change the underlying incentives. Variations on a regulatory budget (such as the one-in, one-out policy in the United Kingdom) could provide regulators incentives to evaluate and withdraw ineffective regulations.

However, it is important to recognize that regulators, like everyone else, are susceptible to what behavioral psychologists call “confirmation bias.”²⁷ Regardless of what analytical requirements they face, their single-mission focus will lead them to discount data, research, values, and perspectives that do not corroborate their preferred regulatory action.²⁸

Thus, more fundamental change is needed. Many of our regulations are still designed for the centuries-old concept of asymmetric information, where vulnerable consumers need protection from duplicitous salesmen. But the world has changed dramatically in recent years. New technologies and social media enable individuals to learn, not only from their own experiences, but from those of others, and brand reputations thrive or fail on the basis of customer reviews.

The most powerful technology for solving the Hayekian “knowledge problem” and effectively using the decentralized wisdom of crowds is a very old one: the market.²⁹ There are countless opportunities to improve regulatory policy by giving greater deference to the dispersed knowledge that is channeled through market forces. We should view with extreme skepticism regulatory proposals that are based on the assumption that individuals are irrational and depend on regulators to maximize their private welfare.³⁰

²⁶ Susan E. Dudley, director, George Washington University Regulatory Studies Center, Testimony before the Senate Homeland Security and Governmental Affairs Committee, 112th Cong., 1st sess., July 20, 2011, http://regulatorystudies.columbian.gwu.edu/files/downloads/Dudley_HSGAC_20110718.pdf.

²⁷ For a short description of confirmation bias, see Robert Todd Carroll, *The Skeptic's Dictionary*, <http://skepdic.com/confirmbias.html>.

²⁸ Brian Mannix, “The Planner’s Paradox,” *Regulation* 26, no. 2 (2003): 8–11.

²⁹ John O. McGinnis, *Accelerating Democracy: Transforming Governance through Technology* (Princeton, NJ: Princeton University Press, 2013).

³⁰ Brian Mannix, “The Troubling Prospect of ‘Behavioral’ Regulation,” George Washington University Regulatory Studies Center, Regulatory Policy Commentary, April 19, 2010, <http://regulatorystudies.columbian.gwu.edu/files/downloads/20100419-mannix-behavioralists.pdf>.

As we lament the limitations of BCA, it is helpful to recall that the economic analyses that motivated regulatory reforms in the 1970s and 1980s were not primarily benefit-cost analyses. Instead, economists examined industry organization and barriers to competition, and pointed out the many ways that regulation was harmful. Consumers may not always recognize the advantages of deregulation, or capitalism, or *laissez-faire*, or free markets; but they do seem to recognize that *competitive* markets work to their advantage. They like choice, and knowing not only that they can keep their doctor, but also that they can *fire* their doctor—or their insurer—if they are not happy.

Greater economic growth and well-being are possible if our magic wand helps us focus on the benefits that competitive markets bring, gives us a greater reliance on the ability of market forces to regulate behavior, and gives us a greater respect for the diversity of preferences. Policies should be designed in ways that encourage competition and allow for experimentation. Greater emphasis on federalism would allow regulators and market participants to learn from natural experiments on a smaller scale and to modify policies accordingly. Less reliance on one-size-fits-all federal regulatory solutions would also encourage innovations at the state and local levels in ways that respect and reflect the diversity of conditions and preferences across the country.

12. An Urban Agenda for Economic Growth

*Richard Florida**

With the first wave of my magic wand, I would do one thing to brighten America's prospects for long-run economic growth. I would strengthen and empower our cities—the fundamental drivers of innovation and economic growth.

Let me say at the outset, I am extremely optimistic about America's economic future. Technologically, we stand head and shoulders above other nations. America's emerging knowledge-energy economy is more powerful than the older industrial model that powered our growth for much of the past two centuries and that we are now leaving behind. As I wrote in the *Atlantic*:

What other nation has even one start-up ecosystem that can rival Silicon Valley's, San Francisco's, New York's, or Boston's—to say nothing of Seattle's or Austin's? What other nation boasts the number of world-class universities and college towns that America has? What other advanced nation can combine such knowledge resources with such abundant energy resources?¹

But to realize our impressive potential, we will need to empower our great cities and metro areas—from the great Boston–New York–Washington corridor to Atlanta, Miami, and Houston and the great West Coast hubs of San Francisco and Los Angeles and everything in between—which power our capacity for innovation, spur our connections to the global economy through trade and talent flows, and underpin our prospects for sustained long-run economic growth.

* Richard Florida is director of the Martin Prosperity Institute at the University of Toronto's Rotman School of Management, Global Research Professor at New York University, and senior editor at the *Atlantic*, where he cofounded CityLab (<http://www.citylab.com/>).

¹ Richard Florida, "The Boom Towns and Ghost Towns of the New Economy," *Atlantic*, October 2013, <http://www.theatlantic.com/magazine/archive/2013/10/the-boom-towns-and-ghost-towns-of-the-new-economy/309460/>.

Harvard economist and former treasury secretary Larry Summers has been very vocal about what's wrong with our economy. He fears that it is in a permanent state of "secular stagnation," which by his definition² is what happens when "the normal, self-restorative properties of the economy might not be sufficient to allow sustained full employment along with financial stability without extraordinary expansionary policies."

The term was coined during the Great Depression by another Harvard professor, Alvin Hansen,³ often called the "American Keynes." The United States' declining population growth, he told the American Economic Association in 1938, a lack of new territories for it to expand into, combined with the "failure of any really important innovations of magnitude sufficient to absorb large capital outlays," was the very "essence of secular stagnation," a condition, he said, that causes "sick recoveries which die in their infancy and depressions which feed on themselves and leave a hard and seemingly immovable core of unemployment."⁴ Hansen's prescription, like Summers's, was an open-ended regime of economic expansionism—not just low interest rates but substantial government investment in infrastructure to spur demand and to get and keep the economy moving.

Paul Krugman has been voluble on the subject of public investment too. "We have huge infrastructure needs," he wrote in the *New York Times*, "especially in water and transportation . . . borrowing to build roads, repair sewers and more seems like a no-brainer."⁵

Listening to them brings to mind John Maynard Keynes's famous prescription for the economy in his *General Theory of Employment, Interest, and Money*: "Fill old bottles with banknotes, bury them at suitable depths in disused coalmines" and wait for the private sector to employ people to dig them up.⁶

² Ezra Klein, "Larry Summers on Why the Economy Is Broken—and How to Fix It," *Washington Post*, January 14, 2014, <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/01/14/larry-summers-on-why-the-economy-is-broken-and-how-to-fix-it/>.

³ For more on Alvin Hansen, see "Alvin Harvey Hansen," *Encyclopaedia Britannica*, <http://www.britannica.com/EBchecked/topic/254571/Alvin-Harvey-Hansen>.

⁴ Timothy Taylor, "Secular Stagnation: Back to Alvin Hansen," *Conversable Economist* blog, December 12, 2013, <http://conversableeconomist.blogspot.com/2013/12/secular-stagnation-back-to-alvin-hanson.html>.

⁵ Paul Krugman, "Ideology and Investment," *New York Times*, October 26, 2014, <http://www.nytimes.com/2014/10/27/opinion/paul-krugman-ideology-and-investment.html>.

⁶ John Maynard Keynes, *The General Theory of Employment, Interest and Money* (Basingstoke, UK: Palgrave Macmillan, 1936), p. 116.

Simply pumping federal dollars into random infrastructure projects won't do the trick. What really powers economies out of great crises (what I call "Great Resets")⁷ is focused spending on a new geographic growth model. Economists call this a "spatial fix," a concept initially advanced by the geographer David Harvey, who argued that technology-powered growth is insufficient to restore economies; what is also needed are new patterns of geographic development.⁸

Perhaps the best example of how a spatial fix works is the great suburban expansion of the 1950s, 1960s, and 1970s. The economy sputtered in the years after World War II. What ultimately powered the great golden age of American economic expansion was neither the New Deal nor military spending. During that period, the United States did not randomly fill "old bottles with banknotes" to borrow Keynes's famous phrase; it used those funds to build an enabling infrastructure that could spur and support the economic engine of industrial capitalism, mass suburbanization. Enabled and accelerated by massive public subsidies for roads and home loans, suburbanization enabled Americans to conquer the "crabgrass frontier," in Kenneth T. Jackson's memorable phrase.⁹ Moreover, it provided a powerful form of geographic Keynesianism in the form of demand for houses, cars, appliances, and durable goods flowing off the great production lines of factory complexes in the Midwest.

But, as we all recognize, that old growth model has outlived its shelf life. In fact, the last attempt to prop it up and inflate it with loose financing techniques and subprime loans was a primary cause of the great financial and economic collapse of 2008. Homeownership has dropped to its lowest level in two decades, and the housing market seems unlikely to recover.

The key to recovery lies in our cities. Talented and ambitious people and investment are already flocking back to them from the suburbs—a process Alan Ehrenhalt has dubbed the "great inversion."¹⁰ Restoring and strengthening our cities and urban areas—encouraging

⁷ Richard Florida, *The Great Reset: How New Ways of Living and Working Drive Post-Crash Prosperity* (Toronto: Random House Canada, 2010).

⁸ David Harvey, "Globalization and the 'Spatial Fix,'" *Geographische Revue* 2 (2001): 23–30, http://publishup.uni-potsdam.de/opus4-ubp/files/2251/gr2_01_Ess02.pdf.

⁹ Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985).

¹⁰ Alan Ehrenhalt, *The Great Inversion and the Future of the American City* (New York: Knopf, 2012).

density not sprawl, and building denser, more mixed-use, transit-connected suburbs—are the new spatial fix of our time.

For one, cities are the key source of creativity and innovation—and have been so all along. Tyler Cowen argues that we are enduring a “great stagnation,” in which the low-hanging fruits of technological advance have largely been exhausted, and the rates of innovation and economic growth have slowed.¹¹ That may be sure in the short term, but history suggests that is not likely to be the case going forward. It’s not Hansen, but his Harvard colleague Joseph Schumpeter who got this right, by identifying the role of innovators and entrepreneurs in powering the great wave of “creative destruction”¹² that ultimately powers long-run growth. As the late Christopher Freeman has shown, innovation declines greatly during the lead-up to great crises and their immediate wake.¹³ But that innovative engine restarts again ever more powerfully as recovery sets in. According to the economic historian Alexander Field,¹⁴ the most “technologically progressive decade” of the past century was not the boom years of the 1950s or 1960s nor the high-tech years of the 1980s or 1990s; rather, it was the 1930s. Innovation appears to be picking up again today, according to the detailed analysis of patent records by the economist Deborah Strumsky.¹⁵

Today, it’s cities, not individual geniuses or megacorporations that are the great fonts of innovation. They are, in the words of Matt Ridley, where ideas come to “have sex.”¹⁶ As Jane Jacobs taught long ago,¹⁷ and Robert Lucas later formalized,¹⁸ cities spur the mixing and mingling of talented people that lead to technological inventions

¹¹ Tyler Cowen, *The Great Stagnation: How America Ate All the Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better* (New York: Dutton, 2011).

¹² Michael W. Cox and Richard Alm, “Creative Destruction,” *The Concise Encyclopedia of Economics*, 2008, <http://www.econlib.org/library/Enc/CreativeDestruction.html>.

¹³ Christopher Freeman, *The Economics of Industrial Innovation* (Cambridge, MA: MIT Press, 1997).

¹⁴ Alexander Field, *A Great Leap Forward: 1930s Depression and U.S. Economic Growth* (New Haven, CT: Yale University Press, 2012).

¹⁵ Richard Florida, “Where America’s Inventors Are,” CityLab, October 9, 2013, <http://www.citylab.com/work/2013/10/where-americas-inventors-are/7069/>.

¹⁶ Matt Ridley, *The Rational Optimist: How Prosperity Evolves* (New York: HarperCollins, 2010), p. 1.

¹⁷ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1992).

¹⁸ “Selected Bibliography for Robert E. Lucas Jr.,” University of Chicago Library, <http://www.lib.uchicago.edu/e/busecon/econfac/Lucas.html>.

and the formation of entrepreneurial enterprises. For this reason, cities are the only biological or social organisms whose metabolisms speed up as they get larger.¹⁹

For a short period during the unique age of American hegemony and suburban expansion, we veered from that course and believed that innovation could come from insulated suburban corporate research and development campuses and high-tech nerdistan²⁰ in places like Silicon Valley and the suburbs surrounding Boston, Seattle, and Austin. But now, startups and venture capital, as well as talent, are flowing back to cities and the urban core. Today, San Francisco has outpaced Silicon Valley to become the world's leading center for startups and venture capital investment. Lower Manhattan is home to hundreds of startups and is drawing more venture capital than Boston. My own recent analysis²¹ found that center cities and their walkable suburbs account for the great majority of startups and venture capital investment in America's leading high-tech hubs.

Cities form the fundamental platforms for innovation. They are where the talent, the customers, the end users, the large industries in need of transformation, and the funders are. They are the arenas for surfacing the big new problems that need to be solved.

More than that, they are the fundamental social and economic organizing unit of our time, playing a role analogous to the farm in the agricultural age or the factory in the industrial age. As recently as a century and a half ago, the great mass of humanity worked in agriculture. But mechanization has made agriculture more efficient; just 1 or 2 percent of the workforce of the advanced countries work on farms today, but they are more productive than they ever were. Later, with the Industrial Revolution, the mass of people in the advanced world took up work in factories. But thanks to the effects of automation and other productivity improvements and globalization, just 5 to 6 percent of the people in the advanced countries work in direct production in factories.

¹⁹ "Urban Metabolism" Defines & Constrains All Cities (Santa Fe, NM: Santa Fe Institute, 2011), video, 7 minutes, <http://www.santafe.edu/news/item/atlantic-urban-metabolism/>.

²⁰ "A locus of high-tech industry." For a more complete definition, see "nerdistan," *WordSense.eu Dictionary*, <http://www.wordsense.eu/nerdistan/>.

²¹ Richard Florida, "Startup City: The Urban Shift in Venture Capital and High Technology," Martin Prosperity Institute, March 2014, http://martinprosperity.org/media/Startup%20City_14-03-14.pdf.

The past several decades have seen the rise of a knowledge-based creative economy. According to my own estimates, roughly 33 to 40 percent or more of the workforces of the advanced countries are members of what I have dubbed the creative class of scientists, techies, professionals, artists, and media types. They are flowing to cities and denser, walkable, transit-served suburbs, not simply because they prefer to live there, but because they need to be close to one another. In the reviving urban districts of major cities, the creative class comprises as much as 80 to 90 percent of the workforce.

Just as it transformed agriculture and industry, the inexorable economic logic of capitalism is changing the form and functions of the arena of waste that is the modern city. Although they are still in their infancy, companies like Uber and Airbnb are making far greater and more efficient use of static assets like cars and space. So much more can and will be done.

But this more innovative and efficient city will not simply enact itself. Spatial fixes require whole new sets of fundamental infrastructure. The rise of the railroad unified the nation. The historian of technology Thomas Hughes astutely analyzed the “system innovations” such as the electrical power grid that industrial-era innovators like Thomas Edison put into place.²² Streetcars and cable cars and ultimately subways enabled the expansion of the city during the 19th century, as the great urban historian Sam Bass Warner has shown. And the road-building boom and Interstate Highway System of the 1950s and 1960s paved the way for the great suburban expansion.

What is needed today is a new kind of infrastructure—a more urbanized growth model that can help reset the economy anew and power the next round of growth and expansion. Transit, both within cities and between them, including high-speed rail, needs to be dramatically upgraded and expanded; the barriers that are preventing the construction of more affordable housing need to be removed. This new growth model requires a lot more than fixing random bridges and filling potholes. It demands a focused effort at city building—incentives and policies that encourage density rather than sprawl; transit rather than highways; and high-speed rail that can connect sagging places to more vibrant cities, creating a larger template for growth and expansion.

²² Thomas Parke Hughes, *Networks of Power: Electrification in Western Society, 1880–1930* (Baltimore: Johns Hopkins University Press, 1993).

But if cities enable and drive growth, they don't distribute it equitably; too many people and too many places are left behind. The new job market is starkly divided between high-skill, high-pay knowledge workers and low-skill, low-pay service workers. Creative class workers may be renovating once-blighted neighborhoods in postindustrial success cities like New York; Washington, D.C.; Boston; and San Francisco, but the country's old industrial cities continue to languish, and the pace of building in sprawling Sunbelt cities like Phoenix and Las Vegas has slowed to a standstill. And even the richest cities have entrenched poverty—as poor people are priced out of their gentrifying neighborhoods, many are decamping for the suburbs, where poverty rates are rising at a faster pace than they are in cities. Far from being flat, this increasingly urbanized and clustered world is dangerously spiky, concentrated, and divided, across cities and within them as well, with clusters of concentrated advantage juxtaposed with those of concentrated disadvantage.

Most worrisome, America's great middle class is sagging; for the first time in the country's history, American children's prospects are worse than their parents'. The recovery may be full-blown for the upper one-third of the income ladder, but for the other 67 percent, things are getting worse. Needless to say, none of these trends are sustainable.

It's cities that provide the mechanism for rebuilding our middle class. We forget that the good, family-supporting factory jobs that we now mourn the loss of were not always so. We actively transformed them from dirty, dangerous, low-paid work in "satanic mills" to safer, more stable middle-class jobs via the social compact between industry, labor, and government. Cities were where we first did this.

Today, cities and mayors are already beginning to take steps to upgrade low-skill, low-wage service work and, in some cases, are establishing a wage floor by imposing minimum wages tied to local costs of living. Most importantly, large vibrant cities continue to attract immigrants and provide avenues for upward social mobility that are declining in too many other places across the nation and the world.

At the end of the day, I am an optimist. America's future can be even better than its past. But the key to getting there—to reigniting innovation, spurring long-run prosperity, and rebuilding our sagging middle class—lies in strengthening and empowering our system of cities, our greatest asset of all.

13. Get the Fiscal House in Order

*William G. Gale**

As policymakers search for ways to raise economic growth and improve the living standards of future generations, a major priority should be to get our long-term fiscal house in order.

Judging by the lack of political attention to deficits and debt in 2014, one might think that the fiscal problem has been solved.¹ While it is true that long-term fiscal prospects have improved over the past few years—as a result of the spending cuts in 2011, the expiration of most of the 2011–2012 tax cuts in 2013, and a reduction in projected health care cost growth—there is still a long way to go. The underlying fiscal imbalance may be forgotten, but it is far from gone.

Even ignoring projections for the future, the *current* debt to gross domestic product (GDP) ratio of 74 percent is far higher than at any time in U.S. history except for a brief period around World War II. The painful budget deals in 1990 and 1993 occurred when the debt–GDP ratio was 25 percent of GDP lower than it is now. The ratio averaged 37 percent in the 50 years before the Great Recession of 2008–2009, and it was at 35 percent in 2007. There is little mystery why the debt–GDP ratio grew substantially since then—largely the recession and, to a smaller extent, countercyclical measures. And although the stimulative measures have helped the economy, the higher debt load will burden the economy in the future.

Reasonable projections of the effects of continuing current policy indicate that the debt ratio will rise higher over time, to about 82 percent by 2024, about 100 percent by 2033, and about 200 percent

* William G. Gale is the Arjay and Frances Fearing Miller Chair in federal economic policy at the Brookings Institution and the codirector of the Urban Institute-Brookings Institution Tax Policy Center. He thanks Len Burman, Howard Gleckman, and Eric Toder for helpful comments and Aaron Krupkin for research assistance.

¹ Alan J. Auerbach and William G. Gale, “Forgotten but Not Gone: The Long-Term Fiscal Imbalance,” *Tax Notes* 144, no. 13 (2014): 1555–70.

by 2059. Asking about the “cause” of this increase is tantamount to asking which side of the scissors does the cutting. At the risk of oversimplifying, conservatives blame rising entitlement spending, especially in Medicare, Medicaid, and Social Security, and see cutting spending as the solution. Liberals view the problem mostly as an imbalance between what the government has promised and what it has committed to collect in revenues and see the solution as reconciling those imbalances through a combination of spending cuts and tax increases.

The budget projections are marked by significant uncertainty, which is sometimes used as a reason not to do anything; after all, the debt might drop on its own accord. But uncertainty cuts both ways; we might also find debt significantly higher. After all, the budget projections assume that there will be no recessions, no wars, and no new programs.

It is worth emphasizing that our fiscal situation is not a crisis. The government has the overall resources to pay its bills for the foreseeable future. We are not in danger of a Greek-style financial meltdown, unless policymakers are foolish enough to trigger a default by failing to raise the debt limit in a timely manner.

Nevertheless, the magnitudes are large. Getting the economy back to the long-term debt–GDP average of 36 percent by 2040 would require permanent spending cuts, tax increases, or both that totaled 3.1 percent of GDP starting in 2014, a figure that rises to 3.9 percent of GDP if the changes are delayed until 2019.²

Rising long-term debt reduces prospects for future economic growth. Long-term growth occurs through expansion of the quality and quantity of the labor force and the capital stock. But sustained increases in federal deficits and debt reduce net national saving—the combined saving of the private and public sectors.

That reduction could result in less investment or higher inflows of capital from abroad to help finance investment here. To the extent that investment declines, there will be less improvement in the quality and quantity of physical capital and possibly in human capital as well. Slower investment turns into slower growth of domestic output, which reduces the growth of household income over time.

To the extent that we stem the reduction in investment by borrowing more from the rest of the world, there will be increased future

² Ibid.

debt payments to foreigners. With a growing share of output that would be channeled to foreigners, the growth of U.S. household income would still be held back.

The theory behind these effects is well thought out. There is no economic model that suggests that sustained deficits and debt, where the spending is not all invested, would be anything but growth retarding. But how big are the effects?

A number of studies suggest significant effects. Illustrative calculations by Greg Mankiw and Douglas Elmendorf suggest that a national debt of 50 percent of GDP reduces net output by more than 3 percent.³ A study by International Monetary Fund researchers suggests that, for each additional 10 percentage points in the debt–GDP ratio, growth in subsequent years falls by 0.15 percentage points.⁴ The Congressional Budget Office has estimated that increasing deficits by \$2 trillion over the next 10 years (that is, by just under 1 percent of GDP) would decrease GDP by 7.5 percent over 25 years.⁵ All of these estimates suggest substantial impacts on long-term economic growth of having the debt–GDP ratio rise from 35 percent in 2007 to 74 percent in 2014, and to 100 percent over the next 20 years.

Economic growth, however, is not the same thing as improving living standards for the vast bulk of the population. Although growth and living standards moved hand in hand for a very long time, over the past 30 years they have moved discordantly.⁶ Growth has continued, but the benefits of that growth have disproportionately gone to high-income groups, while many middle- and low-income groups have seen few if any gains.

If fiscal reform can boost growth, but the benefit of that growth will accrue disproportionately to high-income households, then the

³ Douglas W. Elmendorf and N. Gregory Mankiw, “Government Debt,” National Bureau of Economic Research Working Paper no. 6470, March 1998, <http://www.nber.org/papers/w6470.pdf>.

⁴ Manmohan S. Kumar and Jaejoon Woo, “Public Debt and Growth,” IMF Working Paper no. 174, International Monetary Fund, 2010, <https://www.imf.org/external/pubs/ft/wp/2010/wp10174.pdf>.

⁵ “The 2014 Long-Term Budget Outlook,” Congressional Budget Office, 2014, <https://www.cbo.gov/publication/45471>.

⁶ Facundo Alvaredo, Anthony B. Atkinson, Thomas Piketty, and Emmanuel Saez, “The Top 1 Percent in International and Historical Perspective,” *Journal of Economic Perspectives* 27, no. 3 (2013): 3–20.

burdens of fiscal retrenchment should be placed disproportionately on high-income households. One such example would be to means-test Social Security and Medicare, or otherwise adjust benefits downward for high lifetime income earners. But in practice, having the rich pay more means tax increases, since neither the major entitlements nor any other government spending program affects the very wealthy that much. The notion of tax increases will cause horror in some circles, but a wide variety of evidence suggests that taxes are only weakly related to economic growth.

Higher tax burdens have not adversely affected economic growth.⁷ In the United States' own history in the years before World War II to the years after the war, federal tax revenues rose on a permanent basis by more than 10 percent of GDP, with no observable impact on the annual rate of growth.⁸ Cross-country evidence tells a similar story. Over the past 40 years, revenues at all levels of government have averaged about 8 percent of GDP more in the Organization for Economic Cooperation and Development (OECD) and the Group of Seven (G-7) than in the United States. Yet the United States had the identical growth rate of per capita income as the OECD and G-7 over the same period.

Much public attention has been given to the role of the top income tax rate—faced by high-income earners—in determining growth. But there is little relation over time in the United States between the top marginal income tax rate and the rate of economic growth.⁹ Likewise, studies show substantial differences in how countries have changed the top marginal income tax rate over time, but little connection of those changes to differences in annual growth rates.¹⁰

Nor have tax rate cuts in the United States stimulated much growth. Martin Feldstein, chair of the Council of Economic Advisers during part of the Reagan administration and a proponent of supply-side

⁷ William G. Gale and Andrew A. Samwick, "Effects of Income Tax Changes on Economic Growth," Brookings Institution, September 2014.

⁸ Nancy L. Stokey and Sergio Rebelo, "Growth Effects of Flat-Rate Taxes," *Journal of Political Economy* 103, no. 3 (1995): 519–50.

⁹ Thomas Hungerford, "Taxes and the Economy: An Economic Analysis of the Top Tax Rate since 1945 (Updated)," Congressional Research Service, December 12, 2012, <http://fas.org/sgp/crs/misc/R42729.pdf>.

¹⁰ Thomas Piketty, Emmanuel Saez, and Stefanie Stantcheva, "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities," National Bureau of Economic Research Working Paper no. 17616, November 2011, <http://www.nber.org/papers/w17616>.

policies, concluded that the vaunted 1981 tax cuts contributed little to growth.¹¹ The 2001 and 2003 tax cuts do not appear to have generated new economic growth. Even with expansive monetary policy, growth was lackluster from 2001 to 2007, and the growth was focused mainly in housing and finance, two sectors not aided directly by the Bush administration tax cuts.¹² The 1993 increases in the top marginal rate did not stop the economy from enjoying a booming decade.¹³

And what about tax reform? The 1986 Tax Reform Act, the standard bearer in terms of broadening the base and reducing the rates, generated little impact on growth.¹⁴

Putting the four pieces of the puzzle together—that is, sustained deficits and debt will prove harmful, the burden of debt reduction should be placed largely on high-income households because they will garner most of the benefits, higher tax burdens are the only real way to get the wealthy to finance a significant portion of closing the fiscal gap, and higher tax burdens do not significantly slow the economy in the long run—leads directly to the conclusion that the bulk of the solution should come from higher taxes in general, and higher taxes on high-income households in particular. That could be implemented in several ways, such as limiting the value of tax expenditures—a concept that has been championed by leading members of both parties and a wide variety of analysts.¹⁵ Other options include value-added taxes and carbon taxes, each with generous cash payments to low- and lower-middle-income households designed to eliminate the regressivity of such policies.

¹¹ Martin Feldstein and Douglas W. Elmendorf, “Budget Deficits, Tax Incentives, and Inflation: A Surprising Lesson from the 1983–1984 Recovery,” in *Tax Policy and the Economy*, vol. 3, ed. Lawrence H. Summers (Cambridge, MA: National Bureau of Economic Research, 1989), pp. 1–24.

¹² Gale and Samwick, “Effects of Income Tax Changes on Economic Growth.”

¹³ Chye-Ching Huang, “Recent Studies Find Raising Taxes on High-Income Households Would Not Harm the Economy: Policy Should Be Included in Balanced Deficit-Reduction Effort,” Center on Budget and Policy Priorities, April 24, 2012, <http://www.cbpp.org/cms/index.cfm?fa=view&id=3756>.

¹⁴ Alan J. Auerbach and Joel Slemrod, “The Economic Effects of the Tax Reform Act of 1986,” *Journal of Economic Literature* 35, no. 2 (1997): 589–632; Joel B. Slemrod and Jon Bakija, *Taxing Ourselves: A Citizen's Guide to the Debate over Taxes*, 4th ed. (Cambridge, MA: MIT Press, 2008).

¹⁵ William G. Gale and Samuel Brown, “Tax Reform for Growth, Equity, and Revenue,” *Public Finance Review* 41, no. 6 (2013): 721–54.

Both of these options offer side benefits besides deficit reduction. A value-added tax may encourage saving, which is exempt from the tax.¹⁶ And a carbon tax is a market-oriented approach to reducing greenhouse gases.¹⁷ Revenues from these changes could be used to finance tax reform and existing programs as well as to pay down the debt.

¹⁶ William G. Gale and Benjamin H. Harris, "A VAT for the United States: Part of the Solution," Brookings Institution, July 22, 2010, <http://www.brookings.edu/research/papers/2010/07/22-vat-gale>.

¹⁷ William G. Gale, Samuel Brown, and Fernando Saitiel, *Carbon Taxes as Part of the Fiscal Solution* (Washington: Brookings Institution, 2013).

14. Toward Faster, More Inclusive Growth

*William A. Galston**

The United States has an economic growth problem, and it started before the Great Recession. Between 1949 and 2000, the annual rate of growth exceeded 3 percent 34 times—two years out of every three. During the eight Clinton years, growth reached 4 percent five times and fell below 3 percent only twice. Since 2000, by contrast, growth has reached 3 percent just two times and did not reach 4 percent at all, even during 2003–2007, the peak years of the recovery from the 2001 recession. Since the beginning of the recovery from the Great Recession of 2008–2009, annual growth has not reached 3 percent until this year (perhaps).

The big picture puts these details in sharp relief. Between 1949 and 2000, the economy grew at an average rate of 3.6 percent annually. Since then, growth has averaged only 1.8 percent.

In the economic circumstances of recent decades, only a sustained period of robust growth has been enough to raise wages and household incomes. Unless the economy can resume the more robust growth of the second half of the 20th century, U.S. workers will be hard-pressed to regain the ground they have lost, let alone offer the prospects of something better for their children.

What follows are a number of suggestions for how to spur faster growth—and to ensure that the gains from growth are more broadly shared throughout the American workforce. Over the next decade, there is one overriding challenge—re-creating an economy in which growth works for everyone, not just a favored few. If we solve that problem, we can sustain a generous social order at home and our role as the guarantor of peace and security abroad. If we fail, much that we have taken for granted since the end of World War II will be at risk.

* William A. Galston is a senior fellow in Governance Studies at the Brookings Institution.

Macroeconomics

I begin with some macroeconomic considerations. Among Democratic-leaning economists, there are two broad schools of thought about the recovery from the Great Recession. Some argue that although the 2009 stimulus should have been larger and lasted longer, the painfully slow recovery will eventually bring the United States back to full employment, and eventually the new normal won't differ fundamentally from the old normal.

Led by former treasury secretary Lawrence Summers, other Democratic-leaning economists have adopted a dissenting view.¹ They argue that the 2008–2009 crisis inflicted structural damage that, left uncorrected, will permanently reduce growth, jobs, and incomes. This thesis restores the contemporary relevance of John Maynard Keynes's "liquidity trap" and Alvin Hansen's theory of "secular stagnation." But more than that, it proposes a mechanism—hysteresis—to explain how this permanent effect occurs.

Hysteresis is a technical term for a simple idea: temporary conditions can have long-term effects. That's why timing often matters. If you deal with certain problems promptly, you can solve them. If you wait too long, you can't. You can get stains out of carpets if you work on them as soon as they happen. If you wait too long and the stains "set," they are much harder to remove.

Much the same is true of economies. If workers are unemployed or underemployed for too long, they can become disconnected from the labor market. The resulting economic slack lowers demand, leading businesses to invest less and setting a vicious circle in motion.

For example, recent research shows a link between long-term unemployment and obesity: being out of work for an extended period makes many people depressed; depression leads to decreased physical activity and increased consumption of comfort food. Obese individuals are less able to meet job-related physical qualifications, and potential employers often regard them as lacking in self-control and self-respect.

Policies that would be unwise in normal circumstances may be necessary when hysteresis occurs. Not surprisingly, secular stagnation theorists have offered boldly heterodox proposals. If we need an

¹ Lawrence H. Summers, "Reflections on the New 'Secular Stagnation Hypothesis,'" *Vox*, October 30, 2014, <http://www.voxeu.org/article/larry-summers-secular-stagnation>.

extended period of negative real rates to restore full output and employment, we can negate the zero bound only by raising the target rate of inflation. If we need to reduce the supply of savings, developed economies should institute higher retirement ages and reduce the policy uncertainties that induce precautionary savings. If the demographics of the developed world contribute to economic stagnation, advanced economies should revitalize their workforces by opening the gates to immigration—the reverse of what their current populations favor.

In a paper kicking off the Center on Budget and Policy Priorities' program on full employment, a powerhouse trio of Lawrence Summers, Brad DeLong (University of California, Berkeley), and Laurence Ball (Johns Hopkins University) argue that when specific conditions are satisfied, tax cuts can pay for themselves by boosting potential output through their effects on investment, labor force participation, and other key determinants of long-term growth, which leads to a long-term increase in tax revenues.² If the authors are right, there can be a fiscal-policy free lunch when things are bad enough—the liberal version of a claim that many supply-siders have advanced since the late 1970s. Short-term stimulus is consistent with long-term fiscal balance, perhaps more so than austerity.

To be sure, major differences remain between left and right. Conservatives want tax cuts to be permanent; liberals argue that they should be in force only as long as needed to jump-start growth. Conservatives believe that tax cuts work by increasing incentives to innovate and invest, while liberals believe that boosting demand is the key to shocking lagging economies out of their doldrums. And of course, liberals believe that the right kind of direct government spending (on infrastructure, for example) is the best strategy for boosting long-term growth when demand is slack, while conservatives think that tax cuts are the preferred—perhaps only—means to that end.

Still, this unexpected left-right convergence raises intriguing political possibilities. Republicans who refuse to consider boosting growth through additional public spending should be

² Laurence Ball, Brad DeLong, and Larry Summers, "Fiscal Policy and Full Employment," Center on Budget and Policy Priorities, April 2, 2014, http://www.pathstofullemployment.org/wp-content/uploads/2014/04/delong_summers_ball.pdf.

open to a tax cut for this purpose—especially a cut that promises not to increase (at least in the long run) government debt as a share of gross domestic product (GDP). The potential deal is this: liberals would lead renewed stimulus with tax cuts, and in return, conservatives would agree to the kinds of tax cuts (conditions-based and progressive) that liberals want.

Here's a simple, easily administered proposal along those lines: a five-year reduction in Social Security payroll rates—by 3 percentage points during the first three years, phasing down to 2 points in the fourth year and 1 point in the fifth. (General revenues would fill the gap in the Social Security trust fund, protecting current and future beneficiaries.)

This course of action would entail some risks, of course. If Summers, DeLong, and Ball turn out to be too optimistic, an increased national debt would yield only modest increments in growth and job creation. But staying on our current course is not risk free either: a sluggish recovery could blight the lives of older workers and dash the dreams of young adults. A progressive and time-limited tax cut may be a risk worth taking.

Taxation

To state the obvious, we also need comprehensive tax reform. Whatever a growth-optimizing tax code might look like, most analysts agree that we are far from it today. Broadening the base of the code while lowering the rates is more than an exercise in tax hygiene; it is the best way to improve the odds that investment and consumption decisions will be made on the basis of their economic value rather than their tax consequences.

Another tried and true principle is that we tend to get less of what we tax more. All things equal, a tax on labor is perverse, especially in an extended period of slack labor markets. I join many others in my belief that a carbon tax makes a lot more sense than does the payroll tax. We should therefore initiate a revenue-neutral swap: as a carbon tax is gradually phased in, the payroll tax would gradually phase out. By lowering employers' total labor costs without cutting compensation to workers, this approach could stimulate the creation of millions of new jobs. And by using price signals rather than command and control regulations, it would allow users of fossil fuels and other natural resources to find the most efficient

ways of reducing consumption. As they demonstrate the efficacy of their choices, government could gradually reduce the regulations designed to further the same ends.

Public Investment

Along with other analysts located across the political spectrum, I believe that well-designed public investment—in core areas such as basic research, infrastructure, and education and training—can boost baseline growth rates. (Standard theories of public goods explain why the public sector plays an essential role in these areas.) But public budgets at every level have been neglecting these core functions.

In the past, the United States has been able to balance short-term needs with programs that helped build a better future for everyone. The long list includes land-grant colleges, Interstate highways, and the postwar explosion of publicly funded scientific research that has transformed the world. But in recent decades, we have lost our balance. At the federal level, funding for basic research has plateaued and is projected to decline over the next decade, while the long-standing consensus over infrastructure funding seems to have collapsed. (Numerous expert panels have put underinvestment in infrastructure at about 1 percent of GDP per annum over the past generation, generating an aggregate repair and replacement backlog estimated at \$2.5 trillion.)

We should set a national goal of boosting public investment. That would mean benchmarking basic research as a share of GDP to the global leaders; boosting the total infrastructure of our national product by 1 percentage point, from 2 to 3 percent; and making room for higher education in state budgets. To say the least, that would require a rearrangement of national priorities, through some combination of a tax hike dedicated to public investment, cuts in noninvestment spending, and innovative policies that would free up public funds for investment while encouraging the use of private capital for public purposes.

Two examples of such policies will suffice. If everybody were required either to purchase insurance against the possibility of nursing home care or to save for that eventuality, states could be relieved of the long-term care burdens for which they now pay in the Medicaid program. As for infrastructure, President Obama has been calling for increased investments since he was elected, without

notable results. There's a way of getting this done that enjoys broad bipartisan support. Representative John Delaney (the only former CEO of a publicly traded company now serving in the House) has introduced the Partnership to Build America Act, which would finance \$750 billion in new infrastructure investment using no appropriated funds. A proposed American Infrastructure Fund would be funded by the sale of 50-year infrastructure bonds at a low, fixed interest rate to corporations that would be allowed to repatriate a certain amount of their overseas earnings tax free for every dollar they invested in these bonds. Delaney's bill has garnered broad bipartisan support, rare in these polarized times.

Immigration

I need not tarry long on the topic of immigration reform; the self-destructive tendencies of our current policies are sadly apparent. If we wanted immigration to boost economic growth, we would impose no limits on applicants who score high on education and skills. Nor would we make it so difficult for employers of lower-skilled workers to get a reliable flow of employees to meet shift needs. Nor, of course, would we require foreign citizens who have received bachelor's and advanced degrees in STEM (science, technology, engineering, and mathematics) subjects to repatriate after graduating from U.S. colleges and universities.

Entrepreneurship

Recent studies have documented an alarming fall in business startups, long a key source of innovation and employment. Ian Hathaway and Robert Litan find a steady decline since the late 1970s.³ Since the Great Recession, new firms as a share of all firms have stagnated at the lowest level in four decades. Business deaths now exceed births for the first time since the beginning of these data series.

No one knows exactly why this is happening, only that it is a national rather than regional phenomenon, occurring at roughly the same rate in metro and nonmetro areas. Conversations with

³ Ian Hathaway and Robert E. Litan, "Declining Business Dynamism in the United States: A Look at States and Metros," Brookings Institution, May 2014, http://www.brookings.edu/~media/research/files/papers/2014/05/declining%20business%20dynamism%20litan/declining_business_dynamism_hathaway_litan.pdf.

entrepreneurs suggest that regulations have become steadily more burdensome and that startup capital has become increasingly difficult to acquire. In these circumstances, it would make sense to experiment. For example, what if capital gains from investments in new businesses were exempt from taxation?

Narrowing the Gap between Productivity and Compensation

Taking inflation into account, wages and benefits for workers have not budged since the end of the Great Recession. Nor are they likely to increase significantly anytime soon, according to a recent survey conducted by the National Association for Business Economics. Some 82 percent of employers expect wages to rise between zero and 3 percent over the next three years. Only 11 percent expect faster growth.⁴

All this is part of a larger story: compensation to workers has failed to keep pace with productivity gains for most of the past 40 years. Between 1973 and 2011, productivity rose by 80.4 percent, while median hourly compensation rose by only 10.7 percent. But average hourly compensation rose by 39.2 percent, almost four times faster than the median. The reason is simple: the average has been dragged up by the top 1 percent, whose compensation rose twice as fast, while everyone else fell behind. The gap between average and median hourly compensation has roughly doubled—from 40 percent to nearly 80 percent—since 1973.

Between the end of World War II and 1973, the rise of compensation in line with productivity fueled the creation of a middle-class society. Rising consumer purchasing power—which accounts for two-thirds of our GDP—kept growth robust. A growing, prosperous, self-confident middle class strengthened social mobility and anchored democratic trust. But over the past four decades, according to the Pew Research Center, the middle-class share of American households has declined from 61 percent to 51 percent.⁵ Not by accident, growth has slowed, mobility has stalled, political polarization has spiked, and confidence in government has collapsed.

⁴ National Association for Business Economics Survey, April 2014, pp. 3, 15, <http://www.nabe.com/Surveys>.

⁵ “The Lost Decade of the Middle Class,” Pew Research Center, August 22, 2012, <http://www.pewsocialtrends.org/2012/08/22/the-lost-decade-of-the-middle-class/>.

Over the next generation, we face a stark choice: either rising compensation will yield steady income gains for average families, fueling faster growth, or the American dream will become a hollow promise. There is little chance that the continuation of current policies will yield the preferred outcome. So our policies must change.

Specifically, we should use public policy to reinforce the link between compensation and productivity. That connection must be accepted as a goal—and norm—across the economy. And to make it real, we should link the tax rates that individual firms pay to the compensation strategies they adopt. The point is simple: firms can either share productivity gains with their workers or contribute to the public programs made necessary by their failure to do so.

Conclusion

Even the casual reader will have sensed that I have offered a potpourri of possible policies. That is no accident. Like most analysts who have tackled the problem of slow growth, I have concluded that the challenge is more than cyclical; it goes to the basic structure of our economy. And like most analysts, I have some hunches about how to respond, but nothing approaching a clear new theory that would enable me to say “Do this but not that” with the requisite confidence.

I am convinced, however, that our current policies will not solve the problem. Unless we are satisfied with the status quo (or fear that efforts to change it will make things worse), we should be willing to experiment with measures that we would not have considered when the economy was growing much faster than it is today.

15. Land-Use Restrictions and Other Barriers to Growth

*Edward Glaeser**

I have chosen to do two things for this Cato essay. First, I have written a slightly longer note on an idea that is squarely in my research area—eliminating most land-use powers of American local governments. Second, I have written five ideas that are more far-ranging. I add these smaller ideas because I think that they are important—probably more important and plausible than my primary idea. I hope that others with more expertise in these areas take them on. As a caveat, while I believe that all of these ideas would have social benefits, I certainly cannot guarantee that they will generate permanent increases in the growth rate.

Primary Idea: Eliminating Local Land-Use Powers

America has wildly different productivity levels across space. Per capita gross domestic product (GDP) in the San Jose, California, metropolitan area is over \$100,000. Per capita GDP in the McAllen metropolitan area in Texas is under \$20,000. How can these remarkable differences in productivity persist?

One reason is that the human capital and physical capital levels differ significantly across those places. But even controlling for human capital, wage differences across the United States are enormous. If we accept neoclassical theory, that implies that the marginal product of labor is vastly higher in some parts of the United States than in others. This heterogeneity offers real possibilities for growth. If the rest of the country saw its per capita productivity levels rise to those seen in New York, then national income would grow by over 40 percent.

* Edward Glaeser is a professor of economics at Harvard University.

Indeed, it is also possible that the shift of labor from less productive to more productive places would have growth, as well as level, effects. Silicon Valley is a churning cauldron of talent that consistently produces new ideas. Would it produce even more new ideas if Silicon Valley was much larger?

During the 19th century, Americans regularly moved from less productive places to more productive places. Farmers left the rocky soil of New England to go to the Ohio River Valley and Illinois. Immigrants crowded into cities, like New York and Chicago, and became part of a great economic machine. The free migration of labor ensured that new activities would find new workers.

But something has changed in the United States. In the 19th century, high manufacturing wages strongly predicted faster population growth. Since 1980, population growth has often been slower in wealthier areas. This slowdown is most notable in coastal California, where the wages are high and the climate is superb, and yet population growth is distinctly sluggish.

Why have the most productive parts of America stopped adding population? There is no lack of demand for those areas. We see this in the extremely high housing prices in the high-income coastal areas of the United States. The problem is supply. Whereas California built extensively in the 1960s, as New York built extensively during the 1920s, both of those areas are far less prone to permit new construction today.

In some cases, construction can be limited by natural characteristics. Water and hills make building difficult, as Albert Saiz's work illustrates.¹ Yet these are not insurmountable obstacles. The Back Bay, one of Boston's toniest neighborhoods, was reclaimed from the water—as was much of the Netherlands. Moreover, there is no lack of land in much of high-wage America. Middlesex County, Massachusetts, which contains Harvard and MIT, is substantially less dense than Harris County, Texas, which contains Houston. Yet Harris County still builds more than Middlesex County. Even the most cursory look around Silicon Valley will make the point that by global urban standards, the area is remarkably low density.

Housing supply in desirable areas is being prevented by regulatory, not natural, barriers. Over the past half century, the United States has

¹ Albert Saiz, "The Geographic Determinants of Housing Supply," *Quarterly Journal of Economics* 125, no. 3 (2010): 1253–96.

gone through a property rights revolution. In the 1960s, developers found it easy to do business in much of the country, often taking advantage of public support through eminent domain. In the past 25 years, construction has come to face enormous challenges from any local opposition. In some areas, it feels as if every neighbor has veto rights over every project. To make matters worse, the legal system frowns on side payments so that it is difficult for developers to adequately compensate neighbors for their support.

Without such compensation, there is little reason to think that the local opponents of growth internalize any of the benefits of new construction. To most residents, a new project is nothing but a bother. They don't care about the welfare received by the new residents, or the benefits earned by the builders or by the employers who have to pay lower wages when housing costs are lower. Moreover, unaffordable housing isn't a problem to most homeowners—it represents an increase in the value of their biggest asset.

Diagnosing the problem of excessive local land-use restrictions is easy. Producing a remedy is hard. At the local level, it is easy to imagine a system that replaces uncertainty with clarity and delays with fees. Ideally, developers should be able to build as long as they cover the social costs of their building, which can be covered by writing a check. The check writing could even be structured so that communities that delay projects longer get smaller checks.

But most localities don't want building, and they have little interest in wholesale change. Indeed, the problem of excessive regulation is far more extreme in suburbs, which have become homeowners' enclaves, than in big cities where mayors internalize a wide range of interests. Change is most likely to come from states, which have the option to overrule local land-use controls.

I think that the most natural solution is to give developers a get-out-of-jail-free card from local regulation, based loosely on Massachusetts's Chapter 40B.² The state could write its own code for building, which might include impact fees. Localities can make it easier to build than the state code, but not harder. Essentially, we would just write localities out of the land-use process.

² For more information, see "Chapter 40B Planning," Executive Office of Housing and Economic Development, Commonwealth of Massachusetts, <http://www.mass.gov/hed/community/40b-plan/>.

This proposal has no chance whatsoever of being passed, and indeed progress in reducing land-use regulation is quite difficult. Typically, any progress that occurs is incremental, usually within a single jurisdiction led by someone who wants change. Still, I'm sticking with my proposal, so that America's dysfunctional housing market gets a bit of attention.

As an epilogue, let me mention three other salutary housing market reforms. First, Henry George was right, and we should tax land rather than structures. Moving to a land tax from a structure tax would reduce the incentives to build less housing.

Second, we should end the Low-Income Housing Tax Credit. The LIHTC subsidizes new building in places where it is needed (San Francisco—because of local land-use restrictions) and where it is not (Texas and Detroit). America's housing markets are so diverse that it makes little sense to have any countrywide policy.

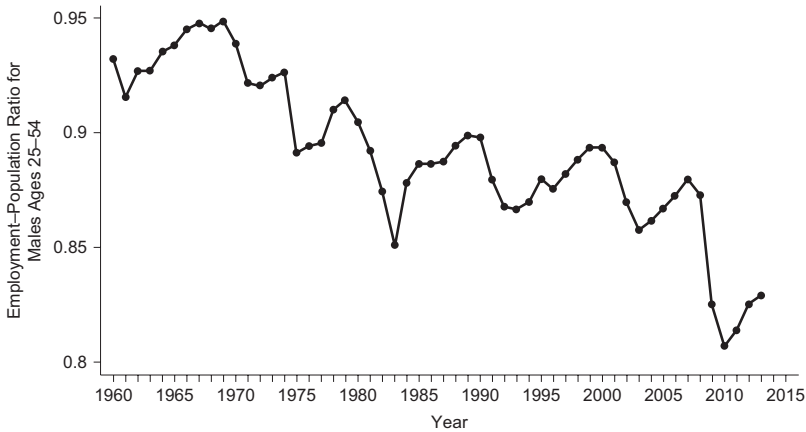
Third, we should rethink the various homeownership policies that distort individual buying and borrowing decisions. A consumption tax would be vastly more sensible than an income tax with a deduction for home borrowing. Importantly, though, David Albouy and Andrew Hanson remind us that the deduction does tend to reduce the tendency of the tax code to distort the decision of whether to move to low or high housing cost areas.³ Fannie Mae and Freddie Mac remain a disaster that should be completely overhauled.

Secondary Idea 1: Reform and Shrink Disability

I start with the view that America's most pressing social problem is extreme joblessness. Figure 1 shows the terrible decline in the employment-to-population ratio that has occurred in the United States since the late 1960s. Today, more than 17 percent of prime-age men do not work. The basic pattern is that joblessness leaps during recessions but never fully recovers during booms. The fact that even during booms joblessness is still much higher than during the 1960s belies the notion that stimulus is the right fix for joblessness. Not only is society losing the value of its talents, but the underemployed themselves are paying an awful price.

³ David Albouy and Andrew Hanson, "Are Houses Too Big or in the Wrong Place? Tax Benefits to Housing and Inefficiencies in Location and Consumption," in *Tax Policy and the Economy*, vol. 28, ed. Jeffrey R. Brown (Cambridge, MA: National Bureau of Economic Research, 2014), pp. 63–96, <http://davidalbouy.net/geographicincidence.pdf>.

FIGURE 1
EMPLOYMENT-POPULATION RATIO FOR
MALES AGES 25-54, 1960-2013

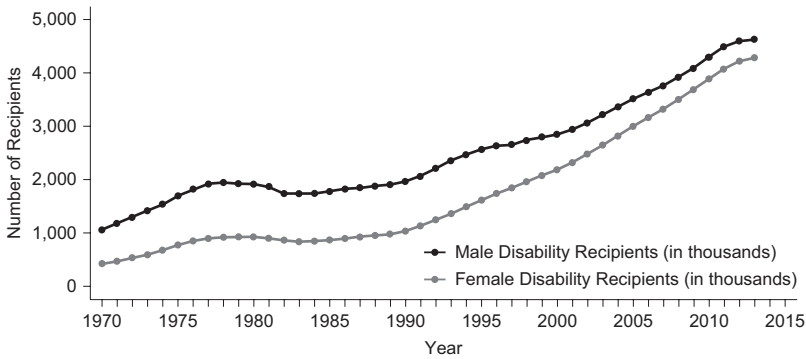


SOURCE: Bureau of Labor Statistics.

Disability policies relate closely to joblessness. Figure 2 shows the rise in disability recipients. This rise occurs despite the fact that Americans are healthier and work in less dangerous jobs. Disability is particularly powerful in discouraging work, because it offers payments conditional upon not working and feeling sick. Reforming disability is politically tricky, but David Autor and Mark Duggan have been particularly thoughtful in producing new ideas.⁴ The right answer surely involves tougher restrictions on disability and more intermediate options, where individuals can receive some aid even if they continue working. The key is to reduce the incentives to remain jobless that are created by public programs.

⁴ David H. Autor and Mark Duggan, "Supporting Work: A Proposal for Modernizing the U.S. Disability Insurance System," Brookings Institution, December 2010, <http://www.brookings.edu/research/papers/2010/12/disability-insurance-autor>.

FIGURE 2
FEDERAL DISABILITY PAYMENTS, 1970–2013



SOURCE: Social Security Administration.

Secondary Idea 2: Eliminate the Payroll Tax for Poorer Americans

A similar idea is to reduce the payroll tax for poorer and younger Americans. These taxes, paid by both employers and employees, create a distortion against work, at least as long as workers don't value the benefits of Social Security highly. Eliminating these taxes for workers at the low end of the wage distribution, and perhaps for young workers altogether, would seem to increase the incentives for firms to hire and for young people to find jobs. Reduced payroll taxes will be felt by workers as a boost, similar to boosting the minimum wage, but they won't have the adverse effect of deterring new job creation.

Secondary Idea 3: Reform and Shrink Federal Infrastructure Spending

Increasing spending on infrastructure is an extremely popular idea on the left, yet there is little evidence to suggest that the federal government's contribution to infrastructure spending is particularly effective. Indeed, the structure of the Senate means that federal transportation aid goes disproportionately toward highways in low-density states. Federal transportation aid has been particularly associated with some of the great follies of American public spending, such as Detroit's People Mover monorail.

Most infrastructure runs within states and localities, and there is little reason for the federal government to fund it. Moreover, in many cases, infrastructure would be better funded by user fees. There is no reason why taxpayers should be subsidizing the generally prosperous users of airplanes. In many cases, private provision—whether of airports or roads—is particularly attractive. Eduardo Engel and his colleagues' work on public-private partnerships is particularly enlightening, and it reminds us that when a private enterprise has invested in a highway, then it will have strong incentives to maintain that highway if its revenues come from tolls.⁵

Secondary Idea 4: Move Failing School Districts to All-Charter Systems

The connection between education and growth is one of the best-established facts in cross-country growth empirics. There is also a well-established link between schooling attainment and urban success. Yet many of America's school districts, particularly those in poorer cities, have fared poorly. Reforming those systems has proved to be quite difficult, although the work of Joshua Angrist and others has shown that many charter schools have achieved remarkable results.⁶

One implication of this work is that a particularly troubled system should essentially move to an all-charter model. Gradually shrinking the public school system of Detroit and replacing it with a complete charter system seems like a reasonable course. However, as we move along that course, we must evaluate the charters regularly and close the charters that are performing more poorly than the public schools. If the public schools can improve and compete with the charters, then they may certainly have a place in a more competitive educational ecosystem.

A more radical idea is to move to a global charter-voucher system. In this system, parents of children in cities can take their kids out of school and go to any provider, anywhere in the country. The city

⁵ Eduardo Engel, Ronald Fischer, and Alexander Galetovic, "Public-Private Partnerships: When and How," Centro de Economía Aplicada, Universidad de Chile, July 19, 2008, <http://www.econ.uchile.cl/uploads/publicacion/c9b9ea69d84d4c93714c2d3b2d5982a5ca0a67d7.pdf>.

⁶ Joshua D. Angrist, Parag Pathak, and Christopher Walters, "Explaining Charter School Effectiveness," MIT Department of Economics Working Paper no. 12-1, April 12, 2012.

will then pay the share of schooling equal to the average cost of a child in the public system. That would enable an even more competitive system and would make it more attractive for many parents to live in cities, because they could use the payments from the public school system to fund their children's education in private or parochial schools. This approach would act against the terrible incentive that we have created for parents to move out of cities to get access to better-performing school districts.

Secondary Idea 5: Move to One-Stop Permitting for Small Business Formation

A fifth idea involves reforming the regulations that can stymie local business formation. In the primary idea, I addressed the point that localities should regulate only if benefits exceed costs. This point is as true for business regulation as for land-use regulation. One positive step would be for states and municipalities to apply cost-benefit analysis to all of their regulations.

Another step forward is to embrace one-stop permitting. There are effectively two variants on this idea. One variant, the Devens model (named after Devens, Massachusetts, which has successfully used this approach for years), involves a public official who is literally empowered to license any new business. The second involves a public interface who then connects with myriad regulators. The first option is far more powerful, since the official can be held accountable for permitting times.

One approach that I have suggested is to begin with one-stop permitting within an entrepreneurship zone in a higher-poverty area. That should make this more politically palatable. Then, ideally, if the system proves a success, it can be expanded citywide or statewide.

16. The Specter of “Secular Stagnation” and Appropriate Policy Responses

*Jagadeesh Gokhale**

The current debate over “secular economic stagnation” seems rife with inappropriate metrics and verbiage. Prominent analysts are using claims about “gross domestic product (GDP) gaps” and “investment shortfalls” to promote massive increases in government expenditures. However, when recommendations to reverse a long-term growth slowdown sound identical to those for reemploying idle resources during recessions, something seems amiss. A better approach would prioritize reforms of the federal tax system and resolutions of large extant financial imbalances in social insurance programs.

The “GDP Gap” Claim

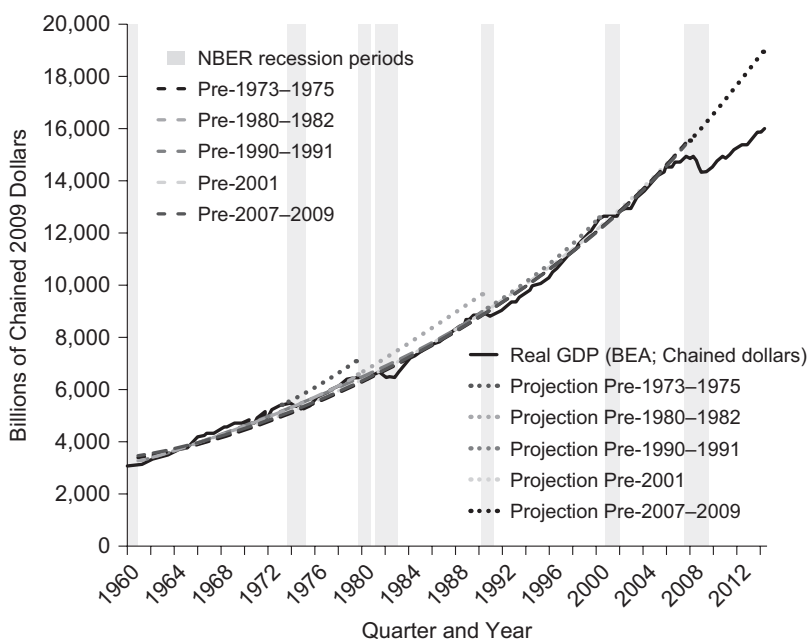
Concern over a forthcoming secular stagnation is prompted by the slow recovery from the 2008–2009 recession and a large apparent “GDP gap” in its aftermath: comparisons of actual GDP with GDP projected using pre-recession growth rates show that the “GDP gap,” thus measured, has become especially large after the last recession (Figure 1).

But that recession involved a financial-sector collapse from an almost universally unexpected and broad decline in home prices. The ensuing mortgage defaults and foreclosures triggered financial deleveraging and portfolio imbalances for households, firms, and banks, prompting stricter lending standards. Previous credit relationships, built over a long time, have been obliterated.¹ As validated by

* Jagadeesh Gokhale is director of special projects at the Penn Wharton Public Policy Initiative.

¹ Residential fixed investment, business-sector borrowing and assets, household-sector borrowing and net worth, home values, and lending volumes still remain significantly below their pre-recession levels. See work by Zach Bethune, “U.S. Economic Snapshot,” <https://dl.dropboxusercontent.com/u/17453613/graphs-US.pdf>.

FIGURE 1
POST-RECESSION GDP GAPS



SOURCE: Author's calculations based on data from the U.S. Bureau of Economic Analysis and National Bureau of Economic Research.

the historical record, a slow recovery was inevitable. Five years after the recession ended, however, the recovery has progressed sufficiently to cast doubt that resource underutilization remains significant.²

Judgment about future potential GDP and growth should be based primarily on *prospective* growth of productive factors and not pre-recession growth rates upon which GDP-gap metrics are based. Under today's social and demographic features and continued anti-work and anti-investment policies, the conjecture that future *sustainable* economic growth will be lower seems credible. If that is

² The U.S. Bureau of Labor Statistics' September 2014 unemployment-rate estimate of 5.9 percent is lower than its average since 1960 (over nonrecession quarters) of 6 percent. Estimates of industrial capacity utilization are available on the Federal Reserve's Industrial Production and Capacity Utilization webpage, <http://www.federalreserve.gov/Releases/g17/current/default.htm>.

correct, promoting faster economic growth through policies to boost aggregate demand is unlikely to work.

The “Investment Shortfall” Claim

A popular explanation of the slow recovery is in terms of the natural interest rate. High global saving—which initiated the pre-recession housing boom—is continuing, but aggregate (especially investment) demand has slowed, causing the natural interest rate to become negative—a condition where normal monetary policy tools are inoperative. Such a superficial macroeconomic analysis directly motivates proposals for additional debt-financed public expenditures to offset the “investment shortfall.”

A more appealing alternative to the “investment shortfall” view is insufficiency of “investment capacity.” Low investment demand results not necessarily from mistaken private-sector decisions in a negative interest rate environment but from poor prospective economic conditions and economic policies that exacerbate those conditions. Low growth in the supply of complementary productive factors is making additional private capital investments in the United States not worthwhile.

High cash holdings by firms and households and more frequent business inversions are signals of investment incapacity in the United States—the lack of complementary productive factors, especially human capital, and prospects of tax-rate increases.³ This calls for focusing on tax policy reforms to accelerate the growth of productive factors and to improve, in that way, the environment for investments in both human and physical capital.

Questionable Remedies

Prominent analysts are using questionable “GDP gap” and “investment shortfall” rationales to motivate large additional government expenditures for infrastructure, construction, energy, and other sectors to boost economic growth.⁴ They also recommend reintroduction of

³ New businesses (less than one year old) have exhibited a declining trend since the Great Recession, and employment generation by new businesses has declined consistently since 1999. See data provided on the U.S. Bureau of Labor Statistics’ Business Employment Dynamics webpage, <http://www.bls.gov/bdm/entrepreneurship/entrepreneurship.htm>.

⁴ Lawrence H. Summers, “Now Is the Time to Rebuild Our National Infrastructure,” *Boston Globe*, April 11, 2014, <http://www.bostonglobe.com/opinion/editorials/2014/04/11/idle-workers-low-interest-rates-time-rebuild-infrastructure/UTYHNLdzN0frz0VMVktSIK/story.html>.

The Specter of “Secular Stagnation” and Appropriate Policy Responses

- Rates of family formation and types of family structures
- Entrenched social insurance policies that deepen anti-market incentives and policy uncertainty

Features of the U.S. demographic and economic profile suggest continued increases in some of those components—but at a slower pace than earlier—and declines in others. Some prospective growth features of productive factors are “baked in” the U.S. demographic profile and are not materially alterable through popularly acceptable policy changes. Experienced baby boomers will be replaced by a smaller cohort of workers of similar age but not necessarily of similar experience. Census Bureau data show labor force attachment of working-age individuals trending downward with more workers employed part-time rather than full-time since the year 2000.⁸ Today’s demographic momentum appears likely to carry those trends forward.⁹ The Affordable Care Act will likely reduce labor force attachment through higher wage taxes, reduced employer-based health insurance, larger health care subsidies, and expanded Medicaid eligibility.¹⁰

The workforce’s schooling-completion rates have been increasing with payoffs to education. However, those rates differ dramatically by gender, race, and other socioeconomic characteristics. Growing population diversity, the rising cost of acquiring education, and growing economic inequality appear likely to slow future education and skill advancement rates.

Family formation, which has declined for several decades, fell dramatically during the recession.¹¹ Marital status, stability, family size,

⁸ Mitra Toossi, “Labor Force Projections to 2020: A More Slowly Growing Workforce,” *Monthly Labor Review*, January 2012, <http://www.bls.gov/opub/mlr/2012/01/art3full.pdf>; Mitra Toossi, “Projections of the Labor Force to 2050: A Visual Essay,” *Monthly Labor Review*, October 2012, <http://www.bls.gov/opub/mlr/2012/10/art1full.pdf>.

⁹ Demographic momentum refers to trends in population diversity. See Bureau of Labor Statistics, “Number of Jobs Held, Labor Market Activity, and Earnings Growth among the Youngest Baby Boomers: Results from a Longitudinal Survey,” U.S. Bureau of Labor Statistics, news release, July 25, 2012, Table 3.

¹⁰ Casey Mulligan, “Average Marginal Labor Income Tax Rates under the Affordable Care Act,” University of Chicago, November 2013, <http://caseymulligan.com/MulliganMTRACA.pdf>.

¹¹ Couples are delaying marriage or forgoing matrimony altogether following the last economic recession. Linda A. Jacobsen and Mark Mather, “A Post-Recession Update on U.S. Social and Economic Trends,” *Population Bulletin Update*, 2011, Figure 9.

and living arrangements are correlated with labor productivity, and the trends in those attributes suggest lower future productivity. For example, residence by young adults with their parents, which is associated with poorer work prospects and later job attachment, has increased.

On balance, projections suggest that those factors will impart a net drag on future labor productivity and output growth.¹² Hence, policies to promote a secular expansion of the economy's productive factors should be prioritized over broad and potentially haphazard expansions of public investment expenditures.

These productivity-reducing demographic and economic trends could be countered through a fairer, flatter, and more efficient tax system. Broadening the tax base by eliminating loopholes and reducing tax preferences—such as health care, mortgage interest, state and property taxes, and various household and business tax credits—would permit tax-rate reductions to generate stronger incentives for education, work, saving, and entrepreneurship. Moreover, reducing the 35 percent corporate tax rate—among the highest in the world—would increase the international competitiveness of American businesses.

Public-Sector Debt and Unfunded Obligations

Perhaps the most significant threat to American economic dynamism is the federal government's large and growing unfunded obligations. Calculations indicate that the total U.S. federal "fiscal imbalance," assuming continuation of today's fiscal policies, amounts to \$83 trillion in today's dollars, or 8.4 percent of the present value of future GDP (PVGDP).¹³ Out of this prospective federal financial shortfall, the share arising from the two largest entitlement programs—Social Security and Medicare—is \$67 trillion, or 6.8 percent of PVGDP. Finally, the share of the fiscal imbalance contributed by past and living generations under those two social insurance programs amounts to \$54 trillion, or 5.5 percent of PVGDP.¹⁴ These

¹² Jagadeesh Gokhale, *Social Security: A Fresh Look at Policy Alternatives* (Chicago: University of Chicago Press, 2010).

¹³ Author's updated calculations based on the Congressional Budget Office's fiscal year 2013 budget projections. For the methodology, see Jagadeesh Gokhale, *Spending beyond Our Means: How We Are Bankrupting Future Generations* (Washington: Cato Institute, 2013), <http://object.cato.org/sites/cato.org/files/pubs/pdf/spending-beyond-our-means.pdf>.

¹⁴ Accrued-basis social insurance unfunded obligations amount to \$41 trillion.

figures show, not the projected amount of a future debt buildup, but the structural financial imbalance embedded in current fiscal policies, which must be resolved by changing those policies.

The fiscal imbalance as a share of the present value of future payrolls amounts to nearly 19 percent. It implies that payroll taxes would have to be more than doubled—or federal expenditures reduced equivalently—to eliminate that imbalance. The large current-policy imbalance implies high uncertainty about future fiscal policy, which likely erodes incentives to acquire education and skills, work, save, invest, and start businesses. Those incentives will likely worsen, while reforms to establish credible and dependable tax and expenditure policies are postponed. Social insurance reforms to recognize program debt to retirees, slow benefit increases, index retirement ages to human longevity, and introduce prefunded saving programs to bolster retirement security would prevent the federal budget imbalance from escalating.

Conclusion

Today’s federal fiscal overextension arose primarily from past expansions of pay-as-you-go-financed entitlements for retirees and others who spend at a faster rate out of their resources. That was the channel for past aggregate-demand boosts accomplished through the public purse. Having exhausted the scope for similar increases in entitlement benefits—because social insurance programs are approaching insolvency—some analysts are seeking to boost public expenditures by conjuring the specter of “secular stagnation” under questionable metrics, superficial analyses, and misleading rhetoric about “investment shortfalls.”

As argued herein, prospective slower growth in productive factors merits prioritizing the removal of constraints on “sustainable growth,” which requires prioritizing fiscal policy reforms. Key among such reforms are (a) a comprehensive tax reform to broaden the tax base, eliminate tax loopholes and preferences, and make U.S. taxes more internationally competitive and (b) a resolution of the financial imbalance in social insurance and other federal programs to restore dependability to future U.S. fiscal policy.

17. Decision Markets as Meta-Policy

*Robin Hanson**

We economists know of many promising ways to grow the economy. Some ways, such as more immigration or wasting less on medicine and the military, could give big but mostly one-time boosts. Other ways could keep boosting growth for a long time, by increasing our rates of innovation. For example, we might reduce excess regulation that cuts our flexibility in land use, occupation choice, venture financing, and product design. Or we might redesign intellectual property or coordinate better globally to promote innovation.

All of those options, however, are dangerous, as badly implemented versions could do net harm. After all, the world is very complicated, requiring good policy to attend to a great many messy details. So what we really need, more than suggestions for good policy directions, are very specific policy proposals that well address all the messy political, economic, and administrative details.

Unfortunately, one more often sees writings like those in this collection, with high-status impressive folks offering articulate and thought-provoking but not very specific commentary. Yes, this has value, but the main problems happen elsewhere, in the dark corners where political and policy sausage gets made. So what would actually help growth the most is to improve this policy process.

That is, even more than better growth policy, we need better meta-policy, that is, policy on how to pick policy. And it seems to me that our biggest meta-policy failure is the failure to aggregate information. On specific policy proposals, we fail to collect what everyone does or could know into visible consensus estimates about their likely consequences. So when ultimate decisionmakers choose to support or oppose specific proposals, they are often quite badly informed about their consequences. Far fewer bad policies would be approved if everyone knew that their consequences were bad.

* Robin Hanson is an associate professor of economics at George Mason University.

I think we can do better by using *decision markets*. Decision markets are speculative financial markets on the consequences of specific policies. For example, to see if a particular bill to subsidize research would actually increase long-term growth, we might create two speculative markets. In one market, speculators would estimate real gross domestic product (GDP) in 20 years conditional on passing this bill (and on keeping it passed). In the other market, speculators would estimate real GDP in 20 years conditional on never passing this bill (or anything like it). (Markets would trade assets that later pay inflation-adjusted cash in proportion to future GDP, with trades called off when conditions are unmet.)

The difference in the prices between these two markets would estimate the effect of this research subsidy bill on future GDP. Since speculative markets are the best mechanisms we know for robustly aggregating information, this estimate should on average be at least as accurate as those from competing mechanisms. This estimate would also be hard for interested parties to manipulate. And it would let informed parties profit by correcting for observed biases. Yes, since one will never observe both outcomes (bill passed vs. not passed), one would never know if the effect estimate was correct. Even so, speculators would have good incentives to estimate well, which would make this estimate a good basis for choosing policy.

One could imagine using markets like these in a purely advisory capacity. In this case, decisionmakers would be free to use or ignore market advice as they wish. But alas I expect the ultimate decisionmakers in democracies, that is, voters, would pay them too little attention. And if voters ignored the markets, representatives and agency heads would mostly ignore them as well. So I'd prefer to have decision markets directly choose policy.

And so now we come to my specific proposed meta-policy. I call it "futarchy," and it has four parts. First, I propose that our national legislatures pass bills to define "national welfare" and fund and authorize an agency to collect statistics to measure this numerical quantity after the fact. National welfare could initially be defined as a discounted sum of future real GDP, but afterward, the legislatures could pass bills to measure and include other important factors, such as leisure, happiness, artistic achievement, and so forth.

Second, I propose we create an open bounty system for proposing policies to increase national welfare. For example, anyone who pays

\$1 million might convert his or her specific bill to be approved or not on a specific day into an official proposal. This proposer might win \$10 million if his or her proposal is officially adopted. (I offer specific dollar figures here for concreteness, but I expect a wide range of figures would work out okay.)

Third, I propose that we create two open speculative decision markets for each official proposal, to estimate national welfare, given that we do or do not adopt this proposal. These markets would have low transaction fees, match best offers into trades, and produce a history of trading prices. They would be open to all who could make good on trade offers. If over the decision day the average if-adopted price is higher than the average if-not-adopted price (plus average bid–ask spread), then the proposal would be officially adopted. An adopted proposal becomes a new law of the land.

Fourth, I suggest a few minor adjustments. To avoid damage from temporary errors in national welfare definition, we could create two more markets per proposal, this time using national welfare as it will be defined one year later. Disapproval by the future-welfare market estimate would veto a proposal. We could also subsidize these speculative markets to encourage more trading, though efforts to manipulate the decisions should give plenty of trading activity. Also, we could let this system become recursive, approving other policies like it but with less restrictive rules.

So there it is, my specific proposed meta-policy, intended to help us better aggregate information on the consequences of policy proposals. If adopted, it would help us more often choose growth-promoting policies, at least when we are willing to pay the short-term costs required to get long-term growth. And I expect this to happen often enough to greatly increase economic growth rates.

Of course, my proposal does have one huge and perhaps fatal flaw: maybe voters don't care much about policy effectiveness. Maybe voters instead want the high status meta-policy that all the other cool nations have. Or maybe voters prefer to hypocritically say they want some things, while electing representatives who understand that they really want other things. Or maybe voters just love the group-bonding ecstasy of crushing opponents via not particularly rational us–them tribal chants. All of these are reasons why voters might not want to change to a system that produces better policy outcomes.

So I think I can identify a policy proposal that, if adopted, would greatly increase growth rates, as well as many other good policy outcomes. It would do that by consistently adopting specific policy proposals that the best-informed people think will actually achieve good outcomes. I also think that once people had lived under this system for a while, they'd be pretty happy with it. But even so, I'm not sure how to get voters today to want to adopt it. You can lead voters to good meta-policy water, but you can't make them drink from it.

18. Structural Reforms to Reduce Debt and Restore Growth

*Douglas Holtz-Eakin**

America's future is in jeopardy. Since World War II, the average rate of growth in real (inflation-adjusted) income (or gross domestic product [GDP]) per capita was 2.1 percent. At about that pace of growth, the average income would double in 35 years. Put differently, in the course of less than one person's working life, the standard of living would double. One car could become two. One child's chance to go to college could open up to the whole family. Two spouses at work could turn into only one, with more time with the family for the other. The opportunity is enormous.

Unfortunately, since 2007, the rate has slowed to a meager 0.7 percent. This slowdown is a recipe for diminished opportunity. At that pace, it takes 99 years for incomes to double. More than two working lives will be needed to achieve the same increase in the standard of living that once was experienced in a lifetime. Given the economic turbulence of the post-2007 era, one might expect the bad news to be transitory. So it is even more troubling that the nonpartisan Congressional Budget Office (CBO) projects that long-run growth per capita will recover to only 1.3 percent over the next 10 years. The poor growth outlook is a direct threat to Americans' future.

The poor growth outlook is also a threat to the nation's fiscal strength. The CBO forecasts that federal deficits will total another \$7.6 trillion in the next decade, and the federal debt will continue to climb from \$13 trillion to \$21 trillion.

Finally, because it exacerbates the debt problem, the poor economic growth outlook is a threat to our security. According to Admiral Mike Mullen, former chairman of the Joint Chiefs of Staff, "I've said

* Douglas Holtz-Eakin is president of the American Action Forum. He is a former director of the Congressional Budget Office.

many times that I believe the single, biggest threat to our national security is our debt, so I also believe we have every responsibility to help eliminate that threat.”¹

Fortunately, Americans need not be condemned to this dismal economic outlook. To take advantage of this opportunity will require leadership, a new approach to policy, and better policies themselves.

Leadership is a key. At its core, long-run economic growth is driven by the willingness to sacrifice in the present—no Twizzlers, no Twinkies, no T-shirts, no tanks, no television—in order to devote those dollars to higher skills, bigger production facilities, development of new technologies, advanced machinery, and other investments in the ability to produce more and better. Put simply, to sustain growth any nation has to make sacrifices in the present.

Most politicians recoil from this idea, with the result that much of federal policymaking is driven by the desire to act like the Sugar Plum Fairy. It will require strong leadership to appeal to voters and other elected officials on behalf of the nation’s future.

A leadership of that vision and discipline will be necessary to change the style of policy to produce better growth. Facilitating economic growth is more a philosophy than a specific piece of legislation. It is a commitment at every juncture in the policy process to evaluate tradeoffs among social goals, environmental goals, political backers’ goals, and economic growth—and to err on the side of growth. The Obama administration championed a new health care law that raised \$700 billion in new taxes and created two new entitlements at a time when the spending-swollen federal debt was already exploding. The White House also chose social objectives over growth. It unleashed the Environmental Protection Agency, choosing a green agenda over growth. It launched the National Labor Relations Board on a union agenda at odds with growth.

The second flaw in recent policy approaches has been its misguided reliance on temporary, targeted piecemeal policymaking. Even if one believed that countercyclical fiscal policy (“stimulus”) could be executed precisely and had multiplier effects, it is time

¹ Tyrone C. Marshall Jr., “Debt Is Biggest Threat to National Security, Chairman Says,” Department of Defense News, September 22, 2011, <http://www.defense.gov/news/newsarticle.aspx?id=65432>.

to learn by experience that this strategy is not working. Checks to households (the Economic Stimulus Act of 2008), the gargantuan stimulus bill in 2009 (the American Recovery and Reinvestment Act), “cash for clunkers” (the Car Allowance Rebate System), tax credits for homebuyers (the Federal Housing Tax Credit and the HIRE Act, consisting of a \$13 billion payroll hiring credit, expensing of certain investments, and \$4.6 billion for schools and energy), the Small Business Jobs Act of 2010, and the state–local bailout Public Law 111-226 (\$10 billion for education, \$16 billion for Medicaid) have all failed to generate growth.

The policy regime of macroeconomic fiscal (and monetary) fine-tuning backfired in the 1960s and 1970s, leaving behind high inflation and chronically elevated unemployment, and it is working no better in the 21st century. Instead, there should be a commitment to raising the long-term growth rate of the economy through permanent reforms.

What kinds of permanent, structural reforms are necessary? There are a lot of potential candidates, but I think one handful will ensure that the 21st century is the second American century: (a) reform entitlements to make the social safety net sustainable, pare down the federal debt, and reduce its economic drag; (b) modernize the tax code to eliminate distortions and raise international competitiveness; (c) bring a 21st-century immigration system built on principles of economic policy; (d) transform the embarrassing and underperforming U.S. K–12 education system; and (e) clean out the regulatory overgrowth that limits U.S. economic flexibility and dynamism.

Begin with entitlement reform. The policy problem facing the United States is that spending exceeds any reasonable level of taxation for the indefinite future. There is a mini-industry devoted to producing alternative numerical estimates of this mismatch, but the diagnosis of the basic problem is not complicated and leaves bare the prescription for action. The budget problem is primarily a spending problem and correcting it requires reductions in the growth of large mandatory spending programs—Social Security and federal health programs.

Since 2010, Social Security has been in cash-flow deficit. There are even larger deficits and future growth in outlays associated with Medicare, Medicaid, and the Patient Protection and Affordable Care Act. These programs share the demographic pressures that drive

Social Security, but include the persistent increase in health care spending per person in the United States.

Any informed observer, especially credit-market participants, can recognize these trends. Improving the outlook for entitlement spending would send a valuable signal to those observers and improve the economic outlook. The spending future outlined above represents a direct impediment to job creation and growth. The United States is courting further downgrades as a sovereign borrower and a commensurate increase in borrowing costs. Any sharp rise in interest rates would have dramatically negative economic impacts, equaling or exceeding the experience of late 2008.

Businesses, entrepreneurs, and investors must also consider the future deficits as an implicit promise of higher taxes, higher interest rates, or both. For any employer contemplating locating in the United States or expanding existing facilities and payrolls, rudimentary business planning reveals this to be an extremely unpalatable environment.

In short, entitlement reform is a pro-growth policy move at this juncture. Our research at the American Action Forum indicates that the best strategy to both grow the economy and eliminate deficits is to keep taxes low and reduce public employee costs and transfer payments.²

With the size of the government contained by entitlement reform, the next step is to overhaul and modernize the U.S. tax code. Essential elements of that overhaul are lower rates on business income—both corporate and noncorporate—a competitive system of taxing overseas income, and broad elimination of distortionary tax preferences.

The types of reforms that generate beneficial economic effects extend past reducing the corporate tax rate to include repealing the corporate alternative minimum tax, making the research and development tax credit permanent, and exempting 95 percent of foreign source dividends. At the same time, one could improve work incentives by simplifying individual income tax rate brackets (recent proposals have suggested two brackets of 10 percent and 25 percent) and excluding a substantial portion of dividends and capital gains from taxation.

² "Repairing a Fiscal Hole: How and Why Spending Cuts Trump Tax Increases," American Action Forum, February 18, 2011, <http://americanactionforum.org/insights/repairing-a-fiscal-hole-how-and-why-spending-cuts-trump-tax-increases>.

Step three is to recognize that immigration reform can raise population growth, labor force growth, and thus growth in GDP. In addition, immigrants inject entrepreneurialism into the U.S. economy.³ New entrepreneurial vigor embodied in new capital and consumer goods promises a higher standard of living. A better and more open immigration system could thus raise the pace of economic growth substantially and reduce the cumulative federal deficit.

The next step is to acknowledge that education in America is a disgrace. Tests scores in primary and secondary school remain flat, high school dropout rates are still distressingly high, and growth in college graduation rates has bogged down.

Furthermore, our nation shows regular gaps in achievement between wealthy and low-wealth students. Regardless of often having better-than-average funding, poor neighborhoods usually lack great teachers. There is as well a shamefully predictable gap in achievement based on race and ethnicity that persists. On average, students of color have a much lower, 50 percent likelihood of graduating. Of those students of color who do graduate, they typically exit high school with the functional equivalent of an eighth- or ninth-grade education. This situation feeds an embarrassingly persistent and worsening gap between our students' performance and that of students in the rest of the industrialized world. The Organization for Economic Cooperation and Development found that in 2006, America ranked 25th out of 30 industrialized countries in math and 24th in science.

In the past, only parents with enough money could choose a school outside their government assignment—and money can still buy escape. However, around the “assigned sector” of public education, there is a whole other world slowly emerging. Increasingly, there are more choices in the public sector that families can access, among them public charter schools and access to private schools with scholarship or tax credit support.

The tragedy is that the government near-monopoly has prevented these new choices from being fully implemented and throwing open doors to the students who need them most. While thousands of

³ Douglas Holtz-Eakin, “Immigration Reform, Economic Growth, and the Fiscal Challenge,” American Action Forum, April 9, 2013, <http://americanactionforum.org/research/study-immigration-reform-economic-growth-and-the-fiscal-challenge>.

parents have accessed choice programs immediately as they become available, thousands more sit on waiting lists while their children and their hopes languish. Better options driven by parental choice can expand as quickly as we can provide them the students and the resources to do so.

The final step is a new approach to regulation. The recent rapid increase in burdensome regulations comes at a considerable cost to American businesses, consumers, workers, and the economy in general. In 2013, the federal government imposed over \$113 billion in compliance costs and an estimated 67 million net paperwork burden hours on American individuals and businesses.⁴ These costs take a real toll on employment: just \$1 billion in additional regulatory compliance costs are associated with a 3.6 percent decline in industry employment.⁵ The cumulative effect of regulation is significant, and therefore policymakers should take existing regulatory burdens into account when writing new rules. A comprehensive reevaluation of existing regulations, starting with the most burdensome, duplicative, and costly, should be undertaken to limit the negative impact on employment and prosperity.

Poor growth is the great threat at this moment. But a new strategy for better growth is the great opportunity for the future.

⁴ 2013 Regulation Rodeo Database, American Action Forum, 2013, <http://americanactionforum.org/rodeo-database>.

⁵ Sam Batkins and Ben Gitis, "The Cumulative Impact of Regulatory Cost Burdens on Employment," American Action Forum, May 8, 2014, <http://americanactionforum.org/research/the-cumulative-impact-of-regulatory-cost-burdens-on-employment>.

19. Radically Simplify Law

*Philip K. Howard**

The power of America's economy comes from individual initiative—or more accurately, from a culture that, beginning with early settlers, encouraged and empowered countless individuals to take ownership of their lives. Individual ownership of life's choices unleashed energy, willpower, and imagination never before seen in human history.

This uniquely American character was identified by Frederick Jackson Turner as “that practical, inventive turn of mind, quick to find expedients; all that restless nervous energy; that dominant individualism, working for good and for evil, and withal that buoyancy and exuberance which comes from freedom.”¹

This was not an economy of calibrated central plans, but of people in garages and backyards and labs who pursued their dreams. Two bicycle mechanics in Dayton, Ohio, tinkered their way to manned flight, beating the smartest scientists around the globe. America's economic philosophy was as simple as it was decentralized: trial and error. “Nothing that's any good works by itself,” as Thomas Edison put it; “You got to *make* the damn thing work.”²

America's can-do culture has a few necessary conditions, including the rule of law. Economic energy dissipates in a state of anarchy

* Philip K. Howard is the founder and chair of Common Good.

¹ Frederick Jackson Turner, *The Frontier in American History* (New York: Henry Holt and Company, 1921), p. 37, https://books.google.com/books/about/The_Frontier_in_American_History.html?id=vtF1AAAAMAAJ.

² Neil Baldwin, *Edison: Inventing the Century* (Chicago: University of Chicago Press, 1995), p. 296.

or corruption. A vigorous economy requires a legal platform that enforces contracts, protects against crime, and allows people to go through the day focusing forward, not looking over their shoulders.

Too much law, however, can have similar effects as too little law. People slow down, they become defensive, they don't initiate projects because they are surrounded by legal risks and bureaucratic hurdles. They tiptoe through the day looking over their shoulders rather than driving forward on the power of their instincts. Instead of trial and error, they focus on avoiding error.

Modern America is the land of too much law. Like sediment in a harbor, law has steadily accumulated, mainly since the 1960s, until most productive activity requires slogging through a legal swamp. It's degenerative. Law is denser now than it was 10 years ago, and it will be denser still in the next decade.

This growing legal burden impedes economic growth.

According to the World Bank, the U.S. now ranks 46th in the world in ease of starting a business.³ There are too many requirements, imposed in a way that is too disorganized. Mayor Bloomberg discovered that starting a restaurant in New York City required getting permits from 11 different agencies. Local regulators close down children's lemonade stands for want of a vendor's license.

Obvious productive investments, such as rebuilding America's decrepit infrastructure, are stymied by regulatory tangles. Even the people in charge can't cut through it. President Obama got broad support for the \$800 billion economic stimulus plan in 2009 by emphasizing the opportunity to rebuild infrastructure. Five years later, buried in the back of a White House report on how the money was actually spent, is this fact: barely 3 percent of the stimulus was spent on transportation infrastructure. How can that be? It turns out that in America today even the president, unlike Franklin D. Roosevelt in the New Deal, lacks the authority to say go to essential projects to fix infrastructure. In the case of rebuilding the Bayonne Bridge in the Port of New York—a project that does not touch the bridge foundations or change the right of way, which President Obama identified by executive order as a national priority—47 permits were required from 19 different government entities, plus a 5,000-page

³ World Bank Group, *Doing Business 2015* (Washington: World Bank, 2014), <http://www.doingbusiness.org/data/exploreeconomies/united-states>.

environmental review study. Five years later, work can begin. On average, highway projects require eight years for approval.

America's competitiveness is weighed down by mandates and systems that business can't control. Health care costs, for example, are inflated by a bureaucratic payment and regulatory structure that, studies estimate, consumes 30 percent of the health care dollar. That's \$850 billion, or about \$2,700 for every person in America. We spend all that money on armies of billing and compliance personnel, and on doctors and nurses spending as much as a third of their days doing what used to be called paperwork. Health care is hardly the only sector in society weighed down by excessive mandates. Small banks are being driven out of business by Dodd-Frank regulations designed to regulate big banks. Over 25 percent of the K-12 budget is consumed by special-education mandates, with almost nothing for gifted children. Who is going to provide for special-needs children in the next generation?

The final legal friction I'll mention here is defensiveness, which has swept across our culture like a plague. Ordinary interactions and ideas out in society are weighed down by fears that any candid comment, any spontaneous reaction, any new product or marketing initiative might get you in legal trouble. Legal defensiveness has changed the culture: employers are afraid to give candid job references (what happened to the First Amendment?), doctors waste upward of \$200 billion on defensive medicine, teachers don't put an arm around a crying child, diving boards and seesaws are verboten, warning labels blanket the landscape: "Caution, Contents Are Hot." It is impossible to calculate the cost of defensiveness, but that's what's so scary about it. It's everywhere. "Can do" is becoming "can't do."

The Solution to Legal Suffocation

Law needs to be rebuilt. There's no avoiding it. Sensible choices today are illegal. Productive activities are sinking in legal quicksand. Even the president can't break loose. *It's the law.*

But the new approach to law is not (generally) captured in the idea of "deregulation." Most Americans want environmental review, special education, financial regulation, licensing of food vendors, and oversight of health care delivery. Lawsuits are an essential tool of the rule of law.

All of these desirable goals of law, which should enhance our freedom, are instead undermining our freedom. Indeed, it's hard to find one government program that isn't broken, and often counterproductive. The evidence is irrefutable: read Peter Schuck's book *Why Government Fails So Often*.⁴ My favorite failure is civil service—designed to be “the merit system,” it instead makes it illegal to judge anyone based on merit.

The mutant root that has produced this impenetrable bureaucratic kudzu is the idea that law can supplant human judgment. We have tried to create a hands-free legal code, without any risk of human frailty. Most legal detail is aimed not at important legal goals or principles, but at dictating daily implementation. That's why the Volcker rule is 950 pages. The Constitution, by contrast, is 10 pages.

American law has become central planning. Actually, it's worse, because the planners are dead. Detailed laws and regulations are still dictating behavior decades after they have been written, when circumstances have long since changed.

The solution, broadly, is to restore human responsibility as the activating force of law and regulation. Law should be radically simplified into goals and governing principles, like the Constitution, and leave to accountable humans the responsibility to achieve those goals fairly and sensibly. Law becomes a fence around a corral, within which humans can try to achieve results in their own way. Any successful regulatory oversight works this way. The Federal Aviation Administration (FAA), for example, certifies new planes as “airworthy” without detailed codes on how many rivets per square foot, and so forth. Would you rather fly on a plane that was permitted to fly only because a court decided it complied with detailed regs? Australia replaced 1,000 rules for nursing homes with 31 broad principles, such as requiring “a homelike setting” and respecting “privacy and dignity.” The experts scoffed. Within a year, the nursing homes were materially better.

Restoring human responsibility will permit legal codes to be slimmed down, in most areas, by probably 95 percent. Law will be understandable. People will disagree on application, but they disagree now. That's another of the fallacies of legal micromanagement. There's no such thing as “clear law.” Every set of words, for reasons

⁴ Peter H. Schuck, *Why Government Fails So Often: And How It Can Do Better* (Princeton, NJ: Princeton University Press, 2014).

explained by Wittgenstein, rests on unstated premises and norms. The obsessive quest for legal clarity just means that disputes focus on the parsing of legal language, not ultimate goals.

Another misconception is that a government grounded in human responsibility requires trusting officials to do what's right. To the contrary, giving people responsibility puts them on the hot seat—it's the basis for accountability. A person who betrays a public trust should be fired. It's also not hard to build in checks and balances—just give other people responsibility to second-guess important public choices (e.g., supervisors, appellate courts, and other oversight bodies). I don't trust anyone. But I do trust *a system based on human responsibility*, where responsible people are exposed to oversight by other responsible people. What I don't trust at all is a tyranny of mindless bureaucracy. Nothing works. No one is accountable. It's a formula for paralysis. It smothers productive activity. It kills freedom.

The reason lawsuits have fostered a culture of defensiveness is also a lack of human responsibility: judges don't feel they have authority to draw lines based on reasonable social norms. So self-interested claimants sue for anything. Because lawsuits are an act of state power—coming down to a verdict in which you could lose your home—judges must act as gatekeepers by deciding what is a valid claim. In courtrooms as well as government agencies, law must affirmatively protect boundaries of free behavior—whether it's taking the risk of seesaws, being honest in workplace discussions, or selling coffee without a warning that it's hot. No code can do this. It requires judges to apply prevailing norms of reasonableness, as a matter of law. Juries can't instill this trust—they render decisions only after years of litigation and have no obligation to honor prior decisions. As with the failure of government programs, the evidence here is irrefutable: this *laissez-faire* approach to lawsuits is undermining Americans' freedom. Look around.

Next Steps

America desperately needs a recodification. The way this works is that small committees are charged with coming up with simplified codes in each area of government, and then lawmakers decide whether to adopt them. That is how the Justinian and Napoleonic

Codes were created—it took only five months for Jean-Étienne-Marie Portalis and a small committee to propose a complete overhaul of French law. That is also how America's Uniform Commercial Code was created.

Simplified codes unleash enormous productive activity—such as replacing a muddy road with a paved highway. That's what happened in ancient Rome, and in 19th-century France, and in postwar America with the Uniform Commercial Code. People know where they stand. They feel free to act on their reasonable instincts of right and wrong. They don't go through the day looking over their shoulders.

How would this legal simplification enhance long-term growth in America? Studies suggest that, by itself, a reasonable infrastructure approval process would result in 2 million to 3 million new jobs over the near term. Imagine the energy unleashed if Americans, instead of tiptoeing through a legal minefield, once again felt free to engage in trial and error.

The economic power of a free society requires that people wake up in the morning and feel free to follow their stars. That requires a new, simplified legal framework.

20. Growth and Taxes

*Peter Howitt**

For generations, economists have tried in vain to find the magic bullet that enables economic growth. Perhaps someone will find it someday. Personally, I doubt that it exists. In my reading of the evidence, growth results from a complex combination of factors, some of which can be identified by cross-country studies and by careful use of rich microdata,¹ but none of which can be said to hold the secret to economic growth.

One important factor is taxation.² A low tax rate, applied uniformly across all sectors and all participants, promotes high rates of capital accumulation and efficient resource allocation, both of which are important background conditions for innovation and technological progress. In the particular case of the U.S. economy in 2014, one of the main impediments to economic growth is our complex and illogical income tax code. Both personal and corporate taxation currently work to distort capital allocation decisions and waste creative talent on compliance and avoidance.

Growth would be strengthened if we were to scrap all income taxes and replace them with a wealth tax and a consumption tax. For example, a 1 percent annual tax on net worth combined with a 10 percent tax on all consumption expenditures would have raised \$1.47 trillion in tax revenues in 2011, which is \$200 billion more than the combined revenue of the corporate and personal income taxes that year, and it would have created far less distortion and wasted far less talent.

* Peter Howitt is the professor of economics emeritus and the Lyn Crost professor of social sciences emeritus at Brown University.

¹ Philippe Aghion and Peter Howitt, *The Economics of Growth* (Cambridge, MA: MIT Press, 2009).

² Narayana Kocherlakota and Kei-Mu Yi, "Is There Endogenous Long-Run Growth? Evidence from the United States and the United Kingdom," *Journal of Money, Credit, and Banking* 29, no. 2 (May 1997): 235–62.

Consider first the personal income tax. Housing income in the United States represents about one-quarter of total national income. Yet little of it is taxed, because most of it is the implicit income that people receive on owner-occupied housing. Removing the deductibility of mortgage income would reduce but not remove the distortion created by the nontaxation of implicit housing income. It would eliminate the subsidy of those who debt-finance their housing ownership by those who pay cash. But it would not alter the fact that the nontaxation of housing income distorts the allocation of national investment, away from the physical capital and innovation that generate taxable returns and toward residential construction that generates a tax-free return.

If a wealth tax were in place, then a person considering whether to invest in housing or the stock market would pay the same taxes in either event, and the decision would be made on the basis of anticipated benefits, not tax considerations. Likewise, we would no longer be encouraging leverage on the part of homeowners; the homeowner who borrowed instead of selling stocks to acquire a house of a given price would end up with the same wealth. Of course, this would require us to define wealth in terms of net worth—assets minus liabilities.

Another distortion in the personal income tax code arises from the favorable treatment given to capital gains and qualified dividends. Personal investment decisions are distorted by this treatment because it is not accorded to interest income. As a result, personal portfolios are tilted toward the acquisition of risky equity and against bonds, again for no good economic reason. Moreover, there is an incentive for people to avoid taxation by declaring that their income takes the form of capital gains, as in the case of private equity and hedge fund managers.

Under a wealth tax, there would be no advantage to investing in assets whose yield took one form or another, or to having one's income declared to be of one form or another. Taxes would depend on accumulated wealth, no matter how the accumulation took place.

On the corporate side, the tax code is riddled with special provisions that reflect special-interest lobbying, with the result that corporate capital gets allocated at least to some extent on the basis of private loopholes rather than social economic benefits. The extent of loopholes is evident in the fact that the United States has one of the highest nominal corporate tax rates in the developed world, and yet

the actual *ex post* rate of taxation is near the average across countries. Some corporations avoid taxes entirely.

Companies that can't take advantage of loopholes can engage in strategic transfer pricing, or in tax inversion. Strategic transfer pricing is an accounting practice that arranges for profits to accrue in a company's subsidiaries located in low-tax countries. Tax inversion takes place when the company is bought out by another company in a low-tax country, thereby escaping the higher U.S. corporate taxes.

To the extent that these international maneuvers are merely accounting practices that do not affect the fundamental production, employment, and investment behavior of the company, they may appear to be relatively benign. But they are not. The taxes that the company avoids must be paid by some other entity, whose effective tax rates are therefore higher than they would otherwise be. And any increase in effective tax rates has some distortionary effect.

Under a wealth tax, the fundamental economic behavior of businesses would not be affected by loopholes or international maneuvers. Investments would be made in such a way as to maximize the investors' wealth, in whatever form. Capital in favored industries would be taxed at the same rate as capital in any other industry. Likewise, the U.S. owners of a corporation that located its profit in some other jurisdiction would still pay the same taxes unless the location decision affected the value of their holdings.

Shifting to a wealth tax would not only end these distortions in the tax code; it would also greatly reduce the tax compliance costs paid by U.S. companies and individuals. Some have estimated those costs to be as large as \$400 billion per year,³ and as the tax code gets more complicated, the burden increases. With a wealth tax, individuals would no longer need to hire clever accountants and financial advisers to minimize the tax consequences of their portfolio allocation decisions, because there would be no such consequences except for those that flow from the effects on the individual's net worth. Meanwhile, those clever people would be induced to redirect their talents toward innovations that benefit society instead of innovations that shift the tax burden to someone else.

³ Jason Fichtner and Jacob Feldman, "The Hidden Costs of Tax Compliance," Mercatus Center, George Mason University, 2013, http://mercatus.org/sites/default/files/Fichtner_TaxCompliance_v3.pdf.

Of course, it would still take some accounting expertise to calculate an individual's net worth, but that can be done without specialized knowledge of a tax code too complicated for nonaccountants to master. Assessment of capital assets without a liquid market and an observable market price might be difficult, but in the case of real estate investments, that is already what property tax assessors do. And consumption taxes could be collected the same way that state sales taxes are already collected, at the point of sale.

Likewise, with no tax considerations to worry about, U.S. corporations could forget about paying experts to arrange complicated deals that exist simply to exploit the tax code, or even to tailor deals in such a way as to minimize the resulting tax burden. For the only way to reduce one's tax burden under a wealth tax would be to reduce one's net worth, which few would opt to do.

One possible objection to a wealth tax is that it would discourage saving. But it would not necessarily discourage saving any more than would a uniform income tax applied to all kinds of income, including the income to capital. What matters to a saver is the after-tax rate of return. If the before-tax rate of return is, for example, 5 percent per annum, then the after-tax rate under a 1 percent wealth tax would be the same as that under a uniform 20 percent income tax. If the before-tax rate were 10 percent per annum, then the after-tax rate would be the same as that under a uniform 10 percent income tax. In any event, there is considerable debate within the economics profession over the question of whether saving is even responsive at all to after-tax rates of return.

Another common objection to a wealth tax is the claim that it would be time-inconsistent—that is, that the government would promise a low tax rate so as to encourage people to accumulate wealth but then impose a high rate once people had made irreversible accumulation decisions. To this objection I say that time inconsistency in fiscal policy is an overrated issue. Fiscal changes are too slow moving and the political process too uncoordinated for anything resembling a coherent strategic entrapment effort by the U.S. government to be a serious threat.

Another possible objection is that of liquidity. What if wealth were in the form of the family farm that would have to be liquidated in order for the owner to pay the 1 percent tax? I would give taxpayers the option of declaring the asset to be illiquid and allowing the

government to accept either a 1 percent equity claim on any future disposition of the asset or a collateralized debt, at some fair interest rate, with a face value equal to 1 percent of the value of the asset, in lieu of current tax payment on the asset.

Finally, the combination of a wealth tax and a consumption tax would provide a fair degree of progressivity to the tax scheme. Given that the median U.S. household in 2011 had net wealth of less than \$70,000, most of the burden of the wealth tax would be paid by the top 50 percent of wealth owners. And given that wealth is more unevenly distributed than income, taxes as a percentage of income would tend to rise as income rose above the median. For those far below the median, it might seem unfair to impose a 10 percent consumption tax, but in that case, I would advocate a negative tax for those with little or no income, provided they also have little or no wealth. The burden would be on the household to demonstrate absence of income and wealth.

Lobbying by special interests is the ultimate source of our dysfunctional income tax system. Perhaps lobbyists would eventually find a way to distort the simple wealth–consumption tax alternative that I am proposing. But it would take time. Meanwhile, the alternative would go as far as any other single measure I can think of to revive economic growth in the United States.

21. More and Better Foreign Direct Investment

*Daniel Ikenson**

National output is a function of the quantity and quality of both labor and capital deployed in the economy, tempered by the constraints and leveraged by the advantages of the environment in which they are deployed. That's just another way of saying legal institutions, business culture, and the policy environment matter too. Economic growth requires that all of these determinants, interacting in the aggregate, move output in a positive direction.

With the world's largest, most innovative, and most dynamic economy for most of the past century, U.S. officials could afford to be cavalier about their policy mistakes and to defer reform for another day. In most cases, those errors and their collective drag on the economy were barely, if at all, perceptible. The engine of growth was working well enough to compensate for its inefficient design and poorly inflated tires.

But it appears that the engine's main components are wearing down, and replacement parts may be hard to come by. In a recent paper, Brink Lindsey suggests that long-term U.S. growth in real gross domestic product (GDP) per capita will likely fall from its historical average of about 2 percent per year, because each of the four discrete growth components has been declining (quantity of labor and capital) or stagnating (quality of labor and capital) in recent years without any foreseeable prospects to reverse those trends.¹ In light of these hard facts, Lindsey implies that the time

* Daniel Ikenson is the director of the Herbert A. Stiefel Center for Trade Policy Studies at the Cato Institute.

¹ Brink Lindsey, "Why Growth Is Getting Harder," Cato Institute Policy Analysis no. 737, October 8, 2013.

may be ripe for policy changes—to inflate the tires, change the oil, and remove the sand from the gears. He writes:

In the quest for new sources of growth to support the American economy's flagging dynamism, policy reform now looms as the most promising "low-hanging fruit" available.

There is probably no single elixir to reverse the declining long-term U.S. growth rate. Getting significantly more mileage out of our labor and capital likely will require a variety of reforms. Among them should be measures that expand the potential for economies of scale, such as deepening global economic integration through harmonization of regulations and standards, removing tariffs on industrial inputs and final goods, and eliminating barriers to services trade. Two "mega-regional" trade negotiations that could yield that outcome are currently in progress.

But the priority developed in this essay is for policymakers to focus on making the United States a more attractive location for foreign direct investment (FDI). The United States is competing with the rest of the world for investment in domestic value-added activities, and foreign providers of that capital have demonstrated the capacity to raise averages across a variety of economic metrics, including GDP.

According to a study published by the Organization for International Investment, U.S. subsidiaries of foreign-headquartered companies (or U.S. "affiliates") represent less than 0.5 percent of U.S. companies with payrolls, but punch well above their weight, accounting for 5.9 percent of private-sector value added; 5.4 percent of private-sector employment; 11.7 percent of new private-sector, nonresidential capital investment; and 15.2 percent of private-sector research and development spending.² These affiliates earn 48.7 percent more revenue from their fixed capital and compensate their employees at a 22 percent premium compared with their respective U.S. private-sector averages.

Between 2001 and 2010, U.S. private-sector value added increased by 39 percent; for affiliates, the increase was 56 percent. In the manufacturing sector, affiliates proved even more consequential: while overall U.S. manufacturing-sector value added increased by

² Daniel J. Ikenson, "Insourcing Companies: How They Raise Our Game," Organization for International Investment, October 30, 2013, http://www.ofii.org/sites/default/files/OFIIRaisingOurGame_FULL.pdf.

21 percent over the decade, it rose by 53 percent for manufacturing-sector affiliates. Affiliates increased their stock of U.S. property, plants, and equipment by 46 percent over the decade—double the overall private-sector rate of increase. The list of superlatives goes on.³

Affiliates have raised average U.S. economic performance by boosting output, sales revenue, exports, employment, and compensation. They have also demonstrated stronger-than-average long-term commitments to operating in the United States with increasing levels of capital investment, reinvested profits, research and development spending, and cultivation of relationships with U.S. suppliers. Moreover, U.S. companies have benefited from exposure to the best practices employed by affiliates, many of which are world-class companies that have stood out in their home markets and have what it takes to succeed abroad.

Competitive jolts to established domestic firms, technology spillovers, and the hybridization and evolution of ideas have all been positive consequences of the infusion of foreign direct investment. One can only wonder whether the Detroit automakers would still be producing Ford Pintos, AMC Pacers, and Chrysler K-cars had foreign producers not begun investing in the United States in the early 1980s, helping to reinvigorate a domestic industry that had fallen asleep at the wheel.

No country has ever been a stronger magnet for FDI than the United States. Valued at \$4.9 trillion in 2013, the U.S. stock of inward FDI accounted for 19 percent of the world total—more than triple the share of the next-largest single country destination. However, the U.S. share was a whopping 39 percent only 15 years ago. Since then, annual inflows have failed to establish an upward trend.

To some extent, this development reflects inevitable demographic changes. Strong economic growth over the past 15 years in developing countries has followed periods of political stability and economic liberalization, creating new opportunities and inspiring greater confidence that these formerly high-risk bets are desirable places to invest in productive activities. However, another important reason for the declining U.S. share is the deteriorating U.S. investment climate.

Companies looking to build or buy production facilities, research centers, and biotechnology laboratories consider a multitude of factors, including access to skilled workers and essential material

³ Ibid.

inputs, ease of customs procedures, the reliability of transportation infrastructure, legal and business transparency, and the burdens of regulatory compliance and taxes, to name some. According to several reputable business-perception indexes, the United States has slipped considerably over the past decade in a variety of these areas.

Out of 142 countries assessed in the World Economic Forum's Global Competitiveness Index, the United States ranks 24th on the quality of total infrastructure, 50th on perceptions that crony capitalism is a problem, 58th on the burden of government regulations, 58th on customs procedures, and 63rd on the extent and effect of taxation.⁴ Meanwhile, ongoing uncertainty over energy, immigration, trade, tax, and regulatory policies continues to deter investment, while encouraging U.S. companies to offshore operations that might otherwise be performed in the United States.

In a recent paper,⁵ Harvard Business School professors Michael E. Porter and Jan W. Rivkin wrote:

The question "Where should we locate?" is more prominent in the minds of executives than it has ever been. Over the past three decades, business activities have become increasingly mobile, and more and more countries have become viable contenders for them. As a result, the number and significance of location decisions have exploded. Considerable evidence suggests that the U.S. is not winning enough of the location decisions that support healthy job growth and rising wages.

Although high-end activities such as advanced manufacturing and research and development have been U.S. strengths over the years, Porter and Rivkin worry that the United States has been struggling to attract and retain those activities. They attribute the loss of location decisions to bad public policies:

The U.S. government is failing to tackle weaknesses in the business environment that are making the country a less attractive place to invest and are nullifying some of America's most important strengths.

⁴ Klaus Schwab, *The Global Competitiveness Report 2011–2012* (Geneva: World Economic Forum, 2011), http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf.

⁵ Michael E. Porter and Jan W. Rivkin, "Choosing the United States," *Harvard Business Review* 90, no. 3 (2012), <https://hbr.org/2012/03/choosing-the-united-states>.

The authors surveyed nearly 10,000 Harvard Business School alumni about their experiences with location decisions. Citing a complex tax code, an ineffective political system, a weak public education system, poor macroeconomic policies, convoluted regulations, deteriorating infrastructure, and a lack of skilled labor, survey respondents expressed great concern that business conditions in the United States were eroding relative to other countries. Putting the United States in a stronger position to win more investment location decisions requires a better understanding of the determinants of these decisions and how public policies affect them.

Last year, the Global Investment in American Jobs Act of 2013⁶ was passed in the House of Representatives. The Senate has not yet considered the bill, but one of its cosponsors, Senator Bob Corker (R-TN), remarked, “If we want the U.S. to be the very best place in the world to do business, we need to take a close look at what we’re doing right, what we’re doing wrong and how we can eliminate barriers that diminish investment in the U.S.”

The “Findings” section of the legislation states the importance of FDI to the U.S. economy, acknowledges that the U.S. share has been declining in the face of growing competition from other countries, and calls for a comprehensive assessment of the policies that both repel and attract foreign investment. The bill’s premise is that U.S. policy and its accumulated residue have contributed to a business climate that might be deterring foreign investment in the United States, and that changes to those policies could serve to attract new investment. Whether through this bill or some other vehicle, the concept of a comprehensive policy audit to identify the most fruitful reforms followed by quick implementation makes good sense.

Considering that the United States has the highest corporate tax rate among Organization for Economic Cooperation and Development member countries and an extraterritorial system that subjects corporate earnings abroad to punishingly high rates upon repatriation, tax reform would likely make the list. The Peterson Institute’s Gary Hufbauer and Martin Veirol argue in a recent paper that “reducing the U.S. corporate tax rate is certainly the most efficient

⁶ Global Investment in American Jobs Act of 2013, H.R. 2052, 113th Congress (2013–14), <https://www.congress.gov/bill/113th-congress/house-bill/2052>.

way to encourage domestic investment and associated gains in production and jobs.”⁷

Investment deterrents can be found in the millions of pages of the *U.S. Code* and the *Federal Register*. According to the Competitive Enterprise Institute, the cost of compliance with federal regulations reached \$1.863 trillion in 2013.⁸ In January 2011, President Obama issued Executive Order 13563 under the heading “Improving Regulation and Regulatory Review.” Section 1 states:

Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness and job creation. It must be based on the best available science. It must allow for public participation and an open exchange of ideas. It must promote predictability and reduce uncertainty. It must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends. It must take into account benefits and costs, both quantitative and qualitative. It must ensure that regulations are accessible, consistent, written in plain language, and easy to understand. It must measure, and seek to improve, the actual results of regulatory requirements.⁹

Certainly, a comprehensive audit would identify regulatory overkill as an important impediment to investment. President Obama (or his successor) should be prepared to reissue Executive Order 13563, but with a much greater sense of urgency and seriousness, including external reviews with goals and firm deadlines included.

If incoherent U.S. energy policies—policies that leave investors guessing about whether and to what extent gas and oil exports will be restricted next year or the year after, and about whether solar energy will be subsidized or taxed in 2015—are found to be deterring investment, policy remedies must be implemented. If U.S.-based

⁷ Gary Clyde Hufbauer and Martin Vieiro, “Corporate Taxation and US MNCs: Ensuring a Competitive Economy,” Peterson Institute for International Economics, Policy Analysis no. PB13-9, April 2013, p. 11, <http://www.iie.com/publications/pb/pb13-9.pdf>.

⁸ Clyde Wayne Crews, *Ten Thousand Commandments: An Annual Snapshot of the Federal Regulatory State* (Washington: Competitive Enterprise Institute, 2013), <http://cei.org/sites/default/files/Wayne%20Crews%20-%202010,000%20Commandments%202013.pdf>.

⁹ Exec. Order No. 13563, 76 Fed. Reg. 3821 (January 21, 2011), http://www.reginfo.gov/public/jsp/Utilities/EO_13563.pdf.

producers are disadvantaged by higher production costs than their foreign competitors on account of the customs duties they must pay for raw materials and components, permanently eliminating all duties on production inputs should be an option on the table.

If a dearth of skilled workers is cited as an investment deterrent, the spotlight should be shone on U.S. education and immigration policy failures with the goal of finding the right solutions. If liability risks on account of wayward class-action suits and legal system abuses are keeping investors at bay, major tort reform should be seriously considered.

FDI is a verdict about the efficacy of a country's institutions, policies, and potential. Given the importance of FDI to economic growth, understanding its determinants and crafting policy accordingly are a matter of good governance and common sense.

22. Forgetting How to Grow

Tim Kane*

Trying to understand why the greatest nation in history is lurching from crisis to crisis leads many observers to the narrative of American decline in the face of a foreign rival. When confronted with such thinking, reflect on James Fallows, who wrote books and articles in the early 1990s suggesting that “the Asian system as a whole will almost certainly be the main source of worldwide economic energy for the next generation,” whereas Western economies would remain “slow” unless they learned from better forms of capitalism. In hindsight, such predictions are embarrassing, but they were common on the left and the right.¹

The thread that unites theories of decline across generations is the false idol of a rival power, from the Soviets in the 1950s to the Chinese today. If we look at great power history, however, it categorically rejects the “great rival” premise and instead shows that the true danger is self-inflicted stagnation.

In *Balance: The Economics of Great Powers from Ancient Rome to Modern America*, Glenn Hubbard and I examined how economies grow and stagnate.² The good news is that American power is truly unrivaled, but, unlike past powers, aware of the fundamentals of economics. Avoiding bad macro should be easy.

Contrary to the declinists, no economy is close to that of the United States. Germany, France, England, Japan, and other near-peers operate 15–20 percent below the production possibilities frontier defined by U.S. per capita productivity. They have been hovering at that level for half a century. The existential threat facing

* Tim Kane is a research fellow at Stanford University’s Hoover Institution.

¹ James Fallows, *Looking at the Sun: The Rise of the New East Asian Economic and Political System* (New York: Vintage Books, 1995), p. 441.

² Glen Hubbard and Tim Kane, *Balance: The Economics of Great Powers from Ancient Rome to Modern America* (New York: Simon & Schuster, 2013).

America is not from China or Russia or, if it must be said, terrorists in the hinterlands. America is the only existential threat to America. The bad news is that the patterns of Great Power decline are the same, time after time, and we can see them playing out right now in the United States.

In short, America is forgetting how to grow. This is quite an achievement in light of the relentless refinement of economists' insights into the factors that drive growth. We know, in a technical sense of knowledge, how economic growth happens. Economists knew more in 2014 than was known in 1994, by far, and knew far more in 1994 than in the decades before. Unfortunately, we the people have become ever more confused and led astray by the politics of protectionism, redistribution, and what Mancur Olson called "the logic of collective action."³

"Nobody Knows Where Economic Growth Comes From," said Matt Yglesias in a 2012 essay for *Slate*.⁴ What? Saying that economists don't understand growth is like saying doctors don't understand cancer. There are always limits, but let's not confuse humility with ignorance. Elhanan Helpman is a highly regarded Harvard professor of economics who titled his 2004 book, *The Mystery of Economic Growth*. William Easterly's book, *The Elusive Quest for Growth*, is another case in point.⁵ Enough already. Growth is no mystery.

Hubbard and I advance a model of economic growth that is accessible and well-grounded in the current academic consensus. There are three different kinds of growth, the intangible drivers that explain the expansion of gross domestic product. Innovative growth, which some call technology proper and others simply call "ideas," is the easiest to understand. This is *Schumpeterian* growth, and it has boomed in the United States thanks to a unique style of

³ Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1965).

⁴ Matt Yglesias, "Nobody Knows Where Economic Growth Comes From," Moneybox (blog), *Slate*, August 6, 2012, http://www.slate.com/blogs/moneybox/2012/08/06/nobody_knows_where_economic_growth_comes_from.html.

⁵ Elhanan Helpman, *The Mystery of Economic Growth* (Cambridge, MA: Belknap Press, 2004); William Easterly, *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics* (Cambridge, MA: MIT Press, 2001).

entrepreneurial capitalism, which was presciently celebrated by Joseph Schumpeter. The second type, *Solovian* growth, stems from investment. Think of Robert Solow's workhorse model. The third type of growth comes from scale and the subsequent specialization of labor, known as *Smithian* growth, after Adam Smith.

The United States is in the process of slowly forgetting all three.

Entrepreneurship has been in a stunning decline since the 1970s. The percentage of companies that are startups has fallen during every presidency since Jimmy Carter. Back when disco was king, one in eight companies was a startup. Today, 1 in 16 companies is. To be sure, the United States has a head of innovative steam with a dynamic startup culture epitomized by Silicon Valley. The institutions of venture capitalism are world-class. It's the demographics that are the problem. The nature of risk taking is simply less appealing, perhaps crowded out by a paternalistic state. We live in a country where it pays, literally, not to work, where occupational licensing has run amok, where patents are a thicket, and where trial lawyers have made a minefield out of the startup runway. Worst of all, medical insurance has been so highly regulated that it is foolish to leave a safe job at a big company with gilded coverage and even more foolish to hire more than 50 employees, lest you take on paternalistic responsibility and a deeply uncertain regulatory burden.

Investment seems like a robust area for growth, especially with all-time highs on the stock market. This is probably not the best barometer, as equity markets are fickle. The emerging trend of corporate inversions—in which U.S. companies merge with foreign firms—is the direct result of uncompetitive U.S. tax rates on profits. If investment is what puts capital in capitalism, it is alarming to see the decomposition of gross domestic product (GDP) data since the 1940s. Not only is the current ratio of investment to GDP at a postwar low during the current recovery, the previous decade's expansion was fueled by artificially low credit that pushed up residential, not corporate, investment. A second alarming observation is the decline in the U.S. share of global foreign direct investment; once a third of the world share, it is now down to a sixth.⁶

⁶ "Foreign Direct Investment in the United States: 2013 Report," Organization for International Investment, 2013, http://www.ofii.org/sites/default/files/FDIUS_2013_Report.pdf.

As for the third area of growth, America's economic strength stems from its vast internal scale. If all economics is ultimately based on free trade among individuals, the United States has enjoyed a tremendous advantage with a wealthy, educated population that is roughly the same size as western Europe. Unlike Europe, our 50 state economies have enjoyed open borders to trade and migration for centuries. The European Union is making a belated effort to create the same internal scale benefits. The logic of scale is so uncontroversial that it is, sadly, easily forgotten. Despite the benefits of the North American Free Trade Agreement and other trade agreements, free trade in principle is regarded with deep suspicion by the public. Even worse is the denigration of America's traditional openness to immigration. Indeed, a major reason that Europe cannot reap the full advantage of its newly open internal trade scale is that population growth has been stagnant among its member states for decades. The United States, thanks to immigration, adds 1 million legal permanent residents born abroad every year.

Sadly, the debate over comprehensive immigration reform in Washington, D.C., reveals how deeply confused American leaders have become. The push for comprehensive reform has been championed by a Republican president (George W. Bush) and a Democratic president (Barack Obama) with the same effect. Both led mixed Congresses and unified Congresses (controlled by their party), yet somehow immigration remained stuck in the cloakroom. When legislation did emerge for a vote, it was inevitably "comprehensive," which is code for including various special-interest provisions and poison pills. It looks now as if the endeavor was designed to fail, the kind of cynical ploy that lets politicians on both partisan extremes enjoy the fight (red meat for their respective donors and voters), while common-sense, incremental reforms languish.

Steve Jobs famously challenged President Obama at a private Silicon Valley dinner in February 2011 on why he wouldn't support a simple bill to increase legal immigration of engineers, with both more green cards and more H-1B visas. Obama claimed that keeping all of the various pieces together in an all-or-nothing comprehensive bill was the only way. It's not true. Even if it were, the result has been nothing. Meanwhile, what economist Bryan Caplan calls the "anti-foreign bias" continues to rise.

From the perspective of a proponent of greater immigration at all levels, a position I have long held, let's shed some light on the latest incarnation of comprehensive reform, the Senate's 2013 bill. This was a bad bill. Whenever the AFL-CIO—historically hostile to increased migration, especially of less-skilled labor—is a major proponent of legislation with a new work visa and an expansively empowered new bureau within the Labor Department, alarm bells should ring. The comprehensive bill tries to do too much, mixing illegal and legal immigration, low-skill farm hands with temporary visas and high-skill engineers with permanent residency. Hidden inside are three clauses that will chill the hiring of foreign guest workers: (a) a non-displacement clause that bans firms from layoffs of a single U.S. worker during a half-year window around the hiring of a single migrant, (b) verification that no American was affected by the hire, and (c) a full spectrum of wage controls.

In 2014, we at the Hoover Institution began a nonpartisan survey of immigration experts from all over the United States to evaluate incremental reforms to immigration in the hopes that a future Congress and president might finally try to find consensus rather than the high-stakes partisan fight over comprehensive legislation.⁷ If they limited their efforts to the singular issue of work visas—leaving alone the contentious issue of deportations, illegals, and the cable TV fodder—something amazing would happen.

The 35 experts were asked about the likely effects of an expanded and more efficient guest worker program. Net exports would rise according to 51 percent of them, versus 3 percent who said they would decline. GDP would increase according to 94 percent, versus zero who said it would decline. Some 80 percent said illegal border crossings would decrease, and 71 percent said the number of undocumented immigrants overall would decrease. What about the unemployment rate of U.S. workers? Zero impact.

Then we asked what elements should be included in a new temporary work visa. Giving migrants portability, meaning the freedom to change U.S. employers and avoid exploitation (the bane of work visas in the past), was recommended by all but one expert on our panel. What about the nondisplacement and employer certification clauses

⁷ Tim Kane, "The Question of Work Visas," *Peregrine*, no. 1402, October 6, 2014, <http://www.hoover.org/research/voting-new-ideas>.

in Harry Reid's Senate bill championed by President Obama? Those had 14 percent and 20 percent support, respectively. It was a bad bill, but Democratic partisans loved that it allowed them to castigate do-nothing Republicans (while they do nothing to pass incremental bills themselves). And to be fair, Republican restrictionists loved it because it offered what looked an awful lot like amnesty. But isn't this a false choice between deportation and amnesty?

A simple survey of scholars shows that designing incremental pieces of legislation that would enhance immigration, GDP, and trade is easy. Unfortunately, designing something that helps incumbent politicians get reelected is easy too. The United States is a nation of immigrants that is building a wall against immigrants. This is how a great republic forgets.

23. Preparing Students for the World of Work

*Andrew Kelly**

During the recession and the anemic recovery, America's labor market has suffered from a seeming paradox: at the same time that millions of workers were unemployed and looking for work, millions of job openings were going unfilled. In 2012, for instance, while the unemployment rate was still over 8 percent (and millions more had dropped out of the labor force), a ManpowerGroup survey found that nearly half of employers reported having difficulty filling job openings.¹

The problem? Nearly 40 percent of respondents blamed a lack of technical competencies, or "hard skills." And the jobs they're trying to fill aren't rocket science: skilled trade workers were at the top of the list among U.S. employers, followed by engineers and information technology staff. "Sales representative" rounded out the top four.

What's going on here? Surely some of the 12.8 million unemployed Americans could have filled the role of sales representative? With a bit of technical training, some of them almost certainly could have been hired as a skilled tradesman or woman.

Some argue that this paradox reflects picky employers who would rather blame the educational system than their reluctance to provide any training.² That's certainly part of it. But the disconnect also reflects a deep flaw in our education system: most Americans get almost no exposure to the world of work as part of their K-16 schooling.

* Andrew Kelly is the director of the Center on Higher Education Reform and a resident scholar in education policy studies at the American Enterprise Institute.

¹ "2012 Talent Shortage Survey Research Results," ManpowerGroup, 2012, http://www.manpowergroup.us/campaigns/talent-shortage-2012/pdf/2012_talent_shortage_survey_results_us_finalfinal.pdf.

² Peter Capelli, *Why Good People Can't Get Good Jobs: The Skills Gap and What Companies Can Do About It* (Philadelphia: Wharton Digital Press, 2014).

Vocational offerings like career and technical education or apprenticeships are treated as an option of last resort for struggling students, not a critical on-ramp to a successful and productive life. As a result, workers at each level of educational attainment—from high school graduates through bachelor's degree holders—are having trouble landing a good-paying job commensurate with their level of education. And employers see a mass of under-skilled workers who need more training and experience to play a productive role.

Rethinking the balance our education system strikes between education and training—for students at all levels of the academic hierarchy—would help grow our economy without sacrificing the things that have made American education great. What exactly would this look like in practice? If I were waving the magic wand, it would mean (a) making apprenticeships the norm rather than the exception, (b) encouraging more flexible job training for lifelong learners who need to reskill and retool, and (c) creating space for private financing that would allow people to pay for all of this.

Blending School and Work “Works” . . .

There is plenty of evidence that blending academics and career training increases people's prospects.

Exhibit 1: career academies; these small learning communities housed within high schools teach both academics and the technical skills needed for a particular career. The academies also provide opportunities for workplace learning with partnered employers. A long-term randomized evaluation of the academies found that they increased earnings by more than \$2,500 per year, an increase that was stable throughout the eight years following graduation. The wage effects were limited to men, and researchers also found slightly positive effects on marriage and family formation. Importantly, contrary to fears about “tracking” students into the workforce instead of postsecondary education, attending a career academy did not depress postsecondary attendance.³

³ James Kemple, “Career Academies: Long-Term Impacts on Labor-Market Outcomes, Educational Attainment, and Transitions to Adulthood,” MDRC, 2008, <http://www.mdrc.org/publication/career-academies-long-term-impacts-work-education-and-transitions-adulthood>.

Exhibit 2 is the federal registered apprenticeship program, which enrolls about 450,000 people a year in a combination of on-the-job training with an employer and technical education courses. A 2012 evaluation of the program found that participants earned almost \$6,000 more a year than nonparticipants. Researchers estimated that for those who actually completed their full program, the boost in career earnings would be about \$240,000 (with an additional \$60,000 in fringe benefits). The societal benefits far outweighed the costs too. Each participant produced an estimated \$49,000 in net social benefit over the course of his or her career.⁴

Lastly, take postsecondary certificate programs, some of which offer a larger immediate payoff than many associate's and bachelor's degree holders receive.⁵ These programs tend to be shorter than two years, are highly structured, have high completion rates, and are directly tied to the labor market. They also blend technical instruction with basic skills courses. To be sure, not all certificates provide a return on investment, but many do.

... But Only a Minority of Students Take Part

The problem is that these programs are small, all things considered. Some estimate that just 5 percent of young Americans train as apprentices, and most are in construction trades.⁶ Certificates are growing in popularity but still make up a minority of credentials awarded. These options are also shunned by most college-bound students. More common is the summer internship—an ad hoc arrangement that favors the wealthy. Four-year colleges, most of which see “job training” as beneath them, are more than happy to farm this function out to employers. But instead of informing a student's

⁴ Debbie Reed, Albert Yung-Hsu Liu, Rebecca Kleinman, Annalisa Mastri, Davin Reed, Samina Sattar, and Jessica Ziegler, “An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States,” Mathematica Policy Research, 2012, http://wdr.doleta.gov/research/FullText_Documents/ETAOP_2012_10.pdf.

⁵ Anthony P. Carnevale, Stephen J. Rose, and Andrew R. Hanson, “Certificates: Gateway to Gainful Employment and College Degrees,” Georgetown Center on Education and the Workforce, 2012, http://www.insidehighered.com/sites/default/server_files/files/06_01_12%20Certificates%20Full%20Report%20FINAL.pdf.

⁶ Tamar Jacoby, “Why Germany Is So Much Better at Training Its Workers,” *Atlantic*, October 16, 2014, <http://www.theatlantic.com/business/archive/2014/10/why-germany-is-so-much-better-at-training-its-workers/381550/>.

choice of major, internships are typically done after students have chosen a field of study. This sequence is the exact opposite of what would be most useful to students who are trying to figure out what career to pursue.

What's more, reliance on internships favors wealthy students who can afford to spend a summer working without pay. First and most obviously, unpaid interns must pay their own living expenses during the summer. Second, unpaid work at for-profit firms is not technically legal, but as long as students are getting college credit for their internship experience, firms can hire them.⁷ Colleges figured this out long ago, reaping tuition revenues from families who pay to have their children work for someone else off campus. It's those who can afford to pay for both living expenses and "internship credit" at their college who are able to take on unpaid gigs at private firms. Not surprisingly, new survey data from the Gallup-Purdue Index suggest that fewer than one-third of students take part in an internship.⁸

In short, despite evidence of their effectiveness, connections between American education and the workplace are not only incomplete, they're often nonexistent for many students. We can do better, but it will take a significant rethinking of the traditional divide between career training and academics. I see three ways to bring the worlds of education and work closer together.

Make Apprenticeships the Norm, Not the Exception

In other countries, the majority of students do an apprenticeship—also known as "dual training"—not just those who are on a vocational track. In Switzerland, for instance, nearly 70 percent of 16- to 19-year-olds participate in the three-year Vocational Education and Training program, including those who will go on to postsecondary study. After three years, apprentices can choose whether to head to work or to go on to further schooling. Apprenticeships are available in white-collar and blue-collar

⁷ "Fact Sheet no. 71: Internship Programs under the Fair Labor Standards Act," U.S. Department of Labor, <http://www.dol.gov/whd/regs/compliance/whdfs71.htm>.

⁸ Sean Seymour and Julie Ray, "Recent Grads More Likely to Have Had Useful Internships," Gallup, November 13, 2014, <http://www.gallup.com/poll/179201/recent-grads-likely-useful-internships.aspx>.

fields alike.⁹ The same is true in Germany, where three out of every five students do an apprenticeship.¹⁰

Even with a magic wand, we wouldn't want to just import these models to the United States. And even in countries with well-developed systems, not every young person does one before entering the workforce. But creating a more vibrant apprenticeship system that attracts all manner of students and covers all manner of careers would remove the stigma attached to career preparation and improve the pipeline of well-prepared workers.

Policymakers should consider reforms that make apprenticeships more attractive to employers and students. First and foremost, these programs cost money. Apprentices are paid a wage for the work they do, and somebody has to teach the courses they take as part of the program. There are currently no federal tax incentives that reward companies for taking on apprentices, but there should be.¹¹

Policymakers could also use a social impact bond approach, where firms would front the money needed to take on apprentices but earn back a slice of the additional tax revenue generated by graduates.¹²

On the demand side, states and school districts have tilted the playing field toward college readiness and away from job preparation. The Common Core State Standards claim to be about both college and career readiness, but instead of defining "career-ready" separately, the architects have equated the two. If they wanted to encourage apprenticeships as a universal option, states could require all students to have some kind of on-the-job training as a prerequisite for high school graduation.

⁹ Diane Auer Jones, "Apprenticeships as an Alternative Route to Skills and Credentials," in *Getting to Graduation: The Completion Agenda in Higher Education*, ed. Andrew P. Kelly and Mark Schneider (Baltimore: Johns Hopkins University Press, 2012), pp. 126–53.

¹⁰ Jacoby, "Why Germany Is So Much Better at Training Its Workers."

¹¹ A bipartisan pair of senators—Tim Scott (R-SC) and Cory Booker (D-NJ)—proposed such a credit earlier this year. Sen. Tim Scott, "Senator Tim Scott and Senator Cory Booker Introduce Apprenticeship Legislation to Tackle Skills Gap, Address Youth Unemployment," news release, April 9, 2014, <http://www.scott.senate.gov/press-release/senator-tim-scott-and-senator-cory-booker-introduce-apprenticeship-legislation-tackle>.

¹² Andrew P. Kelly and Michael Q. McShane, "Private Money, Public Good," *Chronicle Review*, February 18, 2013.

Encourage More Flexible Job Training That Can Evolve with Demands

Given the pace of technological change, career training ought to look more like a checkerboard, where workers jump in and out as skill demands change. Instead, we tend to treat postsecondary education as a one-off choice made early in a student's career that is supposed to equip him for the rest of his life. And while we heap subsidies on degree-seeking students, those who want to take individual courses or sets of courses to build skills are essentially on their own.

Finally, state and federal regulations that govern providers of postsecondary education make it difficult to offer just-in-time training that evolves with labor-market demand. To get access to federal aid, providers must be accredited, but to get accredited, you have to offer degrees. Meanwhile, many states require licensed providers to seek approval for any changes to curriculum or new program offerings, stunting their ability to react to real-time changes in employer needs. And those who offer online training must often get approved in each and every state where they serve students, raising costs and discouraging scale.

Clearly, career training could benefit from more flexibility. As we speak, firms like Udacity and Udemy offer a variety of low-cost massive online courses that are specifically designed to fulfill employer needs. These courses don't cost much, but neither are they eligible for any kind of public subsidies, making it difficult for them to compete with traditional degree programs that are eligible for federal student aid (and are often subsidized by the state).

Reformers should clear out regulations that focus on inputs and processes and replace them with a chartering model where providers submit to accountability for outcomes in return for autonomy in developing and running their programs. Opening up some existing pots of federal student aid money to new, nondegree offerings could allow them to compete on an equal playing field with traditional programs. And ensuring that all colleges have "skin in the game" when it comes to student loan performance could compel them to focus more acutely on preparing students for the labor market.

Create Space for Private Financing That Rewards Value

We certainly shouldn't rely exclusively on public coffers to finance these ideas. Apprenticeships and lifelong learning deliver private as well as public goods, and private financing can and should play

a fruitful role. Specifically, students could choose to finance these offerings through income share agreements (ISAs), where private investors provide the capital needed to pay for an apprenticeship or skill upgrade in exchange for a percentage of the student's future income over a fixed period. For instance, under an ISA, investors could subsidize the wages of an apprentice or pay for the educational component (or both) and then reap some of those sizable wage returns. Because investors' return would be tied to student success, they would have an incentive to guide prospects toward the most valuable apprenticeships and training programs. Students choosing the best programs would be offered the best ISA terms.

While there's a budding ISA market in the United States, there is still considerable uncertainty about the legal status of these contracts, their regulatory home at the federal level, and their interaction with state usury laws. Providing some legal and regulatory clarity would not cost the federal government a dime and certainly wouldn't require a magic wand. Creating space for these financing tools would allow for more innovative career-training models without putting taxpayers on the hook for the failures.

From Last Resort to Top Priority

The basic idea here—that providing more work experience will produce more skilled workers—is hardly revolutionary, nor is it unproven. But it's time to bring these successes from the periphery of our education system to the center. All students—not just those who struggle in school—could benefit from more exposure to the world of work, and our economy would reap the benefits.

24. Unleashing Innovation

*Derek Khanna**

Creative destruction is the process that drives innovation. When competitive intensity is high, old firms that refuse to innovate cease to exist. When competitive intensity is low, old firms that refuse to innovate stagnate and get even bigger. Startups are the disruptors that can force competition and introduce new products and market models. But in many sectors, the barriers to entry, created or reinforced by government actions, are prohibitively high to all but the most well-financed startups. We are seeing that large sectors of the economy are effectively not open for competition. And consequently, entrepreneurship has reached abysmally low levels.

Gross domestic product (GDP) growth of 2 percent a year should not be our new normal. It's only the new normal if we allow incumbent businesses to corrupt the creative destruction process for their particular industries. But so far, that is precisely what is happening. As a result, the engine of our economy—the formation of new companies—is no longer functioning properly.

The good news is that innovation still happens in the United States. We have some of the most creative people in the world. Our human capital, financial resources, and scalability make the United States the perfect place for most founders to start their company. But human capital is now global, venture capital is exploding around the world, and the Internet scales any company's potential users from 1 billion to 3 billion with the click of a button. It's critical that we get America back on track before the next Facebook or Google is launched in India or China.

Policymakers are currently disengaged, allowing problems to get even worse. The question for policymakers is, why is the tech sector growing at around 8 percent a year when the overall economy is growing so much more slowly? In fact, the success of the tech sector

* Derek Khanna is a visiting fellow at Yale Law School's Information Society Project.

may be even starker than those figures indicate, because many of the benefits coming out of the tech sector don't actually contribute to, and may even subtract, from GDP—think of free searching on the World Wide Web, cheaper taxis with UberX, free phone calls with Skype, free social networking with Facebook and Twitter, and so on.

One of the primary ways that the federal government regulates the private sector is through its provisions of patents and copyrights. Patents and copyrights are government-granted protection to incentivize creation and risk taking, but they are also a form of market limitation—a limitation on our individual liberty. Those limitations, particularly in the cases of patents, need to be justified, because otherwise the government is limiting particular markets to only one participant, or a few participants, thereby creating government-implemented monopolies or oligopolies. Such restrictions drive up prices, remove competitive intensity, and can reduce or even eliminate innovation. In the case of true inventions, the Founders believed that this patent exclusivity was justified (otherwise we wouldn't have those incredible technologies that may cost billions to develop, such as a new drug). But in other cases where they are not warranted, patents can perversely discourage innovation: big firms have filed patents on noninventions to ensure high barriers to entry. Often, patents have become a moat to protect incumbent firms, a moat created and enforced by the government to stop competition from raiding the castle through competition.

Patents must be reserved for only true inventions, as every time patents are granted for something that is not truly novel, the government is intervening in the market by pulling the emergency brake on innovation and growth and giving a bounty to one producer. Copyright policy is just as problematic, as modern copyright policies are unclear and, from an originalist perspective, unconstitutional. Websites that feature copyrighted content are increasingly finding themselves liable for millions or billions of dollars of liability—this discourages legitimate innovation. This is why some venture funds, such as Y Combinator, warn entrepreneurs that they will not invest in any startup that touches Web content copyright because the legal landscape is so fraught with uncertain liability.

Our tax code is another area of government policy that has been corrupted to benefit incumbent industry rather than create a level playing field. One could imagine a benefit to having emerging

companies pay less in taxes to help foster creative destruction; instead, U.S. policy is the opposite. Big companies have enough loopholes and lobbyists to ensure that they rarely pay the actual corporate income tax rate. The only companies that pay our full corporate income tax rate, *the highest corporate tax rate in the entire world*, are new companies.

Thus, we have a system where new companies, those that drive economic growth and innovation, pay many times more in taxation than what established firms pay; therefore, essentially, the government is subsidizing the market models of old. It's almost as if policymakers read Schumpeter's theory of creative destruction and sought to foster the opposite. The solution is a complete rethinking of the U.S. tax code, systematically eliminating the opportunities for loopholes and deductions written by lobbyists, effectively creating two tax codes. Low taxes are important, but stable tax policy that provides an even playing field is much more critical for innovation and growth. Both political parties have been complicit in creating tax uncertainty and tax handouts.

The government has a critical role in funding basic research. Patents are one method for society to effectively subsidize research, but patents are often insufficient to incentivize basic research (they last only 20 years). Basic research pushes the economy forward into new frontiers: it seems like every major advance in science brings with it new questions to answer, and new scientific frontiers to explore. As the scientific landscape has become more varied, basic science research has not kept up. In fact, it has slowed down. Investing in basic science is the best investment society can make for its future economic growth. Basic science is a classic example of market failure where the government needs to play an active role. American laboratories and universities are the best in the world, but they need funding to keep up with their ambition. The multiplier effect from this spending is significant for the broader economy.

If we want to grow our economy, then we need to push our economy to new frontiers and systematically identify areas of basic research that are being underfunded by the private sector. For example, longevity research—understanding the basic science of why humans age and how to address the root causes of aging and its impact on the body—could hold incredible implications for extending the human lifespan. But the field has received minimal

private research dollars in comparison with its potential impact because of difficulty monetizing breakthroughs.

We need to push space frontiers: in the 1960s, President Kennedy called for us to go to the moon, “not because it’s easy, but because it is hard.” We must have a similar focus today, pushing the bounds of the possible. Economists have said that the impact of developing a space elevator, a device to connect earth and space, would be profound for the U.S. economy, and despite its roots in science fiction literature (like most of our space program), many scientists, including a National Aeronautics and Space Administration study, believe that building such a device is possible but difficult (as was going to the moon in the 1960s). The government should leverage X Prizes to reward the private sector for developing the particular technologies that will be needed to develop a space elevator by 2025–2030, which would open space for tourism, enterprise, and exploration. Building the space elevator would push the bounds of material science with widespread spillover benefits.

New technologies will push our society forward, but only if we let them. Upcoming innovations not only push the bounds of the possible but also push the bounds of the legal. For several important new innovations, the limiting factor on advancement and adoption is the government. The home genetic-testing industry was shocked when the Food and Drug Administration (FDA) banned 23andMe from providing DNA test analysis to consumers—thereby not only inhibiting 23andMe but also stifling the home diagnostic market just as the cost of a DNA test, for active proteins, fell below the \$1,000 mark. FDA policy needs to be revised to let innovative companies compete in home diagnostics and to bring down the costs of drug approval.

Robotic and autonomous cars may have an impact upon society and our economy larger than anything since the World Wide Web, but autonomous cars will present novel policy questions that haven’t been addressed and will slow development and adoption. But autonomous cars will eventually replace car ownership for many Americans, save thousands of lives, and alter how society arranges itself, making it viable to live farther away from work.

Three-dimensional (3-D) printing will revolutionize many industries, but consumer use of 3-D printing may be clouded in copyright concerns. The Internet of things is upon us, with sensors and chips in all our home devices, but unless the Digital Millennium Copyright

Act is updated, tinkering with our own devices to make them interoperable may be illegal.

Drones can change delivery structures for businesses and create entirely new industries, but business use of drones is currently banned by the Federal Aviation Administration.

These technologies will likely spawn new technologies that we can barely comprehend: for example, drones, material sciences, robotics, and 3-D printing–related technologies may fuse to revolutionize the construction industry. Imagine houses, office buildings, or highways entirely constructed by robots, constructed with new methods and new materials that provide better insulation and quality than what can be physically assembled by humans, with embedded sensors to warn of problems well before they manifest themselves, perfected through repetition and learning from every previous robotic construction mistake, built in just a fraction of the time of current construction and for a fraction of the cost. Such changes are not just possible, they are likely, and they will transform our buildings and infrastructure.

The United States ought to be the leader in these emerging fields. Peter Thiel’s new book *Zero to One* argues that the question we need to ask is, how do we develop the developed world? His answer is technology.¹ It’s up to policymakers of both parties to get the clue.

If policymakers want a better country, and care about economic growth, employment, and raising the earnings and living standards of average Americans, then they should be holding regular hearings with the pioneers of innovation to ask them, “What is working and what is failing in the U.S. economy? How can policymakers make the United States safe for innovation? What sectors do you not invest in because the regulatory climate is too uncertain or onerous? How can Washington help you grow?” The answers may surprise you—many of their problems can actually be fixed.

¹ Peter Thiel with Blake Masters, *Zero to One* (New York: Crown Business, 2014).

25. Our Guild-Ridden Labor Market

*Morris M. Kleiner**

Occupational licensure is the legal process by which governments (mostly the states in the United States but also local governments and the federal government) identify the legal qualifications required to become licensed to practice a trade or profession, after which only licensed practitioners are allowed by law to receive pay for doing work in the occupation. This form of labor-market regulation has rapidly become one of the most significant factors affecting labor markets in the United States and other industrialized countries. The number of persons in licensed professions in the United States has grown from around 5 percent in the early 1950s to almost 29 percent in 2009. More than 800 occupations are licensed in at least one state.¹ However, my research with Princeton economist Alan Krueger, former head of President Obama's Council of Economic Advisers, shows that licensing raises wages by about 15 percent even when controlling for human capital variables, such as age, education, and other labor-market characteristics. That increase is largely due to the ability of regulated professions working through state legislators and regulatory boards to limit the supply of practitioners and eventually drive up costs to consumers and some perception that licensing enhances the quality of the service.

The trend toward broader licensure should be a source of interest to policymakers, if not outright concern. Licensure makes it more difficult to enter a profession, which restrains the supply of service providers and can raise the demand curve by suggesting the service

* Morris M. Kleiner is a professor of public affairs at the University of Minnesota.

¹ Morris M. Kleiner and Alan B. Krueger, "Analyzing the Extent and Influence of Occupational Licensing on the Labor Market," *Journal of Labor Economics* 31, no. 2 (2013): 173–202.

is of higher quality. Consequently, that raises the cost of services for consumers. Similarly, state or local licensure in the United States can diminish mobility by requiring service providers to fulfill new licensing requirements when they move from one political jurisdiction to another. Licensure restricts mobility and the scope of practice within certain professions. Dental hygienists cannot do certain tasks or open independent offices, because the law restricts the overarching tasks to only dentists; a registered nurse in a hospital cannot do a task that state legislators have determined must be carried out by a licensed respiratory therapist. Moreover, occupational licensing is an enforced labor-market monopoly that uses the police powers of the state. Policies that would allow more market-based systems such as certification or that would allow more training and certification facilities to compete with state monopolies could reduce the losses to the economy and the labor market that are often the outcomes of occupational licensing.

One unifying theme about the growth of occupational regulation has been the opposition from both the left and right of the political spectrum. Many on the left are concerned about the reduction in job opportunities, the increase in prices, and the diminished availability of services for those in or near poverty. On the right, there is concern for economic liberty and access to the labor market and jobs. Many licensed professions are relatively low-skilled jobs, such as barbers, manicurists, nurse's aides, and cosmetologists. The social costs of a bad haircut may be negligible, but the social costs of creating additional employment barriers for disadvantaged populations are not. Licensure laws often exclude ex-felons—defensible in many professions, but not in all—and such prohibitions make it extremely difficult for ex-offenders to find postprison employment, thereby contributing to America's high recidivism rate.

As with any form of regulation, policymakers must weigh the potential benefits of professional licensure against the costs of the subsequent labor-market distortions. There are numerous potential drawbacks to licensure, even in cases where such regulation improves quality in the relevant profession. For example, not all consumers demand the same level of quality. When members of the legal profession told Milton Friedman that every lawyer should be a Cadillac, he famously replied that many people would be better off with a Chevy (a cheaper but purely functional alternative). If licensure

improves quality by restricting entry into the profession, then some consumers will be forced to pay for more “quality” than they want or need, or they may not be able to afford any service at all.² Even in professions such as law or medicine that require graduate education, many services are quite basic.

There are income-inequality considerations related to who gains and who loses as the result of licensure. In a model developed by Carl Shapiro, high-income consumers gain at the expense of lower-income consumers with a preference for lower-quality service.³ When licensure is introduced, more producers choose to be high quality, raising output in the high-quality market and lowering prices for consumers who seek high quality. These consumers are better off in the new steady state because they consume the same high-quality service at a lower price. Consumers who prefer lower-quality services are worse off since these services are available only at a higher price than in an unlicensed market, or not at all. Thus, licensing can have a reverse “Robin Hood effect” by making higher-income consumers better off at the expense of lower-income ones.

Consumers who cannot afford licensed professionals have an incentive to do the work themselves—sometimes at great cost to themselves or the public.⁴ Licensure requires that new entrants to a profession undertake specified training, pass a particular exam, or fulfill some combination thereof. Any potential benefit of licensure depends entirely on the connection between those requirements and subsequent quality of service. Often there is none.

One striking example comes from teachers in Los Angeles. California passed a law placing a cap on class sizes throughout the state. Los Angeles was not able to hire enough licensed teachers to fill the open positions. To meet the demand, the district hired thousands of teachers who were not certified or who were in the process of becoming certified but had not yet fulfilled all the state requirements. Subsequent analysis of classroom-level data for 150,000 students over multiple years found that teacher quality did

² Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962).

³ Carl Shapiro, “Investment, Moral Hazard and Occupational Licensing,” *Review of Economic Studies* 53, no. 5 (1986): 843–62.

⁴ Morris M. Kleiner, *Licensing Occupations: Enhancing Quality or Restricting Competition?* (Kalamazoo, MI: Upjohn Institute for Employment Research, 2006).

in fact have a profound impact on student performance, but that there was no statistical association between whether a teacher was licensed and his or her performance in the classroom.⁵ The authors conclude, “To put it simply, teachers vary considerably in the extent to which they promote student learning, but whether a teacher is certified or not is largely irrelevant to predicting his or her effectiveness.” This is consistent with many other findings. For example, tougher laws for dentistry had no impact on the quality received by patients who were air force recruits or other more general measures of quality.⁶ Also, having tougher licensing laws for mortgage brokers did not reduce the number of foreclosures, but it did raise the prices of mortgages in more heavily regulated states.⁷

The proliferation of licensure can raise costs and reduce flexibility in the affected occupations. For example, licensure can make it illegal for an eighth-grade math teacher to switch to the ninth grade (because middle school licensure is different from high school) or for dental hygienists to offer basic dental care without the supervision of a dentist. This professional fragmentation is particularly acute in health care, where more than 76 percent of nonphysicians are licensed, and where there are rigidly defined roles that prevent individuals from moving across jobs or from performing multiple tasks.⁸

If both the left and right oppose more occupational regulation, why is it growing? From the time of medieval guilds, service providers have had strong incentives to create barriers to entry for their professions in order to raise wages. In contrast, consumers who will be affected by the higher costs because of licensure are unorganized and arguably underrepresented in the political process. The

⁵ Robert Gordon, Thomas J. Kane, and Douglas O. Staiger, “Identifying Effective Teachers Using Performance on the Job,” Hamilton Project Discussion Paper no. 2006-01, Brookings Institution, April 2006.

⁶ Morris M. Kleiner and Robert T. Kudrle, “Does Regulation Affect Economic Outcomes? The Case of Dentistry,” *Journal of Law and Economics* 43, no. 2 (2000): 547–82.

⁷ Morris M. Kleiner and Richard Todd, “Mortgage Broker Regulations That Matter: Analyzing Earnings, Employment, and Outcomes for Consumers,” in *Studies of Labor Market Intermediation*, ed. David Autor (Chicago: University of Chicago Press and National Bureau of Research, 2009), pp. 183–231.

⁸ Morris M. Kleiner, *Stages of Occupational Regulation: Analysis of Case Studies* (Kalamazoo, MI: Upjohn Institute for Employment Research, 2013).

willingness of a legislature to pass licensure laws without rigorous analysis of their benefits relative to costs creates the opportunity for well-organized producer groups to lobby for laws that bring them personal gain. The left and right seem to be in agreement that policymakers need to revisit the process for creating licensure regulations and to consider amending or rolling back existing laws in favor of lesser forms of regulations, such as certification. However, rolling back licensing laws is difficult. Another policy option would be to create private accreditation through training facilities that would create more competition than the monopoly-based system of occupational licensing that currently resembles the guilds used in the days prior to the Industrial Revolution.

26. Sidestep the FCC and the FDA

*Arnold Kling**

It is difficult to imagine rapid economic growth taking place in the United States without technological innovation. Other countries can grow by catching up to existing technology, but for us it is necessary to push the frontier.

Two potential areas for rapid innovation are telecommunications and medicine. I am very concerned that these areas are regulated by the Federal Communications Commission (FCC) and the Food and Drug Administration (FDA), respectively, two agencies that were established in different eras. My fear is that these agencies are culturally incapable of adapting to the environment that scientific advances have created. I have proposals for sidestepping each agency.

I must admit that I have no scientific expertise in either telecommunications technology or biochemistry. I may be misjudging the most likely paths for innovation in these areas. Even so, it still may help create new institutions for allocating spectrum and rewarding medical research that are free from the shackles of FCC and FDA tradition. We need agencies that will look at these problems with fresh eyes.

The Spectrum Arbitration Board

All responsibility for regulating spectrum should be transferred from the FCC to a new agency, which I call a spectrum arbitration board. The board would adopt a common-law approach to spectrum, rather than a command-and-control approach.

The command-and-control model, in which the FCC dictates how particular bands of spectrum may be used and by whom they may be used, seems to be based on a view that different uses of spectrum

* Arnold Kling is an adjunct scholar at the Cato Institute.

must be separated in order to avoid the problem of “interference.” However, there are other solutions to this problem.

For example, there is a communication method called “spread spectrum” that does not create interference. The spread-spectrum signals affect only receivers that are programmed to understand them; to other receivers, spread-spectrum signals appear as noise that is readily filtered out.

Another important concept is cognitive radio. That means a transmitter that can adjust automatically to find an open frequency with which to communicate with a similarly programmed receiver.

Even if these technologies do not take over telecommunications, it is still the case that spectrum is allocated very inefficiently in the United States today. For example, in spite of the fact that fewer than 10 percent of households still receive television signals over the air, large swaths of spectrum are reserved for broadcast television.

If spectrum were used efficiently, it is possible that Americans could all have access to low-cost high-speed wireless Internet connections everywhere. In addition, the so-called Internet of things could emerge more rapidly.

Unlike the FCC, the arbitration board would presume that any spectrum could be used for any purpose. The board would set ground rules for users to deal with one another to resolve potential conflicts. These ground rules might specify which user has priority until an agreement can be reached. The ground rules might set expectations for how negotiations ought to be conducted and resolved. If parties are unable to resolve disputes, then the board would rule on that specific dispute.

Many economists have argued that spectrum should be governed by property rights, comparable to the property rights in land. If the arbitration board determines that this is indeed the case, its job will consist of defining such property rights and determining who owns them. For example, the owner of the television license for Channel 6 in Philadelphia might be said to own that slice of spectrum in that region. It could then use, rent, or sell any portion of its spectrum property.

However, there are proponents of the newer technologies who doubt the need for strong property rights in spectrum. As an analogy, consider the problem of avoiding airplane collisions. The property-rights solution would be to allocate specific swaths of sky to different

airlines. Instead, we use rules, technical requirements, and air traffic control systems. Perhaps the arbitration board will determine that the best approach to dealing with spectrum is something similar.

An Agency to Offer Prize-Grants for Medical Research

Medical research has entered a new world, created by the genomics revolution. However, as Peter Huber has pointed out, the institutional structure for creating and protecting property rights has not kept up.¹ Drug developers now can use genetic information to identify individuals who need or are likely to respond to a drug. That ability makes standard testing protocols, which call for broad-based, blind trials, inappropriate. It also blurs the distinction between basic and applied research.

Huber and others focus on the FDA approval process as an impediment to progress. Their thinking is that if the FDA were faster and more flexible about granting approval for medical innovations, then patients would benefit sooner.

I am looking at the problem more broadly than that. To me, it appears that 21st-century medical research is difficult to reconcile with the patent system, and the FDA approval process merely compounds that more fundamental problem.

The current system rewards companies that come up with widely applicable drugs, devices, or medical tests that can be patented. It is not suited to rewarding incremental additions to knowledge or the development of therapies tailored to narrow populations.

What we want to reward is the development of practical knowledge. However, some knowledge is not patentable. Consider, for example, the discovery of “off-label” uses of a drug, which rewards the original developers of the drug but not those who discover the new use. Another example would be a protocol for combining drugs to treat certain cancers in certain patients but that does not involve the development of any new molecule.

We could broaden the patent system to allow protocols and new uses for drugs to be patented. However, the objective of policy should be to increase the amount of knowledge in the public domain, a goal that is not served by a thicket of patents. Broadening

¹ Peter Huber, *The Cure in the Code: How 20th Century Law is Undermining 21st Century Medicine* (New York: Basic Books, 2013).

the patent system would serve to reward patent lawyers rather than researchers.

Instead, we need to do a better job of aligning the institutions that surround biomedical research with the path that medical discovery is likely to take going forward, as we seek diagnostic tools and treatments based on genetic information and biochemistry. What I propose here is a hybrid of a research grant and a prize, which could be awarded to either for-profit or nonprofit entities.

The prize-grant would be a contract between a research organization and a funding institution. The funding institution could be either a government agency or a private foundation. The National Institutes of Health would be the natural home for a prize-grant agency within the U.S. government.

The process would work as follows. First, the research organization proposes a study to test for a particular result. That result might be the identification of a biomarker for a disease, or a demonstration that a new diagnostic tool is more accurate than existing methods, or the creation of a treatment targeting a specific population.

Next, the funding organization would offer a specific amount that the research organization will receive if the study produces a positive result. If the study produces a negative result, then the research organization receives nothing. Either way, the results of the study are placed in the public domain.

The contract would also specify a method for third-party verification of the result. The cost of verification would be paid for out of an escrow account funded in advance by the research team, although the third party would be chosen by the funding institution. In some cases, the verification might be done concurrently with the study, perhaps by the third party auditing the study to determine whether it is conducted in a manner that produces reliable results.

A research organization would have to decide whether or not to proceed with a project, based on its view of the likelihood of success, the cost of the project, and the value that the funding institution is willing to assign to a successful result. The researchers and their backers, whether a drug company, university, or venture capitalist, would have to make the decision whether to accept the contract and undertake the costs of the research.

The prize-grant contract would differ from a plain research grant in the following ways:

- Profit-seeking companies would be just as eligible as nonprofit research institutes to receive prize-grants. The studies contribute to basic research.
- The burden of assessing the probability of success would fall on the research organization, not on the funding institution. Those doing the research would in effect be betting on its success.
- Those doing the research would have the incentive to use funds wisely and for their intended purpose. The cost of waste, including excess overhead, would be borne by the research organization, not by the funding institution.
- The funding institution would have to screen applications to ensure that the research will be conducted safely and ethically. However, it would have to neither “qualify” the researchers based on their scientific credentials and beliefs nor assess the probability of success. A team headed by an oddball who is scorned by mainstream scientists could obtain a contract, risking the team’s resources that the oddball’s idea will pan out.
- The funding institution would have to assign a value to a successful result before the research is undertaken, so that this value can be specified in the contract. This would be the most administratively difficult part of the process, and each research organization would have to submit an application fee to cover the cost to the funding institution of assessing the value of the intended result of the research.

The prize-grant would differ from an ordinary prize in the following ways:

- The criteria for winning the prize would typically be first suggested by the researchers, with funding institutions then assigning a value for the prize, prior to the research.
- Prizes often would be for incremental achievements, not just for spectacular accomplishments.
- Large pharmaceutical companies and other private firms would be just as eligible as nonprofit researchers to receive prize-grants.

We can think of the current intellectual property regime in medical research as a prize-grant approach in which the prize is a patent. However, prize-grants differ from patents in the following ways:

- The prize for a successful result is specified by the funding institution. With a patent, the value of the prize is determined in part by patient demand but also by the purchasing rules of insurance companies and governments, by legal jousting, and by gaming of the system.
- Useful research that does not result in a patentable product gets rewarded under prize-grants, whereas under the patent system such research does not get rewarded.
- Regardless of the outcome of the research undertaken in pursuit of a prize-grant, findings would be immediately placed in the public domain. In contrast, patents set a term of monopoly on the use of information, during which the prices of patented products can be set far above production cost.

It is possible that existing drug companies would be unable to adapt to a regime in which they are paid in cash rather than in patents, and in which they are rewarded for providing incremental knowledge rather than discovering blockbuster drugs. It could be that new profit-seeking research institutions would have to emerge in order for the prize-grant system to work.

One way to understand the prize-grant approach is to recognize that pharmaceutical research conducted by private firms is a public good. Such research adds to the general stock of knowledge. If there were no public-goods aspect to pharmaceutical research, then we would not need patents. If there were no patents, then the prices of drugs would be driven down to production cost, which is much lower than the prices charged for patented drugs. On the other hand, without patents, private firms would not have the incentive to discover and test new drugs.

Patents have always been a problematic way to promote innovation. They raise prices of products far above marginal cost. They impose legal costs involved in obtaining, attacking, and defending patents. They provide an artificially high incentive to develop substitute products that devalue the patented invention. They create an artificial disincentive to develop complementary products, because the high price of the patented product limits its market penetration,

adversely affecting would-be product complements. Most important, there is a lot of important knowledge to be obtained that cannot be shoehorned into a patentable molecule or device.

In pharmaceuticals, the challenges with using the patent system are increasing. As Huber has pointed out, the nature of molecular medicine is changing. The system of rigid, blind clinical trials needs to be replaced by a regime of focused trials in which researchers learn and adapt as they go.

This modern approach to drug development combines biochemistry and genetics. It tends to blur the distinction between basic research and applied research. It used to be that basic research looked at the biochemical mechanism of disease and applied research then tested cures (or sometimes the other way around—cures were found, and basic research then tried to understand the mechanism of the cure). With personalized medicine, the testing process itself yields important information about the biochemical mechanism of disease.

The human trials that used to be considered applied research are now vital in their contribution to basic research. However, the structure of this research needs to be tailored toward discovering new information for the public domain, not on fitting a rigid FDA process for approving a patentable drug. The prize-grant approach could provide a better alternative.

27. Two Relatively Painless Ways to Boost Growth

*Robert E. Litan**

There is no one magic silver bullet that will permanently raise the potential growth rate of the U.S. economy—the driving force behind continued improvements in living standards—but I do offer two relatively painless ways of doing the job, and conceivably helping make the result a bit more equitable to boot.

The first idea should be no stranger to Cato readers, to most economists, and to a bipartisan consensus at least in the U.S. Senate: greatly boost the numbers of *permanent* work visas (citizenship would be a plus) for high-skill immigrants. Two classes of immigrants are especially important: foreign graduates with STEM (science, technology, engineering, and mathematics) degrees from U.S. universities and immigrant entrepreneurs qualifying for a potential new expanded number of such visas.

The reason high-skill immigrants are important for growth is that they are linked to the launch of new businesses, and it is startups that have been disproportionately responsible for disruptive innovation around which many other technologies are built (think the car, the airplane, computers, air conditioning, and the Internet). A substantial body of research has shown not only that immigrants are generally more likely to launch new businesses than native Americans, but also that immigrants account for about a quarter of all tech startups, almost double immigrants' share in the population (13 percent).¹

* Robert E. Litan is a nonresident senior fellow at the Brookings Institution.

¹ Robert W. Farlie, "Immigration and the American Economy," Kauffman Foundation, Kauffman Index of Entrepreneurial Activity, Kauffman Foundation, April 2013, p. 11, http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2013/04/kiea_2013_report.pdf; <http://www.kauffman.org/what-we-do/research/immigration-and-the-american-economy>.

Dane Stangler and Jason Wiens of the Kauffman Foundation have calculated that the immigrant visa provisions in Startup Act 3.0, which has not passed either congressional chamber, and has more liberal entry requirements than the Senate-passed comprehensive bill, would raise the gross domestic product by 1.5 percent over a decade, or roughly 0.15 percent a year (while creating 1.6 million new jobs). These estimates do not include the growth impact of enhanced STEM graduate visas.²

One widely discussed element of the comprehensive immigration reform package, an increase in the numbers of H1-B visas, would be good for tech employers who can't find qualified American employees, but would not likely be a major boost to growth. That's because the H-1B is temporary (3 years, with a possible renewal) and thus offers no way for its recipients to launch their own businesses.

The second idea stems from the landmark decision by a California state court in June 2014, *Vergara v. State of California*, which held that the teacher unions' tenure system violated the equal protection clause of the state's constitution. The reasoning is that teacher quality is critical to student achievement, and the court cited clear evidence that minority children were taught by less able teachers. Without the ability to remove those teachers, the local school system, and the state, were violating the children's rights, in much the same way that "separate but equal" was held to violate the Fourteenth Amendment of the U.S. Constitution in *Brown v. Board of Education of Topeka, Kansas*.

Clearly, this decision—which is likely to be a road map for similar litigation and I believe similar outcomes in other states—has a lot to do with rectifying inequalities that affect students from their very earliest ages and then through the rest of their lives. But what does it have to do with *growth*?

A great deal, I submit. Students who are penalized by an educational system stacked against them virtually from the time they enter school until they graduate (or drop out, as all too many will), represent a huge waste of human capital. Let's not forget that they are real people, with the same distribution of native talents as the

² Dane Stangler and Jason Wiens, "On the Hill: Startup Visas Can Positively Impact the Economy," Kauffman Foundation, July 23, 2014, <http://www.kauffman.org/what-we-do/articles/2014/07/on-the-hill-startup-visas-can-positively-impact-the-economy>.

rest of the population. But apply a poor educational environment with poor teachers (on top of a difficult socioeconomic and often dangerous physical environment), and the whole distribution shifts to the left: far fewer “stars” will make it out of this system to generate the next wave of innovations that could power growth.

Likewise, a huge range of students in the rest of the distribution could make a valuable contribution to society, but instead all too easily fall victim to a life of gangs or crime later in life, at huge cost to society (the costs of incarceration—more about this soon) and to their victims. Others suffer the economic and social loss of disappointed expectations. In economists’ speak, the nation suffers a huge opportunity cost.

The *Vergara* decision points the legal way toward a much better outcome, but the fiscal implications of the decision (and hopefully many like it in the future) have yet to be fully recognized. If school systems are going to get permission to pay teachers for performance, that means that teaching eventually will no longer be the “safe” profession it has long been, with tenure protecting weak performers. Instead, teaching will be like private-sector jobs, where there is a risk of being let go for poor performance. With more risk attached to the job, it is likely that school systems will need to pay more in general.

But they are especially likely to have to pay premiums to attract *good* teachers into the crime-ridden areas, where low-income and minority kids often attend school, and to *stay* there to teach in difficult circumstances—not spend just a two-year Teach for America stint in such situations.

Where is the money going to come from? It need not come from more taxes, although I personally would not be opposed to that outcome as a last-resort source of funds, given the huge social importance of rectifying schooling inequalities. But my *first resort* would be to utilize savings from decriminalizing marijuana and embarking on early release programs for nonviolent offenders now in jail.

There are now over 2 million people behind bars, over 60 percent of whom are serving time for nonviolent offenses. In particular, over a quarter of incarcerated Americans—more than 500,000 people—are there for drug offenses.³ Some 40,000 people are behind bars on

³ John Schmitt, Kris Warner, and Sarika Gupta, “The High Budgetary Cost of Incarceration,” Center for Economic and Policy Research, June 2010, <http://www.cepr.net/documents/publications/incarceration-2010-06.pdf>.

marijuana charges, and approximately 650,000 arrests for marijuana-related offenses occur every year.⁴

The figures on cost per prisoner are all over the map, but a safe assumption for minimum-security prisons is \$25,000 per year, according to the Urban Institute.⁵ Freeing all inmates held on marijuana charges would alone save \$1 billion, and a concerted effort to reduce incarceration rolls for nonviolent offenses could achieve savings of many billions more. Imagine what could be accomplished if we reallocated, say, \$2 billion from incarcerating drug and other nonviolent offenders to paying teachers more. That money could finance an across-the-board annual pay raise of about \$660 for all 3 million teachers,⁶ or we could use the same amount to pay an additional \$10,000 a year for 200,000 teachers or \$20,000 for 100,000 of them.

Put something like these tradeoffs up for a vote, and I'll bet you'd have plenty of teachers siding with a lot of other voters—dare I say a majority in many, perhaps most, states. Add the high-skill immigration proposal I started with, and we'd be well on our way to appreciably lifting our nation's rate of potential economic growth.

⁴ Ezra Klein, "How Legalized Pot Would Change America," *Vox*, 2014, <http://www.vox.com/2014/4/16/5620322/how-legalized-pot-would-change-america>.

⁵ Nancy La Vigne and Julie Samuels, "The Growth and Increasing Cost of the Federal Prison System: Drivers and Potential Solutions," Urban Institute, December 11, 2012, <http://www.urban.org/uploadedpdf/412693-the-growth-and-increasing-cost-of-the-federal-prison-system.pdf>.

⁶ "K-12 Facts," Center for Education Reform, 2014, <https://www.edreform.com/2012/04/k-12-facts/#schools>.

28. Hacking the Regulatory State

*Michael Mandel**

To lift long-term growth levels, policymakers in developed countries must consider making systematic changes in the “operating code” of regulatory institutions in order to encourage innovation and disruptive innovation in particular. Advocating deregulation per se is rarely the right answer, because consumers and workers rightfully see regulation as essential protection against profit-focused businesses. Voters widely support social goals such as clean water and air, and even businesses would not want to see government abandon the market to the law of tooth and nail.

Yet even the most regulation-minded can see how the accumulation of well-intentioned rules can have a pervasive and negative effect on innovation. One useful analogy is that of a small child idly tossing pebbles in a stream. One or 2 or even 10 pebbles won’t make an obvious difference in the flow of the stream. Yet accumulating gradually over the years, thousands of pebbles can make an effective dam. Or to put it into technology terms, asking a software developer to add one more feature or requirement to a program may seem like a small and innocuous request. Yet enough such “minor” requests turn a simple task into a bloated, ungainly, and bug-ridden piece of code that may be virtually unusable.

In this essay, I’ll suggest two ways to hack the regulatory state in order to encourage innovation and long-term growth. One proposal, setting up a “regulatory improvement commission,” was originally described in a 2011 report from the Progressive Policy Institute.¹ It has gained some traction since then, including being introduced

* Michael Mandel is chief economic strategist at the Progressive Policy Institute.

¹ Michael Mandel, “How the FDA Impedes Innovation,” Progressive Policy Institute, June 2011, http://progressivefix.com/wp-content/uploads/2011/06/06.2011-Mandel_How-the-FDA-Impedes-Innovation.pdf.

as bipartisan legislation in both the Senate and House.² My second suggestion is to broaden the approval criteria used by the Food and Drug Administration (FDA) for new drugs and devices, as a way of encouraging disruptive innovations in biosciences.

Before describing these proposals, I note that hacking the regulatory state can be a bipartisan activity. The goal is not to make massive changes in the level of regulation, but rather to introduce fixes that make it work better.

The Regulatory Improvement Commission

The United States has a well-specified process for passing legislation and turning it into rules, complete with flow charts.³ But if you ask about a similar flow chart for undoing or fixing regulations, you'll get a blank stare.

True, every president from Jimmy Carter to Barack Obama has tried to institutionalize the process of "retrospective review," where executive agencies look back at their own past rules and identify which ones are out-of-date or need to be changed.⁴

But retrospective review has always been ineffective, for a variety of reasons. I'll just name two here. First, rules are often the response to congressional mandates, which executive agencies cannot evade. Second, the process of undoing an existing rule requires going through the same extensive process of taking public comments and cost-benefit studies that the original rule required. Paradoxically, cost-benefit studies on an existing rule are very expensive, because they require collecting actual data on the effect of the rule from companies.

That's why we need to hack the regulatory state, and set up a separate low-cost, nonbureaucratic backchannel for undoing or fixing regulations. The Regulatory Improvement Commission (RIC)

² Michael Mandel, "Reviving Jobs and Innovation: A Progressive Approach to Improving Regulation," Progressive Policy Institute, February 2011, <http://www.progressivepolicy.org/publications/policy-memo/reviving-jobs-and-innovation-a-progressive-approach-to-improving-regulation/>.

³ For example, see "The Federal Rule Making Process," Public Citizen, <http://www.citizen.org/documents/Regulations-Flowchart.pdf>.

⁴ For example, see Barack Obama's executive order on retrospective review, Exec. Order No. 13563, 76 Fed. Reg. 3821 (January 21, 2011), http://www.reginfo.gov/public/jsp/Utilities/EO_13563.pdf.

would be authorized by Congress for a fixed length of time and would consist of a panel appointed by the president and by congressional leaders of both parties. The RIC would have a limited time to come up with a package of regulations to be eliminated or fixed, drawing on public suggestions. The package would then be sent to Congress for an up-or-down vote, and then on to the president for signing.⁵

Two important properties of the RIC are important to note here. First, the RIC does not purport to be objective and politics free, like cost-benefit supposedly is. Rather, the RIC embraces the idea that regulations are a joint creation of the executive and legislative branches, with politics deeply embedded.

However, the RIC is specifically designed to be neutral in terms of the changes it can propose for rules. Regulations can be eliminated, changed, or even strengthened if that's what is needed to create a package that can pass Congress and be signed by the president.

Currently, a version of the RIC has been introduced in the Senate and House, with bipartisan sponsorship in both cases (S. 1390, Regulatory Improvement Act of 2013, and H.R. 4646, Regulatory Improvement Act of 2014). It has the virtue of embodying regulatory reform that can be embraced by both Democrats and Republicans, and that can conceivably be enacted even in today's hostile political climate.

Approval Criteria at the FDA

The FDA is one of the fastest-growing agencies in the federal government. In 2000, the FDA employed 12 workers for every 1,000 in the pharmaceutical, biotech, and medical equipment industries. Now, the FDA employs 18 workers for every 1,000 private-sector pharmaceutical, biotech, and medtech workers.

Not surprisingly, the intensity of FDA regulation has also increased by 40 percent since 2000, according to a recent paper from the Progressive Policy Institute.⁶ That's based on a new measure of

⁵ Michael Mandel and Diana Carew, "Regulatory Improvement Commission: A Politically Viable Approach to U.S. Regulatory Reform," Progressive Policy Institute, May 2013, <http://www.progressivepolicy.org/issues/economy/regulatory-improvement-commission-a-politically-viable-approach-to-u-s-regulatory-reform/>.

⁶ Diana Carew, "FDA Regulation in the Data-Driven Economy," Progressive Policy Institute, October 2014, <http://www.progressivepolicy.org/publications/political-memo/fda-regulation-data-driven-economy/>.

regulatory intensity that applies a semantic analysis of written rules, looking for such restrictive words as “shall” and “must.”⁷

The same period has also been notable for an extraordinary amount of public and private spending on biosciences research and development (R&D). In 2012, for example, U.S. industry, government, and academic institutions spent roughly \$100 billion on bioscience-related research and development, second only to the roughly \$125 billion invested in computer and information science-related R&D. In recent years, bioscience R&D has averaged somewhere between one-third and one-quarter of total civilian R&D.

That R&D spending has propelled tremendous scientific advances over this stretch. Yet so far, too few of those scientific advances have been translated into usable innovation. This problem is well accepted. The National Institutes of Health set up a new National Center for Advancing Translational Sciences in fiscal year 2012, specifically to “develop innovations to reduce, remove or bypass costly and time-consuming bottlenecks in the translational research pipeline in an effort to speed the delivery of new drugs, diagnostics and medical devices to patients.”⁸

I will argue here that accelerating commercial innovation in biosciences requires “recoding” the criteria by which the FDA approves new drugs and devices. In particular, the sole focus on “safety and efficacy” has the effect of almost guaranteeing that potential disruptive innovations are not approved. What’s more, the pharmaceutical and device companies have a deep understanding of the FDA’s approval process, and therefore they do not pursue such disruptive innovations. Similarly, venture capitalists shy away from funding innovations that are not approvable.

Here, I’m using the disruptive innovation in the classic Clayton Christensen sense—a product or service that starts out with somewhat worse performance than what’s on the market right now, but much better economic or other characteristics. So when mobile

⁷ Omar Al-Ubaydli and Patrick A. McLaughlin, “RegData: A Numerical Database on Industry-Specific Regulations for All U.S. Industries and Federal Regulations, 1997–2012,” Working Paper no. 12-20, George Mason University, Mercatus Center, August 2014.

⁸ National Institutes of Health, “Notice of NIH Participation in the Cyber-Physical Systems Initiative (CPS),” February 19, 2015, <http://grants.nih.gov/grants/guide/notice-files/NOT-EB-15-003.html>.

phones originally were being widely sold, the quality of calls was lower than using wired handsets. Similarly, the early personal computers were far less powerful than mainframes or minis.

The problem is that the FDA interprets the “safety and efficacy” standard as meaning at least as safe and clinically efficacious as anything on the market currently. That immediately rules out an innovation that is safe, much cheaper, but not as efficacious as the best medical practice. So if the FDA had been in charge of the phone or computer markets at the time, early mobile phones and personal computers would not have been approved for sale because they provided inferior quality to existing products.

As a result, the FDA approval criteria systematically screen out disruptive innovations. What’s more, the pharmaceutical and device companies, and even the venture capitalist-supporting startups, are all too aware of the FDA’s decisionmaking process and are therefore unwilling to fund potential disruptive innovations.

What’s the solution? First, don’t weaken the safety requirement at all. The FDA is a key guardian against harmful products.

Second, separate the efficacy requirement into two parts: clinical efficacy and economic efficacy. Allow innovating companies to present evidence that their potential new product reduces the amount of labor and other resources needed by the health care system, as compared with existing products or treatments. A new product needs to show both clinical efficacy and economic efficacy, but it needs to be superior to existing products on just one of those measures.

Such a broadening of the FDA approval criteria won’t be easy to put into place, but it could have enormous impacts on the incentives for research and development. If we want medical innovation *and* lower costs, we need to change the rules of the game.

29. High-Skill Immigration and Visionary Investments

*Jim Manzi**

Long-run living standards are driven by the combination of human capital and the institutions for the conversion of this latent capacity into economic output. American advantages on both sides of this equation have deteriorated for decades. Here are two straightforward policy ideas that together would help materially on both fronts.

Policy 1: Implement Skills-Based Immigration

Senator Jeff Sessions posed a hypothetical question during an immigration debate in 2013.¹ Two young people are living in Honduras, and each has a strong desire to immigrate to the United States. One has learned English, was valedictorian at his high school, and is in his second year of college. The other dropped out of high school, has minimal skills, but has a brother already living in the United States. Considering what's in the best interest of this country, which of the two should be allowed in?

Our current immigration policy would prefer the high school dropout with a brother living in the United States to the English-proficient high school valedictorian. This preference should be reversed. The United States should evaluate skills and capabilities of prospective immigrants and use that evaluation to prioritize access to residence here.

* Jim Manzi is chairman of Applied Predictive Technologies and a senior fellow at the Manhattan Institute.

¹ Hearing Before the Committee on the Judiciary, United States Senate, "How Comprehensive Immigration Reform Should Address the Needs of Women and Families," March 18, 2013, p. 28, <http://www.judiciary.senate.gov/imo/media/doc/CHRG-113shrg81734.pdf>.

The goals of any U.S. government policy should be to serve the interests of the citizens of the United States. This seemingly bland statement should be the explicit starting point for any discussion of policy, but it is often forgotten or strategically ignored in immigration debates. An implication of this is that the interests of prospective immigrants should have zero inherent weight in determining our policy. Of course, this does not mean that we must therefore have a policy devoid of any consideration of the interests of prospective immigrants. After all, most American citizens place weight on strictly humanitarian help for many residents of foreign countries, most Americans also care about the expected state of American society long after their personal deaths, there may be prudential reasons to believe that assistance to foreign residents may rebound to the material advantage of current U.S. citizens, and so on. But it does mean that any justification for such humanitarian actions must proceed from the interests of current citizens.

The conventional economic wisdom for the effects of a shift to a skills-based immigration system was summarized by the Peterson Institute for International Economics as “likely to reduce the fiscal costs of immigration and to narrow the wage gap between high-skilled and low-skilled labor in the United States. However, these outcomes would entail the potential cost of diminishing well-being in poor countries.”² From the perspective of an American citizen, this sounds like an excellent deal.

Most conventional economic analysis is somewhat speculative, but fortunately the vagaries of the U.S. immigration system have created a natural randomized experiment to evaluate the real effects of high-skill immigration. H-1B visas are granted to skilled, typically technology, workers. Most years, there are many more applicants than available visas, and the visas are allocated by lottery. Researchers at the Partnership for a New American Economy compared metropolitan areas that were more versus less lucky in the percentage of H-1B applicants that won the lottery.³ Their conclusions were that

² Gordon H. Hanson, “Why Does Immigration Divide America? Public Finance and Political Opposition to Open Borders,” Peterson Institute for International Economics, September 2005, p. 60, http://www.piie.com/publications/chapters_preview/4000/05iie4000.pdf.

³ “Closing Economic Windows: How H-1B Visa Denials Cost U.S.-Born Tech Workers Jobs and Wages during the Great Recession,” Partnership for a New American Economy, June 2014, http://www.renewoureconomy.org/wp-content/uploads/2014/06/pnae_h1b.pdf.

luck in the lotteries corresponded with a small net increase in total employment with college degrees in computer fields, but also a large increase in employment without college degrees in computer-related fields. That is, not only were the winners better off, but the computer sector of the whole city was better off, and those without college degrees were disproportionately helped.

We would not need to plow new ground to move in this direction. All of the major Anglophone democracies have done a far better job of this than America and have reaped the benefits. Australia, Canada, and New Zealand all have a higher foreign-born population than the United States, and all three plus Britain have more new immigrants each year per capita than the United States. They have all used some kind of points system to select for immigrants with relevant skills, such as English proficiency and educational attainment, and extra points for degrees or expertise in such fields as science, technology, and medicine. They are generally moving to a two-stage system in which foreign applicants who achieve at least some specified target score under such a points system are put into a pool that prospective employers can browse, and are granted visas when specific employers offer them jobs. America should implement such a system.

We should also go beyond this. Because there is vastly more demand for U.S. residency than any number of spaces that could realistically be made available, we should embed randomized experiments into the process in which we try various selection criteria and methods, and then compare results of immigrants over a number of years after entry. This approach would allow rapid, empirical improvement in our system. Further, we should market American society and treat our embassies and consulates as recruiting centers for high-potential applicants rather than purely as gates that block potential criminals. We are already a magnet for talent, and we should build upon that.

Policy 2: Redeploy 5 Percent of Government Social Expenditures to Visionary Science and Technology Investments

America's technology strategy through most of its history was to commercialize the discoveries of European science. We began investing massively in basic research in the post-World War II era only because there was nobody else left to do it. Today, America is the global leader in basic science. Almost half of all the most-cited scientific papers are produced in the United States. But the world is changing, and

in 2013 the United States represented only about 20 percent of world gross domestic product (GDP) and 28 percent of world research and development (R&D) spending. Over roughly the past 20 years, the fraction of American scientific papers with a non-American coauthor has grown from 12 percent to 32 percent. Science is re-internationalizing.

To thrive in this new world, we need to adapt. We should give ground grudgingly but recognize that over time more science will be done outside the United States. We should participate aggressively in research collaborations, such as international space-exploration efforts and the European Organization for Nuclear Research particle physics facility, and we should fund exchanges and other vehicles to ensure that we gain maximum benefit in return for our basic-research investments.

But we will also need to spend more money. According to the Organization for Economic Cooperation and Development, public social spending in the United States (including not only cash government expenditures but also so-called tax expenditures, private transfers that are compulsory by law, and the like) was just about 20 percent of GDP in 2012–2013.⁴ That is on the order of \$3 trillion per year. Total U.S. spending on R&D across all levels of government, academia, and nonprofits is on the order of \$160 billion per year.⁵ We should reduce social expenditures by 5 percent, and redeploy that money to roughly double annual government R&D spending.

To spend that money most productively, we should think differently about what basic science we conduct here. We should bias basic-research funds not toward those areas that inherently hold the greatest promise, but toward those in which the long-run economic benefits are likely to remain in the United States, because they require the buildup of hard-to-transfer expertise or infrastructure that is likely to generate commercial spinoffs. University and research laboratory rules and the patent system should recognize the long-run desirability of researchers creating private wealth in part

⁴ “Society at a Glance: Social Spending” webpage, Organization for Economic Cooperation and Development, http://www.oecd-ilibrary.org/sites/soc_glance-2014-en/05/04/index.html?sessionId=qd8osp9itjfo.x-oecd-live-02?contentType=&itemId=%2Fcontent%2Fchapter%2Fsoc_glance-2014-20-en&mimeType=text%2Fhtml&containerItemId=%2Fcontent%2Fserial%2F19991290&accessItemIds=%2Fcontent%2Fbook%2Fsoc_glance-2014-en.

⁵ “2014 Global R&D Funding Forecast,” Batelle, December 2013, http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf.

through the exploitation of knowledge created by these publicly supported institutions.

More fundamentally, the sweet spot for most government research funding will likely be visionary technology projects, rather than true basic research on one extreme or commercialization and scale-up on the other. We have a long track record of doing this well and an existing civilian infrastructure that can be repurposed, including most prominently the Department of Energy's (DOE) national laboratories, the National Institutes of Health (NIH), and the National Aeronautics and Space Administration (NASA). Each of those entities is to some extent adrift and should be given bold, audacious goals. They should be focused on solving technical problems that offer enormous social benefits, but are too long term, too speculative, or have benefits too diffuse to be funded by private companies.

What would this mean in practice for these leading national assets? A few examples may help point to an answer. We should, for instance, return the DOE's labs to a more independent contractor-led model with clearer goals but greater operational flexibility. We might set for one lab the goal of driving the true unit cost of energy produced by a solar cell below that of coal, and set for a second lab the same task for nuclear power. We could combine the 27 independent institutes and centers of the NIH into a small number of major programs and task each with achieving measurable progress against a disease. We could task NASA with leading an international manned mission to Mars.

Careful deliberation could lead to different specific targets, but in my experience, great technical organizations have a characteristic spirit that starts with goals that are singular, finite, and inspiring. That is, each organization should have one goal. The goal should be sufficiently concrete that we can all know if it has been achieved or not. And it should be sufficiently impressive that people are proud to work toward it, without being so obviously outlandish that it just inspires cynicism. Beyond goals, political leadership has the responsibility for selecting extremely able senior leadership, providing adequate resources, granting operational autonomy, and measuring progress.

Skills-based immigration and investments in these kinds of visionary projects would be synergistic. Talented potential immigrants worldwide would be inspired by these kinds of projects to try to come to America. The most talented immigrants would play key roles in these projects, and they and their descendants would become citizens.

30. Bigger, Cleaner, and More Efficient: A Carbon–Corporate Tax Swap

*Donald B. Marron**

The United States could reduce its contribution to global climate change and increase domestic prosperity by taxing emissions of carbon dioxide and other greenhouse gases and using the resulting revenue to reduce corporate income taxes. Such a carbon–corporate tax swap would give us a bigger, cleaner economy and avoid any need for more costly efforts to reduce emissions.

This recommendation reflects four recurring lessons from tax and environmental policy.

First, taxing “bads” is better than taxing “goods.” When the government levies a tax, people and businesses are less likely to do the taxed activity. Income taxes, for example, reduce the returns to investing, so some people and businesses invest less than they otherwise would. Those forgone activities have a real economic cost, and each dollar of revenue imposes more than a dollar of costs on taxpayers. By contrast, when government taxes activities that impose costs on all of society, it can both raise revenue and reduce social harm.

Second, putting a price on carbon is the most-efficient way to reduce carbon emissions. In the absence of a national carbon price, as from a carbon tax or a cap-and-trade system, policymakers will likely continue to pursue piecemeal regulations and subsidies. Indeed, we see that today in heightened fuel economy standards and state-by-state electric power plant regulations. These regulatory efforts can reduce emissions, but at a greater cost per ton than a national carbon price. Even the best-intentioned regulations treat emissions sources

* Donald B. Marron is a fellow and director of economic policy initiatives at the Urban Institute. The views expressed here do not necessarily reflect the views of the Urban Institute, its funders, or its trustees. This essay draws heavily on joint work with Eric Toder of the Urban Institute and conversations with Adele Morris of the Brookings Institution.

differently, overcontrolling some and undercontrolling others. They overlook some of the least costly ways to reduce emissions and do little to reward innovation beyond regulatory minimums. Subsidies, through both spending programs and tax incentives, suffer similar problems, offering incentives that are related only loosely to potential environmental gains and often omitting potential methods for reducing emissions. Far more efficient would be a single price that uniformly encourages emissions reductions from all sources and by any means.

Third, the corporate income tax is especially distortionary. By making capital more expensive, it discourages business investment and weakens economic growth. Surveying the evidence on taxes and growth, researchers at the Organization for Economic Cooperation and Development (OECD) identified corporate income taxes as having “a particularly negative impact on gross domestic product (GDP) per capita,”¹ especially through their effect on “dynamic and innovative” businesses. The corporate income tax also inspires substantial wasted effort on tax avoidance, in which highly skilled lawyers, accountants, and managers devote their talents to minimizing taxes rather than creating value.

Fourth, America’s corporate income tax is especially problematic. The statutory tax rate is the highest in the world at more than 39 percent (including federal and state taxes), and the United States is one of only a few nations that taxes resident corporations on their worldwide income. At the same time, our corporate system includes many tax breaks that dramatically lower the effective rate some businesses really pay. This toxic mix benefits lawyers and accountants but has made the United States an unattractive place for many firms to maintain their legal residence. One symptom has been the recent increase in tax-driven inversions.

A carbon tax thus offers many potential benefits. It would reduce America’s emissions of greenhouse gases at least cost and would encourage future innovation on cheaper ways to reduce emissions. By reducing production from coal-fired power plants, a carbon tax would also yield substantial “co-benefits” from reductions in health-damaging air pollutants, most notably particulate matter.

¹ Åsa Johansson, Christopher Heady, Jens Arnold, Bert Brys, and Laura Vartia, “Tax and Economic Growth,” Economic Department Working Paper no. 620, Organization for Economic Cooperation and Development, July 11, 2008, <http://www.oecd.org/tax/tax-policy/41000592.pdf>.

A carbon tax would also provide a source of revenue that the government could use to promote economic growth. Those revenues would be substantial. In 2011, for example, the Congressional Budget Office (CBO) estimated that one common proposal—a \$20 per ton tax increasing at 5.6 percent annually—would raise \$1.2 trillion in its first decade while cutting emissions by 8 percent.² Corporate tax revenues will be about \$4.6 trillion over the next decade. A carbon tax along the lines that the CBO analyzed could thus offset the cost of reducing the federal corporate tax rate from 35 percent to 25 percent.

Recent research suggests that such a swap would boost the economy. In separate projects, researchers at the Brookings Institution, Harvard, the Massachusetts Institute of Technology, and Resources for the Future have all found that the reduction in economic activity resulting from a carbon tax could be more than offset by recycling the revenue to reduce corporate income taxes. Confirming what the OECD researchers found, these modeling efforts conclude that capital income taxes, including corporate income taxes, are particularly detrimental to economic growth. A carbon–corporate tax swap can thus boost growth even as it brings down America’s emissions.

That does not mean that this tax swap is a free lunch. There will be losers as well as winners. Eric Toder and I have found, for example, that a carbon–corporate tax swap would be quite regressive. High-income families would get much of the benefit from reducing corporate income taxes, while the burdens of a carbon tax would be spread more broadly. A carbon–corporate tax swap would thus reduce the tax burden at the top of the income distribution and increase it at the bottom.

That regressivity could be moderated by giving rebates to low-income families or by reducing payroll taxes. Using some revenue this way is desirable from a distributional perspective, but modeling efforts suggest that it would reduce potential macroeconomic gains. Recycling revenue through lump-sum rebates—that is, the same dollar amount to each person or family—would be least efficient. Such rebates would return revenues to taxpayers but would not reduce marginal tax rates and thus would not encourage additional

² “Effects of a Carbon Tax on the Economy and the Environment,” Congressional Budget Office, May 2013, http://www.cbo.gov/sites/default/files/cbofiles/attachments/44223_Carbon_0.pdf.

economic activity. Reducing payroll taxes would provide some offsetting boost but would still be a net negative for overall output. Only reductions in capital or corporate taxes appear capable of more than offsetting the macroeconomic drag from a carbon tax.

In addition, there will be winners and losers in particular sectors. Workers and businesses in the coal industry, for example, will bear a disproportionate share of the costs, while power companies that rely heavily on nuclear, hydro, and other low-emissions generators will reap benefits.

These comparisons implicitly presume that the alternative to a carbon–corporate tax swap is a scenario with no carbon policies. As noted, however, several regulatory efforts are already underway, and more are possible. Given those developments, it is important to consider how the economic effects of a carbon–corporate tax swap might compare to a world with significant carbon regulation.

Regulations can create widely varying incentives for emissions reductions, particularly when imposed on a state-by-state and sector-by-sector basis as the Clean Air Act requires. Some states and sectors will face more expensive requirements than will others, and some approaches will be overlooked. Such variation drives up overall costs in a way that a national, economy-wide carbon tax would not. Moreover, a regulatory approach would not raise revenue that could offset any disproportionate burdens, for example, on coal-dependent communities and the poor, or could be recycled to promote economic growth.

On balance, the argument for a carbon–corporate tax swap remains compelling whether or not policymakers would otherwise pursue an aggressive regulatory effort. In fact, a carbon–corporate tax swap would allow policymakers to roll back regulations and related subsidies without compromising environmental goals.

For all these reasons, a carbon–corporate tax swap, paired with appropriate relief for low-income families, would make our economy bigger, cleaner, and more efficient.

31. Rolling Back Regulatory Complexity

*Megan McArdle**

If there were one simple thing that we could do to promote economic growth, and I knew what it was, I wouldn't be writing this essay; I'd be touring the world's luxury resorts in a chariot pulled by lions. Alas, we are unlikely to discover an easy route to growth, because growth itself is never simple: it is the product of millions and billions of people making individual decisions that add up to a collective choice to do things a little bit better. If there were easy rules that could consistently make this process go more smoothly . . . well, communism would have worked spectacularly well, and most of the authors in this series would be toiling anonymously in the bowels of some gleaming government ministry.

But the failure of central planning doesn't mean that policy doesn't matter; it does, and we could do better. It's just that the changes we need are many, not few, and not always easy to describe in one succinct sentence. So here's a suggestion that will not fix everything, but that could fix some of the barriers to "doing things a little better": we need a regulatory budget.

Before you protest that we already do cost-benefit analysis (CBA), let me be clear that this is not what I'm talking about. The American government indeed already performs CBA on new regulations, which attempts to price government rules the way bankers price securities: so many dollars in the plus column for a single life saved, so much in the minus column for the costs to a factory owner. One could make many quarrels with the methods used for this analysis, but I am not going to, because whatever the method's faults, it's better than the alternative method of ignoring costs entirely. CBA's main failure isn't that it calculates costs wrong; it's the fact that it misses one of the biggest and most pervasive costs of our current regulatory state: the cost of complexity.

* Megan McArdle is a columnist for *Bloomberg View*.

A few years back, I had a conversation with a very smart, very progressive analyst who had left the Public Intellectual Industrial Complex in order to go into business for himself. A few years later, he retreated back into the fold, and the reason he gave for this was deeply disturbing: he found it impossible to know whether he was in compliance with the law.

I won't dive into details, but suffice it to say that this man was not running a toxic waste disposal business; he was running a tech startup. But even this business, which ought to be lightly regulated, was surrounded by red tape. He hired experts, of course, but he had no way to check their decisions; if the payroll company tacked an extra \$100 on his weekly bill, he had to trust that they were collecting money that was really owed, rather than boosting the office Christmas party fund.

This sort of uncertainty haunts innovators at every level, from a guy inventing a toy to a company trying to build a self-driving car. Regulators rarely calculate the individual uncertainties that their laws create, and, more importantly, they never calculate the collective effect of adding on more regulations, at multiple levels of government, every year.

The key thing to understand about regulatory complexity is that it doesn't just add up: it multiplies. Every new regulation potentially interacts with many old regulations, and as the number grows larger, the consequences of those interactions grow harder to predict. Eventually, the law passes the potential of a single person, or even a team of experts, to fully understand it.

To see what I mean, imagine a brand new system that is just passing laws and regulations for the first time. In the early days, each new rule potentially intersects with a handful of other laws. Let's call each of these intersections a "complexity point": a spot where two laws may conflict, create unclear lines of authority, or interact in unanticipated ways to create negative unintended consequences.

As time goes on, however, the number of potential intersections grows. An early law had a handful of complexity points; a later law may have a few million. Over time, too, many of these complexity points get litigated, creating case law that itself offers more complexity points.

What that means is that the complexity cost of new rules grows over time. At our advanced age, any new regulation is very expensive

indeed, complexity-wise. That deters some potential entrants, but it also changes the shape of the competitive landscape. Large corporations that can afford vast reserve armies of paid experts, overseen by a battalion of in-house regulatory and legal specialists, have a massive competitive advantage over smaller upstarts that have to roll the dice and hope their attorneys guessed right.

Most of the Cato Institute's readers won't find it hard to believe that excessive regulation is undesirable. But the important point is that this problem afflicts even the best regulations. It applies to a rule requiring cops to wear video cameras, as well as to a rule requiring African hair braiders to pass an expensive licensing exam. Framing the problem as "bad regulations" misses the real problem with the system: even good regulations are now so expensive, in complexity points, that they are probably not worth passing.

To attack this problem, we need to stop thinking about regulations individually and start thinking in terms of a budget. Instead of analyzing whether the calculations in a regulatory ledger sum to a positive or a negative number, we need to set a level of complexity that we're willing to live with and then decide which positive-sum regulations we're willing to discard in order to stay within that budget.

Creating a framework to do this in a sophisticated way would obviously be a massive task. But there are crude rules that might serve well, such as capping the number of laws and regulations, allowing a new one to be implemented only if an older one is repealed. The most important shift, however, may be cognitive: we need to start talking about this as a large and pressing problem to be solved, before we get lost in the forest, counting the trees.

32. Curtailing Subsidies for Health Insurance

*Jeffrey Miron**

According to many observers, the United States has entered a period of slower than historical growth, otherwise known as secular stagnation.¹ The evidence for this view is suggestive but hardly definitive; past periods of slow growth, such as the 1970s, have been followed by periods of faster growth. Similarly, while the reasons offered for secular stagnation are plausible, each is open to reasonable debate.

Since the causes of the alleged slowdown are still up for grabs, it might seem hard to offer policy advice. The right response could differ substantially depending on whether the slowdown, if real, reflects insufficient aggregate demand, reduced technological innovation, or some other cause.

Fortunately, policymakers can improve economic prosperity without determining the causes of the slowdown or even whether it is occurring; that is because the United States has numerous ill-advised policies that ought to be scaled back or eliminated, regardless of current or future growth rates.

A crucial misguided policy is subsidized health insurance for the nonpoor. Current U.S. policy does this via Medicare, Obamacare,

* Jeffrey Miron is the director of undergraduate studies in the Department of Economics at Harvard University and the director of economic studies at the Cato Institute.

¹ For example, see Tyler Cowen, *Average Is Over: Powering America Beyond the Age of the Great Stagnation* (New York: Dutton, 2013); Robert J. Gordon, "The Demise of U.S. Economic Growth: Restatement, Rebuttal, and Reflections," National Bureau of Economic Research Working Paper no. 19895, February 2014; Paul Krugman, "Secular Stagnation, Coalmines, Bubbles, and Larry Summers," *Conscience of a Liberal* blog, November 16, 2013, <http://krugman.blogs.nytimes.com/2013/11/16/secular-stagnation-coalmines-bubbles-and-larry-summers/>; Brink Lindsey, "Why Growth Is Getting Harder," Cato Institute Policy Analysis no. 737, October 8, 2013; and Lawrence H. Summers, "U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound," *Business Economics* 49, no. 2 (2014): 65–73.

and the tax exemption for employer-paid health insurance. For brevity, I focus on Medicare and Obamacare, emphasizing three points. These programs are difficult to justify on efficiency grounds; these programs generate substantial inefficiencies in health care markets; and these programs are unaffordable under current parameters.

The Efficiency Arguments for Subsidizing Health Insurance

Economists make two efficiency arguments for subsidizing health insurance.

The first relies on asymmetric information and adverse selection. According to this view, individuals have better information about their own health status than do insurers. So if insurers set premiums at the actuarially fair value, unhealthy consumers purchase disproportionately; those larger-than-average health costs force insurers out of business. Insurers must therefore set higher premiums. That makes insurance unattractive to relatively healthy consumers, who suffer the loss of not having insurance.

A crucial problem with the adverse selection defense of subsidizing insurance is that the model does *not* imply any subsidy. Rather, it suggests that government mandate insurance. But since that would force low-income households to pay substantial amounts for health insurance, mandated insurance programs include subsidies for low-income households. Those subsidies, however, achieve a distributional rather than an efficiency goal.

A second problem with the adverse selection model—when applied to health insurance—is the assumption that insurers know less about applicants' health status than applicants. Insurers can learn substantial amounts about applicants' health by requiring medical histories and medical exams as a condition of insurance (as life insurers do routinely). Indeed, insurance companies are probably better than individuals at assessing the implications of any given health characteristics for future health expenditure; thus, any asymmetry favors insurers, not applicants.

This view is consistent with the standard fear that in a free market for health insurance, insurers would know "too much" about each applicant's health status (e.g., via genetic tests) and then charge high premiums or refuse coverage for those with preexisting conditions. Thus, some people would face higher insurance costs than others—because they are more expensive to insure—but risk would

still be pooled among those with similar average health costs. This outcome is unfortunate for those who face high premiums, but it is not inefficient.

The alternative efficiency argument for subsidizing health insurance is that behind a veil of ignorance, everyone would buy insurance against being born with bad health. Private insurance against such risk, however, might not exist. Government can therefore improve economic welfare by providing such insurance. This is a standard public goods—that is, efficiency—argument; it does not require a distributional motivation and applies even if everyone is (*ex ante*) identical. Under the assumptions of this model, and setting aside inefficiencies generated by subsidizing insurance, everyone is better off from such subsidies.

The veil-of-ignorance story is reasonable as far as it goes, but the inefficiencies generated by government provision of health insurance are potentially large. This suggests that the subsidies should extend only to low-income households, which are presumably the ones receiving the worst health shocks and are most affected by the absence of a market of (preborn) health insurance. This is exactly what most societies do regarding income insurance more generally; social safety nets protect against the worst-case outcomes but do not attempt to equalize incomes across the entire distribution.

Subsidizing Insurance Generates Inefficiencies

The crucial inefficiency from subsidized insurance is increased moral hazard: people with insurance purchase excessive health care because they do not pay the full cost. Moral hazard occurs with all insurance, but subsidizing insurance makes moral hazard worse. In particular, private insurance uses copays, deductibles, and coverage restrictions to limit moral hazard; Medicare and Obamacare make modest use of these features.

The excessive demand for health care that results from moral hazard means higher prices for health care. That translates into faster-growing government expenditure, so governments limit reimbursements to health care providers or ration care directly. Providers reply with creative accounting when seeking reimbursements and engage in other nonproductive behavior to raise revenues. The limits on reimbursements also discourage innovation and reduce the supply of talented doctors, nurses, and the like.

Beyond these negatives, the taxes required to fund health insurance subsidies generate their own economic distortions; since these subsidies are large, the tax distortions are substantial.

The Solvency of Medicare and Obamacare

Regardless of how one balances the benefits and costs of subsidizing health insurance, expenditure programs that will bankrupt the country are ill-advised. Yet long-term projections from the Congressional Budget Office (CBO) suggest that Medicare and Obamacare will do just that. Those projections show expenditure on the major health subsidies growing at least 1 percentage point faster per year than gross domestic product (GDP) into the indefinite future. This growth, along with that of other entitlements, implies a debt-to-GDP ratio of roughly 225 percent by 2089 (and ever-expanding growth thereafter).

In recent years, growth in expenditure for the major federal health programs has slowed, suggesting that the long-term fiscal imbalance might be not be so bad. Slower health cost growth is desirable, but this suggests only a limited basis for optimism.² After all, slowdowns have occurred before but reversed later. And in any event, CBO projections that incorporate slower cost growth still show a steeply increasing debt-to-GDP ratio.³

What to Do?

The United States has two paths to avoid the fiscal crisis implied by current health insurance subsidies.

The bigger government approach is to impose more restrictive price and quantity controls on Medicare and Obamacare. That might reduce spending growth, but it will exacerbate the distortions, creative billing, and related inefficiencies caused by these controls.

The smaller government approach is to scale back Medicare and Obamacare.

The most aggressive “reform” would eliminate any federal role in subsidizing health insurance, leaving such policies to the states.

² Amitabh Chandra, Jonathan Holmes, and Jonathan Skinner, “Is This Time Different? The Slowdown in Healthcare Spending,” National Bureau of Economic Research Working Paper no. 19700, December 2013.

³ “The 2014 Long-Term Budget Outlook,” Congressional Budget Office, July 2014, <https://www.cbo.gov/publication/45471>.

Since the federal tax burden would fall dramatically, states could more easily raise taxes to finance these programs. Many states adopted social security programs before the federal government, and states routinely adopt more generous policies than mandated by federal law (e.g., higher minimum wages). Thus, an extreme race-to-the-bottom, in which states offer little or no health insurance, is unlikely. But since states would fear in-migration caused by overly generous programs, spending would be restrained relative to current federal policy, plausibly yielding a better balance.

A less aggressive “reform” is higher deductibles and copays in Medicare and Obamacare. That would increase price sensitivity, slowing cost growth and moderating purchases of medical care. This approach, however, does little to address the growing demographic imbalance, which is one main reason for growth in Medicare.

Other policy changes could nudge the health care system in a good direction, regardless of changes to Medicare or Obamacare: expanded high-skill immigration to increase the supply of doctors and nurses; less restrictive licensing requirements, toward the same end; a Food and Drug Administration that better balances safety against costs and delay; and elimination of the favorable tax treatment for employer-paid health insurance.

Conclusion

The desire to provide universal health insurance is not well justified on economic efficiency grounds, and the attempt to do so creates huge inefficiencies. Plus, current programs are unaffordable. If not cut back substantially, these programs will do serious harm to the health care system and bankrupt the economy. That is not a recipe for economic growth.

33. Tax Cuts for Innovators Are a Good Economic Investment

*Enrico Moretti**

Economists on the right of the political spectrum tend to favor tax cuts, while economists on the left tend to oppose them. But there is a type of tax cut that all economists should support, irrespective of their political inclinations. It is an incentive designed to increase investment in research and development (R&D) and innovation by American companies. It will foster economic growth and job growth in the years to come. It will not cost the Treasury a penny—in fact, it will ultimately pay for itself.

Innovation and research are the engines that sustain the American economy and its workforce. The problem is that the United States is not investing enough in innovation and research. As a consequence, our economy and our salaries are not growing at the rate they used to. That is not to say that American companies invest too little relative to other countries (although this is sometimes true), but rather that they invest too little compared with what would be optimal for the country. This shortcoming is caused by a serious failure in the market for knowledge. The market failure stems from the fact that the creators of new ideas are not always fully compensated for their efforts, as some of the benefit of their research inevitably accrues to others in the same industry.

Consider, for example, the introduction of the iPad. Because the product was completely new, nobody really knew its market potential. Apple carried substantial risks, because it had invested significant resources in the iPad's development. Indeed, when Steve Jobs unveiled the device in front of a select group of journalists and opinion leaders, in San Francisco in 2010, many industry analysts were skeptical, arguing that the iPad was just an expensive gadget and

* Enrico Moretti is a professor of economics at the University of California, Berkeley.

therefore destined to remain a niche product. Some ridiculed it as an outsized iPhone without the phone and predicted that it would generate little interest. After the launch, however, it became clear that the iPad was going to be an international sensation, and many competitors—including Samsung and Microsoft—immediately started developing their own versions. Essentially, those competitors benefited from Apple's risk taking.

The magnitude of these knowledge spillovers is substantial. In two of the most rigorous studies to date, economists Nick Bloom of Stanford and John Van Reenen of the London School of Economics followed thousands of firms and found that the spillovers were so large that R&D investment of one firm raised not only the stock price of that firm but also the stock prices of other firms in the same industry. Part of the spillover is global in scope. For example, an increase in R&D investment by U.S. firms in the 1990s translated into significant productivity increases for British firms in similar industries, with the majority of the spillover accruing to firms with an American presence. But a significant part of the spillover is local, because it occurs between firms that are geographically close. So new knowledge generated by American companies benefits other American companies.

In essence, private investment in innovation has a private return for the firm that makes that investment, but it also supplies an external return that benefits other firms. That means that the market provides less investment in innovation than is optimal, because the return on such investments cannot be fully captured by those who pay for it. To correct for this market failure, and compensate those who invest in R&D for the external benefits that they generate, the U.S. government subsidizes R&D through tax breaks.

The problem is that the difference between private and social return on innovation is much larger than the current subsidies. Bloom and Van Reenen, along with Mark Schankerman,¹ estimate that the social rate of return on R&D is about two to three times as large as the private return. The implication is jarring. The United States is not just

¹ Nicholas Bloom, Mark Schankerman, and John Van Reenen, "Identifying Technology Spillovers and Product Market Rivalry," *Econometrica* 18, no. 4 (July 2013): 1383, <http://web.stanford.edu/~nbloom/bsv.pdf>.

underinvesting in R&D; our current level of R&D investment is barely a fraction of the optimal level. This is not just an American problem, but it is more salient for the United States than for other countries because of the role that innovation will play in our future growth.

Although patents in theory protect intellectual property, in practice innovative companies that invest in research appropriate just some of the benefits of their efforts. That is an unavoidable feature of the way innovation is created today and the speed at which new ideas and new knowledge spread in the high-tech industry. Last year, a federal jury in San Jose, California, did find Samsung guilty of making phones and tablet computers that copy key features of the iPhone and iPad, thus infringing on Apple's patents. But it is hard to stop the flow of knowledge through lawsuits. When high-tech companies need to hire lawyers to protect their products instead of engineers, creativity and innovation inevitably take a toll.

The lessons for Congress are clear: the current U.S. tax credit for corporate spending on R&D is far smaller than it should be. We need to increase it to reflect the real benefits of innovation to the U.S. economy. We also need to make the R&D tax credit permanent, to give innovators more certainty about the future. It is important for legislators to realize that this is not about fairness—it is purely about economic efficiency. The government should not subsidize innovators because it has a moral obligation to do so. It should subsidize innovators because it is in the interest of the American economy to do so. It will create well-paying jobs in the short run, and even more in the long run. Irrespective of our political inclinations, this is a tax break we can all support.

Knowledge spillovers are also pervasive in basic research. Academia has traditionally provided the basic science upon which the private sector builds new commercial applications. That is a big reason that the federal government subsidizes academic research through institutions such as the National Science Foundation and the National Institutes of Health. The problem is that this funding has not kept up with the increased value of knowledge. Globalization and technological change have resulted in increased returns on the economic value of new discoveries in basic science. If the return on an investment increases, the rational reaction is to invest more. And yet the resources that the federal government devotes to supporting basic research in science and technology have actually declined.

REVIVING ECONOMIC GROWTH

As a society, we are much too focused on the present at the expense of the future. Our culture glorifies instant gratification and quick results, and it shuns long-term commitment. Most of the energy and attention in our policymaking is concerned with short-run issues, such as how to stimulate the economy over the next six months or how to deal with this week's employment numbers. While short-term issues can be pressing, their importance pales relative to that of long-term ones, because the latter are the issues that really affect our standard of living in profound and permanent ways. The magic of compound growth means that even tiny differences in growth rates can have enormous consequences for our future jobs and incomes. Thus, policies that can increase growth even marginally are vastly more important than any short-term fix to the economy. Most economists, both on the left and the right, agree that innovation and R&D are key sources of firm productivity growth, and ultimately of economic growth. Lowering taxes on innovative companies and supporting basic research in science and technology are investments that make economic sense.

34. Boost Highly Skilled Immigration

*Alex Nowrasteh**

A liberalized immigration system for highly skilled workers can boost long-term growth in productivity, technological innovation, and entrepreneurship. Such a system would literally add factors of production to the U.S. economy that could create large positive spillover effects. Immigrants are more likely to hold advanced degrees in science, technology, engineering, mathematics, and computer science than similarly educated Americans. In 2010, immigrants were 15.8 percent of the U.S. adult population with at least a bachelor's degree, but they held 21 percent of the college degrees in science and engineering fields. Of all immigrants with at least a bachelor's degree, 46 percent were educated in the science and engineering fields. The comparable figure for natives is 33 percent.¹

American immigration laws heavily restrict highly skilled immigration. The employment-based green card, largely designed for highly skilled workers, has an annual cap of 140,000 green cards, but it imposes enormous fees and country-of-origin regulations that make the system costly to use for both immigrants and their prospective American employers. Worse, the government's interpretation of unclear statutory language guarantees that fewer than half of the green cards issued actually apply to workers, while the rest are allocated to their family members.

Fortunately, the employment-based green card is not the only way for highly skilled immigrants to work in the United States. The H-1B visa provides another avenue. The H-1B is a temporary visa that allows American firms to hire skilled foreign workers in specialty

* Alex Nowrasteh is the immigration policy analyst at the Cato Institute's Center for Global Liberty and Prosperity.

¹ Christine Gambino and Thomas Gryn, "The Foreign Born with Science and Engineering Degrees: 2010," American Community Survey Briefs, November 2011, p. 3, <https://www.census.gov/prod/2011pubs/acsbr10-06.pdf>.

occupations. Some 99 percent of H-1B visa workers have a bachelor's, master's, PhD, or professional degree. The number of H-1Bs issued annually for American firms is capped at 85,000—65,000 from abroad and 20,000 for foreign graduates of American universities. When the economy is growing, those few H-1B slots frequently fill up within days of becoming available. In 2012, 61 percent of H-1B visas went to workers in computer-related occupations.² Importantly, H-1Bs are uncapped for research occupations at nonprofit research institutes affiliated with colleges and universities.

The duration of the H-1B visa is three years, but it can be renewed for an additional three-year term. Unlike with other guest worker visas, H-1B holders can apply for a green card while they are working in the United States if they find an employer willing to sponsor them. If the green card approval process takes longer than the maximum six-year duration of the H-1B visa, then the worker is allowed to work until the green card is approved or denied.

Liberalizing the employment-based green card and H-1B visa would likely reap large economic benefits for the United States. The current contributions of highly skilled immigrants reveal the economic potential of liberalization. Skilled immigrants currently prove to be very innovative if patents are used as a proxy measurement for innovation.

In 2006, the World Intellectual Property Organization recorded that 24.2 percent of international patent applications from the United States had at least one noncitizen inventor compared with just 7.3 percent in 1998.³ That high rate of patenting undercounts the patent contributions of immigrants by excluding those who became U.S. citizens. Between 1998 and 2006, immigrants from China, Taiwan, India, Canada, Germany, and the United Kingdom accounted for almost a fifth of all patents that were filed or cofiled by immigrants.

² "Characteristics of H-1B Specialty Occupation Workers: Fiscal Year 2012 Annual Report to Congress," U.S. Citizenship and Immigration Services, July 2013, <http://www.uscis.gov/sites/default/files/USCIS/Resources/Reports%20and%20Studies/H-1B/h1b-fy-12-characteristics.pdf>.

³ Vivek Wadhwa, AnnaLee Saxenian, Ben Rissing, and Gary Gereffi, "America's New Immigrant Entrepreneurs," Duke University, January 4, 2007, http://people.ischool.berkeley.edu/~anno/Papers/Americas_new_immigrant_entrepreneurs_I.pdf.

Jennifer Hunt and Marjolaine Gauthier-Loiselle found that a 1 percentage point increase in college graduate immigrants as a share of the population increases patents per capita by 9 to 18 percent.⁴ Patents filed by immigrants are not lower in quality compared with patents filed by U.S.-born inventors, according to data provided by Harvard Business School. Looking deeper into the immigration system, Kerr and Lincoln found that a 10 percent increase in workers on the H-1B visa in a particular American city corresponded with a 0.3 to 0.7 percent increase in total patents approved from that city. The authors estimate that a large increase in H-1B visas could have a long-run effect on innovation that can have a significant positive impact on economic growth.⁵

A 2005 World Bank working paper focused on the patents filed by foreign-born student researchers—a research sector largely without H-1B visa caps. It estimated that a 10 percent increase in the number of foreign graduate students would raise patent applications by 4.7 percent, university patent grants by 5.3 percent, and nonuniversity patent grants by 6.7 percent.⁶ In 2011, 76 percent of all patents issued to the top 10 patent-producing universities had at least one foreign-born inventor. Foreign-born inventors were involved with 87 percent of patents in semiconductor device manufacturing, 84 percent of patents in information technology, and 79 percent of patents for drugs or drug compounds.⁷

Highly skilled immigrants can boost innovation in specific sectors of the U.S. economy. A working paper by Petra Moser, Alessandra Voena, and Fabian Waldinger⁸ looked at how some specialized

⁴ Jennifer Hunt and Marjolaine Gauthier-Loiselle, “How Much Does Immigration Boost Innovation?” *American Economic Journal: Macroeconomics* 2, no. 2 (2010): 31–56.

⁵ William R. Kerr and William F. Lincoln, “The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention,” *Journal of Labor Economics* 28, no. 3 (2010): 473–508.

⁶ Gnanaraj Chellaraj, Keith E. Maskus, and Aaditya Mattoo, “The Contribution of Skilled Immigration and International Graduate Students to U.S. Innovation,” World Bank Policy Research Working Paper no. 3588, May 2005.

⁷ “Patent Pending: How Immigrants Are Reinventing the American Economy,” Partnership for a New American Economy, June 2012, <http://www.renewoureconomy.org/wp-content/uploads/2013/07/patent-pending.pdf>.

⁸ Petra Moser, Alessandra Voena, and Fabian Waldinger, “German-Jewish Emigres and U.S. Invention,” National Bureau of Economic Research Working Paper no. 19962, March 2014, <http://www.nber.org/papers/w19962>.

immigrants who fled Nazi Germany affected chemistry patents in the United States. The sudden immigration of German Jewish chemists to the United States during the 1930s resulted in a 70 percent increase in patents in the chemistry subfields populated by the immigrants. The initial increase in patents by the Germans led to an increase of patents by U.S.-born chemists as coinventors beginning in the 1940s. Those patent effects as well as the direction of U.S. chemistry research were affected by the Germans through the 1970s.

Not all patents are productive, but a higher rate of patenting tends to increase the number of productive patents that contribute to increases in total factor productivity (TFP). In a recent paper, Giovanni Peri, Kevin Yang Shih, and Chad Sparber attempted to measure the TFP impact of immigrants who worked in the STEM (science, technology, engineering, and mathematics) professions across 219 American cities from 1990 to 2010. They found that an increased number of H-1B workers were responsible for between 10 percent and 25 percent of *aggregate* TFP growth during that time period.⁹

In another paper, Peri found that immigrants of all skill levels tend to specialize in tasks that require fewer communication skills in English, allowing U.S.-born workers to specialize in more communication-intensive occupations while decreasing employment competition between the two groups of workers. The resulting immigrant-induced task specialization is strongly associated with TFP growth from 1960 to 2006 across American states.¹⁰ The TFP effects of task specialization are distinct from those caused by immigrant patenting.

A third major benefit from highly skilled immigrants is their high rate of entrepreneurship. The founding of new firms is an important contributor to innovation and job growth in the United States. In 2013, immigrants were nearly twice as likely to start a business as U.S.-born Americans. Between 1995 and 2005, 25.3 percent of all technology and engineering firms established in the United States had

⁹ Giovanni Peri, Kevin Yang Shih, and Chad Sparber, "STEM Workers, H-1B Visas and Productivity in US Cities," IDEAS, March 2013, <https://ideas.repec.org/p/nor/wpaper/2013009.html#author>.

¹⁰ Giovanni Peri, "The Effect of Immigration on Productivity: Evidence from U.S. States," IDEAS, February 2012, <https://ideas.repec.org/a/tpr/restat/v94y2012i1p348-358.html>.

at least one immigrant founder. Immigrants from India, China, the United Kingdom, and Taiwan tended to be the most entrepreneurial. In Silicon Valley, 43.9 percent of technology and engineering startups had at least one immigrant cofounder between 2005 and 2012.¹¹

Several conclusions can be drawn from this research. The impact of immigrant workers on TFP is notoriously difficult to measure, and papers attempting to do so are open to methodological challenges. However, much research finds that immigrant workers increase TFP, and there is no major study or academic research that has found that immigrants reduce it. Increased patents and innovation are likely the main way by which immigrants affect TFP, while task specialization is an additional factor. Studies on immigrant innovation through patents are generally convincing as an increase in the supply of scientists and engineers has historically increased the supply of research and development in the United States.¹² One influential paper by Charles Jones estimated that as much as 50 percent of U.S. productivity growth between 1950 and 1993 could be attributed to growth in the share of scientists and engineers—two sectors likely to expand if skilled immigration was liberalized.¹³

Furthermore, highly skilled immigrants are very entrepreneurial, contributing to innovation and productivity growth through the creation of new firms in the high-tech sector. New firms are a major source of job growth and innovation, as they often take risks that larger, established firms are unwilling to bear.

The contributions of highly skilled immigrants to innovation, productivity growth, and entrepreneurship are likely great in proportion to their numbers. However, the restrictiveness of America's immigration policy has severely limited the potential of our economy to benefit even further. There are several policy

¹¹ Vivek Wadhwa, AnnaLee Saxenian, and F. Daniel Siciliano, "Then and Now: America's New Immigrant Entrepreneurs, Part VII," Kaufman Foundation, October 2012, http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2012/10/then_and_now_americas_new_immigrant_entrepreneurs.pdf.

¹² Charles I. Jones, "R&D-Based Models of Economic Growth," *Journal of Political Economy* 103, no. 4 (1995): 759–84, http://www.jstor.org/discover/10.2307/2138581?sid=21105788582133&uid=3739584&uid=2&uid=4&uid=3739256#page_scan_tab_contents.

¹³ Charles I. Jones, "Sources of U.S. Economic Growth in a World of Ideas," Stanford University, 2002, <http://web.stanford.edu/~chadj/SourcesAER2002.pdf>.

reforms that could increase high-skilled immigration and thus the overall economic gains.

First, the current H-1B visa and green card caps for skilled foreign workers should be either eliminated or, at a minimum, increased as much as possible. The family members of employment-based green card applicants should be exempted from the cap, instead of counted against it.

Second, American firms should face a lower regulatory threshold to hiring foreign-born workers. However, political pressure will demand a labor-market test to decrease the possibility that immigrants will push U.S.-born American workers out of the workforce. The primary regulatory method of controlling for that, a process called labor certification, is too onerous and expensive. Replacing labor certification with a simple fee or tariff, so long as it is not exorbitant, would incentivize American firms to seek out American employees first without imposing an uncertainty-producing web of expensive and wasteful government regulations.

Third, the immigration process should be simplified so that firms and immigrants can apply for a visa or green card without having to hire a lawyer and incur costly legal expenses. Such fees can cost tens of thousands of dollars and are a tremendous source of legal uncertainty in the high-tech employment market.

Fourth, immigrants with H-1B work visas should be allowed to change jobs more easily rather than be tied to a single employer. Under the current system, an H-1B worker can change jobs only after complying with a confusing set of requirements that could result in the migrant losing his or her H-1B visa. The benefits of highly skilled migration would be greater if the workers can move to any U.S. firm willing to hire them. Related to this, family members of the H-1B worker who are currently on the H-4 visa should be allowed to work in the United States. Highly skilled foreign workers are likely to be married to highly skilled people, so allowing them to work would increase the number of skilled workers. But even if H-4 visa holders are not highly skilled, allowing them to work legally would increase the potential income of families headed by a highly skilled worker, increasing their likelihood of coming to the United States. The government is currently writing regulations to allow some H-4 visa holders to work, but work authorization should extend to all of them.

Fifth, the government should create a startup or entrepreneur visa. Many skilled immigrants who want to start American firms instead of working on an H-1B visa are thwarted because an immigrant entrepreneur cannot sponsor himself or herself. Even if a skilled foreign worker partners with an American who wants to sponsor the worker on an H-1B visa in a startup, government regulations mostly prohibit that, because the law requires that any sponsoring firm be successful enough to guarantee the worker employment for the duration of the visa—a requirement few startups can meet.

The innovative and productivity benefits of allowing more highly skilled immigrants are most readily apparent in patenting and entrepreneurship. And while their direct effect on TFP as workers is more difficult to measure, it is likely positive with no evidence that it is negative. In sum, liberalizing highly skilled immigration has many upsides and no downsides for American productivity, innovation, and entrepreneurship.

35. Shoring Up the Middle Class

*Don Peck**

I'll admit upfront that I'm going to cheat on this assignment. I'm not writing about what I believe to be the surest or simplest ways to speed long-term growth. (If I were doing that, I might start by aggressively encouraging much larger numbers of highly skilled and entrepreneurial immigrants to settle here.) Nor am I recommending a single policy change, but rather a change in focus for many of the country's economic and social policies.

What I'd like to address is the cultural, economic, and familial dysfunction that is steadily climbing from the lowest socioeconomic classes into the broad American middle class. If this climb is not reversed, I find it hard to imagine any high-growth future.

In the 1970s, the family lives of Americans with a high school diploma but not a college degree closely resembled those of college graduates. Marriage and nuclear families were the norm. But today, as the sociologist W. Brad Wilcox writes, "the family lives of today's moderately educated Americans increasingly resemble those of high-school dropouts, too often burdened by financial stress, partner conflict, single parenting, and troubled children."¹ Between 2006 and 2008, among moderately educated women, 44 percent of all births occurred outside marriage, not far off from the rate (54 percent) among high school dropouts; among college-educated women, that proportion was just 6 percent. The same pattern—families of high school graduates coming to look like those of high school dropouts, rather than those of college graduates—emerges with norm after norm: the percentage of 14-year-old girls living with both their mother and father; the percentage of adolescents

* Don Peck is the deputy editor of *The Atlantic*.

¹ W. Brad Wilcox, ed., "The State of Our Unions: Marriage in America," University of Virginia, 2010, <http://stateofourunions.org/2010/SOOU2010.pdf>.

wanting to attend college “very much”; the percentage of adolescents who say they’d be embarrassed if they got (or got someone) pregnant; the percentage of never-married young adults using birth control all the time.

Wilcox is hardly alone in noticing this trend. It has been documented, exhaustively, by scholars across the ideological spectrum, from Charles Murray to Kathryn Edin. It is deeply worrying, because the college graduates who seem immune to familial dysfunction make up a minority of our society: the broad center is what’s changing.

Intertwined with many of the cultural and familial changes are changes in the work lives and financial prospects of people without a college degree. The economic prospects of this large group have fallen over the past several decades, especially among men. In 1967, nearly every prime-age American man with only a high school diploma was working; today, about one in five is idle. According to economists Michael Greenstone and Adam Looney, real median wages of men have fallen 28 percent since 1969, once you account for the men who have washed out of the workforce altogether.²

Fading prospects and economic insecurity are not the sole cause of the changes in the cultural habits and family lives of the lower middle class, but they are an important cause. In a recent Pew poll, for instance, 78 percent of never-married women said a steady job was “very important” to them in choosing a spouse or partner, more than for any other factor.³ Marriage, famously, has become a “capstone” rather than a “cornerstone” of life in working-class communities: it is viewed as a sign that you’ve arrived, rather than as an institution that can help you get where you’re going. A raft of sociological research suggests that women typically will not marry men with poor economic prospects, though they do end up having children with them.

² Michael Greenstone and Adam Looney, “Trends: Reduced Earnings for Men in America,” Brookings Institution, 2011, <http://www.brookings.edu/research/papers/2011/07/men-earnings-greenstone-looney>.

³ Wendy Wang and Kim Parker, “Record Share of Americans Have Never Married: As Values, Economics and Gender Patterns Change,” Pew Research Center, September 24, 2014, <http://www.pewsocialtrends.org/2014/09/24/record-share-of-americans-have-never-married/>.

Children, ultimately, are the reason I've been going on about family matters in an essay that's supposed to be about economic growth. An enormous body of research indicates that one of the worst things for children is an unsettled family. By the time the average out-of-wedlock child is five, his or her mother will have had two or three significant relationships with men other than the father, and the child will typically have at least one half-sibling. This kind of churning is disastrous—heightening the risks of mental-health problems, trouble at school, teenage delinquency, and more. The problems can begin to build almost from the moment of conception: emerging evidence suggests that maternal stress during pregnancy—the sort that unsettled circumstances and financial insecurity bring—can carry lifelong consequences for a fetus, including a higher incidence of developmental disorders and mental illness. In the two-parent households of college-educated America, children are born into highly predictable lives, and they are lavished with attention and resources. In the rest of the country, while they are loved just as well, the circumstances of their upbringing are very different—and increasingly so.

How do these developments affect economic growth? Human capital is of course the foundation of any modern economy. When large and increasing numbers of children grow up in circumstances that impede their development, the economy's potential is slowly leached away. And, of course, as these same children struggle as adults, and adopt the mores and habits of their parents, cultural separation, in tandem with income divergence, could become self-reinforcing across generations. That would create a toxic political environment, characterized by instability, an unhealthy preoccupation with pie slicing, and myopic policy choices across the board.

As a society, we have spent a lot of energy and a lot of money trying to bolster the prospects of young children from low-income families (through programs like Head Start), and to improve educational opportunities for children across the board (through public-school improvement and wide access to college). These are, in the main, worthy efforts, but I would submit that they begin too late. Academically and behaviorally troubled children are often the products of troubled families; if we can reduce the incidence of the latter problem, the former will ease.

The defining period in many lives begins in late adolescence and stretches through early adulthood: it is during this period when

many people will make choices about work and sex and relationships that will set them—and, eventually, their children—on very different life trajectories. Yet our public policy is remarkably inattentive to this period. Sure, we promote college access through loans and grants, but four-year colleges are simply not an answer for a large part of the population: the proportion of young people who graduate from college has risen excruciatingly slowly for more than three decades, despite massive efforts to send more kids to college. That proportion is only about a third today.

Ron Haskins and Isabel Sawhill have shown that young people who graduate from high school, find full-time jobs, and wait to have children until they are over 21 and married are very likely to lead middle-class lives—and these same circumstances create an environment in which children can flourish.⁴ The real imperative, I believe, is to focus harder, as to our public policy, on launching young adults more reliably into good full-time jobs and stable family relationships (the two go together).

Young, working-class men should be a particular focus, because far too many are now simply adrift, and because many of the cultural problems I've described in this essay can, in one way or another, be traced back to them. In my own reporting, I've seen countless young men, in Reading, Pennsylvania, or among the exurbs of Tampa, Florida, with no real plan for their lives. They'd found school ill-fitting, and once disgorged into the workforce after high school or an indifferent semester in community college, had little idea what to do. The job opportunities immediately available were typically poor, with low wages and low prospects for advancement. Faced with these prospects, many drifted in and out of work, and in and out of relationships. They became fathers, and wanted to be good ones, but wanting is not always a sufficient strategy.

What might a new focus on steering young adults into stable careers and stable relationships entail? First, a new emphasis on increasing the odds that noncollege men and women can find their way into steady work and, ideally, a good trade or career. That means radically expanding the nation's vocational programs, apprenticeship opportunities, and other job-training programs focused on

⁴ Ron Haskins and Isabel Sawhill, *Creating an Opportunity Society* (Washington: Brookings Institution Press, 2009).

the young. Adjusting for inflation, government support for employment and job training programs has fallen about 75 percent since the 1970s. We now spend more than \$20 on college grants, loans, and tax breaks for every \$1 on these programs: that proportion is far out of whack. It also means more aggressive wage support for low-end jobs, primarily to encourage young people who have few other good opportunities to seek and keep those jobs, rather than drifting in and out of them. The Earned Income Tax Credit (EITC) is still primarily focused on people already raising children (often on their own): we need support for young adults who don't yet have them, in order to encourage work habits and to raise incomes enough so that they will marry before becoming parents. (I am agnostic, for now, on whether we accomplish this through an expanded EITC, direct wage subsidies to employers, or perhaps an expanded minimum wage. Each of these approaches has pluses and minuses.)

Second, it entails the broad encouragement of marriage and of dedicated, long-term relationships generally. I believe that improving early career prospects is in fact the best way to do that, but there are others as well. The tax code, for instance, could be tweaked to make marriage more economically beneficial, especially to low-income and moderately low-income people.

Finally, it entails the prevention of accidental pregnancy, before young people want and are ready for children, through the aggressive promotion of intrauterine devices, which are vastly more reliable than condoms or the pill. Likewise, while abortion should not be actively encouraged by our society, it should be readily available, without preconditions that subtly pressure pregnant women to avoid it.

From an economic standpoint, all of this is a very long game. The measures I've outlined are primarily geared toward people who are unlikely to become highly productive workers, in the classic sense: the direct impact on growth is likely to be modest, given the outlays involved. But in the long run, these measures—if we undertake them wholeheartedly—should provide better, more stable childhoods for countless children, and a much thicker base of human capital in the decades to come.

36. Fighting the Crony Capitalist Alliance

*James Pethokoukis**

Even though deep recessions are frequently followed by equally strong recoveries, that hasn't happened this time around. Indeed, the 2013 median income was 8 percent below where it was back in 2007. Now, it would be almost comforting if we could blame everything on the Great Recession and its unique characteristics—a financial crisis accompanied by a housing crisis. If that's the case, then perhaps the economy just needs a bit more time to find its legs. Eventually, the new normal will begin to more closely resemble the old normal.

This seemed to be the theory of the Obama White House, which arrived in power just as the recession was hitting bottom. Its economists repeatedly predicted a strong recovery to be just around the corner. In August 2009, the White House predicted that the gross domestic product (GDP) would rise 4.3 percent in 2011, followed by 4.3 percent growth in 2012 and 2013, too. In its 2010 forecast, the White House said it was looking for 3.5 percent GDP growth in 2012, followed by 4.4 percent in 2013. In its 2011 forecast, the White House predicted 3.1 percent growth in 2011, 4 percent in 2012, and 4.5 percent in 2013. While Democrats will argue that the White House didn't count on a debt-ceiling crisis or fiscal austerity (including the income tax hikes Obama himself demanded in 2013), they forget that the White House made those predictions also not assuming extraordinary and unconventional monetary stimulus that offset the austerity.

Although the economy finally appeared to be picking up some steam in fall 2014, there is no indication of the kind of accelerated growth needed to make up the lost ground of recent years and to put the economy back on its pre-recession trend line. And along with the growth gap, there is a job gap. The current job-market recovery has been a historically slow one. It was only in March 2014 that private-sector employment surpassed its former peak reached in

*James Pethokoukis is a columnist and blogger at the American Enterprise Institute.

January 2008, or 51 months from its February 2010 nadir. During the 1981–1982 recession by contrast, it took private-sector employment just 10 months to surpass its old high. If the current jobs recovery had been as robust as the ones during the Reagan and Clinton years, we would have around 6 million more private-sector jobs right now.

But the problem isn't just the quantity of jobs created, but also the quality. Today, there are nearly 2 million fewer jobs in mid- and higher-wage industries than there were before the recession took hold, while there are 2 million more jobs in lower-wage industries. Service-providing industries—such as food services and drinking places, administrative and support services, and retail trade—have led private-sector job growth during the recovery. Those industries, which pay relatively low wages, account for 39 percent of the private-sector employment increase over the past four years. As Susan Lund of McKinsey Global Institute (MGI) has put it: “Where are the middle class jobs? U.S. job growth post-2008 is in skilled professions and low-skill, part-time jobs.” Thanks to both automation and globalization, jobs in the middle that can be “scripted, routinized, and automated” continue to disappear. What’s left, as MGI puts it, are those—both high and low skill—that involve “complex problem solving, experience, and context (e.g., lawyer, nurse).”¹

So yes, the Great Recession and its aftermath have taken a terrible toll on the economy. But pull the camera back and you see America’s economic woes have roots far further back. There is something deeper and more structural going on, something that predates the financial crisis of the Bush years and the multiple policy mistakes since then. McKinsey Global Research notes increasingly lengthy “jobless recoveries” after recessions. From the end of World War II through the 1980s, labor markets snapped back quickly after each downturn. It took an average of just six months to return to pre-recession job levels. But recovery times have grown ever longer over the past three decades. And when labor markets do normalize, the share of mid-wage jobs after the recovery is below where it stood before the recession.

Since 1999, real GDP growth has averaged just 2 percent. Instead of year after year of 4 percent growth as Wall Street predicted back

¹ McKinsey Global Institute via James Pethokoukis, “Where Are US Jobs Being Created? Not in the Middle,” AEIdeas (blog), May 22, 2014, <http://www.aei.org/publication/where-are-us-jobs-being-created-not-in-the-middle/>.

in 2000, the United States has experienced just seven individual quarters of growth that fast versus 38 combined in the 1980s and 1990s. Never in the history of the United States has there been such a persistent period of weak economic growth. Such anemic economic growth has helped translate into weak job growth. Nearly 50 million net new jobs were created in the 1980s and 1990s versus fewer than 10 million in the 2000s.

So what's wrong? Perhaps what we are seeing is the economic calcification of the U.S. economy, resulting in less dynamism and growth. As J.P. Morgan economist Mike Feroli has put it:

The churning that has long characterized the U.S. economy, the frenetic creative destruction of firms rising and falling, has become less frenetic recently. New business creation has trended lower, as has the normally-massive amount of labor market reallocation. This reduction in economic dynamism has taken place over the course of the last few decades. Less churning in the economy can have beneficial consequences, but the reality is that the negative effects likely outweigh the positive effects. The symptoms of reduced churn look similar to Euro-sclerosis.²

Indeed, economists Ian Hathaway and Robert Litan have found that if you look at startups as a share of all firms, that rate declined from about 15 percent or so in the late 1970s to about 8 percent in 2012.³ Other research, coauthored by Hathaway, also found a sharp drop since 2000 in the number of technology firms age five and younger—that is, the fast-growing “gazelle” firms that generate a large share of America’s innovation and new job creation.

Why is this important and concerning? Innovation is what drives long-term economic growth and improvement in living standards. And key to generating innovation is creating an economic ecology of maximum competitive intensity where the most innovative and dynamic company wins. Startups and the threat of failure they bring

² James Pethokoukis, “America Suffering from ‘Economic Calcification’—JP Morgan,” AEIdeas (blog), September 2, 2014, <http://www.aei.org/publication/america-suffering-from-economic-calcification-jp-morgan/>.

³ Ian Hathaway and Robert Litan, “Declining Business Dynamism in the United States: A Look at States and Metros,” Brookings Institution, May 2014, http://www.brookings.edu/~media/research/files/papers/2014/05/declining%20business%20dynamism%20litan/declining_business_dynamism_hathaway_litan.pdf.

to incumbent firms are critical to the Schumpeterian “gales of creative destruction” that drive innovation. A lack of competitive intensity, however, results in stagnation and decline. And right now, there are several ways government is throttling the economy’s dynamism, competitive nature, and startup culture. Investment taxes, regulations, and immigration laws are frequently mentioned as impeding innovation, but one mentioned less often is our highly concentrated and interconnected too-big-to-fail financial system, which gives a competitive edge to megabanks—an advantage that the Dodd-Frank Wall Street Reform and Consumer Protection Act extends and worsens. Since just before Dodd-Frank’s passage through the third quarter of 2013, according to the Mercatus Center, the United States lost nearly 10 percent of its small banks. Moreover, small banks’ share of U.S. banking assets and domestic deposits has decreased by nearly 20 percent and 10 percent, respectively, with the five largest U.S. banks absorbing much of this market share. The megabanks not only suck assets away from their smaller rivals thanks to their too-big-to-fail status, but the biggest banks can also better deal with Washington’s tidal wave of regulations.⁴

Now this is critical: smaller banks are crucial to small business creation. As an American Enterprise Institute (AEI) paper⁵ last year noted, community banks provide nearly half of small-business loans issued by U.S. banks. Big banks, on the other hand, are incentivized to focus on taking risks of the sort the Fed and regulators care about, risks that would sink the broader economy, such as investing in mortgage-backed securities and complex derivatives. The attractiveness of this strategy has meant that banks shunned lending exposed to non-macroeconomic idiosyncratic risks, such as lending to small businesses or new firms.

One possible solution would be to substantially raise the capital requirements for too-big-to-fail banks and apply them to all assets. But how much capital? Some in Congress would force megabanks to comply with a 15 percent leverage ratio, meaning they could borrow only 85 percent of the money they lend versus 94 percent or 95 percent under new preliminary U.S. bank rules. As AEI scholars Charles Calomiris and Allan Meltzer have pointed out, a capital

⁴ Hester Peirce and Stephen Matteo Miller, “Small Banks by the Numbers, 2000–2014,” Mercatus Center, George Mason University, March 17, 2015, <http://mercatus.org/publication/small-banks-numbers-2000-2014>.

⁵ Tanya D. Marsh, “Treat Community Banks Differently,” American Enterprise Institute, May 14, 2013, <https://www.aei.org/publication/treat-community-banks-differently/>.

cushion of that size allowed all the large New York City banks of the time to survive the Great Depression.⁶ What's more, such capital requirements might well nudge the biggest banks into shrinking themselves or breaking up. Assets would be more evenly distributed among financial institutions, and smaller banks would not have to contend with a Dodd-Frank regulatory flood.

Not only do we need to end the bailout culture on Wall Street and create real financial competition, but we must also dismantle the regulatory and legal barriers more directly eroding America's startup culture. There should be as few government hurdles as possible between a person with a good idea and the transformation of that idea into a small business with the potential to become a high-growth gazelle. As Adam Thierer writes in *Permissionless Innovation*:

Experimentation with new technologies and business models should generally be permitted by default. Unless a compelling case can be made that a new invention will bring serious harm to society, innovation should be allowed to continue unabated and problems, if they develop at all, can be addressed later.⁷

One big way government intersects with the world of ideas and innovation is through patent and copyright law. But U.S. copyright and patent laws have evolved into cronyist protection of the revenue streams of powerful incumbent companies. And that protection, a type of regulation, hampers innovation and entrepreneurship. Indeed, patent and copyright laws have become a key manifestation of the long-term corporatist turn of the U.S. economy that works against startups, economic dynamism, and creative destruction. As Nobel Prize-winning economist Edmund Phelps writes in his book *Mass Flourishing*:

But now the economy is clogged with patents. In the high-tech industries, there is such a dark thicket of patents in force that a creator of a new method might well require as

⁶ Charles W. Calomiris and Allan H. Meltzer, "How Dodd-Frank Doubles Down on 'Too Big to Fail,'" *Wall Street Journal*, February 12, 2014, p. 16, <http://online.wsj.com/articles/SB10001424052702304691904579345123301232800>.

⁷ Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center, George Mason University, 2014), p. vii, <http://mercatus.org/permissionless/permissionlessinnovation.html>.

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many lawyers as engineers to proceed. . . . Copyright has only recently seen controversy. The passage by Congress in 1998 of the Sonny Bono Act lengthening copyright protection by 20 years—to author’s life plus 70 years—prevents wider use of Walt Disney’s creations and prevents wider use of performances copyrighted by the record companies. The length of the copyright term may be deterring new innovation that would have had to draw on products at Disney and EMI. Members of Congress have a private interest in lengthening copyright and patent protections since they can expect to share in the big gains of the few without paying for the small costs borne by the rest of society.⁸

The 2014 paper “Intellectual Property Rights, the Pool of Knowledge, and Innovation” by Joseph Stiglitz outlines the problem in a similar way:

We have shown that tighter intellectual property regimes, by reducing the newly available set of ideas from which others can draw and by increasing the extent of the enclosure of the knowledge commons, may lead to lower levels of innovation, and even lower levels of investment in innovation, as a result of the diminution in the size of the knowledge pool.⁹

In short, an overly strict patent and copyright regime benefits existing players, not new ones.

With an aging population and slowing labor force growth, America will need to be more innovative than ever just to grow as quickly in the future as in the past. The U.S. economy will need a higher level of competitive intensity and dynamism to avoid Euro-sclerosis and Japan-sclerosis. But that won’t happen if big government and big business keep teaming up in a crony capitalist alliance to prevent the next generation of dynamic and disruptive competitors from ever existing.

⁸ Edmund Phelps, *Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, and Change* (Princeton, NJ: Princeton University Press, 2014), p. 254.

⁹ Joseph E. Stiglitz, “Intellectual Property Rights, the Pool of Knowledge, and Innovation,” National Bureau of Economic Research Working Paper no. 20014, March 2014, <http://www.nber.org/papers/w20014>.

37. Taxes, Patents, and Money: Three Proposals

*Ramesh Ponnuru**

I have no prejudice against silver bullets. It is conceivable that in some times and places, one simple reform would work wonders for an economy. It is even conceivable that ours is such a time and place. I just can't think of any such reform. So instead of proposing one, I will make three suggestions that I think would raise average growth rates over the next few decades. We should reduce the taxation of business investment, rein in the abuse of patents, and adopt a level target for nominal income.

Our tax system discourages companies from investing in the United States. Our corporate tax rates are a particular problem: the statutory rate is high for the developed world, and my colleagues at the American Enterprise Institute tell me that the effective average and effective marginal rates on investment are high relative to the developed world, even after accounting for loopholes.

My top priority in reforming business taxation would be to allow companies to write off the full cost of an investment in the year it incurred the expense, while scaling back the tax break for corporate interest payments. That step would reduce the tax code's bias toward debt over equity in corporate finance, while also making the United States a more attractive destination for capital. More investment in the United States should make our workers more productive and better paid.

It would also be worthwhile to bring the corporate tax rate down to the extent budget constraints allow it. Indeed, I would favor any steps to reduce the tax code's bias against investment and saving. The goal should be to move toward something like the "X tax," because it would do less to discourage saving and investment than our

* Ramesh Ponnuru is a senior editor for *National Review* and a visiting fellow at the American Enterprise Institute.

current code, and thus increase growth, and less to distort the allocation of resources as well.

Protections for intellectual property are supposed to promote innovation. While debate among specialists over the proper contours of that protection continues, it appears that aspects of our system are perversely reducing innovation. Low-quality patents on software and business methods appear to have generated a lot of rent-seeking litigation, diverting resources away from productive activity. Scholars suggest that patents in these areas are particularly conducive to this kind of abuse because of their inherently “fuzzy boundaries.” We have inadvertently created a system that creates an incentive to acquire vague patents for the purpose of opportunistic litigation.

It is a growing problem, and it is not easy to see how the abuse of these patents can be fixed. Barring such a solution, it would be best to return to our earlier practice of not recognizing patents in software and business methods. Pieces of music can be copyrighted but not patented; the same should be true of programming code. Congress could, for example, exclude from patent protection those industries where it is hard for companies to discover what patents they might be infringing.

In thinking about the country’s long-term growth prospects, we tend to distinguish between cyclical and structural issues, concentrate on the latter, and group monetary policy with the former. That habit is inappropriate today, because we have an approach to monetary policy that seems likely to increase the probability and severity of recessions and to slow down recoveries—and thus to make growth over long periods lower, on average, than it could be.

The Federal Reserve seems to want to keep inflation between 1 percent and 2 percent annually. When the economy experiences a negative shock or the Fed tightens policy in what turns out to be an excessive manner, that means nominal interest rates have to go significantly below zero. And the experience of the past few years suggests that the Fed faces, or feels, serious constraints in rescuing depressed economies using means other than lowering interest rates.

One way of reducing the risk of getting into this situation is for the Fed to adopt—or be instructed by Congress to adopt—a target path for nominal spending. It would commit, that is, to ensuring that nominal spending rose by, say, 4.5 percent a year, and to return to

that path after any deviations from that trend in one year (so that a 4 percent year would be followed by a 5 percent one).

The expectation of a return to trend would help, in the case of a shock, to set a floor under spending, interest rates, and inflation. Indeed, that expectation would reduce the risk that a serious demand shock would happen in the first place. (A level target for prices could accomplish that goal as well as a level target for nominal spending, but the latter is preferable because it implies more appropriate responses to supply shocks.) That target would be compatible with keeping the average inflation rate over the business cycle within the narrow band the Fed currently favors, but the rate would move up and down countercyclically.

Increased macroeconomic stability and monetary predictability should have modest microeconomic benefits as well, making it easier to make and coordinate long-term plans.

So changes in tax policy, intellectual property law, and the monetary system. It is a grab bag of different ideas, two supply-side reforms, and one that could be characterized as a shift in demand management. Perhaps that's just as well. We need to attack the problem of too-low growth on as many fronts as possible.

38. Apprenticeships, and Lots of Them

*Jonathan Rauch**

If I could wave a magic wand, my first-choice economic reform would be an aggressively expanded national apprenticeship system, and a supportive public culture to go with it. The reason is that the downward spiral of working-class men is the country's single most-worrying social trend, and apprenticeships could make a real dent in it.

I don't mean to imply that apprenticeships are unimportant for women. But women are, by and large, doing pretty well in today's workforce. Their earnings, labor force participation, and rates of college completion have been rising for decades. Men, by contrast, have been dropping out of the workforce for decades, and the less education they have, the steeper the fall in workforce participation has been. In 2011, more than 90 percent of men with college degrees were in the workforce, a decline since the early 1970s but not much of one; among those with a high school diploma or less, by contrast, a quarter and a third, respectively, were out of the labor force. The rise of nonwork as a norm among less-educated American men is a dramatic, alarming, and, as far as I know, unprecedented development.¹

Just why so many men are unplugging from the job market is something of a mystery, but the decline of wages for men without college degrees is certainly part of the picture. "For males with less than a four-year college education, earnings fell in real terms [from 1979 to 2010], declining between 5 percent and 25 percent," write the Massachusetts Institute of Technology economists David Autor and Melanie Wasserman in "Wayward Sons: The Emerging Gender Gap

* Jonathan Rauch is a senior fellow in governance studies at the Brookings Institution.

¹ Jonathan Rauch, "The No Good, Very Bad Outlook for the Working-Class American Man," *National Journal*, December 6, 2012, <http://www.nationaljournal.com/next-economy/the-no-good-very-bad-outlook-for-the-working-class-american-man-20121205>.

in Labor Markets and Education,” a superb paper recently published by Third Way, a centrist think tank.² When the rewards of work decline, a decline in work effort can hardly be surprising.

But male workforce participation declined even in periods when job markets were tight, so cultural factors are likely also in play. The kinds of hands-on, manual jobs traditionally favored by working-class men are rapidly being automated; the sorts of people- and service-oriented jobs that are replacing them are harder to get non-college men into. Autor and Wasserman take note of “intriguing evidence” that information- and technology-rich work environments favor cognitive and interpersonal skills, which women may, on average, be more likely to possess. I suspect deep issues involving masculine self-esteem are also in play. Three things really matter for success in life—work, education, and family—and increasingly, outside the ranks of the baccalaureate-holding elite, women have a comparative advantage in all three domains. This is something quite new in human affairs and has to come as a demoralizing shock to many blue-collar men. In any case, whatever the causes may be, the discouraging reality is that the economy is less and less able to integrate noncollege men into the workforce.

It gets (even) worse. The reason to speak of a downward spiral, rather than just a downward trend, is that men, especially young men, who don’t get integrated into the workforce, and who therefore don’t have promising and stable earning prospects, are not very attractive as marriage prospects. Autor and Wasserman cite evidence of a strong relationship between changes in female marriage rates and changes in male hourly earnings, which provide “remarkably clear support for the proposition that changes in the labor market rewards impinge heavily on the marriage market.” A marriageability crisis is emerging in non-college-educated America: the marriage rates of men, which in the early 1970s were high across the board, now vary steeply with earnings.³ According to the Brookings Institution’s Hamilton Project, at the 20th earnings percentile, only about half of men between the ages of 30 and 50 are married, versus 80 percent or

² David Autor and Melanie Wasserman, “Wayward Sons: The Emerging Gender Gap in Labor Markets and Education,” Third Way, 2014, <http://www.thirdway.org/report/wayward-sons-the-emerging-gender-gap-in-labor-markets-and-education>.

³ June Carbone and Naomi Cahn, *Marriage Markets: How Inequality Is Remaking the American Family* (New York: Oxford University Press, 2014).

more in the upper brackets.⁴ Alas, men who are unmarried are less stable and less employable; alienation from the marriage market and from the labor market thus feed upon and exacerbate each other.

Worst of all, as marriage and stable jobs become more the exception than the rule in blue-collar and lower-income America, the interlocking cultures of work and marriage lose traction among kids. "A vicious cycle may ensue," write Autor and Wasserman, "with the poor economic prospects of less-educated males creating differentially large disadvantages for their sons, thus potentially reinforcing the development of the gender gap in the next generation." Inequality not only grows but propagates itself from parent to child; America divides into marital and educational haves and have-nots, increasingly living in separate worlds; and something disturbingly like a class structure emerges and solidifies.

If the problem is with noncollege men, one answer seems simple enough: get more men through college. The returns to a bachelor's degree are large and getting larger; women are responding to the market's signal by flocking to universities. Men aren't. Clearly, if more finished college, more would do well.

Encouraging college completion is certainly necessary. But it is clearly not sufficient. For decades, public policy has poured government money into student aid and other subsidies for higher education, which has helped many people afford bachelor's degrees, which is good. By now, however, it is evident that the "B.A. for everyone" strategy fails to reach a very large segment of the population (especially but not exclusively male) for whom an academic program is simply not a good fit. "The United States' academic-only strategy is ill-suited for a diverse population and for the multiple needs of the 21st-century labor market," write Stuart Eizenstat and Robert Lerman. "A robust apprenticeship system would ensure that the impending manufacturing expansion succeeds in macroeconomic terms and widen the routes to rewarding careers for millions of workers."⁵

⁴ Adam Looney and Michael Greenstone, "The Marriage Gap: The Impact of Economic and Technological Change on Marriage Rates," the Hamilton Project, Brookings Institution, February 2012, http://www.hamiltonproject.org/papers/the_marriage_gap_the_impact_of_economic_and_technological_change_on_ma/.

⁵ Stuart Eizenstat and Robert I. Lerman, "Apprenticeships Could Help U.S. Workers Gain a Competitive Edge," Urban Institute, May 9, 2013, <http://www.urban.org/publications/904583.html>.

Apprenticeships combine supervised on-the-job learning—at real jobs, earning real paychecks—with related academic instruction, typically at community colleges or vocational institutes. “In Austria, Germany and Switzerland—countries with long histories of guilds and craftwork—55 to 70 percent of all young people enter apprenticeships,” Eizenstat and Lerman note. In the United States, by contrast, only about 4 percent of workforce entrants come through apprenticeship programs.⁶ The whole idea of apprenticing has been culturally sidelined by the prestige and predominance of the college degree, which public priorities do much to support: “Government spending on colleges and universities tops \$300 billion per year; outlays to apprenticeship programs total less than \$40 million annually,” write Eizenstat and Lerman.

This is all the more a pity in that Lerman estimates that current demand could support a near-sextupling of formal apprenticeships.⁷ Despite the rise of automation, many employers still have trouble filling mid-skill jobs because of skill mismatches: what young people learn in school is not necessarily what employers need. That, of course, is not a problem with apprenticeship, where the employer is the teacher. Over time, if apprenticeship worked itself into the cultural mainstream, both demand and capacity could presumably grow still larger.

Another advantage of apprenticeship: it is an ancient and reassuringly familiar idea that, unlike, for instance, most kinds of education reform, seems to have no political enemies. Formal, federally certified apprenticeships have been around since the National Apprenticeship Act of 1937.⁸ President Obama touted the idea in his 2014 State of the Union address⁹ and announced new grants for

⁶ Robert I. Lerman, “Expanding Apprenticeship: A Way to Enhance Skills and Careers,” Urban Institute, October 8, 2010, <http://www.urban.org/UploadedPDF/901384-Expanding-Apprenticeship.pdf>.

⁷ Robert I. Lerman, “Training Tomorrow’s Workforce: Community College and Apprenticeship as Collaborative Routes to Rewarding Careers,” Urban Institute, March 19, 2010, http://www.urban.org/UploadedPDF/1001360_training_tomorrow.pdf.

⁸ “History and Fitzgerald Act,” U.S. Department of Labor ApprenticeshipUSA webpage, 2004, <http://www.doleta.gov/oa/history.cfm>.

⁹ President Barack Obama’s State of the Union Address, Office of the Press Secretary, the White House, January 28, 2014, <http://www.whitehouse.gov/the-press-office/2014/01/28/president-barack-obamas-state-union-address>.

apprenticeships and a program to expand academic credit for apprentice training. Conservatives like the fact that the program is based on work rather than welfare, with employers rather than taxpayers picking up much of the tab.¹⁰ Moreover, according to Lerman, careful studies find that earnings gains and social benefits from apprenticeship are “extremely high.”¹¹ Although even sneezing is difficult in Washington these days, apprenticeship would seem to offer a path of comparatively low friction and rich return.

So it is not crazy to wish that both parties would make a push for apprenticeship and do it in a big way, big enough to bring apprenticeship significantly closer to parity with college aid. That kind of commitment would not only bring new financial resources to bear, it would also steer apprenticeship into the cultural mainstream and perhaps even break the baccalaureate bottleneck. In that respect, I think of apprenticeship not just as a way to train people for jobs but also as a way to train the country to think differently about education.

¹⁰ “Fact Sheet: American Job Training Investments: Skills and Jobs to Build a Stronger Middle Class,” Office of the Press Secretary, White House, April 16, 2014, <http://www.whitehouse.gov/the-press-office/2014/04/16/fact-sheet-american-job-training-investments-skills-and-jobs-build-stronger-middle-class>.

¹¹ Lerman, “Training Tomorrow’s Workforce.”

39. End Corporate Debt Bias—and Expand School Choice

*Reihan Salam**

Though the cultural prestige of entrepreneurship in the United States is as high as it's ever been, the sobering truth is that the country is suffering from a dearth of high-growth firms. The entrepreneurs of the moment gravitate toward the least-regulated sectors of the economy, where barriers to entry are low and headaches are relatively few. The trouble is that these are also sectors where the opportunities to deliver big employment gains have also proved fairly modest, or at least they have so far.

In the normal course of events, we expect job destruction and job creation to move roughly in tandem, with job creation surpassing job destruction just enough to keep employment levels rising. One of the main drivers of net job creation is the emergence of new business enterprises. When new enterprises fail to emerge, it should hardly be surprising that net job creation suffers—and indeed, that it will go into reverse, as it did in the wake of the Great Recession.

How is it that new firm creation contributes to net job creation? To oversimplify matters, successful new enterprises tend to bring with them new ways of doing business, which force older firms to either adapt or go out of business. Yet these new business models also create new employment opportunities. The rise of the automobile may have devastated the horse-and-buggy economy, but it also led to the establishment of filling stations, quick-service restaurants, motels, and all manner of other businesses that have automobile-enabled customers at their core, not to mention all of the businesses that were supercharged by automobile-enabled workers. We've grown accustomed to thinking about (some would say dwelling on) how various labor-saving innovations destroy jobs. What we neglect is

* Reihan Salam is the executive editor of *National Review*.

how labor-saving innovations can free up workers to take on new challenges and solve new problems.

There are many steps we could take to make life easier for entrepreneurs. But if given a magic wand to make a single policy change, I'd start with the so-called corporate debt bias. Because interest payments are deductible while the cost of raising equity capital is not, the tax code all but begs companies to borrow. While the effective tax rate on corporate investments financed by debt is effectively *negative*, the rate on investments financed by equity is quite high. That would make sense if there were some compelling public policy reason to finance corporate investments with debt rather than equity. If anything, the opposite is true. Debt is not a bad thing in itself. But too much debt can make firms, and entire economies, more fragile.

There is another, subtler dimension to the corporate debt bias. Yes, it lures firms into making debt-equity decisions that they might not make if they were looking at only the economic fundamentals. It also gives a boost to incumbent firms that, by virtue of their track record, are in a much better position to borrow than untested startups. Even in the absence of the corporate debt bias, startups face a less-than-level playing field when they decide to take on established players. If our goal were to squelch startups in the crib, the debt bias would be a great way to finish the job. So let's get rid of it.

Having tackled the corporate debt bias, I'd next want to address another innovation bottleneck: our public education system. Dartmouth College economist Andrew Samwick has proposed a modest tax reform that could have an enormous impact on how Americans educate their children.¹ When parents choose not to send their children to local public schools, they are in effect making a cash gift to state and local taxpayers, as they are forgoing a claim on public resources. Samwick argues that we ought to treat this gift the way we treat other charitable donations. That is, he wants to give these parents a tax break. Some will no doubt object that by encouraging affluent parents to withdraw their children from local public schools, Samwick's proposal will exacerbate inequality. But by expanding the

¹ Andrew A. Samwick, "Donating the Voucher: An Alternative Tax Treatment of Private School Enrollment," Cato Institute Research Briefs in Economic Policy no. 1, May 6, 2014, <http://www.cato.org/publications/research-briefs-economic-policy/donating-voucher-alternative-tax-treatment-private>.

market for private education, Samwick's tax reform will create an opening for educational entrepreneurs who are open to serving a more economically diverse clientele.

In a similar vein, I would encourage all public schools to move toward course-level instructional choice. That is, instead of simply choosing one school or another, students would be given a K–12 spending account that they could use to purchase a range of educational services, as Burck Smith, the CEO of StraighterLine, has proposed.² If a student chooses a lower-cost online Mandarin course over taking Spanish from the teacher at her high school, she could use some of the savings to pay for English tutoring, or to add to her college savings account. This would encourage productivity-enhancing course-level innovation, and it would encourage spending discipline on the part of students, parents, and educators.

Reducing the corporate debt bias would be politically difficult. Changing the tax code to encourage parents to abandon their local public schools would be, for all practical purposes, politically impossible, as would empowering students and parents to choose lower-cost educational options that would slowly drive ineffective teachers and administrators out of business. But these are the kinds of institutional reforms that would, over time, deliver serious growth dividends.

² Burck Smith, CEO and founder, StraighterLine Inc., "Keeping College within Reach: Improving Higher Education through Innovation," Testimony before the House Education and the Workforce Committee, 113th Cong., 1st sess., July 9, 2013, http://edworkforce.house.gov/uploadedfiles/smith_testimony_final.pdf.

40. Money, Economic Growth, and the Fed

George Selgin*

“The absolute quantity of the precious metals is a matter of great indifference.”

So wrote David Hume, in what is now regarded as the *locus classicus* of the doctrine of monetary “neutrality.”¹ According to that doctrine, a change—whether an addition or a subtraction—to a nation’s nominal money stock should, in the long run at least, leave that nation neither better nor worse off than before. That’s so because the change, instead of having any permanent effect on either the extent of employment or the quantities of goods produced by those employed, merely results in an all-around and strictly proportional (hence “neutral”) change in prices paid for labor and goods. Though it’s perhaps tempting to treat Hume’s insight, and the more modern theory it anticipates, as implying that monetary policies and institutions have little if any bearing upon an economy’s economic growth rate, the temptation should be resisted, because the claim that money is “neutral” actually implies nothing of the sort.

The neutrality doctrine refers, first of all, to the eventual consequences of a *one-time* increase in the quantity of money—that is, a multiplication by factor y , or an x percent increase. It doesn’t follow that changes in the *growth rate* of the money stock (or, equivalently, the equilibrium rate of inflation) are also matters “of great indifference.” While economists disagree concerning which inflation rate is best, practically all are in agreement in regarding *arbitrary* fluctuations in the quantity of money as costly. Such fluctuations contribute to business cycles, whose upward phases involve misallocation of capital as well as some squandering of leisure, and whose downward

* George Selgin is a senior fellow and the director of the Center for Monetary and Financial Alternatives at the Cato Institute.

¹ David Hume, “Of Money,” in *Essays, Moral, Political, and Literary* (1777; Indianapolis: Liberty Fund, 1978).

ones involve wasteful unemployment. Because resources are wasted during boom and bust alike, less stable economies end up having lower growth trajectories than more stable ones.

Finally, the *quality* of money—that is, the specific assets of which the money stock consists—can have a very considerable bearing upon economic growth, depending on how savings represented by the public's money balances are invested. In *The Wealth of Nations*, Adam Smith explained how Scotland's economic growth was aided by the employment, in place of silver coins, of commercial banknotes backed mainly by productive loans. Even today, comprehensive currency privatization might raise some countries' long-term growth rates by several percentage points, by reducing the extent to which scarce savings are commandeered, and inefficiently invested, by central banks.²

Now let's consider, in light of these considerations, recent U.S. experience. Before the 2008 crisis, the Fed's liabilities amounted to about one-eighth of the U.S. (M2) money stock, implying a correspondingly large diversion of savings from potentially more productive investment. Since those liabilities consisted mainly of Federal Reserve notes, many of which circulate overseas, the diversion of U.S. monetary savings was rather less substantial.

Three post-crisis rounds of quantitative easing have, however, led to a fivefold increase in the size of the Fed's balance sheet. Because banks chose to add the new reserves that this easing generated to their excess reserve holdings instead of lending them, the Fed's share of M2 intermediation rose dramatically, from one-eighth to one-third. What's more, because the Fed's QE-related purchases included almost \$1.9 trillion in mortgage-backed securities, such securities now make up well over a third of the Fed's total assets. Therefore, instead of being invested as productively as possible, or even being used to finance the general government, over *one-sixth* of the public's monetary savings now serve to prop up the value of assets considered toxic by the private sector. Regarded strictly from the perspective of its effect on credit allocation, quantitative easing seems to have been very wasteful indeed.

² William D. Lastrapes and George Selgin, "Banknotes and Economic Growth," *Scottish Journal of Political Economy* 59, no. 4 (2012): 390–418.

Although the Fed now stands more squarely in the way of healthy U.S. economic growth than ever before, its pre-2008 performance was, from a growth perspective, also far from ideal. In fact, the monetary environment since the Fed's establishment has in important respects been even less conducive to growth than that of the previous, crisis-prone national currency era.³

The price level, for one thing, became far harder to predict, adding considerably to long-term investment risk. (A stark symptom of this change has been the almost complete disappearance of once-common 50- and even 100-year corporate bonds.) Real output has also been more volatile or, if one prefers to overlook the Fed's first three decades, no less volatile than it was before 1914—and this despite tremendous broadening of markets, a much-reduced role for weather- and blight-sensitive farm output, and a much enlarged ratio of government spending to total gross domestic product (GDP), not to mention the rise of activist fiscal policy, all of which should have contributed to greater stability. Still more revealingly, shocks to aggregate demand, which would be altogether absent in an ideal monetary system, have become a far greater source of economic instability since 1914 than they were before. Economic contractions, finally, have become more instead of less frequent, as well as longer lasting on average, than they used to be—and here once again, the comparison holds even setting the interwar period aside.⁴

From what has been said, it ought to be evident that reducing the U.S. monetary system's drag on growth means, among other things, (a) minimizing the extent to which that system diverts savings toward relatively unproductive uses and (b) seeing to it that the system dampens the business cycle instead of aggravating it.

These objectives are, fortunately, not necessarily at loggerheads. For although it is true, as Adam Smith observed, that a fractional-reserve monetary system is bound to be less secure than one in which all money either is or is backed by basic money, experience

³ George Selgin, William D. Lastrapes, and Lawrence H. White, "Has the Fed Been a Failure?" *Journal of Macroeconomics* 34, no. 3 (2012): 569–96.

⁴ The last conclusion follows, provided one allows for events since Romer's 1999 assessment. Christina D. Romer, "Changes in Business Cycles: Evidence and Explanations," *Journal of Economic Perspectives* 13, no. 2 (1999): 13–44.

shows that the most free and efficient fractional-reserve systems—including Scotland's in its heyday (roughly from Adam Smith's time to the latter part of the 19th century) and Canada's (to this day, but especially before 1935)—have also been among the most stable. Theory suggests, furthermore, that this is neither a coincidence nor a paradox. It is, on the contrary, just what one would expect to find if government regulations tended, as they often do, to make banking systems less rather than more stable than they would be otherwise.⁵

Reducing wasteful misdirection of savings means, first of all, unwinding the Fed's bloated balance sheet. Because disposing of its long-term Treasury and mortgage-backed security holdings could disrupt the markets for those securities, while exposing it to large capital losses, the Fed is unprepared to tighten money by means of conventional open-market sales. But should banks become inclined to shed their excess reserves more aggressively, to avoid unwanted inflation, the Fed will have to counter the tendency somehow, which it is most likely to do by increasing interest payments on excess reserves. That strategy would, however, perpetuate instead of ending the present unproductive employment of savings.

This outcome can be expeditiously avoided by two steps. First, the Treasury should be instructed to swap short-term bills and notes for the long-term Treasury securities that the Fed is now holding. Second, Congress should establish and fund a special resolution authority for the purpose of acquiring the Fed's mortgage-backed security holdings at an appropriate discount and disposing of them in an orderly but relatively rapid manner.

The above reforms would serve to reestablish something akin to the pre-crisis status quo. But they would not otherwise diminish the Fed's share, and hence the overall inefficiency, of U.S. financial intermediation. Further steps in that direction might include doing away with statutory reserve requirements and (a far more controversial option) allowing commercial banks to issue their own circulating notes, as banks in Hong Kong, Ireland, and Scotland do, and as U.S. banks also did before the Fed acquired its monopoly.

⁵ George Selgin, "Legal Restrictions, Financial Weakening, and the Lender of Last Resort," *Cato Journal* 9, no. 2 (1989): 429–59; Charles W. Calomiris and Stephen H. Haber, *Fragile by Design: The Political Origins of Banking Crises & Scarce Credit* (Princeton, NJ: Princeton University Press, 2014).

Letting banks issue their own notes makes no sense at all, of course, unless something is first done to correct the moral-hazard problems that presently make some banks poor custodians of ordinary deposit liabilities. Such steps must include both a reduction of explicit deposit guarantees and the undoing of the guarantee implied by the official view that some banks are too big (or “systemically important”) to fail. Moral hazard stemming from explicit insurance might be contained by providing for coinsurance, by restricting the uses of (or interest return on) insured deposits (while leaving uninsured balances unregulated), or by replacing government-administered insurance with private-industry cross guarantees.⁶ That stemming from implicit insurance can be contained by limiting the Fed’s bailout authority, by having “big” banks prepare “living wills” or, if all else fails, by breaking them up.⁷

Once the moral hazard problem has been addressed, banks may safely be left to intermediate as efficiently as possible, and thus to contribute as much as possible to economic growth, using whatever liabilities their customers might be persuaded to hold, *provided* that they are protected from such extreme movements in interest and inflation rates as might cause even responsibly managed and well-diversified banks to fail. Because such violent swings are almost always due to irresponsible monetary policy, in practice this means placing limits on central banks’ discretionary powers of monetary control.

Limited space prevents me from either rehearsing the arguments or reviewing the evidence favoring monetary rules over discretion, or from considering the many forms such rules might take, from simple base growth-rate rules to sophisticated ones, such as the Taylor rule, allowing feedback from various policy targets. I must instead settle for adding my voice to those of Scott Sumner, David Beckworth, and other “market monetarists,” by opining that an ideal rule should seek, not to stabilize either output or inflation per se, or some weighted average of both, but to stabilize some measure of total

⁶ Bert Ely, “Financial Innovation and Deposit Insurance: The 100 Percent Cross-Guarantee Concept,” *Cato Journal* 13, no. 3 (1994): 413–36.

⁷ This solution, though hardly a first-best ideal, is presumably less far removed from first best than it might be when one considers the part government guarantees have played in promoting recent banking-industry consolidation. Very large banks that have benefited from bailouts (but not those that were *compelled* to accept Troubled Asset Relief Program money) should top the list of candidates.

spending such as the growth rate of nominal GDP or domestic final demand.⁸ Doing that serves to prevent monetary disturbances from influencing either the general price level or real output, while still leaving both variables free to respond, as efficient allocation requires that they do, to both favorable and adverse supply innovations.

But no monetary rule can succeed that isn't strictly enforced, and the world has offered no examples—or no long-lasting ones, at any rate—of a strictly enforced rule since the passing of the classical gold standard. That standard owed much of its success to the fact that central banks actually had relatively little to do either with its enforcement or with its establishment; and there are good reasons for suspecting that the only way to have a truly rule-bound monetary regime of any sort is by having one that does away with central bankers altogether, instead of merely endeavoring to constrain them. In the Fed's case, that means replacing the Federal Open Market Committee (FOMC) with some other, automatic means for controlling the money stock.

Because the success of the classical gold standard itself depended crucially on both its international character and the fact that participating banks and central banks still felt themselves bound by contract (rather than by mere "policy") to maintain their notes' convertibility into gold, replicating it poses daunting challenges that make it wise to contemplate other options, especially ones that don't depend on the cooperation of foreign governments.⁹

One such option, suggested by Milton Friedman back in the mid-1980s, would be to forgo altogether changes to the monetary base, freezing it for all time, and leaving it to private-sector financial institutions to accommodate changes in the public's specific demand for paper currency as well as changes in money's velocity.¹⁰ As I've

⁸ Scott Sumner, "The Case for Nominal GDP Targeting," Mercatus Center, George Mason University, October 23, 2012, <http://mercatus.org/publication/case-nominal-gdp-targeting>; William A. Niskanen, "Political Guidance on Monetary Policy," *Cato Journal* 12, no. 1 (1992): 281–86.

⁹ George Selgin, "Law, Legislation, and the Gold Standard," unpublished, November 18, 2014, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2524863.

¹⁰ Milton Friedman, "Monetary Policy Structures," *Cato Journal* 34, no. 3 (2014): 631–55, <http://object.cato.org/sites/cato.org/files/serials/files/cato-journal/2014/9/cj34n3-10.pdf>.

shown elsewhere, if banks are free both to set their own reserve ratios and to issue their own notes, they might accommodate the former changes fully, and the latter to a considerable extent, despite a fixed reserve base.¹¹ Changes in real output would, however, tend to be deflationary; and though the deflation might be harmless or even beneficial to the extent that it reflected productivity gains (it might, for one thing, approximate Friedman's "optimum quantity of money"), if prompted instead by an increased supply of labor it could instead prove depressing.¹²

A less draconian option, and one Friedman also suggested, if only facetiously, would be to replace the FOMC with a computer, programmed to allow the monetary base to grow at a fixed rate. But even that solution couldn't deal adequately with extraordinary growth in money demand, such as growth stemming from an influx of new workers. It also raises the question, who is responsible for programming the computer, and how can that person or those persons be prevented from tampering with it?

Computer technology has, fortunately, taken huge strides since Friedman made his somewhat tongue-in-cheek suggestion; and computer programming has taken even bigger ones. One development especially, and a very recent one at that, seems to me to hold out the best prospect yet for rendering central bankers obsolete. That development, you've probably guessed, is bitcoin.

Bitcoin itself, I hasten to say, has a long way to go before it can qualify as a serious rival to, let alone a replacement for, the U.S. dollar. But it isn't bitcoin itself that I regard as a means for dispensing with the Fed and other central banks. It's the program that controls the supply of bitcoins—and controls it in such a way as to practically rule out any tampering with that supply.

The actual bitcoin program or "protocol" provides for a steady but gradually diminishing output of bitcoins that will level off as their total quantity approaches 21 million (we are, as of this writing, still shy of the halfway mark). Since this means that the bitcoin stock will itself one day be "frozen," this particular protocol, were it used to

¹¹ George Selgin, *The Theory of Free Banking: Money Supply under Competitive Note Issue* (Totowa, NJ: Rowman & Littlefield, 1988).

¹² George Selgin, *Less than Zero: The Case for a Falling Price Level in a Growing Economy* (London: Institute of Economic Affairs, 1997).

regulate the supply of base dollars, wouldn't accomplish anything that simply disbanding the FOMC or shutting down the New York Fed's open-market desk wouldn't accomplish.

But one could also design a "bitdollar" protocol that, while resembling the actual bitcoin protocol in being tamper-proof, allows, not merely for perpetual growth of the bitdollar base, but for growth that automatically responds to changes in, say, the volume of bitdollar payments. One could, in other words, have a "smart" yet tamperproof base-money management algorithm—smart enough, for example, to automatically implement a nominal GDP rule, or something close to it. Such an automatic system, if only politicians would implement it, offers the best hope yet for monetary stability and, hence, for having a monetary arrangement that contributes to economic growth instead of hampering it.

41. Economic Growth in the Age of Diminishing Labor

*Karl Smith**

The most significant fact for economic growth in the 21st century is the sharp, now global, reduction in birth rates, population growth, and hence labor force growth. There is quite literally no area of economic, political, or social policy that is not at least touched by this fact. Our most pressing issues are radically altered by it. Some standard concerns are well-known: dependency ratios will rise, inherited wealth as a multiple of national income will grow, and debt dynamics will become less stable. As a result of these effects, both inequality and demands on the welfare state will increase.

I'd like, however, to press a more subtle, though potentially more damaging, concern. Lower population growth rates have the potential to undermine the virtuous cycle of risk taking and innovation. Without policy changes, economies will find themselves trapped in rapid boom-and-bust cycles that net out to pathetically slow growth rates even in per capita terms.

Though the economic growth dynamics are complex, the underlying intuition is straightforward. A growing population provides a buffer for risky capital investments. A growing population—and hence potential workforce—demands more capital each year and crucially demands a larger total pool or stock of capital. The economy cannot get by simply by replacing worn-out machines and refurbishing dilapidated buildings. The total stock of machinery and the total number of buildings need to grow. If not, capital will become scarce relative to labor, wages will fall, and the profits from new capital investments will soar. These soaring profits will provide an irresistible lure for new investment.

* Karl Smith is an economist who blogs at Modeled Behavior.

The potential for soaring profits also provides a cushion for innovation. Innovators may guess wrong and invest in capital that turns out to be less, rather than more, efficient or effective than the current modes of production. If the population size is stagnant, then society responds by shunning the innovation and simply continuing to replace existing machines and buildings using the existing technology.

A growing population can't get by that way. It needs new capital and will settle for the less effective and efficient innovation if nothing else is available. In economic terms, a growing population provides price support for even unsuccessful innovations and thus limits the downside risk for innovators.

This insight into the innovative process can help us see the Industrial Revolution and subsequent process of global industrialization as part of a virtuous cycle in which innovation led to rising populations, and rising populations reduced the downside risk of further innovation.

Now we face an end to this virtuous cycle, not because innovation itself is petering out, but because population growth is. Moreover, because innovations themselves are self-supporting—for example, advanced hardware increases demand for advanced software and vice versa—the net slowdown can be dramatic. Today, for example, the growing global middle class provides rapacious demand for smart devices. This demand means enormous profits for industry leaders, such as Apple and Samsung. Yet that same rapacious demand attracts new (if unsuccessful) entrants like Facebook and sustains old quasi-successful ones like HTC. It also keeps the leaders ever focused on further innovation.

This need not be the case. It is not merely the advance of the underlying technological know-how that creates this innovative race. For decades the personal computer (PC) industry was a wellspring of innovation. Yet that innovation has cooled to a snail's pace as the demand for PCs was sated. The underlying technology is the same as smart devices. It wasn't lack of know-how that killed PC innovation. It was lack of sustained demand growth.

What Can Be Done?

For a problem this interwoven, a successful policy intervention needs to attack from the demand and supply sides simultaneously. I'll offer what I think of as a prototypical set of policies. The pair

are meant to be illustrative rather than prescriptive. There are other policy sets that could operate as well, so long as those sets combined the key elements outlined here.

On the demand side, we can make up for slower population growth with less restrictive monetary policy. This is a tradeoff that has held throughout time. Periods of rapid population growth—in the United States, often driven by strong immigration—are times when monetary policy could be tight with few economic dislocations. Times of declining and even negative population growth—we are thinking now of early 21st-century Japan—meant seemingly modest monetary policy rules could be disastrously tight.

If we think about how loose monetary policy works, it will become clear why this is the case. Fans of tight money will argue that loose money robs a nation's citizens of their purchasing power. Each year, the money that they have saved buys less than the year before. Where, however, does this purchasing power go? In a modern economy, it is almost always transferred to the younger generation.

Middle-age citizens are typically savers, but young citizens are typically borrowers. Loose money means that after accounting for inflation, the real interest rate paid by borrowers is very low. Indeed, if inflation is high enough and interest rates low enough, the real interest rate paid by borrowers can be zero or even negative. That means that younger borrowers are benefited at the expense of older savers. In and of itself, this is a delicate balance to strike. The good monetary-policy maker wants to ensure that neither group is unduly harmed.

Slowing population growth, however, changes the calculus. Continued innovation depends on an expanding capital stock. That implies that the younger generation must have the means to engage in even greater investment than their predecessors. If they cannot do this by the sheer weight of numbers, then society can benefit by providing them with easier repayment terms. The consequences of failing to do so are severe. Stringent payment terms will mean that failed innovation leads to a wave of bankruptcies. Those bankruptcies in turn threaten the entire savings and investment community and drag down the value of investments even for the older generation. This is largely the story of the late 20th-century and early 21st-century bubbles from Japan in the 1980s, Korea in the 1990s, and the United States in the 2000s. In each case, investment got ahead of

itself—as it has done many times in the past. However, low population growth combined with difficult repayment terms turned what would have been a market correction into a full-scale financial collapse, followed by stagnant growth.

It's no accident that this phenomenon appeared in Japan first. As its population began to stagnate well before the rest of the industrialized world, investors found themselves with loads of capital, a dearth of workers, and repayment terms they could not meet.

The result was not pretty. A strong recession failed to clear away the wreckage of failed businesses. The economy stagnated for over a decade. Stock prices peaked in 1989, never to return to their highs. Decades' worth of savings were wiped out.

A New Kind of Labor Force

While Japan's demand-side response was tepid and tragic, it fared better on the supply side. Government and industry in Japan invested heavily in robotics, completely dominating the field through the end of the 20th century and into the 21st. While the rest of the world has started to catch up, as late as 2005 roughly 40 percent of all robots were located in Japan.¹

What distinguishes robots from smart devices or simply technology in general is that they are designed to replace the role of a human operator. A nonrobotic machine or device is designed with the intention that it will always depend on human supervision. For growth policy, this implies that smart devices and machines, like traditional capital, are inherently complementary to labor. Their profit and risk profiles will match that of standard capital, and they suffer from exposure to population dynamics.

Robots, by contrast, have the capacity to operate without supervision, meaning that tasks can be accomplished labor free. This helps insulate the robotic investment from labor force dynamics. There's no worry that universities will turn out too few employees with the requisite "robot skills," or that the operators will be lured away to elderly home care or some other field with soaring demand and hence wages.

¹ Hiroku Tabuchi, "Japan Looks to a Robot Future," *USA Today*, March 1, 2008, http://usatoday30.usatoday.com/news/world/2008-03-01-67233768_x.htm.

This independence, however, exposes the robotic enterprise to a separate sort of risk. Without a human operator, there is no well-defined distinction between malfunction and operator error. Yet the same types of problems that lead to operator error can occur. The control system for a robot cannot be preprogrammed for every possible situation, because it is impossible for its programmers—who are only human—to imagine every possible situation. The control system must take in data and make judgment calls about the best likely response to a situation. Autonomous vehicles are an obvious example.

Autonomous vehicles, otherwise known as driverless cars, can function independently of a human operator. They can negotiate traffic and respond in real time to the seemingly infinite threats and obstacles that appear on the road. Naturally, there is no way to preprogram the vehicle for every possible encounter. The vehicle must have objectives, such as “do not strike a child running into the road,” that interfere with other objectives, such as “do not swerve into the opposite lane,” that together interfere with other objectives, such as “do not slam the brakes too hard when closely followed by another car.”

Inevitably, some car somewhere will eventually make what most observers regard as a poor choice. Human drivers make mistakes because they are tired, distracted, or confused. Those same phenomena affect robots as well. When their central processing units have been working for a long time in hot and humid conditions, their cores begin to overheat, and an overheating core operates more slowly and less efficiently. When faced with an unusual set of sensor data, the robot must divert more of its processing power to analyze the nature and potential threat of the situation than when in more standard conditions. When the robot is presented with highly complex, interwoven problems with constantly changing inputs, portions of its processing can become caught in infinite loops, which require the process to be aborted and attempted again.

When a human operator harms someone as a result of tiredness, distraction, or confusion, he or she may have his or her culpability judged by peers and acquitted or held liable based on the judgment of those individuals. A similar process examines the executives and owners of a company whose device malfunctions.

The robot, however, does not fit neatly into this paradigm. It cannot be judged as a human; but at the same time, the executives who

manufactured the device the robot controlled could not—by the very definition of robot—have foreseen what the robot would do in every applicable situation.

Yet absent any other mechanism for restitution, we should expect victims to seek redress from the manufacturer. Manufacturers therefore are and will continue to be reluctant to take the “robotic leap.”

That is, they are willing to employ ever-more-complex smart devices, so long as the ultimate judgment rests in the hands of a human being. This keeps them chained to the effects of population and labor force growth. For many devices—including the automobile—the robotic leap is not far from a technological standpoint. Liability concerns are the primary hurdle.

These concerns are only magnified when we move to food service, home care, housekeeping, childcare, and a host of other functions where labor shortages could be relieved by robotic devices. We have the tools. We have the technology. We lack the legal structure.

Creating the proper legal structure will require the following two steps. The first is cleaving legally the robotic operator from the device. For example, one would not own a Toyota Camry with a self-driving feature designed by Google. Instead, one would own a Toyota Camry and then have that car driven for him by the Google autonomous vehicle robot. Toyota is responsible only for making a Camry that works. The choices the autonomous vehicle robot makes has nothing to do with Toyota.

Second, Google, or whatever company it likely spins off for the purpose of creating robots, would be required to join one or more indemnity funds. Those funds would be run by and for the manufacturers of robots and would determine whether or not potential robots showed sufficient judgment to be covered. This determination process need not expose the source code of the robot. We imagine the robot could be exposed to simulations or external tests similar to a human who seeks insurance coverage or professional licensing.

If robots are found legally culpable for a poor decision, the indemnity funds compensate the victims and perhaps pay fines to the state if needed. It is then up to the fund to decide whether a specific robotic model should be expelled from the fund.

42. Two Ideas to Boost Long-Term Growth

*Dane Stangler**

Here are two policy changes I would make in order to brighten the long-term economic growth outlook for the United States.

Immigration

Immigration has been a potent economic force in the United States for our entire history. In particular, immigrant entrepreneurs have added enormous value to the American economy for many decades. Data have shown that in recent years immigrants have had a much higher rate of entrepreneurial activity than native-born Americans. Only 10 years ago, in fact, their rates of entrepreneurial activity were nearly identical, but the gap has widened continuously, and today immigrants are nearly twice as likely to start a business as natives.¹ Immigrant entrepreneurs also carry disproportionate weight in high tech—Vivek Wadhwa and his colleagues have found that roughly half of Silicon Valley technology companies have an immigrant as a founder or cofounder, and that this is also true for about a quarter of technology companies nationwide.²

Remarkably, the strong inclination of immigrants to start companies appears to have persisted for over a century, back to the late 1800s.³ It is not a leap to imagine that immigrant entrepreneurs have helped sustain a rather steady level of business creation in the United States.

* Dane Stangler is vice president of research and policy at the Ewing Marion Kauffmann Foundation.

¹ Kauffman Index of Entrepreneurial Activity, Kauffman Foundation, April 2014, <http://www.kauffman.org/what-we-do/research/kauffman-index-of-entrepreneurial-activity>.

² Vivek Wadhwa, AnnaLee Saxenian, and F. Daniel Siciliano, "Then and Now: America's New Immigrant Entrepreneurs, Part VII," Kauffman Foundation, October 2012, http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2012/10/then_and_now_americas_new_immigrant_entrepreneurs.pdf.

³ Sarada Prasad, "The Historical Evolution of Entrepreneurship," working paper, University of Wisconsin–Madison Business School, forthcoming.

To keep this up—and to reverse stagnant rates of business creation—the United States must reclaim its position as the global destination for entrepreneurs. In recent years, as American policy-makers have bogged down in contentious debates over immigration, other countries have fallen over themselves to lure entrepreneurs to their countries. There have been various proposals to create a “startup visa” that would create a new path for immigrant entrepreneurs eager to start their companies in the United States. Both the House and Senate versions of immigration reform that were passed in 2014 contained versions of a startup visa, and such a visa has also been introduced as part of the standalone Startup Act introduced into the Senate on multiple occasions. Rather than create a brand new visa for potential entrepreneurs outside the country, there could be two other options, one incremental, the other slightly more radical.

Foreign students studying in the United States represent low-hanging fruit because many would like to stay here, especially those in graduate school in the STEM (science, technology, engineering, and mathematics) fields. And many of them would like to remain in America and either start a company or join an early-stage startup. Current rules around F-1 visas and the two work programs for foreign students—curricular practical training and optional practical training—limit the options for students and rule out, for all practical purposes, either starting a company or working for a young firm.⁴

Create a “startup visa” for foreign students to extend their stay in the United States, allow them to start companies and work at startups, and put them on a path to permanent residency and citizenship. Some criteria would need to be attached, of course—perhaps investment raised, jobs created, or “entrepreneur apprentice” milestones reached working closely with a founder.⁵ These criteria,

⁴ Anthony Luppino, John Norton, and Malika Simmons, “Reforming Immigration Law to Allow More Foreign Student Entrepreneurs to Launch Job-Creating Ventures in the United States,” Kauffman Foundation, August 2012, http://www.kauffman.org/~ / media / kauffman_org / research % 20 reports % 20 and % 20 covers / 2012 / 08 / kauffmanimmigrationreform.pdf.

⁵ Brad Feld, “Massachusetts Has an Innovative Approach to Immigration Reform,” Feld Thoughts (blog), April 11, 2014, <http://www.feld.com/archives/2014/04/massachusetts-innovative-approach-immigration-reform.html>.

however, should not be as unreasonable as those proposed in some versions of a startup visa, or as those currently required for the EB-5 visa. The criteria, moreover, should not tie these students to the particular company where they work, in recognition that entrepreneurial ventures fail frequently. The visa should be attached to the individual, not the company.

This student startup visa extends programs already in place—curricular practical training and optional practical training—and provides an easy way to test the viability of a broader startup visa.

The second option to tap more immigrant entrepreneurial energy is to combine the idea of a startup visa with the various proposals on the right and left that would have created a new pathway to citizenship for the millions of illegal immigrants already living in the United States. Data are difficult to come by for this population, but it is reasonable to believe that many illegal immigrants have started their own businesses or are working for other immigrants who have started companies.

Create a “startup visa” for existing illegal immigrants in the United States who either are already running businesses or would do so within the boundaries of the law. Strict criteria would need to attend this, to deter abuse and make sure that actual businesses were benefiting or being created. But this startup visa would come with a pathway to citizenship, marked both by business milestones and by some of the details of proposals already out there to allow illegal immigrants to “get in line” for residency. Importantly, this startup visa should not be narrowed to only technology companies—many immigrant entrepreneurs start successful companies that are not high-tech but that grow and create jobs.⁶ We are interested in businesses that create jobs no matter what kind they are. Like the student startup visa described above, this one would be a way to test different pathways to citizenship without committing the country to one defined way.

These variations on the more conventional startup visa would boost entrepreneurship, create jobs, help start to solve thorny immigration issues, and solidify America’s status as the immigrant (entrepreneur) nation.

⁶ Jonathan Bowles, “A World of Opportunity,” Center for an Urban Future, February 2007, <https://nycfuture.org/research/publications/a-world-of-opportunity>.

Teacher Licensing and Preparation

Education is a perennial area of concern, a perennial target of reform ideas, and, more recently, a hotspot of entrepreneurial activity. Any discussion of long-term economic growth must include some consideration of how to not just improve K–12 education but also build higher levels of human capital more generally. There are supply-side and demand-side components to doing this.

On the one hand, employers and others perpetually complain of a “skills gap,” and there is evidence that the increasing cognitive demands of the U.S. economy are exacerbating socioeconomic divides.⁷ On the other hand, recent research indicates that the U.S. economy may be in the midst of “deskilling” and unable to produce enough cognitively demanding jobs for all the students it is educating.⁸ To sustain long-term economic growth, the United States needs an educational system that generates both educated individuals and individuals who will create new high-quality jobs. Because teachers are perhaps the most important factor in educational quality, overhauling the way we prepare and license teachers will, in the long run, boost economic growth.

The issue of teacher licensing and preparation is beginning to get more attention, as school districts and states cast around for ways to improve the quality of their teaching workforce. Schools of education at universities have, by and large, responded with a shrug, preferring to point to the number of teachers they produce rather than consider their quality. As a result, the entire industry of teacher preparation has come in for stinging criticism from organizations such as the National Council on Teacher Quality (NCTQ).⁹ Most schools of education around the country perform poorly in NCTQ’s assessment, and the organization has a raft of sensible recommendations for teachers, districts, state policymakers, and schools of education.

⁷ Brink Lindsey, *Human Capitalism: How Economic Growth Has Made Us Smarter—and More Unequal* (Princeton, NJ: Princeton University Press, 2013).

⁸ Peter Cappelli, “Skill Gaps, Skill Shortages, and Skill Mismatches: Evidence for the U.S.,” National Bureau of Economic Research Working Paper no. 20382, August 2014; Paul Beaudry, David A. Green, and Benjamin M. Sand, “The Great Reversal in the Demand for Skill and Cognitive Tasks,” National Bureau of Economic Research Working Paper no. 18901, March 2013.

⁹ “2014 Teacher Prep Review,” National Council on Teacher Quality, June 2014, http://www.nctq.org/dmsStage/Teacher_Prep_Review_2014_Report.

Besides overhauling the way that schools of education are organized or instigating a war between school districts and universities, one option is to create a new pathway for experienced professionals to become quickly but rigorously certified as teachers. The NCTQ does make some recommendations in this direction, and its criteria for such alternative certifications make sense. A new pathway might be able to be created faster than reforms to existing schools of education—which should still occur in any case.

If, for example, a retired engineer wanted to teach high school math, or a mid-career internist wanted to teach anatomy, why turn them away or subject them to the inanities of many teacher preparation programs? No one is claiming that those individuals would automatically make better teachers than the ones being turned out by education schools, but few can claim they would be any worse, either. Allowing alternative certification of subject-matter knowledge as well as a *de minimis* apprenticeship in teaching would create a new pipeline of quality teachers.¹⁰

Ideally, such an alternative pathway would begin to create competitive pressure on schools of education and help force some necessary reforms, while also creating a new set of teachers. One objection to this idea is that it would do nothing to overcome barriers, often union backed, to getting rid of poor teachers. What good would creating more teachers do if we still couldn't fire bad teachers, and if we couldn't remove some of the alternatively certified teachers who turn out to be terrible?

Permit, and even encourage, the new teachers to join unions in exchange for reform of teacher tenure and greater ability to fire bad teachers. With enhanced union membership and better teachers—everybody wins.

Improving the quality of K–12 teachers—by widening the funnel of people who are admitted to the profession—will go further than most other education reforms to boost attainment and raise long-term growth.

¹⁰ Ibid.

43. Getting Back to Work

*Michael R. Strain**

Of course, it's hard to know for sure, but many economists would argue that a 1 percent increase in the number of hours Americans work would increase potential gross domestic product (GDP), potential output, and the amount of stuff the economy could produce—by about seven-tenths of a percentage point. Extrapolating from that estimation, if we could increase hours of work by 10 percent, we'd increase the potential size of the economy by 7 percent.

Some economists would quibble with that calculation. But all economists would agree that the more Americans work, the more stuff the economy can produce. Jobs are an extremely important component—indeed, the key component over the short run—to economic growth.

And of course, the opposite is true. If we have fewer jobs and if fewer people are participating in the workforce, then the ability of the economy to produce goods and services will shrink quite a bit.

With that in mind, let's review briefly the trends in workforce participation.

First, some terminology is required. For the purposes of this essay, let's consider only people between the ages of 25 and 54. I focus on that age range because it contains people who are both too old to be in school and too young to retire—people in their prime working years. Each such person is classified by the Bureau of Labor Statistics (BLS) as either employed, unemployed, or not in the labor force. Workers are employed if they work for pay. Workers are unemployed if they don't have a job, are trying to find a job, and are available for work. The labor force is the sum of employed and unemployed workers. Persons who are neither employed nor unemployed are

* Michael R. Strain is a resident scholar in economic policy studies at the American Enterprise Institute.

classified as not in the labor force. The labor force (or workforce) participation rate is the share of the population that is either employed or unemployed.

The labor force participation rate for prime-age workers stood at 64.2 percent at the beginning of 1948.¹ It rose steadily in the 1950s and 1960s, picked up steam in the 1970s, and continued to rise until about 1990, when it leveled off in the 83–84 percent range. For about the past 15 years, the share of the prime-age population in the workforce has been declining. Currently, the rate is lower than it's been in three decades.

It may surprise you to learn that over this entire period—from the end of the Second World War to the beginning of the Great Recession to the present day—the rate at which men have been participating in the workforce has been falling.² The four-decade increase in workforce participation I just described is due to women entering the labor market.³

In fact, the average monthly workforce participation rate for men in each decade dropped relative to the previous decade. From a peak of 97.9 prime-age men out of every 100 participating in the workforce in September 1954, the participation rate stood at 90.9 percent when the Great Recession began, bottomed out at 87.9 percent in October 2013, and has equaled about 88 percent in 2014. That is a staggering decline. And the trajectory of male workforce participation directly threatens the prospects for long-term growth, the health of society, and the ability of men to lead flourishing lives.

My purpose here is to propose two actions that could move us toward halting and, hopefully, reversing the downward trend in prime-age male workforce participation in an effort to shore up the prospects for long-term growth.

The first thing I would do—and I list this first because it is seldom discussed despite its clear importance—is increase the capacity of the federal government to collect social and economic data.

In order to (a) better understand why fewer men are working and (b) understand how public policy can best attempt to reverse that

¹ Michel R. Strain, "Labor Force Participation Rate: Workers 25–54 Years Old," Twitter, October 5, 2014, <https://twitter.com/MichaelRStrain/status/518869420698271744>.

² Ibid.

³ Ibid.

trend, we simply need to know more than we know today about workers, potential workers, and the tasks firms want them to do.

The truth is that we don't know enough about any of these. And much of what we do "know" is often inferred rather than measured. True, there is some great research out there that attempts to explain why male labor force participation has fallen over the decades, and there are some good ideas about how to pull it back up. But it would be an overstatement to say that there is a broad consensus among economists, and I don't know of any practicing labor economist who would argue that better data aren't needed to fully understand what's driving the trends and how to reverse them.

We want to know why men have been participating in the workforce at lower rates over time, and what it would take to get non-participants back in. But the monthly Current Population Survey (CPS)—the source of our monthly information about labor force participation—doesn't ask the obvious question to nonparticipants: what would it take to get you to come back to the workforce? The answers to this question could generate a wealth of information about why some people are not in the labor force, and how we can reincorporate them into it—and ergo how we could increase the prospects for long-term growth by increasing workforce participation.

We know how many workers are working "part-time for economic reasons." But more broadly, the monthly CPS doesn't ask whether workers—both part-time and full-time—are fundamentally satisfied with their jobs, think their job is a good fit, or consider their current job part of their long-term career plan. We don't know whether full-time workers get as many hours as they would like. These sorts of "satisfaction questions" could help us understand not only how many workers choose to leave the workforce but also *why* they do so.

We want to know why some "observationally equivalent" men work and others don't. But we don't really understand how people get jobs. If the CPS asked newly employed workers detailed questions about how they found their jobs, we would learn so much more about the process of job search and acquisition. We should ask questions about labor-market networks, job referrals, and other issues of vital importance. This information would help us design policies to make finding jobs easier. And if finding jobs is easier, then more men will work, and long-term growth prospects will improve.

And the monthly CPS should evolve as the labor market evolves. My understanding is that the BLS is planning on introducing questions about licenses and credentials, in addition to questions about levels of education. This is important, because licenses and credentials are growing in importance relative to traditional degrees. We know very little about the “underground economy”—unreported jobs, odd jobs, little bits of work picked up here or there in the new “sharing economy,” and illegal activity. At least the “sharing economy”—Uber, Airbnb, and so forth—is expected to grow over the medium term, but it’s hard to imagine that if the trends continue the other categories won’t grow as well. The CPS should be ready to collect and interpret data on 21st-century styles and modes of work.

In addition to augmenting the CPS, there are other steps we should take. To administer the unemployment insurance program, the government already collects records on nearly all American workers. But those records contain very little information. If we were to add questions about the hours an employee works, the employee’s occupation, and the actual tasks the employee performs, then we would know a lot more about what is happening in the labor market. Since the unemployment insurance records can be linked to data on workers and firms, this additional information would help us tremendously in our efforts to understand why some men are working and others aren’t, to design policies to pull more men back into the workforce, and to strengthen long-term growth.

The press pays a lot of attention to the monthly jobs report, which tells us how many new jobs were added to the economy *on net*. The BLS also reports data on gross labor-market flows—on the total number of workers who quit or were laid off from their jobs, and who were hired into new jobs, among other measures. These statistics are available at very broad industry and regional levels. But they are not available at the state and metropolitan statistical area level, they do not have detailed industry breakdowns, and they do not break down by occupation or by job task.

Flows data on occupation, hours, and job tasks in specific geographical areas would help us understand some of the most important questions regarding the workforce participation of men. Why are middle-class jobs disappearing? Why are wages falling or

stagnating? Which occupations and tasks allow workers to climb the income ladder when they lose a middle-class job, and what types fall down into lower-wage jobs? The answers doubtless have a lot to do with what workers are doing at work—with (from the economist's perspective) the black boxes that are firms' production functions—and adding information on hours, occupation, and job tasks to flows data would greatly improve our understanding and help us design policies to shore up male workforce participation in the face of powerful 21st-century labor-market trends.

Critically, we also need better "longitudinal" data—data that track individuals every year (or even more frequently) for a long period. The CPS gives us snapshots in time (and can be used to construct short panels), but even better would be to follow individuals for decades. Some workers leave the labor force and never return. Some leave and eventually return. Some leave, return, leave, and return. Some never leave. If we had detailed information about workers' work history and socioeconomic background, then we could better understand which workers leave, which never return, and how to design policies to help those who are on the margin of returning to reenter. And the more who reenter, the greater the economy's productive capacity.

We have the basic infrastructure in place for better data. All we have to do is up our game. The major federal statistical agencies need larger budgets to collect the data we need to design policies to increase workforce participation and to strengthen future growth. And in the context of labor-market information and statistics, this applies especially to the BLS. Data are a public good, as well as an investment that will pay dividends in the future.

Having said that, it is a safe bet that one reason fewer men are working is that real wages for male workers without a college degree have been stagnant or falling for decades. So my second policy suggestion is to expand the Earned Income Tax Credit (EITC) for childless workers, many of whom are low-income men. The EITC is a federal earnings subsidy: if you work, and if you earn less than a certain amount, then the government will supplement your earnings with a transfer payment. The EITC offers very little support for childless workers, with a maximum credit of only about \$500. That amount should be significantly expanded, as both President Obama and Representative Paul Ryan have suggested.

REVIVING ECONOMIC GROWTH

Previous expansions of the EITC have lifted millions out of poverty and are designed to incentivize nonparticipants to return to the workforce. When they do, everyone wins—the economy has more workers and can produce more goods and services, and the new participants can earn their own success in the labor market, leading flourishing lives that include the dignity only work can provide.

44. More Bang for the Buck: A Surprisingly Cost-Effective Way to Boost Growth

*Scott Sumner**

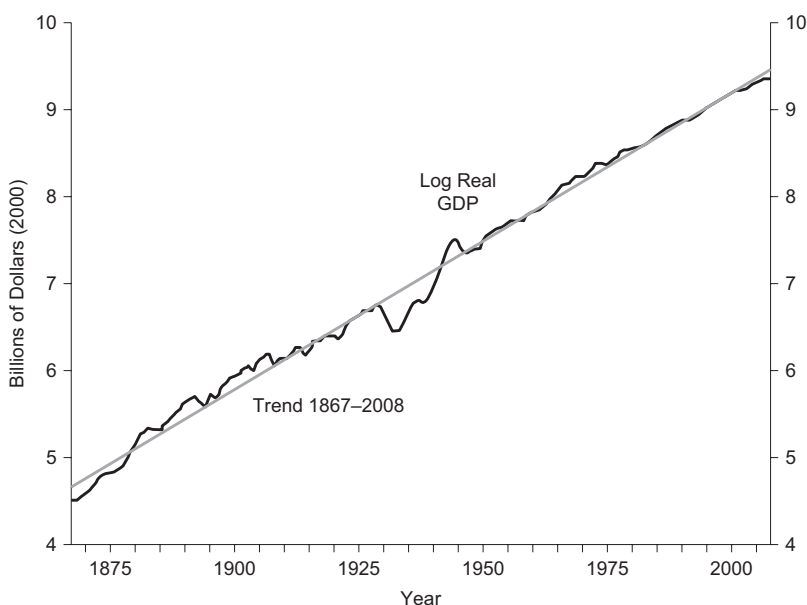
Economists generally like to separate factors that affect the business cycle from factors that affect long-run economic growth. It's often assumed that monetary policy can affect the cycle but not long-term growth. While there is some truth to this claim, I will show that improvements in monetary policy can affect long-term economic growth, at least according to one commonly used definition.

First we need to consider a subtle distinction between two different ways that a change in "growth" might occur. Consider the roughly 3 percent trend rate of real growth in gross domestic product (GDP) in the United States over the past 150 years (Figure 1). In the 1930s, real output fell well below the trend line, and in the early 1940s, output rose far above the trend line. But long-term growth has been relatively stable in the United States, more so than in many other countries.

When people talk about boosting economic growth, they are actually describing two very different phenomena. One would be a vertical shift upward in the long-run trend line, without any change in slope. This shift might be accomplished by improvements in economic efficiency. For instance, the countries of western Europe have per capita GDPs (purchasing power parity) of roughly 60 percent to 80 percent of U.S. per capita GDP. Some economists believe that if those countries reduced explicit taxes on labor, and also the implicit taxes that result from generous benefit programs, then hours worked in western Europe would rise closer to U.S. levels. That change would lead to a one-time upward shift in real output, even though the adjustment might occur over many years, and indeed even a few decades. But in the long run, growth would continue at roughly the same rate as in the United States.

*Scott Sumner is director of the Program on Monetary Policy at the Mercatus Center, George Mason University.

FIGURE 1
LOG REAL U.S. GDP, 1867–2000



SOURCE: Menzie Chinn, “Trend Stationarity/Difference Stationarity over the (Very) Long Run,” *Econbrowser*, 2009, http://econbrowser.com/archives/2009/03/trend_stationar.

At other times, talk about boosting economic growth implies an increase in the slope of the output trend line, perhaps from 3 percent per year to 4 percent per year. This change is generally viewed as being more difficult to achieve, particularly in the very long run. The only policies that are likely to increase the slope of that trend line (at least in per capita terms) are those that increase the global rate of technological progress. Of course, it is not at all clear whether any government has the ability to do that on a sustained basis, although subsidies for basic research in science might conceivably have some impact on the long-term trend rate of growth. In my view, most proposals to boost “growth” are much more likely to produce a one-time upward shift in the output trend line, without changing the slope, that is, the long-term trend rate of growth.

Here I'll suggest two reasons why improved monetary policy may be able to produce the same sort of parallel upward shift in the real output trend line as we see after other supply-side reforms, without changing its slope. First, improved monetary policy can reduce the severity of the business cycle. In basic textbook models, this has no impact on the trend line. But more sophisticated models suggest that the business cycle is not symmetric, and that a more stable business cycle would result in a higher average level of employment, and output. Second, cyclical instability often leads governments to enact counterproductive policies in other areas, such as bailouts of failing businesses and increased government spending. Those policies also reduce the level of GDP over time, without changing the long-run trend rate of growth.

Both the Great Depression and the Great Recession provide almost textbook examples of how monetary policy can reduce economic output. Most economists believe the natural rate of unemployment in the United States is about 5 percent. When monetary policy is too expansionary, unemployment falls below 5 percent, but generally not below 3 or 4 percent. Thus, during the boom decade of the 1920s, unemployment was only modestly below the natural rate, even during the most prosperous years. And let's not forget that even during the 1920s, there were actually three recessions: one short but very deep recession in 1921 and very short and mild recessions in 1924 and 1927. In contrast, the contractionary monetary policy of the early 1930s pushed the unemployment rate up to 25 percent. Admittedly, some of that increase was due to counterproductive labor, tariff, and tax policies by President Herbert Hoover, but the monetary policy alone (which cut nominal GDP in half) was contractionary enough to cause at least 15 to 20 percent unemployment. And of course, unemployment remained high all the way up to 1941. The lost output from the Great Depression was far greater than the extra output associated with the Roaring Twenties.

Modern economists have developed models to explain the asymmetry of the business cycle. One factor is obvious: unemployment cannot fall below zero, whereas it can rise far above 5 percent. But there's more to the asymmetry than mathematics. There is some evidence that workers suffer from money illusion, making nominal wage cuts especially difficult. It is true that nominal wages are also sticky in the upward direction, because of long-term labor contracts, but money illusion does not generate an extra degree of stickiness on the upward side as it does when wage cuts are needed. Thus,

persistently contractionary monetary policies can lead to rather extended periods of high unemployment, as we saw in the 1930s and again in the period after the 2008 Lehman crisis. In contrast, overly expansionary policy boosts output only modestly, and for a shorter period.

Some new classical economists are skeptical of claims that tight money can lead to persistent periods of high unemployment. I do have some sympathy for this skepticism, as it's hard to provide convincing models of why nominal shocks would have long-term real effects. However, these economists often ignore the way that nominal and real shocks can become *entangled*. Here, I'll provide three examples of how bad monetary policy led to bad supply-side policy, which resulted in a more persistent loss in output than would have otherwise occurred.

Return to the example of the early 1930s, when Hoover raised tariffs, discouraged firms from cutting wages, and dramatically raised income tax rates. If not for the contractionary monetary policy, only the tariff mistake would have occurred. (That was part of the Hoover election platform.) Without a contractionary monetary policy, there would have been no decline in the equilibrium wage rate, and hence Hoover would not have been pressuring large corporations to maintain high wages. And it seems extremely unlikely that he would have called for a dramatic increase in income tax rates if not for the large budget deficits produced by the contractionary monetary policy.

After President Franklin Roosevelt took office in March 1933, monetary policy improved and deflation ended. Of course, we were still deep in depression with nearly 25 percent unemployment. Like Hoover, Roosevelt adopted policies that would not have occurred if the economy had not been deeply depressed. Perhaps the most counterproductive policy was the ironically named National Industrial Recovery Act, which dramatically raised wage rates and aborted the brisk recovery in industrial production that followed the devaluation of the dollar. He also dramatically increased government spending and raised income tax rates even higher than Hoover. Firms were encouraged to form cartels and to restrict output. As late as mid-1940, unemployment was far above 10 percent, seven years after Roosevelt took office.

Another example occurred in Argentina between 1990 and 2014. Between 1990 and 1997, economic growth in Argentina was quite

rapid. That growth reflected improvements in the supply side of the economy resulting from neoliberal economic policy reforms. After 1997, however, the Argentine peso became increasingly overvalued. The reason was partly due to the fact that Argentina's competitors, such as Brazil and Russia, sharply depreciated their currency in the wake of the East Asian crisis of 1997–1998. In addition, the U.S. dollar strengthened during the high-tech boom of the late 1990s. Because Argentina had fixed its currency to the dollar using a rigid currency board arrangement, it was politically difficult to devalue the currency—especially with the public having fresh memories of the hyperinflation of the 1980s.

Although this policy error was understandable, it resulted in falling nominal GDP and mass unemployment. As in the 1930s, the public wrongly blamed free-market capitalism for what was actually a monetary policy failure. The result was a more left-wing government, which sharply devalued the currency, much as Roosevelt did in 1933. Despite the bad supply-side policies enacted by the populist left-wing government, the currency devaluation led to a sharp rebound in real economic growth. But this was fool's gold, as the statist policy interventions gradually undermined the neoliberal reforms of the 1990s, and by 2014, Argentina was again teetering on the edge of bankruptcy.

The most recent example occurred in the United States. Between mid-2008 and mid-2009, policy errors by the Federal Reserve allowed nominal GDP to fall about 4 percent below trend. That fall led to mass unemployment, which triggered all sorts of counterproductive policies.¹ Just as in the Great Depression, the counterproductive policies began under a conservative Republican president and accelerated under a more left-wing Democratic president. Even as early as 2008, President George W. Bush was enacting all sorts of bad supply-side initiatives, including ineffective fiscal stimulus (with no positive supply-side aspect) in spring 2008, extended unemployment compensation in summer 2008, and bailouts of failing automakers and banks in the latter part of the year.

President Obama continued many of Bush's policies and indeed sharply accelerated some of them, extending unemployment

¹ David Beckworth, ed., *Boom and Bust Banking: The Causes and Cures of the Great Recession* (Oakland, CA: Independent Institute, 2012).

insurance to a record 99 weeks. Obama also sharply increased tax rates on capital income and accelerated the pace at which the government created new regulations. And of course, there was also the massive fiscal stimulus program, which actually had little or no impact on output because of monetary offset. Nonetheless, Obama's fiscal stimulus leaves a legacy of debt, which must be serviced in the future by distortionary taxes that will create a drag on growth. In contrast, free-market policies did better during the long period of fairly stable nominal GDP growth, from 1984 to 2007.²

I would certainly not claim that monetary policy is the most important determinant of the long-run growth rate in the economy. The textbooks are correct in that its main impact is on the business cycle. There are other policy reforms that would do more. But it does offer one of the cheapest ways of boosting growth. Unlike fiscal programs such as infrastructure, there is virtually no cost to improving monetary policy. And unlike supply-side tax cuts, there are no significant political barriers.

Elsewhere, I've argued that a policy of nominal GDP targeting would smooth out the business cycle and undercut many of the arguments for counterproductive policies, such as fiscal stimulus or bailouts.³ After all, if the Fed sets its policy instruments aiming at \$18 trillion in nominal spending for 2015, then the effect of bailing out one company would simply be to steal jobs from another.⁴ And any increase in government spending would be offset by tighter money and a reduction in private spending.

We need to convince other economists that nominal GDP targeting is the way to go. Once we do so, the Fed will follow the consensus.

² Scott Sumner, "Why the Fiscal Multiplier Is Roughly Zero," Mercatus Center, George Mason University, September 11, 2013, <http://mercatus.org/publication/why-fiscal-multiplier-roughly-zero-0>.

³ Scott Sumner, "Nominal GDP Targeting: A Simple Rule to Improve Fed Performance," *Cato Journal* 34, no. 2 (2014): 315–38.

⁴ Scott Sumner, *The Midas Curse: Gold, Wages, and the Great Depression* (Oakland, CA: Independent Institute, forthcoming).

45. Restrain Regressive Rent Seeking

*Steven Teles**

America today faces three great challenges. First, inequality, driven in particular by a spike in incomes at the very highest end, is threatening the public's belief in the justice of our economic system. Second, innovation in products and services that actually add to human flourishing and produce meaningful employment, driven by new firm formation, appears to be stagnating. Third, Americans both on the right and left increasingly believe that our political system is rigged to benefit organized insiders, while critical public problems remain unaddressed.

All three of these critical national problems derive from the same source. We often talk about the last third of a century as an era of deregulation and the expansions of markets. And in certain areas that is certainly true. But the most important market rigidities that have been eliminated have been those that protected those from the middle class on down. In fact, the great paradox of the last third of a century is that we have actually had an explosion of regulation in this “supposedly deregulatory” era—but regulation that has the effect of redistributing, sometimes dramatically, upward.

A few examples will suffice to make the point. Intellectual property (IP) protections, especially patents and copyright, have been expanded dramatically over this period, both in time (through patent and copyright extensions for existing IP) and across space (by using trade agreements to push American IP principles into foreign law). While there is an argument that this expansion has actually reduced innovation, there is no doubt that it has allowed existing firms to use the force of law (rather than the market) to enrich themselves by reaching further into the pockets of consumers.

The same period has seen a transformation of occupational licensing, from a marginal force in our economic organization to one that

* Steven Teles is an associate professor of political science at Johns Hopkins University.

is increasingly ubiquitous. According to Morris Kleiner, in the 1950s, only 1 in 20 Americans needed some form of government permission to work in their chosen occupation, whereas today nearly a third do.¹ With every passing year, more and more parts of the labor market cease to be characterized by free entry, with the licensing regime extending even to areas like interior decorating and flower arranging. The metastasizing licensing regime places barriers in the way of innovation (think of the way that the taxi license system has stood in the way of Uber and Lyft, or the way that medical licensing presents obstacles to health care reforms such as shifting work from doctors to nurses), reduces economic opportunity (by making it harder for outsiders to enter licensed occupations and undercut incumbents), and reduces competition, allowing insiders to raise their incomes at the expense of consumers.

Finally, the incredible growth of the financial sector, which has created a concentration of wealth that the United States has not seen for nearly a century, and which helped bring the economy to its knees just a few years ago, also finds its source in government-derived rents. By allowing for the consolidation of the financial sector (through financial deregulation and the all-but-abandonment of antitrust enforcement), the government helped create a set of firms so large that they were “too big to fail.” That is, they had an implicit government guarantee, one that became explicit in 2008. At the same time, by allowing a huge securitized housing finance market to develop (which had previously been primarily in savings and loans), and by pushing more and more of American retirement savings into actively managed 401(k)s and IRAs (which collectively produce negative value for savers), the government created the greatest pool of rents in the history of mankind. The result has been economic instability, a diversion of talent from innovation to financial engineering, hyperinequality, and pervasive suspicion of our democratic political system.

A focus on rent seeking allows us to look at the American inequality problem with a different lens than is typical in our public debate. On the left, there has been a tendency—accelerated of late by the publication of Thomas Piketty’s *Capital*—to see the expansion

¹ Morris M. Kleiner, *Stages of Occupational Regulation: Analysis of Case Studies* (Kalamazoo, MI: Upjohn Institute for Employment Research, 2013).

of inequality as a natural product of capitalism, one that can be disrupted only by war or depression.² The solution, in this account, must take the form of enormous redistribution through taxes and transfers. In the center, there has been an account of exploding inequality that puts it at the feet of the increasing returns on skills and education, driven by the shift of the economy to cognitively demanding tasks. If that is true, then the only response can be almost unimaginable improvements in the quality of education. Finally, most on the right continue to see American inequality as a relatively unproblematic result of a market economy, especially one where the scale of markets is global and where (in some of the darker accounts) society has effectively sorted itself into culture- and intelligence-based classes.

There is something to almost all of those explanations. But the problem with all those accounts is that, peculiarly enough, they all insist on describing the United States as if it were a basically pure market economy, with the results one would expect. But as the short descriptions of the glaring exceptions to market logic described above would suggest, that description is, in fundamental ways, wrong—and especially wrong in the economy's upper reaches. While there are certainly large parts of the 1 percent made up of entrepreneurs and innovators, the image of the United States as a free-market paradise is hard to square with the presence in the top income strata of people like car dealers (protected by regulations against the consolidation of car sales), doctors (protected by medical licensing and extensive educational requirements), lawyers (with a limited supply of lawyers and a government that produces outsized demand for their services), government contractors (including private prison managers, defense contractors, for-profit colleges, and others whose almost exclusive dependence on government revenue raises question about whether they are “private” in any meaningful sense), and property developers (who in many urban areas can exploit government-constrained ability to build—which drives up prices—and political connections to generate oversized profits). Add in finance, licensed occupations, and sectors with lots of intellectual property, and you're looking at a sizable chunk of the 1 percent.

² Thomas Piketty, *Capital in the Twenty-First Century* (Cambridge, MA: Harvard University Press, 2014).

The standard image of how our economy works, and where the wealth of a good chunk of the 1 percent comes from, is wrong. The really important question—if we want to put our economy on a trajectory of greater productive innovation, less inequality, and more political legitimacy—is what explains this explosion of upward redistributing rent? How did this happen at a time when all of the political conversation was about the wonders of markets? How, if at all, might we actually restructure our politics to make it possible to claw back these rents, thereby liquidating unjust politically protected fortunes, creating space for greater economic opportunity, and unleashing greater innovation?

If one were to consult only the economists who pioneered the idea of rent seeking, the answer would be terribly depressing. Starting with Mancur Olson, economists have traced the political success of rent seeking to the unbalanced incentives to organize of rent extractors and those whom they seek to exploit.³ While those with concentrated interests have a strong incentive to invest in political activity, and to engage in surveillance over political actors, those with diffuse interests do not. Thus, rent extraction is a natural law of democratic political systems, limited only by constitutional constraints.

The good news is that Olson's account of democratic politics was wrong. Diffuse interests—like those opposed to rent seeking—are not always unorganized. As Jack Walker first argued, democratic politics since the 1960s has been pervasively populated by “public interest organizations” funded by third parties (those who do not primarily benefit from the organization).⁴ That suggests that rent seeking might be constrained by public interest organizations, but only if there was sufficient philanthropic interest in creating countervailing power. Second, political scientists like Frank Baumgartner and Bryan Jones have emphasized how much rent-seeking policy monopolies depend on supportive institutional structures and attractive “policy images” to protect those policies that would be very difficult to defend publicly. When those protective structures are

³ Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities* (New Haven, CT: Yale University Press, 1984).

⁴ Jack L. Walker, “The Origins and Maintenance of Interest Groups in America,” *American Political Science Review* 77, no. 2 (1983): 390–406.

skillfully attacked, they appear much more vulnerable than public choice might have us believe.⁵

Such attacks depend on the existence of space and time on the public agenda, intense and informed media scrutiny, and public interest groups willing to challenge rent seekers, sometimes for decades, before getting their break. In some ways, rent seekers have exploited problems in all of those areas, for example, by shifting their activity away from places with sophisticated media and an active public interest community to state governments, obscure agencies, and arcane laws and regulations—all of which maximize their resources and minimize those on the other side.

Putting a dent in rent seeking, therefore, requires that someone be willing to subsidize “third-party” political activity, and for good or ill that must start with deep-pocketed donors willing to use their money to compensate for the imbalance of organization and attention that is the lifeblood of rents. Such activity is not pie in the sky, for we can look to two examples, associated with the right or left, to see how potent such anti-rent-seeking mobilization can be. On the left, donors in the late 1960s and 1970s poured huge sums into getting a broad range of environmental organizations off the ground. Pollution can be profitably understood as a form of rent, since it produces additional profits for those who engage in it by extracting uncompensated benefits from those who pay its costs in the form of despoiled air and water. Polluters had effectively captured government agencies in the years before the institutionalization of the environmental movement, but donor-subsidized countermobilization helped make agency rulemaking more pluralistic and repeatedly damaged the reputation of polluters in the public sphere. The result was a correction in the political marketplace that allowed for a surge in environmental regulation.

Equally potent has been the enormous investment in the cause of education reform over the past two decades. As Terry Moe argued in *Special Interest*, the politics of education policy in most school districts is dominated by teacher unions, which have captured school board elections and defended their professional interests behind the

⁵ Frank R. Baumgartner and Bryan D. Jones, *Agendas and Instability in American Politics* (Chicago: University of Chicago Press, 1993), <http://www.amazon.com/Agendas-Instability-American-Politics-Political/dp/0226039390>.

popular belief that their actions are aligned with the welfare of children.⁶ A wide range of organizations funded by large foundations and individuals has started to correct this organizational imbalance: from think tank programs at Brookings Institution and the American Enterprise Institute to state-based organizations, such as 50CAN and Stand for Children, and leadership pipelines, such as Leadership for Educational Equity and Students for Education Reform. This broad range of third-party-supported education reform organizations has at least partially evened the playing field in education policy, to the point where at least some observers are starting to worry that it is the reformers who have captured the political system.

If the broader phenomenon of upwardly redistributed rents is to be effectively addressed, these examples of subsidized anti-rent-seeking mobilization need to be multiplied. Funders need to make sure that there are organizations in every state that can give testimony when professions seek to expand the web of licensing, and to aggressively push back the boundaries of licensing where it is already in place. The very small network of organizations working on financial regulation needs to be ramped up considerably, and they need to be given the resources to hire sophisticated analysts capable of understanding the complex businesses that regulators oversee. And more broadly, funders need to invest in journalism and research across the board that can bring to light the stories of rent seeking in real time, when it is still possible to rally public interest and make public officials worry that their upward transfers will be exposed.

It may be impossible to organize a broad, deeply mobilized grassroots coalition against upward-redistributing rent seeking. But in most cases, equaling the manpower and resources of the rent seekers isn't necessary—just making sure that there is someone on the other side can make a big difference. Perhaps perversely, it may be that the only answer to the problem is for the wealthy themselves to bankroll organizations that would change the political calculus that makes acceding to the demands of rent seekers logical for politicians.

⁶ Terry M. Moe, *Special Interest: Teachers Unions and America's Public Schools* (Washington: Brookings Institution Press, 2011).

46. Embracing a Culture of Permissionless Innovation

*Adam Thierer**

“Why does economic growth . . . occur in some societies and not in others?” asked Joel Mokyr in his 1990 book, *The Lever of Riches: Technological Creativity and Economic Progress*.¹ Debate has raged among generations of economists, historians, and business theorists about that question and the specific forces and policies that prompt long-term growth.

As varied as their answers have been, there was at least general agreement that *institutional* factors mattered most—it was really just a question of what mix of them would fuel the most growth. Those institutional factors include government stability, the enforceability of contracts and property rights, tax and fiscal policies, trade policies, regulatory policies, labor costs, educational policies, research and development expenditures, infrastructure, demographics, and environmental factors.²

This perspective leads many scholars and policymakers to speak of innovation policy as if it were simply a Goldilocks-like formula that entails tweaking various policy dials to get innovation *just*

* Adam Thierer is a senior research fellow at the Mercatus Center, George Mason University.

¹ Joel Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress* (New York: Oxford University Press, 1990), pp. 8–9.

² For a listing and discussion of these and other factors, see Robert D. Atkinson, “Understanding the U.S. National Innovation System,” Information Technology & Innovation Foundation, June 2014, <http://www.itif.org/publications/understanding-us-national-innovation-system>.

right.³ Such thinking animates the Obama administration's *Strategy for American Innovation*, which catalogs "policies to promote critical components of the American innovation ecosystem."⁴ The White House claims its *Strategy* plays a "critical role in guiding the development of new policy initiatives that can help unleash the transformative innovation that leads to long-term economic growth."⁵

Unfortunately, far less attention has been paid to the role that *values*—cultural attitudes, social norms, and political pronouncements—play in influencing opportunities for entrepreneurialism, innovation, and long-term growth.⁶ Does a sociopolitical system respect what Deirdre McCloskey refers to as the "bourgeois virtues" that incentivize invention and propel an economy forward?⁷ "A big change in the common opinion about markets and innovation," she has argued, "caused the Industrial Revolution, and then the modern world. . . . The result was modern economic growth."⁸

There are limits to how much policymakers can influence these attitudes and values, of course. Nonetheless, to the extent they hope to foster the positive factors that give rise to expanded entrepreneurial opportunities, policymakers should appreciate how

³ "On Capitol Hill and in Brussels, there seems to be a belief that if only governments adopt the right tax policies, adequately fund R&D, enforce patents and copyrights, and support manufacturing . . . then start-ups will pop up everywhere and supercharge economic growth. Unfortunately, that misses an underlying problem: In many parts of the U.S. and Europe, innovation is not really welcome. It is misunderstood and even feared." Michael Nelson, "Six Myths of Innovation Policy," European Institute, July 2013, <http://www.europeaninstitute.org/index.php/180-european-affairs/ea-july-2013/1762-perspectives-six-myths-of-innovation-policy>.

⁴ Office of Science and Technology Policy and the National Economic Council, "Notice of Request for Information: Strategy for American Innovation," *Federal Register*, July 29, 2014, <https://www.federalregister.gov/articles/2014/07/29/2014-17761/strategy-for-american-innovation>.

⁵ Ibid.

⁶ Donald J. Boudreaux, "Deirdre McCloskey and Economists' Ideas about Ideas," Online Library of Liberty, July 2014, <http://oll.libertyfund.org/pages/lm-mccloskey>.

⁷ Deirdre N. McCloskey, *The Bourgeois Virtues: Ethics for an Age of Commerce* (Chicago: University of Chicago Press, 2006).

⁸ Deirdre McCloskey, "Bourgeois Dignity: A Revolution in Rhetoric," *Cato Unbound*, October 4, 2010, <http://www.cato-unbound.org/2010/10/04/deirdre-mccloskey/bourgeois-dignity-revolution-rhetoric>.

growth-oriented innovation *policy* begins with the proper policy *disposition*.⁹ As Mokyr notes, “Technological progress requires above all tolerance toward the unfamiliar and the eccentric.”¹⁰

For innovation and growth to blossom, entrepreneurs need a clear green light from policymakers that signals a general acceptance of risk taking—especially risk taking that challenges existing business models and traditional ways of doing things.¹¹ We can think of this disposition as *permissionless innovation*, and if there was one thing all policymakers could do to help advance long-term growth, it is to first commit themselves to advancing this ethic and making it the lodestar for all their future policy pronouncements and decisions.

Permissionless Innovation versus the Precautionary Principle

While it would seem self-evident that pro-innovation attitudes matter and that a general embrace of risk taking and commercial pursuits is crucial to unlocking entrepreneurial creativity and opportunities, scholars have typically failed to put a name on this disposition. “Permissionless innovation” is a phrase of recent (but uncertain) origin that nicely summarizes that vision. Permissionless innovation refers to the notion that experimentation with new technologies and business models should generally be permitted by default.¹² Unless a compelling case can be made that a new invention or business model will bring serious harm to individuals, innovation should be allowed to continue unabated, and problems, if they develop at all, can be addressed later.

Permissionless innovation is not an absolutist position that rejects any role for government. Rather, it is an aspirational goal that

⁹ “When entrepreneurship is seen as the engine of growth, the emphasis shifts toward the creation of an environment within which opportunities for entrepreneurial activity are created, and successful entrepreneurship is rewarded.” Randall Holcombe, “Entrepreneurship and Economic Growth,” *Quarterly Journal of Austrian Economics* 1, no. 2 (1998): 58, http://mises.org/journals/qjae/pdf/qjae1_2_3.pdf.

¹⁰ Mokyr, *Lever of Riches*, p. 182.

¹¹ “Economic and social institutions have to encourage potential innovators by presenting them with the right incentive structure.” Ibid., p. 12. “To reignite economic growth, we need a broad commitment to an open economy and robust entrepreneurship.” Bret Swanson, “More Disruption, Please,” *TechPolicyDaily*, August 20, 2014, <http://www.techpolicydaily.com/technology/disruption-please/#sthash.PVUNga9N.dpuf>.

¹² Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center, George Mason University, 2014).

stresses the benefit of “innovation allowed” as the default position to begin policy debates. It switches the burden of proof to those who favor preemptive regulation and asks them to explain why ongoing trial-and-error experimentation with new technologies or business models should be disallowed.

This disposition stands in stark contrast to the sort of “precautionary principle” thinking that often governs policy toward emerging technologies. The precautionary principle refers to the belief that new innovations should be curtailed or disallowed until their developers can prove that they will not cause any harms to individuals, groups, specific entities, cultural norms, or various existing laws, norms, or traditions.¹³

When the precautionary principle’s “better to be safe than sorry”¹⁴ approach is applied through preemptive constraints, opportunities for experimentation and entrepreneurialism are stifled. While some steps to anticipate or control for unforeseen circumstances are sensible, going overboard with precaution forecloses opportunities and experiences that offer valuable lessons for individuals and society. The result is less economic and social dynamism.

Innovation is more likely in systems that maximize breathing room for ongoing economic and social experimentation, evolution, and adaptation. Societies that appreciate those values—and allow them to influence both social norms and policy decisions—are likely to experience greater economic growth.¹⁵ By contrast, those that deride such values and adopt a more precautionary policy approach are more likely to discourage innovation and languish economically.

Unlocking long-term growth opportunities, therefore, depends upon a rejection of precautionary principle thinking and an embrace of permissionless innovation as the default policy disposition.

¹³ Ibid., p. vii. Also see Adam Thierer, “Technopanics, Threat Inflation, and the Danger of an Information Technology Precautionary Principle,” *Minnesota Journal of Law, Science & Technology* 14 (2013): 309–86, <http://conservancy.umn.edu/handle/144225>.

¹⁴ Indur M. Goklany, *The Precautionary Principle: A Critical Appraisal of Environmental Risk Assessment* (Washington: Cato Institute, 2001), p. 3.

¹⁵ “There is a positive and statistically significant relationship between the level of economic freedom in a country and that country’s total entrepreneurial activity,” Joshua C. Hall, John Pulito, and Benjamin J. VanMetre, “Freedom and Entrepreneurship: New Evidence from the 50 States,” Mercatus Center, George Mason University, April 17, 2012, <http://mercatus.org/publication/freedom-and-entrepreneurship-new-evidence-50-states>.

The Secret Sauce That Powered the Information Revolution

Consider how permissionless innovation powered the explosive growth of the Internet and America's information technology sectors (computing, software, Internet services, etc.) over the past two decades. Those sectors have ushered in a generation of innovations and innovators that are now the envy of the world.¹⁶ That happened because the default position for the digital economy was permissionless innovation. No one had to ask anyone for the right to develop those new technologies and platforms.¹⁷

A series of decisions and statements in the mid-1990s paved the way, beginning with the Clinton administration's decision to allow commercialization of what was previously just the domain of government agencies and university researchers. Shortly thereafter, Congress passed, and President Clinton signed, the Telecommunications Act of 1996, which notably avoided regulating the Internet like earlier communications and media technologies. Later, in 1998, the Internet Tax Freedom Act was passed, which blocked governments from imposing discriminatory taxes on the Internet.

Perhaps most importantly, in 1997, the Clinton administration released its *Framework for Global Electronic Commerce*, outlining its approach toward the Internet and the emerging digital economy.¹⁸ The *Framework* was a succinct and bold market-oriented vision for

¹⁶ See Bret Swanson, "The Exponential Internet," *Business Horizon Quarterly* (Spring 2014): 40–47, <http://www.uschamberfoundation.org/sites/default/files/article/foundation/BHQ-Spring12-Issue3-SwansonTheExponentialInternet.pdf>.

¹⁷ "The entrepreneurship and investment that has sustained such fast growth for so long is due, in substantial part, to light-touch government policies (at least compared to other industries. . . . There have been mistakes, but for the most part, scientists, entrepreneurs, and big investors have been allowed to build new things, try new products, challenge the status quo, cooperate, and compete. They have also been allowed to fail." *Ibid.*, p. 46. Also, "Failure is a core competency of capitalism and a key component of resilience. Wealth is about creating new ideas. New ideas can only emerge through experiments of science, technology, and enterprise, all of which must be capable of failure in order to generate newness. Failure flushes away bad ideas and points us toward good ones. The failures may at times harm individuals and waste resources—people lose jobs and investments can be lost. The larger effect, however, is to lift the economy to a higher plane of knowledge, efficiency, and resilience." Bret Swanson, "Long Live the Risk Takers," *Business Horizon Quarterly* (Summer 2013): 30, <http://www.uschamberfoundation.org/bhq/long-live-risk-takers>.

¹⁸ "The Framework for Global Electronic Commerce," the White House, July 1997, <http://clinton4.nara.gov/WH/New/Commerce>.

cyberspace governance that recommended reliance upon civil society, contractual negotiations, voluntary agreements, and ongoing marketplace experiments to solve information age problems.¹⁹ Specifically, it stated that “the private sector should lead [and] the Internet should develop as a market driven arena not a regulated industry.”²⁰ “Governments should encourage industry self-regulation and private sector leadership where possible” and “avoid undue restrictions on electronic commerce.”²¹

This policy disposition resulted in an unambiguous green light for a rising generation of creative minds who were eager to explore this new frontier for commerce and communications. As Federal Trade Commission Commissioner Maureen K. Ohlhausen observes, “The success of the Internet has in large part been driven by the freedom to experiment with different business models, the best of which have survived and thrived, even in the face of initial unfamiliarity and unease about the impact on consumers and competitors.”²²

The result of this “freedom to experiment” was an outpouring of innovation. America’s info-tech sectors thrived thanks to permissionless innovation, and they still do today. An annual Booz & Company report on the world’s most innovative companies revealed that 9 of the top 10 most innovative companies are based in the United States, and that most of them are involved in computing, software, and digital technology (Table 1).

¹⁹ Adam Thierer, “15 Years On, President Clinton’s 5 Principles for Internet Policy Remain the Perfect Paradigm,” *Forbes*, February 12, 2012, <http://www.forbes.com/sites/adamthierer/2012/02/12/15-years-on-president-clintons-5-principles-for-internet-policy-remain-the-perfect-paradigm>.

²⁰ The document added that “parties should be able to enter into legitimate agreements to buy and sell products and services across the Internet with minimal government involvement or intervention. . . . Where governmental involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment for commerce.” *Framework for Global Electronic Commerce*.

²¹ *Ibid.*

²² Maureen K. Ohlhausen, commissioner, Federal Trade Commission, “The Internet of Things and the FTC: Does Innovation Require Intervention?” Speech at the U.S. Chamber of Commerce, Washington, D.C., October 18, 2013, https://www.ftc.gov/sites/default/files/documents/public_statements/internet-things-ftc-does-innovation-require-intervention/131008internetthingsremarks.pdf.

TABLE 1
2013: 10 MOST INNOVATIVE COMPANIES

| 2013 Rank | ▲ ▼ | 2012 Rank | Company | Geography | Industry | Research and Development Spending (\$Bn) |
|-----------|--------|-----------|------------------|---------------|-------------------------|--|
| 1 | ► | 1 | Apple | United States | Computing & Electronics | 3.4 |
| 2 | ► | 2 | Google | United States | Software & Internet | 6.8 |
| 3 | ▲ | 4 | Samsung | South Korea | Computing & Electronics | 10.4 |
| 4 | ▲ | 10 | Amazon | United States | Software & Internet | 4.6 |
| 5 | ▼ | 3 | 3M | United States | Industrials | 1.6 |
| 6 | ▼ | 5 | General Electric | United States | Industrials | 4.5 |
| 7 | ▼ | 6 | Microsoft | United States | Software & Internet | 9.8 |
| 8 | ▲ | 9 | IBM | United States | Software & Internet | 6.3 |
| 9 | New | — | Tesla Motors | United States | Automotive | 0.3 |
| 10 | New | — | Facebook | United States | Software & Internet | 1.4 |

SOURCE: Strategy& (formerly Booz & Company), “Global Innovation 1000 Study, 10 Most Innovative Companies,” 2013, <http://www.strategyand.pwc.com/global/home/what-we-think/innovation1000/top-innovators-spenders>.

And What’s Good for the Goose . . .

What’s even more powerful about this story is how the information technology and “data-driven innovation” became the goose that laid the golden eggs for the broader U.S. economy.²³ Brink Lindsey has noted that “economists generally agree that information technology

²³ In a study commissioned by the Direct Marketing Association, John Deighton of Harvard Business School and Peter Johnson of Columbia University found that data-driven marketing added \$156 billion in revenue to the U.S. economy and fueled more than 675,000 jobs in 2012. John Deighton and Peter A. Johnson, “The Value of Data: Consequences for Insight, Innovation & Efficiency in the U.S. Economy,” 2013, <http://ddminstitute.thedma.org/#valueofdata>. Also, major reports from economic consultancies Gartner and McKinsey Global Institute have documented significant consumer benefits from “big data” across multiple sectors. See “Gartner Says Big Data Will Drive \$28 Billion of IT Spending in 2012,” Gartner, news release, October 17, 2012,

(IT) was behind the decade of high [total factor productivity] growth that ran from the mid-1990s to the mid-2000s.”²⁴ It also boosted overall economic growth during that period.²⁵

If an embrace of permissionless innovation can unlock this sort of entrepreneurial energy within the information technology sectors, it can also provide a shot in the arm to other sectors. The rest of the economy could certainly use such a boost since “the evidence of a real decline in business dynamism keeps stacking up.”²⁶

Recent studies “suggest that incentives for entrepreneurs to start new firms in the United States have diminished over time”²⁷ and that this is hurting job creation and productivity.²⁸ Two recent Brookings Institution studies by Ian Hathaway and Robert E. Litan also document a decline in business dynamism in the American economy across a broad range of sectors—including a “precipitous drop since 2006 [that] is both noteworthy and disturbing”²⁹—as well as the increased

<http://www.gartner.com/newsroom/id/2200815>; and James Manyika, Michael Chui, Brad Brown, Jacques Bughin, Richard Dobbs, Charles Roxburgh, and Angela Hung Byers, “Big Data: The Next Frontier for Innovation, Competition, and Productivity,” McKinsey & Co., May 2011, pp. 97–106, http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation.

²⁴ Brink Lindsey, “Why Growth Is Getting Harder,” Cato Institute Policy Analysis no. 737, October 8, 2013, p. 14.

²⁵ “For the years 1997–2002, we find the sector contributed 19% of measurable economic gross output growth, or more than 582 billion 2013 dollars. For the period 2002–2007, we find the sector contributed 9.3% of gross output growth, or more than 340 billion 2013 dollars.” Harold Furchtgott-Roth and Jeffrey Li, “The Contribution of the Information, Communications, and Technology Sector to the Growth of U.S. Economy: 1997–2007,” Hudson Institute, Center for the Economics of the Internet, August 2014.

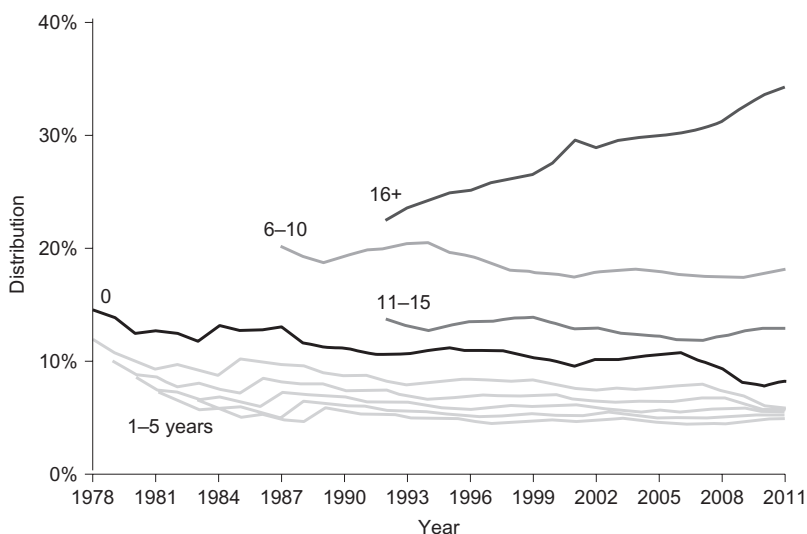
²⁶ Richard Florida, “The Troubling Decline of American Business Dynamism,” *City Lab*, July 31, 2014, <http://www.citylab.com/work/2014/07/the-troubling-decline-of-american-business-dynamism/375353>.

²⁷ Ryan Decker, John Haltiwanger, Ron Jarmin, and Javier Miranda, “The Role of Entrepreneurship in US Job Creation and Economic Dynamism,” *Journal of Economic Perspectives* 28, no. 3 (2014): 4, <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.28.3.3>.

²⁸ Robert J. Samuelson, “Where Have All the Entrepreneurs Gone?” *Washington Post*, August 6, 2014, http://www.washingtonpost.com/opinions/robert-samuelson-where-have-all-the-entrepreneurs-gone/2014/08/06/e01e7246-1d7c-11e4-82f9-2cd6fa8da5c4_story.html.

²⁹ Ian Hathaway and Robert E. Litan, “Declining Business Dynamism in the United States: A Look at States and Metros,” Brookings Institution, May 2014, <http://www.brookings.edu/research/papers/2014/05/declining-business-dynamism-litan>.

FIGURE 1
DISTRIBUTION OF TOTAL FIRMS BY FIRM AGE IN YEARS (1978–2011)



SOURCE: Hathaway and Litan, "The Other Aging of America."

"aging" of businesses, with the share of older firms in the U.S. economy increasing by 50 percent over the past two decades (see Figure 1).³⁰

Many different institutional factors affect business dynamism, especially the regulatory environment that new startups face. "If you look over time, the number of rules has just proliferated," says Litan. "The cumulative weight of regulation—federal, state and local—is probably the most important impediment to starting a business."³¹ Unfortunately, many current public policies "are rife with barriers to entrepreneurship, competition, innovation, and growth," notes Lindsey.³²

³⁰ Ian Hathaway and Robert E. Litan, "The Other Aging of America: The Increasing Dominance of Older Firms," Brookings Institution, July 2014, <http://www.brookings.edu/research/papers/2014/07/aging-america-increasing-dominance-older-firms-litan>.

³¹ Quoted in Rick Newman, "What Obama Gets Wrong about Corporate America," Yahoo! Finance, August 4, 2014, <http://finance.yahoo.com/news/what-obama-gets-wrong-about-corporate-america-200338595.html>.

³² Lindsey, "Why Growth Is Getting Harder," p. 18.

As a result, “the regulatory environment in the United States has become less favorable to private-sector activity in recent years compared to other countries,” a recent Mercatus Center report concluded.³³ That is especially true for new startups.³⁴ Even if it is the case that “established firms . . . have the experience and resources to deal with [regulatory burdens],” Litan notes, the cumulative effect of regulations ends up hampering innovation by new, smaller firms.³⁵

The reason that is important is not just because “business dynamism is inherently disruptive,” as Hathaway and Litan note, “but [because] it is also critical to long-run economic growth” since “a dynamic economy constantly forces labor and capital to be put to better uses.”³⁶ Thus, because economists widely acknowledge that “young firms are known to play a central role in job creation,”³⁷ it is especially important that policymakers get their signals right.

Again, an embrace of permissionless innovation is the way out of this conundrum.

Operationalizing the Vision

Patience, flexibility, and forbearance are the key policy virtues that nurture an environment conducive to entrepreneurial creativity. As the FTC’s Ohlhausen argues:

[It is] vital that government officials . . . approach new technologies with a dose of regulatory humility, by working

³³ Steven Globberman and George Georgopoulos, “Regulation and the International Competitiveness of the U.S. Economy,” Mercatus Center, George Mason University, September 18, 2012, p. 4, <http://mercatus.org/publication/regulation-and-international-competitiveness-us-economy>.

³⁴ “Regulations have been historically biased toward existing technologies and increasing regulatory burdens on new entrants to a sector. This negatively impacts growth, and increases prices for consumers.” Jason J. Fichtner and Jakina R. Debnam, “Reducing Debt and Other Measures for Improving U.S. Competitiveness,” Mercatus Center, George Mason University, November 13, 2012, <http://mercatus.org/publication/reducing-debt-and-other-measures-improving-us-competitiveness>.

³⁵ Samuelson, “Where Have All the Entrepreneurs Gone?”

³⁶ Hathaway and Litan, “Declining Business Dynamism,” p. 1.

³⁷ Chiara Criscuolo, Peter N. Gal, and Carlo Menon, “DynEmp: New Cross-Country Evidence on the Role of Young Firms in Job Creation, Growth, and Innovation,” Vox, May 26, 2014, <http://www.voxeu.org/article/dynemp-new-evidence-young-firms-role-economy>.

hard to educate ourselves and others about the innovation, understand its effects on consumers and the marketplace, identify benefits and likely harms, and, if harms do arise, consider whether existing laws and regulations are sufficient to address them, before assuming that new rules are required.³⁸

Beyond its importance as an aspirational vision, permissionless innovation can guide policy in concrete ways, especially regulatory policies. Possible reforms include regulatory streamlining³⁹ and flexibility requirements,⁴⁰ “sunsetting” provisions,⁴¹ better benefit–cost analysis,⁴² and a greater reliance on potential nonregulatory remedies—education, empowerment, transparency, industry self-regulation, and so forth—before resorting to preemptive controls on new forms of innovation. Relying on common-law solutions is also preferable to top–down administrative controls.⁴³

³⁸ Ohlhausen, “The Internet of Things and the FTC.”

³⁹ Sherzod Abdukadirov, “Evaluating Regulatory Reforms: Lessons for Future Reforms,” Mercatus Center, George Mason University, May 29, 2014, <http://mercatus.org/publication/evaluating-regulatory-reforms-lessons-future-reforms>; Joshua C. Hall and Michael Williams, “A Process for Cleaning Up Federal Regulations,” Mercatus Center, George Mason University, December 20, 2012, <http://mercatus.org/publication/process-cleaning-federal-regulations>.

⁴⁰ “What is at stake in this area is nothing less than the question of how to preserve technical innovation in the face of wall-to-wall regulation. The prognosis is grim. Unless we reform agencies like the FDA and their procedures and operations, this country will suffer from a long-term drag on innovation that could, if the trend is not abated, lead to long-term mediocrity, as inventors and scientists flee our shores for friendlier environments. The pace of regulation is one of the central issues of our time.” Richard Epstein, “Can Technological Innovation Survive Government Regulation?” *Harvard Journal of Law & Public Policy* 36, no. 1, (2013): 102, http://www.harvard-jlpp.com/wp-content/uploads/2013/01/36_1_087_Epstein_Tech.pdf.

⁴¹ Adam Thierer, “Sunsetting Technology Regulation: Applying Moore’s Law to Washington,” *Forbes*, March 25, 2012, <http://www.forbes.com/sites/adamthierer/2012/03/25/sunsetting-technology-regulation-applying-moores-law-to-washington>; Patrick McLaughlin, “A Solution to the Old Rules vs. New Tech Problem,” Mercatus Center, George Mason University, July 8, 2014, http://mercatus.org/expert_commentary/solution-old-rules-vs-new-tech-problem.

⁴² Susan E. Dudley and Jerry Brito, *Regulation: A Primer*, 2nd ed. (Arlington, VA: Mercatus Center, George Mason University, 2012).

⁴³ Thierer, *Permissionless Innovation*, pp. 74–78.

Conclusion: Reasons for Optimism

In sum, attitudes matter as much as institutional factors in understanding what drives innovation and long-term growth, and there are reasons for optimism if policymakers embrace permissionless innovation as their default policy disposition.

Pessimists who predict permanent productivity and growth slowdown shouldn't forget that "the rate of growth of productivity at the frontiers of knowledge is especially difficult to predict; and it is unwise to underestimate human ingenuity," as Federal Reserve Vice Chairman Stanley Fischer noted in a recent speech.⁴⁴ While "it is difficult to know exactly in which direction technological change will move and how significant it will be," Joel Mokyr reminds us that "something can be learned from the past, and it tells us that such pessimism is mistaken. The future of technology is likely to be bright."⁴⁵ Contra the belief that all the "low-hanging fruit" has already been picked, Mokyr notes that "we can also plant new trees that will grow fruits that no one today can imagine."⁴⁶

Getting the disposition right will be more important than ever with so many exciting—but potentially highly disruptive—technologies starting to emerge, including the "sharing economy,"⁴⁷ 3-D printing, the "Internet of things" and wearable technology,⁴⁸ digital medicine, virtual reality and augmented reality

⁴⁴ Stanley Fischer, "The Great Recession: Moving Ahead," paper presented at "The Great Recession—Moving Ahead" conference sponsored by the Swedish Ministry of Finance, Stockholm, August 11, 2014, <http://www.federalreserve.gov/newsevents/speech/fischer20140811a.htm>.

⁴⁵ Joel Mokyr, "The Next Age of Invention," *City Journal*, Winter 2014, http://www.city-journal.org/2014/24_1_invention.html.

⁴⁶ Ibid.

⁴⁷ Adam Thierer, "The Debate over the Sharing Economy: Talking Points and Recommended Reading," *Technology Liberation Front*, September 26, 2014, <http://techliberation.com/2014/09/26/the-debate-over-the-sharing-economy-talking-points-recommended-reading>.

⁴⁸ Adam Thierer, "Policy Issues Surrounding the Internet of Things and Wearable Technology," *Technology Liberation Front*, September 12, 2014, slide presentation, 46 slides, <http://techliberation.com/2014/09/12/slide-presentation-policy-issues-surrounding-the-internet-of-things-wearable-technology>.

technologies, commercial drone services,⁴⁹ autonomous vehicles,⁵⁰ and various robotic technologies.⁵¹

Permissionless innovation can help spur the next great industrial revolution by unlocking amazing opportunities in these and other arenas, boosting long-term growth in the process.

⁴⁹ Jerry Brito, Eli Dourado, and Adam Thierer, "Federal Aviation Administration: Unmanned Aircraft System Test Site Program Docket no: FAA-2013-0061," Mercatus Center, George Mason University, April 23, 2013, <http://mercatus.org/publication/federal-aviation-administration-unmanned-aircraft-system-test-site-program>; Eli Dourado, "The Next Internet-Like Platform for Innovation? Airspace. (Think Drones)," *Wired*, April 23, 2013, <http://www.wired.com/opinion/2013/04/then-internet-now-airspace-dont-stifle-innovation-on-the-next-great-platform>; Adam Thierer, "Filing to FAA on Drones and 'Model Aircraft,'" *Technology Liberation Front*, September 23, 2014, <http://techliberation.com/2014/09/23/filing-to-faa-on-drones-model-aircraft>.

⁵⁰ Adam Thierer and Ryan Hagemann, "Removing Roadblocks to Intelligent Vehicles and Driverless Cars," Mercatus Center, George Mason University, September 17, 2014, <http://mercatus.org/publication/removing-roadblocks-intelligent-vehicles-and-driverless-cars>.

⁵¹ Adam Thierer, "Problems with Precautionary Principle-Minded Tech Regulation and a Federal Robotics Commission," *Medium*, September 22, 2014, <https://medium.com/@AdamThierer/problems-with-precautionary-principle-minded-tech-regulation-a-federal-robotics-commission-c71f6f20d8bd>.

47. Reforming Corporate Taxation

*Eric Toder**

The U.S. corporate tax system is broken. The current method of taxing the profits of large, publicly traded corporations was designed for an economy in which international investment was relatively unimportant and most corporate profits were produced by tangible assets, such as machinery and buildings. It doesn't work well in today's economy, which features increasing globalization and a rising share of profits coming from patents, brand reputation, and other intangible property.

Until now, lawmakers have debated ways that the United States could reform its corporate tax while retaining its basic structure. But that will not be sufficient to address fundamental flaws in the law. As a result, the United States should consider more significant reforms, such as leading an international effort to develop new rules to allocate corporate profits among countries or scrapping the corporate income tax entirely and replacing it with a direct tax on shareholders.

The corporate income tax has always distorted economic choices in important ways. By taxing corporate income at both the corporate and shareholder level, it encourages businesses to organize themselves as limited partnerships or Subchapter S corporations so that they face only a single level of tax, and it favors sectors, such as agriculture and real estate, in which noncorporate structures have been prevalent. It favors the use of debt over equity, encouraging corporations to become overleveraged, and it favors retained earnings over distributions, keeping capital locked in to existing businesses.

Depreciation rules and other special provisions favor investment in some industries over others for both taxable corporations and other businesses, causing capital to flow to less productive uses than they would with neutral tax rules. All of these distortions reduce economic output.

* Eric Toder is a fellow at the Urban Institute and codirector of the Tax Policy Center.

These long-standing problems are only the tip of the iceberg, however. The biggest problems come from the interaction of the U.S. tax system with the global economy.

At roughly 39 percent (including state taxes), the top statutory U.S. corporate tax rate is the highest among developed countries. That high rate discourages investment in the United States by both U.S.- and foreign-owned corporations and encourages companies to report taxable profits elsewhere. Also, the United States is one of the few countries that still taxes active foreign-source income of its resident corporations, although the tax liability is deferred until foreign profits are repatriated to the U.S. parent. These rules encourage U.S., but not foreign-owned, corporations, to retain profits overseas and may place U.S. companies at a disadvantage compared with their foreign competitors that do not pay home-country tax on their foreign profits.

Besides distorting investment flows, keeping capital of U.S. multinationals “locked out” overseas, and in many circumstances favoring foreign- over U.S.-chartered multinationals, corporate tax rules also encourage firms to manipulate the way they report income and where they locate their legal residence. These tax avoidance activities are rampant because the concepts of residence and source that determine who gets to tax corporate profits make little economic sense. Both U.S.- and foreign-resident multinationals have investors, employees, and shareholders throughout the world, and intangible property contributes to a firm’s output throughout the world. Corporations can avoid residence-based taxation by incorporating elsewhere. They can avoid source-based taxation by shifting reported income overseas, often into tax havens.

Recent events have highlighted how U.S. corporations can avoid both residence-based and source-based taxation without changing real decisions about investment and employment. Efforts by major corporations such as Medtronic, Mylar, AbbVie, and Burger King to merge with foreign firms and move their corporate residence overseas to reduce their U.S. tax liability have sparked outrage and prompted proposals to curb such transactions. Congressional hearings in 2014 highlighted the ways other major U.S. firms, including Apple, Microsoft, and Caterpillar, shift reported profits from intangible assets, mostly developed in the United States, to affiliates in low-tax foreign countries where the companies undertake little real economic activity.

The Treasury Department recently announced new rules to reduce the tax benefits from corporate expatriations, and President Obama and Senators Carl Levin and Chuck Schumer have advanced legislative proposals that would remove tax benefits from recent inversions and deter future ones. Both the president and Ways and Means Chairman Dave Camp have endorsed broader reforms that would lower the top corporate rate and eliminate or reduce many business tax preferences.

Obama and Camp would also limit the ability of U.S. multinationals to benefit from shifting reported profits to tax havens, and Camp has in addition proposed eliminating 95 percent of the tax on repatriations of dividends to U.S. companies from their foreign affiliates. Camp's proposal would move our corporate tax more in line with most of our trading partners by removing most of the repatriation tax, retaining only a small tax to correct for the continued deductibility of some costs of generating foreign income against U.S. profits.

These reforms would improve the allocation of domestic investment and tax foreign-source income of U.S. corporations in a more efficient way. But in a recent paper, Alan Viard of the American Enterprise Institute and I argued that these reforms don't go far enough because they continue to rely on the flawed concepts of corporate residence and source to assess corporate tax liability. We offer two more fundamental reforms that would get at the root of the problem.¹

The first option would seek international cooperation on defining the source of corporate income, building on the ongoing Base Erosion and Profit Shifting project being undertaken by the Organization for Economic Cooperation and Development (OECD). The OECD has advanced a number of important proposals to encourage countries to limit common tax avoidance techniques and to require better information reporting on where multinationals generate profits. The current measures are important first steps, but they fall short of an international agreement on allocating corporate income. Viard and I would go further, urging countries to adopt common rules for allocating income. This step could stop firms from shifting profits to tax havens without putting U.S. multinationals at a competitive disadvantage.

¹ Eric Toder and Alan Viard, "Major Surgery Needed: A Call for Structural Reform of the U.S. Corporate Income Tax," American Enterprise Institute, April 3, 2014, http://www.aei.org/wp-content/uploads/2014/04/-toder-viard-report_132524981261.pdf.

Such allocation rules would still allow countries to compete for real capital investment by cutting rates. But they would stop countries from efforts to attract and retain corporate headquarters by turning a blind eye to how their home-based companies shift profits to tax havens. Although it would be very difficult for nations to reach consensus on how to allocate profits, all of our leading trading partners have a common interest in preventing the diversion of profits to tax havens.

A second and even more far-reaching reform option would scrap the U.S. corporate income tax entirely and replace it by taxing shareholders under the individual income tax on the annual increase in the value of their corporate equity holdings. American shareholders in all publicly traded companies, domestic and foreign, would be fully taxed, at ordinary-income rates, on their dividends and the annual increases in the value of their shares, whether or not they've sold the shares, and would be allowed to claim a full deduction for any annual declines in share values. Current rules provide a preferential rate for capital gains realizations to prevent lock-in and impose limits on realized losses to prevent shareholders with net gains from selectively claiming losses. These rules would no longer be necessary in a system that taxes all gains or losses, whether realized or not.

U.S. tax liability would depend only on the individual shareholder's residence, not on the corporation's legal residence or the source of its income. The U.S. tax system would no longer discourage domestic investment, reward companies that shift reported income elsewhere, or favor foreign over U.S.-resident companies.

These rules would apply only to publicly traded corporations, for which it is possible to observe changes in a company's market value. Other companies would continue to be taxed as most businesses are today, with income allocated to owners or partners in proportion to their ownership shares and taxed once under the individual income tax. Owners of these businesses would continue to pay capital gains tax upon realization, with current-law preferred rates and limits on capital losses. The removal of the corporate double tax, however, would substantially reduce the benefit that tax law now provides to these "flow-through" enterprises, compared with firms with similar activities that are organized as taxable corporations.

Both these options would confront difficult design choices and significant political obstacles. There is no agreed-upon way to allocate

corporate profits among jurisdictions, and different formulaic approaches have strengths and weaknesses and produce different divisions of the tax base among countries. International agreement on how to allocate multinational profits would therefore be hard to achieve, even though all of the major and emerging economies would benefit from halting the use of tax havens to strip their tax bases. And it will be difficult to persuade Americans to accept more international constraints on our tax system.

Replacing the corporate tax with an accrual tax on corporate shareholders would also be challenging. Congress would have to resolve major issues, such as how to address the effects of market volatility on individual tax liability, and whether and how to impose an offsetting levy on nonprofit institutions and retirement plans that would benefit from removal of the corporate-level tax. Lawmakers would also have to decide whether to retain tax preferences that benefit flow-through businesses such as partnerships, even though these subsidies would be effectively eliminated for publicly traded corporations. And a major educational campaign would be necessary to address the concern that the proposal is taxing people instead of corporations, even though economists agree that people ultimately bear the burden of the corporate income tax.

Neither option is likely to be enacted before the next presidential election. But the current method of taxing corporate income is eroding quickly and is not sustainable in the long run.

Tinkering with the current system won't fix the problems. We need a system for taxing corporate income that works in our current globalized economy, allowing us to retain the benefits of free trade and capital movements and improving incentives to invest in the United States, while ensuring that corporate shareholders pay taxes commensurate with their incomes. The time to start developing practical reforms to accomplish these goals is now.

48. No Easy Answers

*Peter Van Doren**

Economic output is the result of combining land, labor, and capital into goods and services that people purchase. What policy changes would increase the productivity of those factors and thus allow real incomes or leisure to increase? Let's examine the factors in order.

Land

The supply of land cannot be increased, but the intensity with which land is used can be. Scholars increasingly agree that zoning regulation prevents those with high school educations who currently do not reside in urban areas from moving to them and increasing their wages. High school graduates in cities with many college graduates make more than college graduates in cities with relatively few college graduates. For example, high school graduates in Boston average \$62,000 per year, which is 44 percent more than the \$44,000 made by college graduates in Flint, Michigan.¹

Migration to higher-wage cities is now much more difficult than in the past. From 1880 to 1980, incomes across states converged at the rate of 1.8 percent per year. Since 1980, that convergence has stopped. From 1980 to 2010, there was a large reduction in low-skill migration to those states with a high share of bachelor's degrees, but no change in high-skill migration to the same states. The explanation is housing supply constraints created by zoning in urban areas.²

The obvious conclusion from this research would be to eliminate zoning or modify it to reduce the effect of neighborhood opposition

* Peter Van Doren is a senior fellow at the Cato Institute and the editor of *Regulation*.

¹ Enrico Moretti, "Are Cities the New Growth Escalator?" World Bank Policy Research Working Paper no. 6881, May 1, 2014, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2439702.

² Peter Ganong and Daniel Shoag, "Why Has Regional Income Convergence in the U.S. Declined?" Harvard Kennedy School Working Paper no. RWP12-028, March 28, 2013, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2081216.

to more housing³ and to allow housing markets to respond with new supply, which would occur whenever the marginal costs of new construction were less than the price of existing housing.⁴ But earlier work in urban economics concluded that the funding of local public services through a property tax in the absence of zoning would lead to a never-ending cycle of households seeking to pay less in property taxes than the cost of local public services that they consume. From this perspective, zoning is a second-best policy that converts the property tax into an efficient user fee.⁵ Thus, to be efficient and growth promoting, zoning reform also would have to be accompanied by the much more conceptually and politically difficult task of local public service payment reform. And even if that occurred, the economic growth rate would increase only temporarily until all the gains from moving to urban areas had been achieved.

Labor

Increasing labor supply would seem to be a good thing, but growth in real gross domestic product (GDP) per labor hour is inversely related to labor supply growth in the United States over 20-year periods since 1839. That is, when labor supply growth through immigration or increased female or teenager participation occurs, labor productivity goes down. Rapid growth in real GDP per labor hour in the United States has occurred when immigration was severely limited (1930–1965). The slowdown in productivity from 1970 to 1990 occurred when first teens and women and then illegal immigrants flooded the service sector.⁶

Increasing labor quality through improved educational outcomes seems to be full of intellectual dead ends.⁷ For example, charter high

³ Roderick M. Hills Jr. and David Schleicher, "Balancing the 'Zoning Budget,'" *Regulation* (Fall 2011): 24–32.

⁴ Edward Glaeser and Joseph Gyourko, "Zoning's Steep Price," *Regulation* (Fall 2002): 24–30.

⁵ William A. Fischel, *The Economics of Zoning Laws* (Baltimore: Johns Hopkins University Press, 1985), p. 302.

⁶ Robert J. Gordon, "Two Centuries of Economic Growth: Europe Chasing the American Frontier," National Bureau of Economic Research Working Paper no. 10662, August 2004, pp. 25–26.

⁷ James Heckman, "The American Family in Black and White: A Post-Racial Strategy for Improving Skills to Promote Equality," National Bureau of Economic Research Working Paper no. 16841, March 2011.

schools on average have no effects.⁸ But from Roland Fryer,⁹ we learn that intense specialized charter schools that implement what he refers to as a “no excuses curriculum” erase the black–white achievement gap in math and halve it in reading after four years, and implementation of a similar curriculum in Boston eliminated both achievement gaps.¹⁰ But scaling up such a “Herculean model” may be very difficult because of the limited amount of teaching and principal talent available. For example, to implement the program on a limited basis in Houston public schools required interviewing 200 candidates to hire 9 principals.¹¹

At the college level, the problem is the lack of increase in college graduation rates despite a dramatic increase in the premium paid to college graduates relative to those with a high school degree. Caroline Hoxby has concluded that high-achieving low-income students can be induced to apply and attend selective colleges through application fee waivers and financial aid. The College Board is implementing her recommendations.¹² The City University of New York has implemented a program of additional financial aid and individual advising at a cost of \$3,900 per student per year to improve the graduation rate at its community colleges. In a random-assignment trial, 56 percent of the first two cohorts of more than 1,500 students have graduated, compared with just 23 percent of the control group that received no extra help.¹³

Capital

If the savings rate increased, future incomes would be higher, although each increment of additional savings would have decreasing returns. But additional savings would increase the rate of growth

⁸ Julie Berry Cullen, Steven D. Levitt, Erin Robertson, and Sally Sadoff, “What Can Be Done to Improve Struggling High Schools?” *Journal of Economic Perspectives* 27 (2013): 144.

⁹ Roland G. Fryer Jr., “Injecting Successful Charter School Strategies into Traditional Public Schools: A Field Experiment in Houston,” National Bureau of Economic Research Working Paper no. 17494, October 2011, p. 2.

¹⁰ Cullen et al., “What Can Be Done to Improve Struggling High Schools?” p. 144.

¹¹ *Ibid.*, pp. 144–46.

¹² David Leonhardt, “A Nudge to Poorer Students to Aim High on Colleges,” *New York Times*, September 26, 2013, <http://www.nytimes.com/2013/09/26/education/for-low-income-students-considering-college-a-nudge-to-aim-high.html>.

¹³ David L. Kirp, “How to Help College Students Graduate,” *New York Times*, January 9, 2014, <http://www.nytimes.com/2014/01/09/opinion/how-to-help-college-students-graduate.html>.

in output only temporarily, because the larger capital stock also would depreciate and have to be replaced.¹⁴

Many believe that decreased entitlements would increase the savings rate. The entire growth in the ratio of consumption to GDP between 1988 and 2000 (roughly 2 percentage points) can be explained by increases in medical care expenditures.¹⁵ “Consumption has increased simply because social programs are in fact assumed to be paying for the additional expenditure.”¹⁶

But Avner Greif and Murat Iyigun argue that the development of social welfare institutions can promote economic growth by reducing resistance to economic change that enhances productivity at the expense of current jobs.¹⁷ English counties that had more poor relief had more patents and fewer food riots during the period 1650–1830. An analogous modern example is the deal that allowed the shift from manual unloading of ships and its associated labor violence to the use of containers that could be simply loaded by large cranes onto railcars or trucks.¹⁸ After 1960, dockworkers ended their resistance to productivity-enhancing mechanization in return for higher guaranteed wages. “From 1958 to 1988, longshore wages in West Coast ports more than doubled, increasing 240 percent in constant dollars. But unit labor costs declined by 80 percent—from \$16.98 per ton in 1958 (in 1988 dollars) to \$3.31 per ton in 1988.”¹⁹

Effect of Taxes on the Supply of Labor and Capital

Surely lower taxes increase economic growth. Tax reform in 1986 lowered marginal rates quite substantially but also eliminated many deductions. The net effect was revenue neutral. Even though the top

¹⁴ Barry P. Bosworth, *Tax Incentives and Economic Growth* (Washington: Brookings Institution, 1984), pp. 44–46.

¹⁵ Annamaria Lusardi, Jonathan Skinner, and Steven Venti, “Saving Puzzles and Saving Policies in the United States,” *Oxford Review of Economic Policy* 17 (Spring 2001): 95–115.

¹⁶ Massimo Guigolin and Elizabeth A. La Jeunesse, “The Decline in the U.S. Personal Savings Rate: Is It Real and Is It a Puzzle?” *Federal Reserve Bank of St. Louis Review* 89, no. 6 (2007): 510.

¹⁷ Avner Greif and Murat Iyigun, “Social Organizations, Violence, and Modern Growth,” *American Economic Review* 103, no. 3 (2013): 537.

¹⁸ Robert A. Kagan, “How Much Does Law Matter: Labor Law, Competition, and Waterfront Labor Relations in Rotterdam and U.S. Ports,” *Law & Society Review* 24, no. 1 (1990): 35–69.

¹⁹ *Ibid.*, p. 52.

marginal rate decreased from 50 percent to 28 percent, economists Alan Auerbach and Joel Slemrod concluded that the policy change altered the composition of national income rather than increased growth. "The aggregate values of labor supply and saving apparently responded very little."²⁰

What about the effect of higher taxes in Europe? Their effect has been to reduce the labor supply and hours worked but increase the productivity growth of those that remain in the labor force: fewer and more productive jobs. From 1973 to 2000, the annual average growth in real GDP per labor hour was 1.37 percent in the United States and 2.4 percent in Europe.²¹

Multifactor Productivity

After land, labor, and capital, what is left? Economists call what is left multifactor productivity. What is it? Greg Mankiw, commenting on a paper summarizing the growth accounting literature, said:

Long ago, some economist—I believe it was Moses Abramovitz—called multifactor productivity “a measure of our ignorance.” That is, we account for changes in capital, labor, labor quality, and the many other determinants of output we can measure, and the changes in output left unexplained are called “multifactor productivity.” But that is really just giving a fancy name to something about which we are pretty clueless.²²

Statements about multifactor productivity are of limited use for either forecasting or policy analysis. Measured ignorance is probably better than unmeasured ignorance, but it would be a mistake to confuse it for real knowledge.²³

Innovation is a component of our measured ignorance. Is policy optimally encouraging innovation? Dan Burk argues that our system of intellectual property is premised on the belief that the social cost of the market power created by patents is less than the benefits

²⁰ Alan J. Auerbach and Joel Slemrod, “The Economic Effects of the Tax Reform Act of 1986,” *Journal of Economic Literature* 35, no. 2 (1997): 627.

²¹ Gordon, “Two Centuries of Economic Growth,” Table 1.

²² N. Gregory Mankiw, “Comments on ‘Explaining a Productive Decade,’” *Brookings Papers on Economic Activity* (Spring 2007): 143.

²³ *Ibid.*, 144.

created by the inventions that result. But there is surprisingly little data to support or refute this belief.²⁴ Abraham Bell and Gideon Parchomovsky propose to end the one-size-fits-all patent monopoly and its accompanying economic distortions (excessively high prices and reduced output) with a menu of options that would charge inventors more for longer patents with greater rights to sue infringers and less for shorter patents and fewer rights.²⁵ Their basic insight is that we charge too little now for the monopoly rights we grant and thus have too much intellectual property.

Conclusion

The literature is not very supportive of claims that simple changes in policy would improve productivity and real incomes. For every common argument about a simple policy change that would increase the productivity of land, labor, capital, and everything else that matters, I have found compelling contrary, or at least complicating, evidence.

What advice can I offer? Good policy offers sound remedies for those market failures that really exist. And to the extent that government redistributes, it needs to think carefully about the incentive effects of guarantees and the rate at which subsidies are reduced as market incomes increase. Of the policies I examined, zoning, low-income college student assistance, and patent reform seem to offer the most promising, though limited gains.

²⁴ Dan L. Burk, "Law and Economics of Intellectual Property: In Search of First Principles," *Annual Review of Law and Social Science* 8 (2012): 397–414.

²⁵ Abraham Bell and Gideon Parchomovsky, "Reinventing Copyright and Patent," *Michigan Law Review* 113 (2014): 231, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2399998.

49. Move to a Progressive Consumption Tax

*Alan D. Viard**

Capital is a key determinant of growth, along with labor and technology. Yet the U.S. tax system systematically penalizes saving, which finances capital accumulation. The tax penalty on saving could be eliminated by moving to progressive consumption taxation.

The Tax Burden on Saving

Income taxation is inherently biased against saving, which arises when individuals consume later than they work. Under income taxation, individuals who save part or all of their earnings pay tax on the return on their saving, in addition to the tax already paid on the earnings. This double taxation imposes higher-percentage tax burdens on those who save than on those who immediately consume their earnings.

Wage taxation avoids the double tax and the resulting saving penalty because only the original earnings are taxed, with no tax on the return to saving. Consumption taxation also avoids the double tax and the saving penalty, because the saver is not taxed on the amount that is saved and is taxed only on the future consumption ultimately financed by the saving.

It is sometimes argued that the current U.S. tax system taxes savings lightly and therefore imposes only modest saving penalties. A common claim holds that income from saving is taxed at a special maximum rate of 20 percent, well below the 39.6 percent maximum tax rate that applies to wages. Also, capital gains are not taxed until realization. Moreover, retirement saving and some other types of saving can be done through tax-preferred accounts.

But the actual tax treatment of saving is quite different, as Robert Carroll and I have documented.¹ The 20 percent maximum tax rate

* Alan D. Viard is a resident scholar at the American Enterprise Institute.

¹ Robert Carroll and Alan D. Viard, *Progressive Consumption Taxation: The X Tax Revisited* (Washington: AEI Press, 2012).

applies to only two types of income from saving: long-term capital gains and qualified dividends. Full ordinary income tax rates apply to other income from saving, including the profits of S corporations and noncorporate businesses, interest income, short-term capital gains, and nonqualified dividends. Also, since 2013, most income from saving by high-income households has been subject to a special 3.8 percent “un-earned income Medicare contribution” tax, over and above regular income taxes. Although capital gains are not taxed until realization, they are also not indexed for inflation, so investors must pay tax on nominal gains that merely offset the rise in the price level. And tax-preferred savings accounts feature complexity and restrictive rules that reduce participation. Because of contribution limits, the accounts also offer no marginal incentives for those making the largest contributions.

The profits of C corporations are also subject to a separate corporate income tax, featuring a 35 percent statutory tax rate. The much-vaunted tax savings that corporate shareholders reap from the 20 percent maximum tax rate on their dividends and capital gains provide only a partial offset for the burden of the corporate income tax. And estate and gift taxes also apply to the savings of the nation’s wealthiest households. State and local tax systems impose further taxes on saving, including individual and corporate income taxes, property taxes, and sales taxes on business purchases of capital goods.

If reforms are not undertaken, the tax burden on saving may increase in upcoming years. The Obama administration has proposed an increase in estate and gift taxes and a “Buffett rule” that would effectively raise the individual income tax rate on some high-income households’ long-term capital gains and qualified dividends. More sweeping proposals are likely to arise from the fiscal pressures posed by the rise in Medicare, Medicaid, and Social Security spending. Tyler Cowen² and I³ called attention to calls for an annual wealth tax, a tax that gained added support when subsequently advocated by Thomas Piketty.⁴

² Tyler Cowen, “Wealth Taxes: A Future Battleground,” *New York Times*, July 20, 2013, http://www.nytimes.com/2013/07/21/business/wealth-taxes-a-future-battleground.html?_r=0.

³ Alan D. Viard, “Capital Income Taxation: Reframing the Debate,” AEI Economic Perspectives, July 2013, http://www.aei.org/wp-content/uploads/2013/07/-capital-income-taxation-reframing-the-debate_172019152543.pdf.

⁴ Thomas Piketty, *Capital in the Twenty-First Century* (Cambridge, MA: Harvard University Press, 2014).

Progressive Consumption Taxation

As mentioned above, consumption taxation does not penalize saving. Replacing income taxation with consumption taxation would therefore be beneficial. One approach, which may well be adopted at some point, would replace part of the income tax system with a value-added tax (VAT). That approach raises a number of concerns, which are not discussed here.

The greatest gains could be achieved by replacing the entire income tax system (the individual and corporate income taxes, the unearned-income Medicare contribution, and the estate and gift tax) with a consumption tax. For distributional reasons, though, the consumption tax would need to be progressive, rather than a regressive tax like the VAT.

One progressive consumption tax is the personal expenditure tax, sometimes called a “consumed-income” tax. This tax starts with a framework similar to the individual income tax, but with a crucial modification that strips out the income tax’s saving penalty. Households would report their income on annual tax returns but would then claim a full deduction for all saving and add back in any dis-saving. What’s left would be the household’s before-tax consumption for the year. That consumption amount would be taxed at graduated rates, with higher tax brackets for households with higher consumption. Exemptions and refundable tax credits would be provided to low-consumption households.

Under a personal expenditure tax, households would deduct deposits in savings accounts, the costs of purchasing stocks and other investments, any loans that they made, and any payments (interest or principal) that they made on their debts. Households would pay tax on withdrawals from savings accounts, the full proceeds from selling stocks and other investments, any payments (interest or principal) received from loans that they made, and the full amount of any borrowing that they did. Laurence Seidman provides a thorough analysis of the personal expenditure tax.⁵

Another progressive consumption tax is the Bradford X tax, which is a graduated-rate variant of the Hall-Rabushka flat tax. The X tax and the flat tax start with a framework similar to the VAT, with a crucial modification that removes the VAT’s regressivity. The VAT base would

⁵ Laurence A. Seidman, *The USA Tax: A Progressive Consumption Tax* (Cambridge, MA: MIT Press, 1997).

be split into two. Households would be taxed only on their wages, and business firms would be taxed on value added minus their wage payments, so that the total tax base would be the same as the VAT. The household tax would have graduated rates, with higher tax brackets for households with higher wages. Exemptions and refundable credits would be provided to low-wage households. The business tax would have a flat tax rate, equal to the top wage tax bracket.

Although the household tax might look like the individual income tax, and the business income tax might look like a corporate income tax, they would actually be quite different in economic terms, with no vestige of those taxes' saving penalties. The household tax would be imposed only on wages, thereby exempting interest, dividends, capital gains, and all other income from saving. The business tax (which would apply to both corporate and noncorporate businesses) would be imposed on business cash flow, not income. The key difference is that investments would be immediately deducted, as they are under a VAT, rather than depreciated. As under a VAT, there would be no tax penalty on a new break-even investment. Carroll and I provide a thorough analysis of the X tax.⁶

Neither the personal expenditure tax nor the X tax is familiar to the general public, and neither is likely to be enacted in the near future. The personal expenditure tax may draw criticism because it does not include a tax collected at the business level and because individuals are taxed on the proceeds of borrowing. The X tax may be criticized because it does not look like a consumption tax and because it does not collect tax at the household level from people who are consuming the proceeds of past investments. And each tax would have to address a variety of challenges, including transition issues, the treatment of financial institutions, and international issues. Nevertheless, each tax would allow revenue to be raised in a progressive manner without penalizing saving.

Conclusion

The rise in the federal government's revenue needs is likely to prompt efforts to increase the already-high tax burden on saving in upcoming decades. This threat to growth can be averted by moving to progressive consumption taxation.

⁶ Carroll and Viard, *Progressive Consumption Taxation*.

50. Raise Tuition at State Universities to Boost Long-Term Economic Growth

*Ben Wildavsky**

Any strategy designed to deploy higher education for improved economic growth must start with this indisputable (yet often disputed) proposition: graduating from college is, on average, good for the graduate and good for the country. College graduates enjoy dramatically lower unemployment rates than their high school-educated counterparts. They earn more too. Despite rising tuition and student debt loads, the lifetime earnings of bachelor's degree holders are 75 percent higher than they were 30 years ago. Indeed, the financial returns to a college education—as observers like Laura D'Andrea Tyson, a professor at the Haas School of Business at the University of California, Berkeley, have noted—significantly exceed the payoff to investments such as stocks, bonds, housing, and gold.¹

The same trends generally hold true globally, where postsecondary education brings significant benefits to individuals and to nations. A recent Organization for Economic Cooperation and Development study found, unsurprisingly, that spending on higher education, together with forgone tax revenues while students are out of the labor force, is costly for governments.² But those expenses are more than offset by the higher tax revenues that go along with college graduates' higher wages, as well as by lower outlays to college grads

* Ben Wildavsky is director of higher education studies at the Rockefeller Institute of Government and policy professor at the University at Albany.

¹ Laura D'Andrea Tyson, "Getting More Bang for the Buck in Higher Education," *New York Times*, 2013, http://economix.blogs.nytimes.com/2013/06/14/getting-more-bang-for-the-buck-in-higher-education/?_r=2.

² Organization for Economic Cooperation and Development, "Education Spending Rising but Access to Higher Education Remains Unequal in Most Countries, Says OECD," news release, September 11, 2012, <http://www.oecd.org/newsroom/educationspendingrisingbutaccesstohighereducationremainsunequalinmostcountriessaysoecd.htm>.

for social programs. On average, the study found, the return to governments for higher education spending is approximately 4 to 1 for men and 2.5 to 1 for women.

Those facts amply reinforce a core observation in *The Race between Education and Technology*, the influential 2008 book by Harvard economists Claudia Goldin and Lawrence Katz: “Human capital,” they write, “embodied in one’s people, is the most fundamental part of the wealth of nations.”³

Against this backdrop, national and state policymakers’ push to improve the quality of human capital in the United States by raising college graduation rates makes a lot of sense. And ideas abound: rethinking the structure of student loans, lowering costs by improving campus productivity, changing the structure of degrees, bringing classes online, and more. Underlying most of these proposals is the recognition that improving access, affordability, and graduation rates is especially important for low-income students. They are less likely than others to enroll in college, and significantly less likely to make it to graduation. As a result, they will often miss out on the financial benefits that accrue to earning a college diploma. The nation’s economy will miss out on gains as well.

But although the case for some level of state support for higher education is strong, one of the most cherished policies used to promote college attendance—low in-state tuition at state universities around the country—does much less than it could to attract and retain low-income students. Instead, it provides heavy subsidies to students who would go to college anyway. That approach is neither an optimal use of taxpayer dollars nor a promising path to economic growth.

Public tuition subsidies at the state level are enormous, and those subsidies apply to the lion’s share of undergrads nationally. Despite all the attention paid to fast-rising tuition at Ivy League colleges and other elite institutions, the vast majority of American undergraduates—nearly four in five—attend public colleges and universities. And while tuition has risen significantly at many of those institutions in recent years, students still pay nowhere near the actual cost of their education. In 37 of 50 states, average list prices for

³ Claudia Goldin and Lawrence F. Katz, *The Race between Education and Technology* (Cambridge, MA: Harvard University Press, 2010), p. 41.

public colleges and universities range from \$10,000 to \$14,000. That list-price tuition covers only 50 to 60 percent of undergraduate costs, on average.

To be sure, states vary significantly in how much they expect students to pay. On the low end, New Hampshire taxpayers cover only 16 percent of costs at state schools, according to a recent Lumina Foundation report. On the high end, Wyoming provides an unusually large subsidy—86 percent of total costs.⁴ Still, the extent of across-the-board subsidies is considerable. Writing in the *Washington Post* recently, Fred Hiatt noted that in-state tuition plus fees at the University of Maryland's flagship College Park campus comes to \$9,400, while the state appropriates \$19,000 for each Maryland college student.⁵

Americans have come to take for granted such high levels of state support for college tuition. But unlike, say, federal Pell Grants, which target students from low-income families, low tuition at state colleges and universities is an across-the-board subsidy for rich and poor alike. This state support is hugely problematic given the large numbers of affluent students to be found at state schools, particularly the most selective institutions. Family income figures for students at state schools are hard to come by. But a study by the Higher Education Research Institute found that in 2004, 40 percent of freshmen at the 42 most selective state schools in the country—including the likes of Berkeley and the University of Michigan—came from families making more than \$100,000. In Michigan's freshman class in the late 1990s, *New York Times* reporter David Leonhardt has written, there were more undergraduates from families making more than \$200,000 a year than from families earning below the national median income of \$53,000.⁶

⁴ Nate Johnson, "College Costs and Prices: Some Key Facts For Policy Makers," Lumina Foundation, p. 1, http://www.luminafoundation.org/files/publications/issue_papers/College_Costs_and_Prices.pdf.

⁵ Fred Hiatt, "In-State College Tuition: A Handout to the Rich," *Washington Post*, November 2, 2014, http://www.washingtonpost.com/opinions/fred-hiatt-subsidized-college-tuition-amounts-to-a-handout-to-the-rich/2014/11/02/af5e2222-6111-11e4-8b9e-2ccdac31a031_story.html.

⁶ David Leonhardt, "As Wealthy Fill Top Colleges, Concerns Grow over Fairness," *New York Times*, April 22, 2004, <http://www.nytimes.com/2004/04/22/us/as-wealthy-fill-top-colleges-concerns-grow-over-fairness.html>.

Kids in the former group would surely still be going to college, with or without a subsidy. So why not raise tuition at state colleges and ask students from middle- and high-income families to pay more?

Higher education is a public good, but it's a private good as well. Why should the daughter of an affluent lobbyist in Arlington, Virginia, attend the University of Virginia and pay a heavily subsidized tuition of \$13,200 when her family could easily pay two or three times that amount? Writing in 2011 on the joint blog that he then ran with the late University of Chicago economist Gary Becker, law and economics pioneer Richard Posner said that "there is no case at all from an overall social standpoint for subsidizing students who would pay full college tuition, without the inducement of a subsidy . . . it is a windfall to their families."⁷ For his part, Becker wrote, given that college graduates' earnings are so much higher than those of the average taxpayer, "It is a questionable system of regressive taxation when taxes are spent on subsidizing individuals who will earn more than those paying the taxes."⁸

Some advocates of improving college access go further than calling for subsidies, instead promoting the notion of free college for all. They argue not only that those universal subsidies will create incentives for broader college attendance, but also that universalism is a recipe for widespread political support. But this is a big mistake. We know from the experience of other countries that what appears to be an egalitarian policy may in fact have perverse consequences. With free tuition—which Germany just reintroduced, and many other countries have instituted—government funds become spread too thin. That reduces quality and often limits capacity. As a result, well-off students, who tend to be better prepared academically, are more likely to get scarce spaces. Thus, intended beneficiaries from low-income backgrounds may not get postsecondary education at all. Call it the egalitarian tuition-subsidy paradox.

It's worth noting that low state tuition policies are not the only college subsidies that disproportionately benefit the well-off. As journalist Jon Marcus notes, tuition tax credits, work-study aid,

⁷ Richard Posner, "Raising Public-College Tuition—Posner," *Becker-Posner Blog*, January 17, 2011, <http://www.becker-posner-blog.com/2011/01/raising-public-college-tuitionposner.html>.

⁸ Gary Becker, "The Case for Tuition Increases at Public Universities—Becker," *Becker-Posner Blog*, January 17, 2011, <http://www.becker-posner-blog.com/2011/01/the-case-for-tuition-increases-at-public-universities-becker.html>.

and tax-advantaged state college-savings plans all do little to help poor families pay for college.⁹ For instance, the Tax Policy Center finds that although just 20 percent of U.S. households have annual earnings of more than \$100,000, households in this income range received more than 50 percent of federal tax deductions for tuition, fees, and exemptions for dependent college students. Similarly, low-income taxpayers are far less likely than their more affluent counterparts to participate in college-advantaged savings accounts. The households that participate in these plans, according to the U.S. Government Accountability Office, have a median income of \$120,000.

None of these findings mean that low-income students get no state subsidies for college—they do, of course, often receive significant financial aid. But college costs and living expenses remain a barrier for many of these students. Raising tuition at state institutions to the true cost of attendance would free up additional funds to make financial aid much more generous. That, in turn, would open the door to many policy changes that could improve access, retention, and graduation rates.

First, states could offset tuition hikes by increasing the size of direct grants to needy students. Research shows that \$1,000 in extra aid per student raises college enrollment rates by 3 to 6 percentage points.¹⁰ Increasing aid would also allow disadvantaged students to borrow less. That's important, because even though there is a strong economic case for taking on debt to pay for college, given the high average returns to earning a degree, students from poor families are often debt averse. They may hesitate to attend, or to persist, because of anxiety about taking on loans.

New funds from state tuition increases could also be spent on outreach to students from low-income families. Researchers have identified a range of new, inexpensive outreach measures that seem to be very effective. For example, a study by economists Caroline Hoxby of Stanford University and Sarah Turner of the University of Virginia found that talented low-income students often don't apply

⁹ Jon Marcus, "College, Federal Financial Aid Increasingly Benefits the Rich," *Hechinger Report*, March 9, 2014, http://hechingerreport.org/content/college-federal-financial-aid-increasingly-benefits-rich_15001/.

¹⁰ Helena Skyt Nielsen, Torben Sørensen, and Christopher Taber, "Estimating the Effect of Student Aid on College Enrollment: Evidence from a Government Grant Policy Reform," University of Wisconsin, 2009, <http://www.ssc.wisc.edu/~ctaber/Papers/Version14.pdf>.

to selective colleges for which they would be qualified, and from which their chances of graduation would be much higher than at less-selective institutions.¹¹ But when high-achieving students were provided with information about the application process and net costs after financial aid at those colleges, they applied to and were admitted to more colleges than those in a control group that didn't receive the intervention. The intervention cost just \$6 per student.

Another experiment, by Benjamin Castleman of the University of Virginia and Lindsay Page of the University of Pittsburgh, focused on a disadvantaged student population headed to much less selective colleges.¹² In an effort to combat "summer melt"—the phenomenon whereby high school graduates who intend to go to college do not enroll in the fall—the researchers used personalized text messages to remind students of key deadlines and offer them access to counselors. The results were striking: student enrollment in the districts studied rose between 4 and 7 percentage points. Like the Hoxby and Turner study, the texting experiment was cheap: \$7 per student.

Whichever route or routes policymakers take to improve postsecondary participation and success, using taxpayer dollars to advance this goal seems eminently more worthy than providing tuition breaks to large numbers of students who don't need them. Inevitably, a policy change like this would be hugely controversial. Nevertheless, it would be the right thing to do.

The elimination of across-the-board tuition subsidies at state colleges, to be replaced by more generous financial assistance to low-income students, along with other new enrollment strategies for disadvantaged populations, may not lead to immediate and striking increases in economic growth. But how many policy changes do? If incremental, steady improvements in college attendance and graduation rates build human capital to meet fast-changing workforce needs, over time the benefits will be substantial for individuals and the economy. That would be a remarkably worthwhile outcome from rechanneling a single kind of misdirected subsidy.

¹¹ Caroline Hoxby and Sarah Turner, "Expanding College Opportunities for High-Achieving, Low Income Students," Stanford Institute for Economic Policy Research Discussion Paper no. 12-014, March 28, 2013, <http://siepr.stanford.edu/publicationsprofile/2555>.

¹² Benjamin L. Castleman and Lindsay C. Page, *Summer Melt: Supporting Low-Income Students through the Transition to College* (Cambridge, MA: Harvard University Press, 2014).

51. Expand Opportunity to Boost Growth

*Scott Winship**

Over human history, nothing has expanded opportunity more successfully than economic growth. Indeed, growth is nothing if not a machine to fulfill ever more of the wants and needs of ever more people. But economic growth alone has been insufficient for ensuring equal opportunity to benefit from growth or contribute to it. Through politics and cultural change, we have made great—if long-delayed and incomplete—advances in eliminating formal and even informal discrimination. But a fundamental market failure continues not only to impair opportunity but also to limit economic growth: we do not choose our parents. Parents endow us (unequally) not only with skills and personalities but also with values, habits, and aspirations, often reflecting legacies of history, familial or societal. While there may be better strategies to promote growth than expanding opportunity, steps that expand opportunity while stimulating economic growth would achieve complementary goals.

There are at least two ways of thinking about “opportunity.” It can mean either rising living standards or upward movement in rank. The former, often called “absolute mobility,” is unconcerned with whether those who start at the bottom end up at the bottom, so long as they also see rising purchasing power. Rank mobility, or “relative mobility,” is about whether—real income gains aside—people who start at the bottom can make it to the middle or top. Both are important—the rising living standards embodied in absolute mobility are self-evidently so, while relative mobility stands in for the ability of poor children to aspire to something other than the least-desirable jobs or government dependence when they become adults. It is this sense of high relative mobility that is evoked by appealing to “equal” opportunity.

* Scott Winship is the Walter B. Wriston Fellow at the Manhattan Institute.

What is the state of upward relative mobility in the United States today? A just-released paper examined, better than any previous study, mobility across multiple countries using administrative data for each and the same methods and income concepts.¹ That paper reported—for the United States, Sweden, and Canada—the probability that a man raised by a father in the bottom fifth of earnings has earnings that exceed the bottom fifth of grown sons. The figures were 68 percent in the United States and Sweden and 69 percent in Canada. The essentially identical rates of upward mobility—also reflected in other measures in the paper—contradict the prior consensus that the United States features lower upward mobility than other nations, a conclusion that now appears compromised by data inconsistencies or driven by family structure differences that affect household income.

Upward mobility rates in the United States differ notably by race. Among whites, 74 percent of sons raised in the bottom make it out, compared with just 49 percent of African American sons.² Even among whites, however, upward mobility is arguably insufficient. Just 37 percent of sons raised in the bottom fifth end up in the top three-fifths, while equality of *outcomes* would put that figure at 60 percent. Among black sons, the figure is just 29 percent.

And while upward mobility probably has not declined in recent decades, neither has it increased.³ My own estimates, for example, indicate that 63 percent of sons born in the late 1940s and raised in the bottom quarter of family income made it out of the bottom quarter of earnings in early adulthood. For sons born in the early 1980s, the figure was 60 percent.⁴

Of course, it is impossible to directly observe barriers to opportunity, since we can neither observe the potential outcomes of children

¹ Miles Corak, Matthew J. Lindquist, and Bhashkar Mazumder, “A Comparison of Upward and Downward Intergenerational Mobility in Canada, Sweden, and the United States,” *Labour Economics* 30 (2014): 185–200.

² Bhashkar Mazumder, “Black–White Differences in Intergenerational Economic Mobility in the United States,” *Federal Reserve Bank of Chicago Economic Perspectives* 38, no. 1 (2014): 1–18.

³ For a review, see Scott Winship, “Has Rising Income Inequality Worsened Inequality of Opportunity in the United States?” *Social Philosophy and Policy*, forthcoming.

⁴ Scott Winship, “Great Gatsby Curve: All Heat, No Light,” May 20, 2015, <http://www.brookings.edu/blogs/social-mobility-memos/posts/2015/05/20-opposition-great-gatsby-curve-winship>.

under different circumstances nor identify how their preferences form and evolve. Relative mobility rates cannot even be taken as *prima facie* evidence of unequal opportunity. However, we do know that there are large test-score gaps when children enter school, which do not diminish much, if at all, over the course of primary and secondary schooling.⁵ We also know that college graduation rates are six times higher for children born in upper-income families than for those in lower-income families.⁶ Even children with test scores in the top quartile in eighth grade have dramatically different probabilities of getting a bachelor's degree, depending on whether they come from advantaged or disadvantaged families.⁷ There are sizable ethnic gaps along those dimensions as well. Perhaps these inequalities reflect preferences. Perhaps.

Does greater opportunity increase economic growth? There are certainly theoretical reasons to think so. If the next potential Steve Jobs is languishing in an impoverished neighborhood and attending a failing school, we will all lose if he or she never fulfills his or her potential. Unequal opportunity may diminish investment in human capital and entrepreneurship. Alternatively, human capital may simply be misallocated. Poor children, for instance, may train for jobs that do not match their talents. Not only would we be better off with more people investing in human capital and more people working jobs for which they are best suited, but we could end up with more people in high-productivity jobs as an ancillary benefit.

To see the potential benefits to economic growth from reducing inequality of opportunity, consider a recent study by University of

⁵ Sean F. Reardon, "The Widening Academic Achievement Gap between the Rich and the Poor: New Evidence and Possible Explanations," in *Whither Opportunity? Rising Inequality and the Uncertain Life Chances of Low-Income Children*, ed. Greg J. Duncan and Richard J. Murnane (New York: Russell Sage Foundation Press, 2011), pp. 91–116.

⁶ Martha J. Bailey and Susan M. Dynarski, "Inequality in Postsecondary Education," in *Whither Opportunity? Rising Inequality and the Uncertain Life Chances of Low-Income Children*, ed. Greg J. Duncan and Richard J. Murnane (New York: Russell Sage Foundation Press, 2011), pp. 117–32.

⁷ Mary Ann Fox, Brooke A. Connolly, and Thomas D. Snyder, "Youth Indicators 2005: Trends in the Well-Being of American Youth," National Center for Education Statistics no. 2005–050, July 2005, <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2005050>.

Chicago and Stanford economists.⁸ The study examines how the expanded opportunity afforded women and African Americans to choose their best-fitting occupation affected U.S. productivity after 1960. Using a model of human capital investment, occupational choice, labor demand, and economic growth, the researchers explore how the lessening of three barriers to equal opportunity helped the economy. The barriers modeled include reduced accumulation of human capital among women and blacks for the same investment of time and money, higher costs to acquire the same human capital, and lower pay for the same human capital.

The study finds that greater opportunity among women and African Americans raised productivity by 15 to 20 percent between 1960 and 2008. The researchers' model also suggests that this was only about half of the boost to productivity that could have been achieved from reducing *all* barriers to occupational choice among the two groups. Those are surely rough estimates, and they assume that opportunity can be expanded at no cost, but they nevertheless demonstrate the likelihood that unequal opportunity constitutes "money on the sidewalk" that would make the nation richer if we could successfully pocket it.

How, then, might we increase upward mobility rates? If we admit, as we must, that we lack many successful models for improving the educational and economic outcomes of disadvantaged children, then the task becomes one of discovering models that work.⁹ The best way to do so would be to follow the advice of entrepreneur and policy analyst Jim Manzi and embrace local experimentation and evaluation through the use of randomized controlled trials.¹⁰ The federal government could build on the quiet shift toward evidence-based policymaking instituted by the Obama administration and subject all new and existing programs intended to change behavior or build

⁸ Chang-Tai Hsieh, Erik Hurst, Charles I. Jones, and Peter J. Klenow, "The Allocation of Talent and U.S. Economic Growth," National Bureau of Economic Research Working Paper no. 18693, January 2013.

⁹ On the limited success of existing federal programs that have included multiple sites and have been evaluated using randomized controlled trials, see David B. Muhlhausen, *Do Federal Social Programs Work?* (New York: Praeger, 2013).

¹⁰ Jim Manzi, *Uncontrolled: The Surprising Pay-Off of Trial-and-Error for Business, Politics, and Society* (New York: Basic Books, 2012).

human capital to such evaluation.¹¹ The emphasis on evaluation should be coupled with greater state and local flexibility to combine programs and depart from federal requirements. Executive agencies would also need flexibility to shift funding between successful and unsuccessful approaches, so long as they serve the goal of the authorizing legislation.

It would be most efficient if policy experiments were coordinated and evaluated by a dedicated federal office, which would work with state and local recipients of federal funds to set program goals, design the experiments, approve evaluation metrics, analyze data as they are generated, and summarize results for the administration and Congress. Brookings Institution scholar Richard Reeves has proposed establishing an Office of Opportunity, which would symbolize federal commitment to and prioritization of increasing upward mobility rates.¹² A beefed-up version of Reeves's office could lead the policy experimentation and compile a user-friendly database of programs evaluated by the office or externally, building on the Institute of Education Sciences' What Works Clearinghouse within the Department of Education. This database would itself serve as guidance for states and localities looking to submit proposals to agencies supported by the office.

While we know little about what intermediate objectives would best serve the goal of increasing upward mobility, we know enough to suggest some important areas on which to focus. Effective early childhood education and parenting programs would help close the yawning test-score gaps between advantaged and disadvantaged children that are present even in kindergarten. Greater experimentation and flexibility in primary and secondary schools might identify encouraging models related to school and class size, teacher recruitment and retention, curricular and pedagogical approaches, governance and school choice, and school-to-work linkages. Performance-based

¹¹ On the Obama administration's efforts, see Ron Haskins and Jon Baron, "The Obama Administration's Evidence-Based Social Policy Initiatives: An Overview," in *Evidence for Social Policy and Practice: Perspectives on How Research and Evidence Can Influence Decision-Making in Public Services* (London: NESTA, 2011), pp. 28–35.

¹² Richard V. Reeves, "Planning the American Dream: The Case for an Office of Opportunity," Brookings Institution Center on Children and Families Brief no. 53, 2014, <http://www.brookings.edu/research/papers/2014/05/planning-american-dream-office-of-opportunity-reeves>.

aid experiments for postsecondary institutions could increase accountability at community colleges and four-year institutions and promote better support of nontraditional and first-generation college students. Safety-net program experiments could better promote work and independence. Policing, sentencing, incarceration, and re-entry experiments could find a better balance among public safety, prevention, punishment, and forgiveness. And programs aimed at early unintended childbearing and family stability might ensure that more children enjoy the increasingly uncommon experience of growing up with both of their parents in a happy household.

This last issue of family instability merits special attention and prioritization. Births to single mothers constitute more than 40 percent of all births today—and over half of births to women under age 30.¹³ In 1970, 20 percent of births to women without a high school diploma were to single mothers, but today two-thirds are. Births to single women in 1970 accounted for less than 10 percent of births to women with a high school diploma but no college, but for 58 percent of such births in 2012.

We can debate the strength of the (mountains of) studies finding that growing up with a single parent worsens adult outcomes. My own view is that they are generally unpersuasive as evidence that children who are raised by single parents would do better if their actual parents would marry or stay married. But if we could delay early out-of-wedlock births such that more births were planned by older parents within durable marriages, the children who would be born—often to different fathers—would likely do better for having been born into more stable circumstances. And the minimal expectations we have of fathers today likely have discouraged the responsible behavior of men—not just in terms of family formation and child rearing, but in terms of work and self-sacrifice—and eroded norms in support of such behavior.

In the spirit of experimentation, then, we should consider promoting child rearing within marriage with generous financial rewards. The easiest way to do so would be to restructure tax subsidies so that married parents qualify for a sizable and refundable tax credit that explicitly makes parenthood within marriage more attractive

¹³ Isabel V. Sawhill, *Generation Unbound: Drifting into Sex and Parenthood without Marriage* (Washington: Brookings Institution Press, 2014).

than parenthood outside marriage. Funding for such a subsidy could come from any of a number of sources, including elimination of tax expenditures that subsidize less important societal goals, cutting of ineffective anti-poverty programs, or explicit redistribution from childless taxpayers to parents (as the writer and policy analyst Reihan Salam has suggested).¹⁴ While calls for expanded child tax credits are growing more popular as a way to support parents generally, and while marriage promotion programs have been proposed to encourage unmarried parents to wed, targeting tax benefits to married parents would have a different goal. The goal would be to give teens and young adults who might otherwise see little to gain from more responsible family planning a clear incentive to delay pregnancy.

Using opportunity expansion as a strategy for increasing economic growth would be compatible with other growth-promoting efforts. Even if it failed to increase growth meaningfully, we might nonetheless succeed at giving poor children better options. That would be a very pleasant failure indeed. But we might find instead that unequal opportunity has been a drag on economic growth all along, and that doing right by poor children turns out to benefit all of us.

¹⁴ Reihan Salam, "Tax the Childless," *Slate*, March 31, 2014, http://www.slate.com/articles/news_and_politics/politics/2014/03/tax_credits_and_children_parents_should_pay_lower_taxes_and_childless_people.html.

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Washington, D.C. 20001
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