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# From Recession to Recovery to Renewal: An Economic Strategy to Achieve Broadly Shared Growth

Roger C. Altman, Michael Greenstone, Robert E. Rubin, and Sarah Cannon



## MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments. We believe that today's increasingly competitive global economy requires public policy ideas commensurate with the challenges of the 21st century. Our strategy calls for combining increased public investments in key growth-enhancing areas, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first treasury secretary, who laid the foundation for the modern American economy. Consistent with the guiding principles of the Project, Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that “prudent aids and encouragements on the part of government” are necessary to enhance and guide market forces.





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BROOKINGS

# Abstract

A defining feature of United States history is that each generation of Americans has enjoyed a higher standard of living and access to opportunities not available to their parents. This tradition is at risk because we are failing to make critical investments in human, physical, and environmental capital while the global economy is becoming increasingly competitive.

At the same time, the recession that began in 2007 has been one of the worst periods for American families since the Great Depression. Americans are living with the uniquely acute fears that are produced by economic insecurity. In this weak economic environment, much of government policy should be focused on the short and intermediate terms.

In this paper, The Hamilton Project argues that even in these difficult times it is vital that we begin to confront the challenges that pose a greater risk to our long-run prosperity than the Great Recession. Our perspective is that America's future growth requires reprioritizing expenditures toward increasing workforce productivity, innovation and infrastructure, savings, and government effectiveness. However, the ability to make these investments is increasingly compromised by our difficult fiscal position. As part of this strategy to shift focus to long run prosperity, the United States should begin to confront the deficit as soon as the economic recovery has gained sufficient momentum.

Since 2006, The Hamilton Project has encouraged leading thinkers to put forward concrete policy proposals commensurate with the challenges of our time. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments. This paper sets out an ambitious agenda for The Hamilton Project as we continue to develop and disseminate bold and innovative policy recommendations to promote broad-based growth.

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# I. Introduction

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A defining feature of United States history is that each generation of Americans has enjoyed a higher standard of living and has had access to opportunities that were not available to their parents. Indeed, expanding opportunity and increasing prosperity through broad-based growth are at the core of the American Dream that has stitched our country together through good times and bad. However, at the same time that the global economy has become increasingly competitive, we are failing to make critical investments in human, physical, and environmental capital. Furthermore, the ability to make these investments is increasingly compromised by our difficult fiscal position. As a consequence, the American Dream is at risk.

The promise of the American Dream cannot protect the U.S. from the ebbs and flows of a dynamic market economy. The promise is instead from one generation to the next, that each will prepare the ground in the best way possible so the coming generation can inherit an economy and a society that allows individuals to take full advantage of their efforts and talents. That vision of progress is not an American birthright, but rather a pledge that needs to be renewed by each generation as it responds to the problems of its own time.

The recession that began in 2007 has been one of the worst periods for American families since the Great Depression. Housing and stock market prices plunged.<sup>1</sup> American families watched their nest eggs dwindle in the last few years; nationwide, those families lost more than \$8 trillion in household wealth.<sup>2</sup> The national unemployment rate soared from 5.5 percent in June 2008 to 9.5 percent in June 2009, and has hovered near 10 percent since then.<sup>3</sup> In early 2010, this represented 15 million unemployed Americans, 6 million of whom had been out of work for more than six months.<sup>4</sup>

A century ago, social reformer Jane Addams, who would later be awarded a Nobel Peace Prize, wrote, “of all the aspects of social misery nothing is so heartbreaking as unemployment.”<sup>5</sup> Chronic unemployment is worse than just a loss of income and a blunting of career prospects. For the individual, sustained unemployment means a loss of self-reliance; for families, it means strained relationships and limited opportunities for the children; for communities, it aggravates a series of social problems that compound the challenges that individuals face.<sup>6</sup>

What steps are necessary to move our country from recession to recovery to renewal?

The first steps have already been taken. The Federal Reserve and later the U.S. government began in 2007 to take extraordinary measures to address the worst economic conditions in eight decades. In the summer of 2007, the Federal Reserve took aggressive actions to address troubling economic signs; as the crisis evolved, it began lending to financial institutions, providing liquidity and buying longer-term securities.<sup>7</sup> The administration and Congress put together a comprehensive \$787 billion dollar stimulus package—including infrastructure spending, clean energy investments, and tax cuts—and injected capital into the largest financial institutions to shore them up and thaw the frozen capital markets that were threatening the global economy. The impacts of these policies are becoming apparent. After 27 months of the economy losing an average of over 307,000 jobs per month,<sup>8</sup> in March 2010, the employment situation showed the first substantial signs of improvement with the net creation of 162,000 jobs. Furthermore, credit markets have begun to thaw as the cost of borrowing for credit worthy borrowers has declined dramatically.

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1. Housing prices nationally dropped 29 percent from June 2006 to the end of 2009. See Maitland and Blitzer (2010).

2. The decrease from Q3 2006 to Q3 2009 for households’ and nonprofit organizations’ net worth (market value) assets was \$8.14 trillion. See Federal Reserve Board (2010).

3. Department of Labor (2010d).

4. Department of Labor (2010b).

5. Addams (1912), 221.

6. Wilson and Wilson (1996), xiii.

7. Bernanke (2009).

Although the economy is exhibiting some hopeful signs, it is crucial that we remain focused on aiding the nascent recovery because the ravages of the Great Recession have not let up for tens of millions of Americans. The length of unemployment spells remains at record levels. (The level as of April 2010, 31.2 weeks, is the longest average jobless period since the government began collecting data in 1948.)<sup>9</sup> The fraction of the workforce that is unemployed or underemployed is higher than it has been since the early 1980s.<sup>10</sup> As a result of these challenges, families are drawing down their savings, defaulting on their mortgages, and postponing schooling for themselves or their children. Recent graduates are still finding it frustratingly challenging to find that critical first job. States are still cutting important social programs, and, in some cases, shortening the length of the school week. More broadly, Americans are living with the uniquely acute fears that are produced by economic insecurity.

In this weak economic environment, much of government policy should be focused on the short and intermediate terms. Even in these difficult times, however, The Hamilton Project believes that it is vital that we also begin to confront the challenges that pose a greater risk to our long-term prosperity than the Great Recession. These long-term challenges are not new. In fact, they have manifested themselves in the slow wage growth of the past few decades, the decline of the industrial sector, and the risks associated with climate change. They also are apparent in the uneasy—even pervasive—sense that the United States is losing its edge in an increasingly competitive global economy. Illustrations of some important steps to address these challenges are detailed here, while others are discussed later in the paper:

- **Improve the U.S. education system to deliver better outcomes and train a globally competitive workforce.** Wage growth for many Americans has been disappointing for more than three decades. The surest solution to this challenge is to increase the education levels and skills of American workers. The historical rise in educational attainment has dropped off dramatically in the past couple of decades, however.<sup>11</sup> Furthermore, several projections suggest that this very modest rate increase in education levels will continue; some forecasts even suggest that a decline in educational attainment is possible.<sup>12</sup> Meanwhile, America seems to get less than most other developed

countries out of its education spending in terms of student performance.<sup>13</sup> Improvements in the effectiveness of our educational system would increase the productivity of the future workforce without substantially increasing current expenditures.

- **Actively promote spending on research and development (R&D) to encourage innovation.** American prosperity rests on the continued development of new technologies, which in turn relies on federal support for investments in R&D. Federal support for R&D is crucial for innovation because government can support the types of projects that offer wide-ranging benefits that individual firms will not undertake. Nevertheless, federal R&D spending has been declining for several decades.<sup>14</sup> Increasing government R&D investments can help to unleash the innovation that can lead to sustained income growth.<sup>15</sup>
- **Limit emissions of greenhouse gases to reduce the high costs and risks associated with climate change.**<sup>16</sup> High and growing emissions of carbon and other greenhouse gases pose a risk of dramatic and costly climate change. By taking steps now to reduce the production of greenhouse gas emissions, we can stabilize the change in climate at moderate levels.<sup>17</sup> This would substantially reduce the economic risks of climate change.

These seemingly different long-term problems share some common characteristics: None is a problem that can be solved by one bold stroke, and all require persistent and sustained effort. All are problems whose effects, if untended, will continue to accumulate over time and indeed have accumulated over time. All require government action and none can be solved without new resources. Finally, all are problems that involve deferring present consumption for a future benefit, which can present a difficult political situation.

Addressing these challenges requires new resources at the same time that our fiscal situation is compromised. Even before the Great Recession, the country's fiscal situation had been deteriorating as a series of policy decisions (starting with significant lost revenues from tax cuts and new entitlement spending) caused the structural or full employment budget position to swing from a surplus in the late 1990s to a deficit today. Furthermore, the nation has not set in place a plan to

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8. From December 2007 to February 2010, the average monthly change in payroll employment was -307,000. Department of Labor 2010a.

9. Department of Labor (2010f).

10. Department of Labor (2010e).

11. Aaronson and Sullivan (2002), 1.

12. Bauman and Cheeseman Day (2000). See also National Center for Public Policy and Higher Education (2005).

13. Organisation for Economic Co-operation and Development (OECD; 2007).

14. National Science Board (2010b), Table 4-7.



control the surge in projected entitlement spending, such as Medicaid, Medicare, and Social Security, that will accompany the Baby Boomers' retirement.

The most telling measure of a country's indebtedness is the federal debt-to-GDP ratio that expresses a country's public debt as a percentage of total economic output—which in turn is a measure of a country's capacity to repay its debt. The higher this ratio, the greater the strain that debt places on a country. Between the beginning of 2007 and the end of 2010, the federal debt-to-GDP ratio is projected to increase from 37.9 to 61.1 percent as the federal government has increased spending to stimulate the economy and tax revenues have declined. This ratio compares to a projection from 2007 that the federal debt-to-GDP ratio would be 35.9 percent in 2010. The Congressional Budget Office (CBO) projects that the federal debt-to-GDP ratio will be 91 percent in just over a

decade; before the recession, this debt level was not projected to occur for two decades. Looking farther ahead, the federal debt-to-GDP ratio is projected to climb even faster after 2020.<sup>15</sup>

of borrowing will increase interest rates, which crowds out private investment and slows GDP growth.<sup>19</sup> Furthermore, high debt levels remove flexibility to confront unexpected challenges such as future recessions. Finally, experience indicates that such high levels of debt can cause international global capital markets to lose confidence in a country's ability to repay without resorting to using inflation to shrink the debt. When global capital markets make these judgments, countries are forced to make abrupt changes in spending and tax policies with little consideration for their impacts and for the resulting losses in their citizens' well-being.

Ultimately, the engine of prosperity in the United States is the private sector. It is workers and businesses—large, medium, small—who determine the nation's wealth and direction. They will never be able to do what they do best in an economic environment where workers are unprepared to compete in the global economy, technology is not innovative, and climate change poses risks and uncertainty that inhibit growth. At the same time, the current and projected future fiscal imbalances add further threats and restrict the resources to address these challenges.

## The American Dream is not a birthright, but rather a pledge that needs to be renewed by each generation as it responds to the problems of its own time.

The Hamilton Project believes the solution is to put more emphasis

on our future priorities. This means that we need to reprioritize expenditures toward education, R&D, confronting climate change, and other policies that promote future prosperity. Critically, the United States should begin to confront the deficit as soon as the recovery has gained sufficient momentum. We believe the federal debt-to-GDP ratio must be lowered from its current levels; ultimately, this will require achieving budget balance over the longer term. Our future prosperity rests on tackling these challenges in a nation only starting to recover from a devastating recession and in an era when, too often, people want more from government and yet seem unwilling to pay for it.

The high debt levels increase the probability of several adverse possibilities. At a minimum, the necessary interest payments on the debt will consume resources that could be put to alternative uses. Additionally, it is likely that the high levels

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15. Investments in R&D have been found to carry substantial rates of return, estimated at 20 to 30 percent. See Congressional Budget Office [CBO] (2005), 33. See also Scott, Steyn, Geuna, Brusoni, and Steinmueller (n.d.).

16. Solomon, Qin, Manning, Chen, Marquis, Averyt, et al. (2007). See also Ackerman and Stanton (2008).

17. A reduction in global emissions of carbon dioxide by 50 percent in 2050, relative to emissions levels in 1990, would reduce the expected increase in temperature by 3.6 degrees Fahrenheit (assuming only developed countries reduce their emissions 50 percent and developing countries remain on their current trajectories). See Paltsev, Reilly, Jacoby, Gurgel, Metcalf, Sokolov, and colleagues (2007), 53.

18. The figures and estimates in this paragraph are from the long-term budget outlook reports released by the CBO in December 2007 and June 2009. The projections are based on CBO's "alternative fiscal scenario", which attempts to set aside the common practice of holding down long-term budget deficits by promising changes that are extremely unlikely to occur, and instead "incorporates some changes in policy that are widely expected to occur and that policymakers have regularly made in the past" (CBO 2009, Notes, p. 4). Under the alternative fiscal scenario, federal revenues as a share of GDP remain close to historical levels.

19. Reinhart and Rogoff (2009).

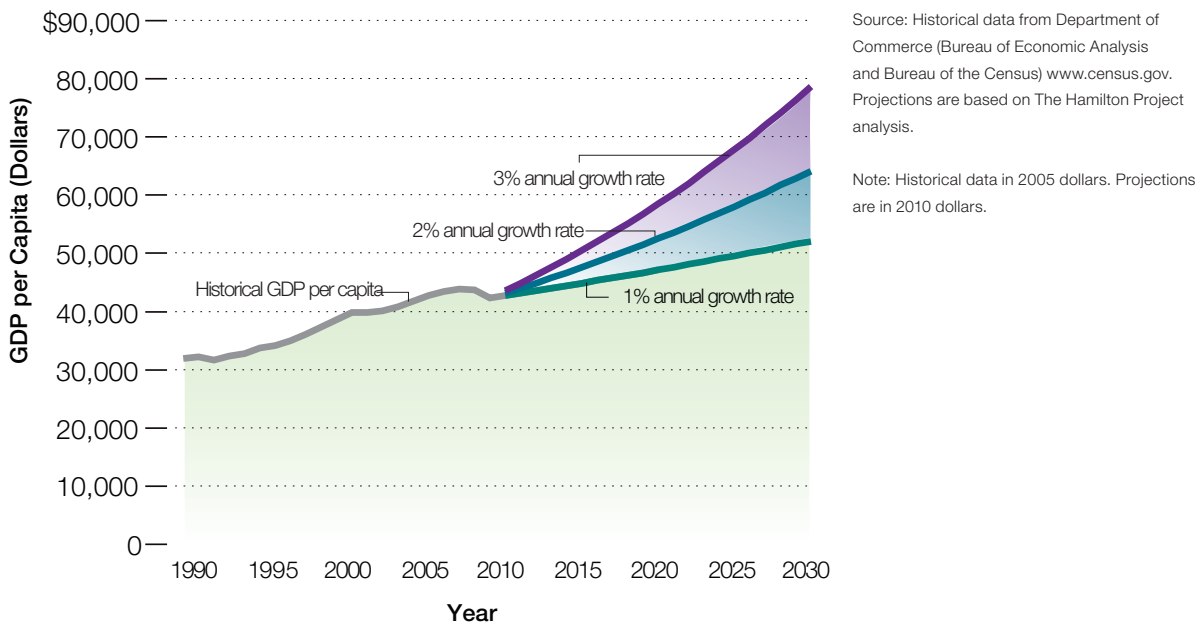
At stake are the country's living standards and future growth. Consider the hypothetical scenarios illustrated in Figure 1. The graph shows actual growth in real per capita GDP (that is, it is adjusted both for inflation and for population growth) from 1989 up to the dip in the recession year of 2009. Looking into the future, it shows three scenarios. These scenarios are intended as thought experiments because the precise relationship between policy choices and income growth are unknown. The 1 percent annual growth line might be called the "Japan scenario," because Japan has experienced a GDP per capita growth rate of about 1 percent per year over the two decades since its financial crisis in the early 1990s.<sup>20</sup> The 2 percent annual GDP per capita growth line might be called the "U.S. historical scenario," because real U.S. GDP per capita grew at an average annual rate of about 2 percent per year from 1960 to 2009.<sup>21</sup> The 3 percent annual GDP per capita growth line might be called the "1960s sustained scenario," because that was the annual rate of real per capita GDP from 1960 to 1970.<sup>22</sup>

These three scenarios illustrate how differences in annual rates of GDP per capita growth may appear relatively small over a year or two, but then may compound over time.

In 2010, GDP per capita will be around \$43,000. If GDP per capita grows at 1 percent a year, GDP per capita will be about \$47,000 in 2020. If GDP per capita grows at 3 percent a year, however, GDP per capita will be approximately \$58,000 in 2020. Thus, the difference between 3 percent and 1 percent growth rates would be worth roughly \$11,000 per person by 2020. Similarly, the difference between 1 percent and 2 percent GDP per capita growth rates would be an additional \$5,300 per person annually by 2020. If these differences are sustained out to 2030, the differences between the "Japan" scenario of 1 percent GDP per capita growth and the "1960s sustained" scenario of 3 percent GDP per capita growth would be even more dramatic.

FIGURE 1.

### Alternative Paths of Future American Living Standards: Historical GDP per Capita and Three Potential Future Scenarios, 1990 to 2030



20. Average percentage growth in GDP per capita in Japan from 1990 to 2008 was 1.4 percent. Data from World Bank (2009).

21. Using chained 2005 dollars, GDP per capita was \$15,661 in 1960 and \$42,242 in 2009. Department of Commerce (Bureau of Economic Analysis and Bureau of the Census).

22. Using chained 2005 dollars, GDP per capita was \$15,661 in 1960 and is \$20,820 in 1970. See *ibid.*

Although the challenges ahead are real and the stakes are high, there are still many reasons to be optimistic that America can overcome them. The U.S. economy continues to be the most innovative in the world. More people start businesses in the United States each year than in any other country.<sup>23</sup> More patents are filed in the United States than in any other country.<sup>24</sup> American universities continue to attract top talent from around the world and to produce global leaders. The American economic system and financial markets continue to be some of the most open and efficient—notwithstanding the need for new financial regulations—in an increasingly complex and interdependent global economy.<sup>25</sup>

Perhaps most important, the United States has a long history of rising to meet great challenges. It is within the capacity of this generation to move our country and our economy beyond the early stages of recovery we are experiencing now into a broad period of national renewal so that the next generation will have the opportunity to redeem and enjoy the promise of the American Dream.

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23. Klapper (2008).

24. World Intellectual Property Organization (2008).

25. World Economic Forum (2009), 320.

## II. Three Principles for Broad-Based Growth

Since 2006, The Hamilton Project has encouraged leading thinkers to put forward concrete policy proposals that address the challenges ahead. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments. The Project's economic strategy and policy proposals are based on a framework that includes guiding principles and pillars of policy focus. This framework defines our policy perspective and shapes our policy agenda.

The first publication of The Hamilton Project, in April 2006, enunciated the following three principles to offer guidance to our work:<sup>26</sup>

**Principle 1:** Economic growth is stronger and more sustainable when it is broad based.

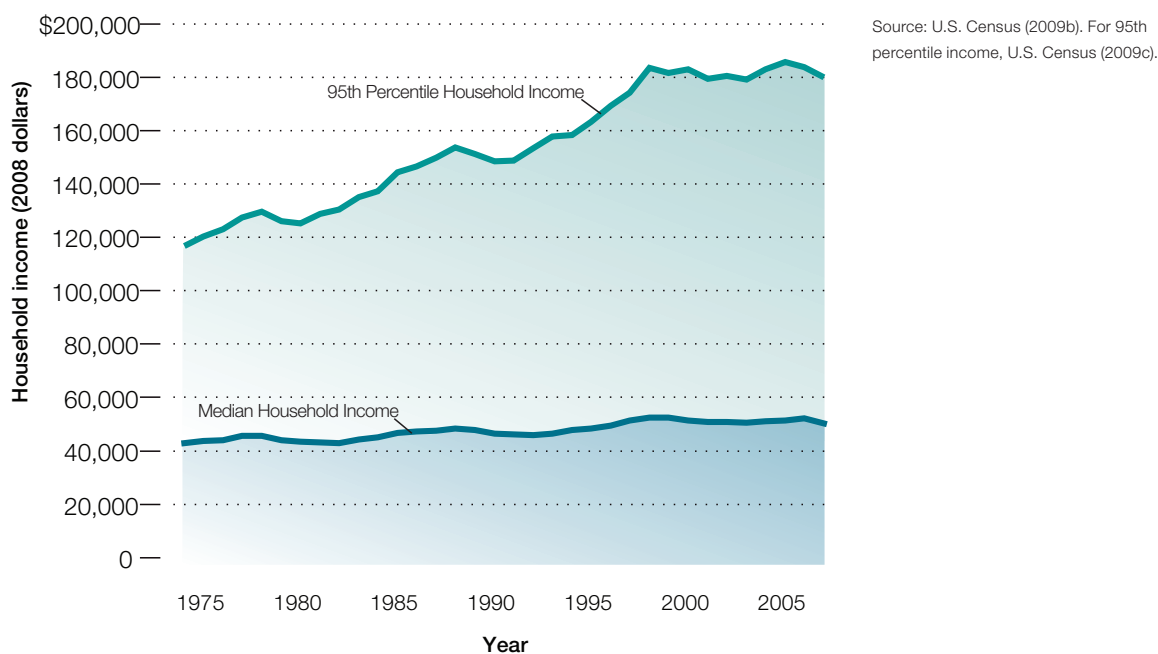
**Principle 2:** Economic security and economic growth are mutually reinforcing.

**Principle 3:** Effective government enhances economic growth.

In light of the Great Recession that started in 2007, our commitment to broad-based growth, opportunity, and prosperity are more important now than ever. The principles detailed below guide our recommendations about how our nation can move from recession to recovery to renewal.

FIGURE 2.

### U.S. Income Inequality: Median and 95th Percentile Household Income, 1975–2008



26. Altman, Bordoff, Orszag, and Rubin (2006).

## Principle 1: Economic growth is stronger and more sustainable when it is broad based.

In the early 1960s, President John F. Kennedy often noted that “a rising tide lifts all the boats.”<sup>27</sup> At that time, President Kennedy was not being aspirational but rather was reflecting a reality about the distribution of income: in the 1960s—in fact, from the 1950s into the 1970s—economic growth was broadly shared across the spectrum of the income distribution. In recent decades, however, most of the benefits of growth in the U.S. economy have gone to those at the very top of the income distribution.<sup>28</sup> From 1975 to 2008, households in the 95th percentile of the U.S. income distribution saw a 54 percent rise in income growth, while median household income increased a relatively modest 17 percent (Figure 2).<sup>29</sup> In fact, the dramatic changes in income inequality seen in the United States over the last few decades are almost entirely a function of how well the top 1 percent of earners did at any given time.<sup>30</sup>

The Hamilton Project believes that this trajectory of unbalanced income growth is unacceptable. The U.S. economy is a group project. It is what happens when 130 million or so workers get up and head off to their jobs. A successful economy relies on broad-based gains in productivity growth across a wide range of skill levels; it also relies on each of the skill groups receiving the fruits of its labor.

Additionally, the available evidence indicates that unbalanced growth is harmful to growth in the long term. When workers’ incomes do not grow adequately, they look to public policies that will help them in the near term. Over the long term, these policies can undermine a nation’s long-term growth and weaken the prospects of each generation’s opportunities surpassing those of the previous generation. Indeed, a recent review article from the World Bank concluded that growth that only benefits a small proportion of the population is unsustainable.<sup>31</sup>

Both as a normative judgment and as a means of supporting long-term growth, The Hamilton Project’s policy proposals will aim to increase growth and broad participation in that growth.

## Principle 2: Economic security and economic growth are mutually reinforcing.

Economic security refers to a safety net for American workers and families who need temporary support during hard times and for those who are unable to provide for themselves. Of course, most people can and should be expected to provide some of their own economic security. This security is a result of financial decisions—such as personal saving, restrained borrowing, and carrying insurance—and the acquisition of transferable job skills and experience. But it would be unrealistic to expect that we all start on a level playing field. Furthermore, it is unrealistic to expect that households can protect themselves fully against severe economic risks. As a result, social insurance also has an important role to play. Indeed, the traditional social safety net has mitigated the Great Recession’s impact on families, although it was evident that more extraordinary policy measures were necessary to respond to the crisis.

The traditional social safety net includes programs that make cash payments such as unemployment benefits, workers’ compensation, disability insurance, and welfare. It further includes programs that offer noncash benefits such as basic provision of health care through Medicaid or provision of food through the Supplemental Nutrition Assistance Program (Food Stamp Program). A well-designed social safety net goes a step beyond offering these kinds of support, and can help those who have suffered as a result of economic change to make a fresh start through programs that support job training and job search, that offer support for mobility, that offer financial workouts from bankruptcies and foreclosures, and that offer small-business loans.

It is obvious that economic growth offers benefits in terms of economic security, but the reverse also holds true—that is, well-designed programs of economic security can help support economic growth. For example, programs that encourage people to build up a cushion of savings for themselves also will contribute to a higher rate of national savings, which in turn can provide capital for business investment. Assistance with new skills, job retraining, job search, and mobility can help people rebound more quickly out of tough economic times, which can help the overall economy rebound. A degree of

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27. Kennedy (1963), 519.

28. Saez (2008), 6–7.

29. U.S. Census (2009b).

30. Saez (2008).

31. World Bank (2005), 124–5.

32. See, for example, Sinn (1995). Empirical evidence also suggests that generous personal bankruptcy laws are associated with higher levels of venture capital, that workers who are highly fearful of losing their jobs invest less in their jobs and job skills than those who are more secure, and that investment and job skills are higher when workers have key risk protections. See Armour and Cumming (2004); Esteves-Abe, Iverson, and Soskice (1999); Mocetti (2004); and Osberg (1998).

economic security can make some people more willing to take the risks of starting a business or trying a new career that can pay off for both the individual and the economy as a whole.<sup>32</sup> Finally, economic security can help society find the political willingness to accept—or at least not resist—the dynamic and disruptive process of economic growth and change.

### **Principle 3: Effective government enhances economic growth.**

The private sector is the main engine of economic growth. A brief look around the globe, however, underscores the central role that government plays in facilitating the growth of the private sector. At the broadest level, the rule of law and an effective institutional structure are both essential to the functioning of the economy. Property rights, contracts, and enforcement allow markets to function efficiently and reliably. An effective government creates a level playing field and establishes foundational rules for markets.

**This trajectory of unbalanced income growth is unacceptable. The U.S. economy is a group project. It is what happens when 130 million or so workers get up and head off to their jobs.**

Government also plays a vital role in providing the services or public goods that private markets would fail to provide on their own. For example, private firms lack incentives to finance broad-based and long-term R&D efforts, because while such efforts are vital for the U.S. economy as a whole, no single firm can count on capturing a sufficient portion of the benefits to make it worthwhile for that firm. Thus, government has an essential role to play in subsidizing basic R&D in cases where the benefits spill over to multiple firms. Furthermore, government has an essential role to play in shaping the

infrastructure of transportation and establishing the rules of the road for the communication infrastructure that knits the economy together (e.g., auctioning off spectrum). Government also shapes the policies that affect the international movement of goods and capital and the provision of information in many markets.

Another essential role for government is to provide the structure necessary to protect consumers and families and provide the incentives necessary to reduce actions by firms or households that harm others. The most natural examples are in the case of environmental damage. In many cases, a productive activity—for example driving a motor vehicle—involves the release of pollutants that harm human health or even cause climate change. In these cases, it is necessary for government to create incentives that cause the polluter to “internalize” these damages in making production decisions. These incentives come in a variety of forms, ranging from price signals—which tend to be the most efficient approach—to outright bans.

Many of these government activities require institutions and resources. Just as the private sector must continually strive for improvements in efficiency, it is vital that government does the same so that it does not break its promise to use the public’s resources wisely. Furthermore, tax laws must be designed in as

efficient a manner as possible to allow for future growth and to limit unfair advantages and tax evasion.

Of course, government actions may sometimes overreach in ways that hinder long-term growth and prosperity. The appropriate relationship between government and the private sector cannot be defined by oversimplifications like “getting government out of the way,” however. Instead, we must recognize that effective governance is a substantial asset to the long-term growth of any economy.



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## III. Policy Recommendations for Broad-Based Growth

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The Hamilton Project will continue to disseminate innovative recommendations about how America can make strategic and effective investments in broad-based growth. In the aftermath of the Great Recession, innovative ideas that can translate into tangible improvements in the well-being of future generations of Americans are needed more than ever. These recommendations will be drawn from the nation's leading thinkers.

A distinguishing feature of The Hamilton Project has been an emphasis on policy proposals that are specific, detailed, and evidence-based. (The appendix lists a number of the Project's past policy proposals.) They will not be reflective of a single political ideology, doctrine, or party. Instead, their common theme will be that they are grounded in credible evidence and designed to be easily implementable by policymakers. The challenges are too great to do otherwise.

The Hamilton Project has always built its policy recommendations on a solid foundation of four pillars, and in this paper we have updated them to more accurately reflect our mission in today's economy. Moving forward, we will identify and advance sound policy ideas that rest on these four pillars:

**Pillar 1:** Workforce productivity

**Pillar 2:** Innovation and infrastructure

**Pillar 3:** Savings and insurance

**Pillar 4:** Effective government

The remainder of this section outlines some of the challenges that America faces within each of these pillars and highlights broad areas where The Hamilton Project will look to provide innovative policy solutions.

### **Pillar 1: Workforce Productivity**

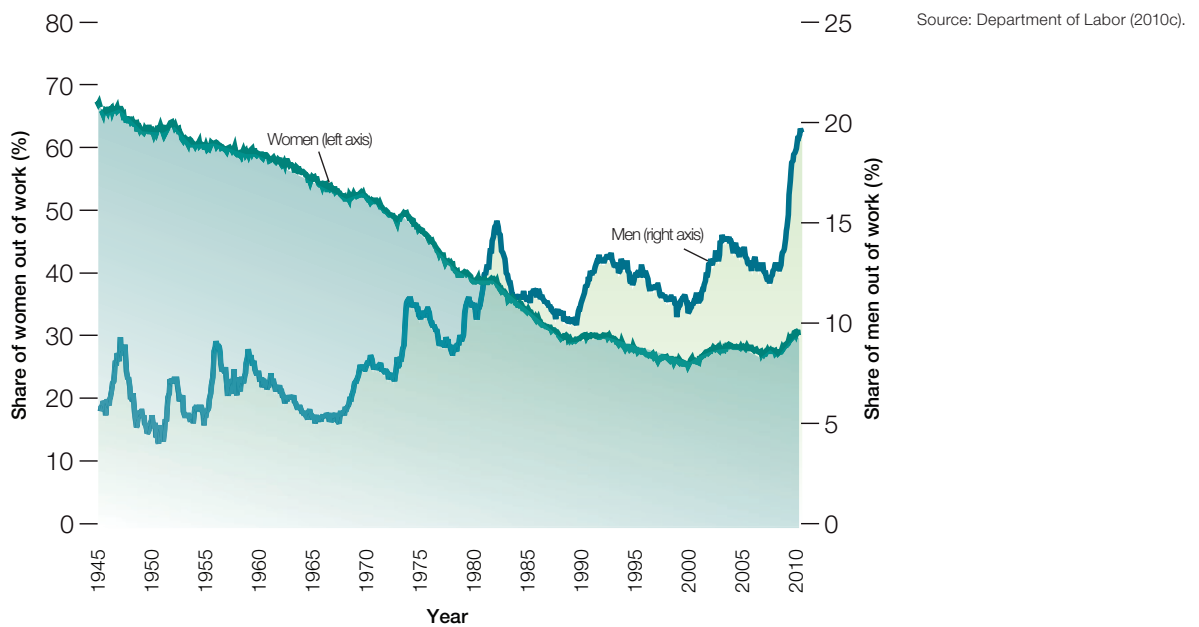
America's greatest economic resource lies in the skills and energy of its workers, but the potential of any workforce needs to be developed and then utilized. The abilities of workers can be raised along at least two main dimensions: education or skills, and health. Workers also need the opportunity to put their abilities to the test in an economic environment with jobs and business opportunities that offer appropriate incentives for hard work and innovation. In all these areas, the challenges ahead are formidable. Nevertheless, we must make progress to keep America competitive.

One of the most important trends in the last several decades has been the increased likelihood that men, especially less-educated men, are not employed. In Figure 3, this is reported as the number of men between 25 and 54 who are not working (including the unemployed and those who are not looking for work) divided by the total population. Between 1948 and 1972, the nonemployment to population ratio for prime-age men was roughly 5 percent. Since then, it has increased steadily to nearly 20 percent (although it was closer to 15 percent before the Great Recession).

This rupture between men and work might be good news if it was a consequence of great increases in income that resulted in earlier retirement or increased leisure time. However, it coincides with a period of slow wage increases for most American workers. Furthermore, recent research shows that the increase in male nonemployment is concentrated among males whose wages were under the most pressure during this period.<sup>33</sup> These changes in labor force participation are dramatic and the resulting social outcomes for men, their families and their communities are troubling.

FIGURE 3.

Fewer Men Working and More Women Working: *Nonemployment to Population Ratios, Ages 25–54, by Gender, 1945–2010*



Conversely, the figure demonstrates a decline in nonemployment rates (or, alternatively, an increase in employment rates) for women that lasted from about 1950 through 2000, when such increases slowed. This increase in employment reflects a series of factors, including greater rights and incentives for women to join the workforce and probably even the increase in male nonemployment. Today, women represent more than half of college students and the American workforce.

The Great Recession has heightened the stress on American workers. A poor economic environment presents challenges to new entrants in the job market; economic studies suggest that those who struggle to find jobs early in their careers will often suffer lower wages for years afterward.<sup>34</sup> Evidence from past recessions suggests that the cohort of young adults who enter the workforce in a recession not only suffer short-term losses to job prospects and wages, but also earn lower wages even fifteen years later because of the shaky start to their careers.<sup>35</sup>

In addition, a recession can leave lasting scars on those who lose their jobs: the unemployed have lower self-esteem and face shorter life spans. Sustained unemployment can even affect future earnings of the children of the unemployed.<sup>36</sup> Compared to children whose fathers have not experienced unemployment, similar children with unemployed fathers have 9 percent lower future earnings<sup>37</sup>.

An important antidote to the troubling labor market trends is improvement of the skills of the American workforce, which have not been keeping pace with the labor market's demands. In an increasingly competitive global economy, it is vital that American workers increase their human capital. In the last few decades, however, the historical rise in educational attainment has dropped off dramatically.<sup>38</sup> Furthermore, several projections suggest that this very modest rate of increase in education levels will continue. Some forecasts even suggest that the average educational attainment of the

33. Autor (2010).

34. Graduating in a recession leads to large initial earnings losses. These losses, which amount to about 9 percent of annual earnings in the initial stage, eventually recede, but slowly—halving within five years but not disappearing until about ten years after graduation. See Heisz, Oreopoulos, and von Wachter (2006).

35. Kahn (2009).

36. Job displacement leads to a 15–20 percent increase in death rates during the following twenty years. If such increases were sustained beyond this period, they would imply a loss in life expectancy of about 1.5 years for a worker displaced at age forty. See Sullivan and von Wachter (2007). See also Murphy and Athanasou (1999), 72, 83–99.

37. Oreopoulos, Page, and Huff Stevens (2005).

American workforce will decline in the coming years.<sup>39</sup> A failure to increase the skills of the American workforce in today's knowledge-driven global economy will expose the country to the risk of declining living standards.

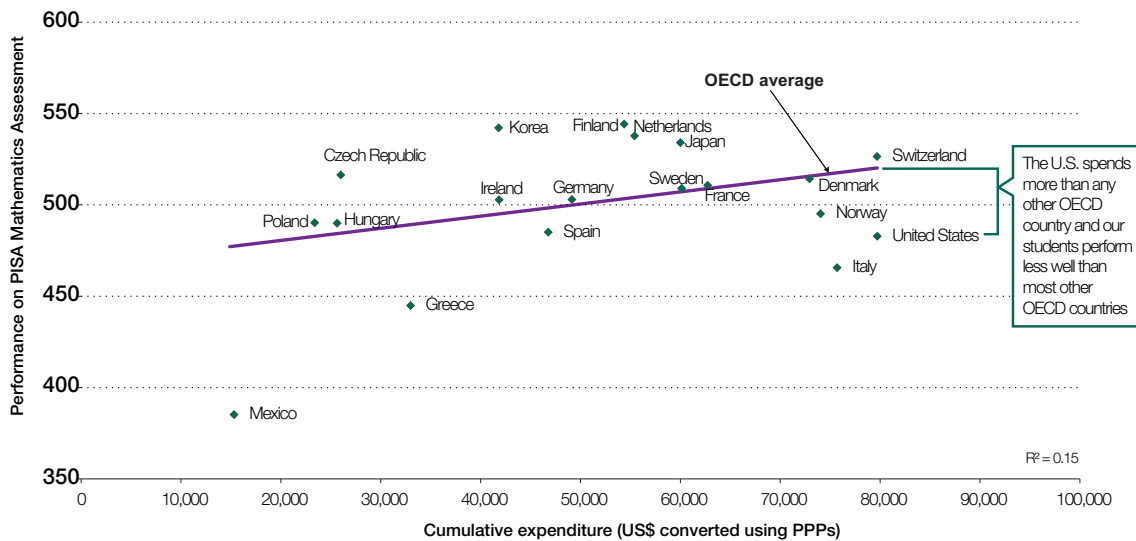
Other well-known problems of the U.S. education system include the unacceptably high rates of high school dropouts in many large urban school districts. Additionally, there remain persistent and troubling gaps in educational outcomes between black students and white students, as well as between students from low- and high-income families.<sup>40</sup>

Meanwhile, U.S. students often perform worse than students from other countries, even though we spend more on education than other countries.<sup>41</sup> International data (see Figure 4) show that on average countries that spend more on a per student basis do better on mathematics examinations.<sup>42</sup> Some countries, such as South Korea and The Netherlands, do much better than would be expected based on spending alone. Italy and the United States, however, do significantly

worse than is predicted by their spending.<sup>43</sup> It is evident that there is room for substantial improvement in the performance of the U.S. education system. Even an improvement to the average international level of efficiency would lead to a marked improvement in mathematics proficiency.

Beyond K–12 education, we must invest in lifelong learning and facilitate access to education for Americans through their college years. Two-year colleges play an important role in providing students with the skills to succeed in their professional lives and to go on and succeed in four-year colleges (for students who decide to continue their education). Four-year-degree institutions play a central role in our nation's economy: they provide essential training and have proven to increase the earnings of graduates. In addition to the traditional public and nonprofit four-year degree institutions, students are increasingly attending for-profit institutions of higher learning. Less is known about the labor market returns for graduates of these institutions, although some of their students are supported by federal programs.

**FIGURE 4.**  
**Inefficiency of U.S. Spending on Education: *Relationship Between Performance in Mathematics and Cumulative Expenditure on Educational Institutions Per Student, 2003***



Source: OECD (2007).

Note: Students between the ages of 6 and 15, in U.S. dollars, converted using purchasing power parities.

38. Aaronson and Sullivan (2002), 1.

39. Bauman and Cheeseman Day (2000). See also National Center for Public Policy and Higher Education (2005).

40. The following reports highlight these gaps: McKinsey and Company (2009) and National Center for Education Statistics (n.d.)

41. OECD (2007).

42. Ibid.

43. Ibid.

A final area for improving the abilities of the American workforce lies in issues of health. These issues include access to health-care services, especially those that have substantial payoffs for long-term health such as care for children and for pregnant women. Some health-care interventions may help those approaching retirement who wish to stay active in the labor force to do so. Additionally, it may be possible for government policies to help more people avoid unhealthy lifestyle choices, such as smoking and behaviors associated with obesity.

The Hamilton Project will put forward proposals whose aim is to achieve the full potential of America’s workforce. These proposals may include ideas about ways to improve the quality and performance of American education. We will seek solutions to tackling our most pressing health challenges that compromise productivity and well-being.

## Pillar 2: Innovation and Infrastructure

Key ingredients of America’s future prosperity include investments aimed at innovation and infrastructure. These investments should be viewed as the building blocks for ideas, physical capital, environmental capital, and the transportation and communications infrastructure that will support the new growth industries of the future, which are essential to offering

opportunities to America’s workers and ensuring our future competitiveness.

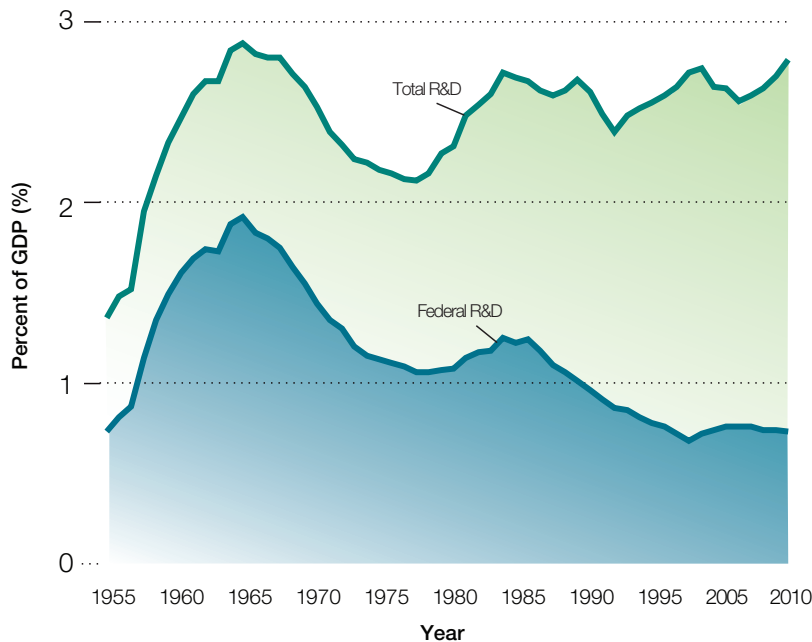
It has been apparent for at least a century that future economic progress will be driven by the invention and application of new technology. R&D is one category of spending that develops and drives these new technologies. As Figure 5 indicates, the overall U.S. levels of R&D spending in recent decades show no sense of urgency; instead, they are essentially flat at around 2.5 percent of GDP.<sup>44</sup>

Even more unsettling, the federal government’s share of America’s total R&D spending has been declining over the decades.<sup>45</sup> This decline matters, especially because private sector firms are prone to focus their R&D on “applied” projects, where the payoff to their bottom line is likely to occur in the near term. Government can sponsor the kind of “basic” research projects that seek wide-ranging scientific understanding, some of which will lead to true technological breakthroughs.

Government research funding has been critical to many technologies of everyday importance. Just a few examples would include the development of plant genetics, fiber optics, magnetic resonance imaging, computer-aided design and computer-aided manufacturing (CAD/CAM), data

FIGURE 5.

### Decreasing Federal Investments on R&D: Total R&D Spending and Federal R&D spending, as a Percentage of GDP, 1955–2010



Source: National Science Board (2010b).  
 Note: GDP numbers from National Science Board (2010b), Appendix Table 4-1. In 2000 constant dollars.

44. National Science Board (2010).

45. Ibid.

compression technologies that make all manner of electronic devices more powerful, progress toward edible vaccinations, and the “eye chip” that might help 6 million blind Americans see.<sup>46</sup>

In addition to considering an increase in R&D, it may be appropriate to consider new R&D delivery mechanisms. For example, X-Prizes have proven successful at incentivizing private sector research. Furthermore, it may be appropriate for government to undertake more of a portfolio approach to its R&D investments that accept the risks associated with the failure of some R&D expenditures.

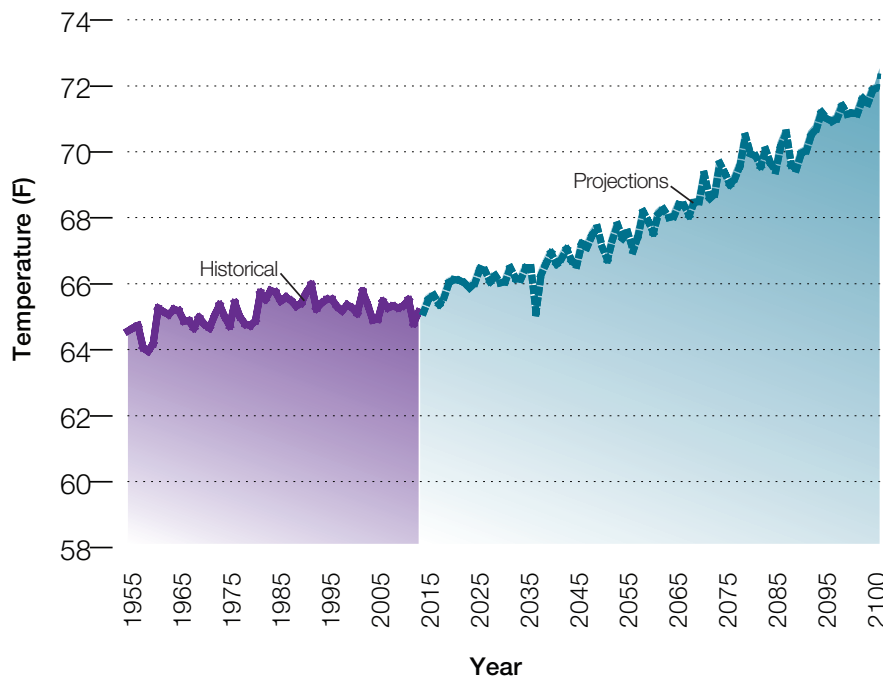
One of the greatest challenges society faces is how to efficiently confront climate change, which is projected by many to have disruptive impacts on growth, innovation, and well-being. The world economy runs largely on energy produced by burning fossil fuels, such as coal, petroleum products, and natural gas; the burning of these fuels involves the release

of greenhouse gases. The scientific consensus is that the buildup of greenhouse gases in the Earth’s atmosphere has already caused an increase in temperatures, with much larger increases projected if we continue to rely on fossil fuels for energy.<sup>47</sup> Indeed, Figure 6 shows that, without a change in policy, the mean global temperature is projected to increase by more than 7 degrees Fahrenheit over the course of this century. The higher concentrations are projected to cause other changes in climate including higher sea levels, changes in rainfall patterns, and storms with greater intensity. The consequences of climate change for growth, innovation, and well-being are not well understood, but include quite negative possibilities.

Climate change poses an especially difficult challenge for policy because confronting it will require the redirection of massive resources, and because policy choices will determine whether this allocation is accomplished efficiently. Furthermore, climate change is a global problem that

FIGURE 6.

### Greenhouse Gas Emissions Are Projected to Increase Global Temperatures: *Historical and Projected Mean Annual Temperature, 1955–2100*



Source: National Centers for Environmental Prediction (Data retrieved 2009), and Community Climate System Model (CCSM; Data retrieved 2010).<sup>48</sup>

46. Examples are from the Nifty 50, NSF-funded inventions, innovations, and discoveries that have become commonplace in our lives. See National Science Board (2010a).

47. Solomon et al. (2007).

48. The historical and projected temperature data are obtained from readings and projections at grid points around the planet. These grid points are weighted by the associated population at each grid point to determine the annual population-weighted average temperature that is the basis for the series. The historical data come from the National Center for Environmental Prediction (1950–2008), while the projected data are from the Community Climate System Model’s (CCSM’s) state-of-the-art climate model and business as usual A-2 for the years 2000–2099. The average difference in annual temperature between the two series for the overlapping years (2000–2008) was found to be 0.95139 degrees Fahrenheit. This average difference was subtracted from each annual temperature value for the CCSM projected data for the years 2009–2099 to create a complete series for 1950–2099. The population grid is from 2000 and is at one-fourth degree resolution. Population data are from the Center for International Earth Science Information Network (CIESEN; 2005).

requires coordinated action by the planet's largest economies. Reaching an international agreement will require insightful international leadership from the United States.

It seems probable that there is a useful role for government at the intersection of R&D and climate policies to facilitate the development of clean and cost-effective energy technologies that will ease the transition to a low carbon economy. Even in today's interconnected world, knowledge does not cross borders without cost, so basic R&D in the clean energy sector could support the growth of U.S. firms in this increasingly global industry. Indeed, there is already some reason for concern that the United States is missing an important opportunity. According to an HSBC study from February 2009, as a part of its stimulus plan China will spend around \$220 billion on green investments, whereas the United States will spend around \$90 billion through the American Recovery and Reinvestment Act.<sup>49</sup>

Our country's traditional infrastructure requires significantly more investment. A 2009 report from the American Society

**Our primary concern is not with high levels of government borrowing last year, this year, or even next year. Instead, our concern is that projected deficits over the next decade cause a dramatic rise in the debt-to-GDP ratio.**

of Civil Engineers indicates that America needs to spend \$2.2 trillion on its existing infrastructure over the next five years.<sup>50</sup> That report offers an extensive list of problems: congested roads and airports, overcrowded classrooms, disintegrating bridges, and "hazard dams" whose failure would pose an immediate danger to human life. But as economists like to point out, the issue here is only partially one of pouring additional concrete. There are also questions of how to structure the incentives for using infrastructure in an efficient way; for example, to avoid the situation where jumbo jets holding hundreds of passengers

are waiting in line on an airport runway at the busiest times of day, waiting for a small aircraft to lift off.<sup>51</sup>

Given the importance of innovation and infrastructure to future growth, The Hamilton Project may develop recommendations to address these problems, including mechanisms to promote basic R&D and to identify new mechanisms for administering these resources more efficiently. These recommendations also could include a proposal about how to facilitate the role of our universities and national laboratories as centers of innovation and growth across all sectors of the U.S. economy.

### **Pillar 3: Savings and Insurance**

A modern economy requires savings. The savings of households, firms, and government provide the funding for investment in business plants and equipment. If an economy does not have sufficient domestic saving, then it must either reduce its investment levels or rely on borrowing from other countries that save. In the long term, both alternatives present risks to future prosperity.

The U.S. economy has traditionally had a relatively low savings rate by international standards, and, as our nation continues to recover, the prospects for future national savings look bleak.<sup>52</sup> Overhanging all discussions of national saving are the enormous and chronic budget deficits projected for the federal government. Since the colossal budget deficits

of more than 20 percent of GDP that were used to finance World War II, annual U.S. budget deficits have been common, but their size has typically been modest—often, with some exceptions, in the range of 1 to 3 percent of GDP per year.<sup>53</sup>

These modest deficits have meant that the accumulated burden of U.S. government debt has been under control. From the end of World War II until the late 1970s, the ratio of government debt to GDP actually fell quite sharply, from a debt-to-GDP ratio of more than 100 percent in 1946 to a ratio of less than 30 percent in the 1970s. It is worth noting that this progress

49. These figures are estimates because due to the difficulties in defining "green investments." See HSBC (2009).

50. American Society of Civil Engineers (2009).

51. Morrison and Winston (2008), 669–678.

52. Gramlich (2005).

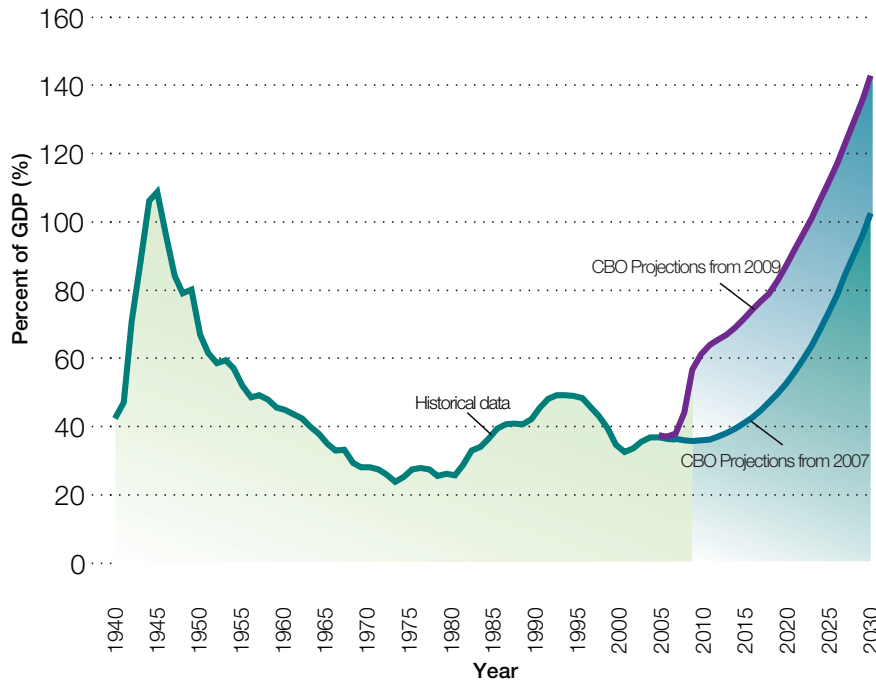
53. OMB n.d.

54. Ibid.



FIGURE 7.

## High Levels of Government Debt: *Federal Debt as a Percentage of GDP, 1940–2030*



Source: OMB (2010), Historical Tables, Table 7-1; CBO (2007), Figure 1-2; CBO (2009), Table 1-2, 6.

against government debt did not require running a long string of budget surpluses; indeed, the government ran budget deficits in many of these years. But the deficits were relatively modest, so the national debt grew more slowly than the size of the economy, and the U.S. debt-to-GDP ratio declined. The larger budgets of the 1980s and early 1990s pushed up the debt-to-GDP ratio to almost 50 percent, however.<sup>54</sup> In the latter part of the 1990s, a series of reforms and a strong economy helped the budget swing into surplus.

Between that period and the Great Recession’s onset in 2007, there was a sharp worsening of the structural or full employment budget position as it swung into deficit. This change was largely due to lost revenues from tax cuts and new entitlement spending that was not matched with spending cuts or new revenues. Furthermore, although budget analysts have been setting off alarm bells for more than a decade, the nation did not set in place a plan to control the surge in projected entitlement spending, such as Medicaid, Medicare, and Social Security, that is accompanying the Baby Boomer’s retirement.

A new administration entered office in January 2009, when the Great Recession was arguably at its worst. A consequence

of the necessary and aggressive policy steps taken to cushion the recession and to help jump-start a recovery were enormous budget deficits, almost 10 percent of GDP in 2009.<sup>55</sup> Our primary concern is not with high levels of government borrowing last year, this year, or even next year. Instead, our concern is that projected deficits over the next decade are very large—large enough to cause a dramatic rise in the debt-to-GDP ratio.

Figure 7 plots the federal debt as a percentage of GDP from 1940 through the present. It extends this series through 2030 with projections from the CBO in 2007 and 2009. The former projections are from before the onset of the Great Recession, while the latter were made in the midst of that event. It is evident that even before the Great Recession the country was on a path to a federal debt-to-GDP ratio not seen since World War II. The Great Recession has worsened the fiscal situation, however, and reduced the time available to respond.

Focusing on the more recent projection, our debt-to-GDP ratio will reach a troubling 61 percent in 2010 and 91 percent in 2021.<sup>56</sup> Moreover, when it comes to rising government debt, the next decade is only the opening act. Over the next ten

55. Ibid.

56. CBO (2009), Figure 1-3, 5.

57. Ibid., Table 1-2, 6.

58. In fiscal year 2009, interest payments on federal debt were \$187 billion dollars, 5 percent of the \$3.5 trillion dollar budget. OMB (2010), Summary Tables, Table S-3, 149.

years, the Baby Boom generation will retire in full force and the costs of entitlement programs will rise rapidly. In the June 2009 CBO projections, the federal debt-to-GDP ratio reaches an inconceivable 143 percent of GDP by 2030. But, as the CBO notes, that alarming outcome is unlikely to arise because the rising debt will begin to have severe negative effects on the economy far before then.<sup>57</sup>

## Even in these difficult times, The Hamilton Project believes it is vital that we also begin to confront the challenges that pose a greater risk to our long-run prosperity than the Great Recession.

Indeed, the evidence of trouble has already started to emerge. The interest payments to service the debt already account for 5 percent of the budget and will rise in lock step with the debt.<sup>58</sup> These payments restrict the resources available for public investments; by leading to higher interest rates, these payments crowd out private sector investment, which lowers living standards.

Furthermore, the high levels of debt increase the probability of macroeconomic instability. This could be precipitated by international global capital markets losing some confidence in the United States' ability to repay debt. Indeed, credit-rating agencies such as Moody's have warned that while the United States does not currently face a lower credit rating, it might well do so if federal debt continues on this path.<sup>59</sup> A ratings downgrade would raise the cost of servicing the debt, leading to further declines in investment. A full-fledged loss in confidence in a country's credit worthiness almost invariably requires abrupt changes in spending and tax policies with little consideration for their impacts and the resulting losses in well-being of their citizens. Notably, research by economists Carmen Reinhart of the University of Maryland and Kenneth Rogoff of Harvard University on a group of forty-four countries over the past two centuries suggests that when a central government's debt-to-GDP ratio exceeds 90 percent, the average growth rate for an economy is 4 percentage points

slower than economies that have a debt-to-GDP ratio of less than 30 percent.<sup>60</sup>

In addition to federal debt, state and local government debt was \$2.4 trillion in 2007, amounting to 17 percent of GDP.<sup>61</sup> The recession has caused the greatest declines in state tax revenues on record: states are facing an unprecedented budget crisis, which has increased their debt beyond the 2007 levels. Thus, this ratio has certainly increased since 2007. Furthermore, increasing unfunded pension liabilities poses additional risks to this already troubling state fiscal situation since inadequate funding of retirement programs can cause large, long-term liabilities.

The Hamilton Project may put forward proposals on how to reduce the deficit to stabilize the nation's projected federal debt-to-GDP ratio and then to return it to lower, more sustainable levels.

### Pillar 4: Effective Government

Government is an integral part of every modern economy. In the United States, government at the federal level typically spends about one-fifth of GDP in a given year.<sup>62</sup> Taking state, local, and federal government together, all levels of government typically account for one-third or more of U.S. GDP in a year.<sup>63</sup> Of course, the influence of government goes well beyond its levels of spending: it includes the incentives created by rules for environmental protection, rules about workplace safety, rules that govern legal liability, rules involving unemployment insurance and welfare, and rules that shape the requirements to be faced by financial institutions, insurance companies, and government-sponsored enterprises. The events that led up to the Great Recession certainly suggest that some of our economic institutions—in both the private sector and in government—have in important cases functioned poorly as mechanisms to reward effort and innovation. Ultimately, the effectiveness of government determines the success of policy efforts to promote workforce productivity, innovation and infrastructure, and savings and insurance.

59. Mark Brown, "Moody's: Large AAA Govts Face Delicate Balancing Act," Wall Street Journal, March 15, 2010, Business section, U.S. edition.

60. Reinhart and Rogoff (2009).

61. In 2007, state and local government debt was \$2.4trillion and GDP was \$13.9 trillion. See U.S. Census Bureau (2009a). See also OMB (2010), Table 10.1.

62. In fiscal year 2008, the federal government spent \$3 trillion, amounting to 21 percent of the nation's GDP. See Center on Budget and Policy Priorities (2009), 1.

63. In total, the fifty states and the District of Columbia spent a little more than \$1 trillion in state revenues in fiscal year 2008, according to the most recent survey by the National Association of State Budget Officers (NASBO). See Center on Budget and Policy Priorities (2010), 1.

64. One recent study suggests that the rate of return on highway infrastructure investment has fallen to 1 percent (Winston and Shirley 2004).

Although the American Society of Civil Engineers report, as discussed earlier, outlined many cases where additional infrastructure funding is needed, recent research suggests that returns to infrastructure spending are low.<sup>64</sup> One likely culprit is the system of allocation for infrastructure investments. Government often allocates funding to low-value-added projects rather than to those that would generate high returns and facilitate further investment.

There is a fundamental weakness in our system of regulation. Specifically, regulations are rarely (if ever) evaluated or fine-tuned after they are issued, with the aftermath of crises being an important exception. A more effective regulatory system would continually evaluate regulations' impacts and identify areas where reform would be beneficial.

The financial crisis metastasized from the housing market into the broader financial sector. This crisis took an enormous toll on American families as stock prices and housing values decreased and individuals lost their jobs. It is still a task in progress to figure out an appropriate set of rules that are likely to effectively limit risk-taking behavior in the future, without causing unwanted side effects. It is clear, though, that reform is necessary.

The Hamilton Project will develop proposals to improve the efficacy and efficiency of government. These proposals may include responses to challenges in areas including the allocation of infrastructure spending and a reform of the approach to regulating markets to better achieve societal goals.

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## IV. Conclusion

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The phrase “the American Dream” was coined by a Pulitzer prize–winning historian named James Truslow Adams in his 1931 book *The Epic of America*. Truslow described the American Dream as:

*... that dream of a land in which life should be better and richer and fuller for everyone, with opportunity for each according to ability or achievement. . . . It is not a dream of motor cars and high wages merely, but a dream of social order in which each man and each woman shall be able to attain to the fullest stature of which they are innately capable, and be recognized by others for what they are, regardless of the fortuitous circumstances of birth or position.<sup>65</sup>*

This vision of the American Dream must have seemed especially shaky and uncertain during the Great Depression of the 1930s; it seems shaky and uncertain today, as well, particularly in the context of an increasingly competitive global economy.

We are fundamentally optimistic about the future of the U.S. economy, but we intend no alarmism or hyperbole in making this plain statement: the American Dream is at risk. The grim headlines of the Great Recession—soaring unemployment, home foreclosures, personal and firm bankruptcies—have created a feeling of public unease. In addition to addressing the country’s immediate needs following the Great Recession, America must prioritize the steps that it needs to begin taking in the service of its long-term economic needs. In this way, we renew the promise of the American Dream for our children, just as our parents did for us.

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65. Adams (1931).



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# Authors

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## **Roger C. Altman**

Roger Altman is founder and chairman of Evercore Partners, which has become the most active investment banking boutique in the world.

Mr. Altman began his investment banking career at Lehman Brothers; in 1974 he became a general partner of that firm. Beginning in 1977, he served as assistant secretary of the U.S. Treasury for four years. He then returned to Lehman Brothers, becoming cohead of investment banking. He remained in that position until the firm was sold to American Express.

In 1987, Mr. Altman joined The Blackstone Group as vice chairman, head of the firm's advisory business, and a member of its investment committee.

Beginning in January 1993, Mr. Altman returned to Washington to serve as deputy secretary of the U.S. Treasury for two years. In 1996, he formed Evercore Partners.

Mr. Altman is a Trustee of New York–Presbyterian Hospital, serving on its Investment Committee, and is vice chairman of the Board of The American Museum of Natural History. He also serves as Chairman of New Visions for Public Schools. He is a member of the Council on Foreign Relations and a director of Conservation International. He received an A.B. from Georgetown University and an M.B.A. from the University of Chicago.

## **Michael Greenstone**

Michael Greenstone is the Director of The Hamilton Project. He is the 3M Professor of Environmental Economics at the Massachusetts Institute of Technology; senior fellow at the Brookings Institution; director of The Hamilton Project; codirector of the Climate Change, Environment and Natural Resources Research Programme of the International Growth Centre; and research associate at the National Bureau of Economic Research.

Dr. Greenstone previously served as the chief economist of the Council of Economic Advisors for the Obama Administration and was an assistant professor at the University of Chicago in the Economics Department.

Dr. Greenstone's research ranges widely across a number of areas, from the environment and public finance to regulation of financial markets, and to labor and health economics. He has conducted extensive studies on environmental topics, including the economic impact of climate change; air quality; hazardous waste sites; and the relationship between the environment and well-being in developing countries. His research has been funded by the National Science Foundation, National Institute of Health, and the Environmental Protection Agency.

Dr. Greenstone received a PhD in economics from Princeton University and a BA in economics with High Honors from Swarthmore College.



## Robert E. Rubin

Robert Rubin served as our nation's 70th secretary of the treasury from 1995 to 1999. As secretary, Mr. Rubin played a leading role in many of the nation's most important policy debates—from balancing the federal budget to acting to stem financial crises in Mexico, Asia, and Russia. Long active in public affairs, Mr. Rubin first joined the Clinton Administration in 1993 as director of the newly created National Economic Council.

From 1999 to 2009, Mr. Rubin served as a member of the Citigroup Board of Directors and as a senior advisor to the company. He began his career in finance at Goldman, Sachs & Company in New York City in 1966, serving as cosenior partner and cochairman from 1990 to 1992. Before joining Goldman, he was an attorney at the firm of Cleary, Gottlieb, Steen & Hamilton in New York City.

Mr. Rubin is chair of the board of the Local Initiatives Support Corporation (LISC), the nation's leading community development support organization. He serves on the board of trustees of Mount Sinai Medical Center and is a member of the Harvard Corporation. In June 2007, he was named cochairman of the Council on Foreign Relations, after serving as vice chairman since 2003.

Mr. Rubin is the author of *In An Uncertain World: Tough Choices from Wall Street to Washington* (Random House, 2003, with Jacob Weisberg), which was a *New York Times* bestseller as well as being named one of *Business Week's* ten best business books of the year.

Mr. Rubin graduated summa cum laude from Harvard College in 1960 with an A.B. in economics. He received a L.L.B. from Yale Law School in 1964 and attended the London School of Economics.

## Sarah Cannon

Sarah Cannon was at the National Economic Council from 2009-2010 prior to joining The Hamilton Project. She spent a year in Ghana as a Fulbright Scholar working at the Center for Democratic Development and advising members of Parliament. She worked in McKinsey & Company's Washington D.C. office on strategy projects for both private and public sector institutions around the world. Her work ranged from climate change to country-level strategies to promote economic growth.

Ms. Cannon graduated from Yale College with a B.A. in Ethics, Politics and Economics.

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# Appendix: The Hamilton Project Papers by Subject

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## HAMILTON PROJECT STRATEGY PAPERS

An Economic Strategy to Advance Opportunity, Prosperity, and Growth

*Roger C. Altman, Jason E. Bordoff, Peter R. Orszag & Robert R. Rubin*

April 2006

Growth, Opportunity, and Prosperity in a Globalizing Economy

*Peter R. Orszag & Michael Deich*

July 2006

A Growth-Enhancing Approach to Economic Security

*Jason E. Bordoff, Michael Deich & Peter R. Orszag*

September 2006

Promoting Opportunity and Growth through Science, Technology, and Innovation

*Jason E. Bordoff, Michael Deich, Rebecca Kahane & Peter R. Orszag*

December 2006

An Education Strategy to Promote Opportunity, Prosperity, and Growth

*Joshua Bendor, Jason E. Bordoff & Jason Furman*

February 2007

Achieving Progressive Tax Reform in an Increasingly Global Economy

*Jason Furman, Lawrence H. Summers & Jason Bordoff*

June 2007

Universal, Effective and Affordable Health Insurance: An Economic Imperative

*Jason Furman & Robert E. Rubin*

July 2007

An Economic Strategy to Address Climate Change and Promote Energy Security

*Jason Furman, Jason Bordoff, Manasi Deshpande & Pascal Noel*

October 2007

A Hand Up: A Strategy to Reward Work, Expand Opportunity, and Reduce Poverty

*Jason E. Bordoff, Jason Furman & Paige L. Shevlin*

December 2007

If, When, How: A Primer on Fiscal Stimulus

*Douglas W. Elmendorf & Jason Furman*

January 2008

Missing Markets: Why Markets That Can Reduce Risks Are Missing and What Can be Done About It

*Jason Furman*

June 2008

An Economic Strategy for Investing in America's Infrastructure

*Manasi Deshpande & Douglas W. Elmendorf*

July 2008

Path to Prosperity: An Economic Strategy to Achieve More Broadly Shared Growth

*Roger C. Altman, Jason E. Bordoff, Jason Furman & Robert E. Rubin*

September 2008

## HAMILTON PROJECT DISCUSSION PAPERS

### WORKFORCE PRODUCTIVITY

#### Education

Summer Opportunity Scholarships (SOS): A Proposal to Narrow the Skills Gap  
*Molly E. Fifer & Alan B. Krueger*  
April 2006

Identifying Effective Teachers Using Performance on the Job  
*Robert Gordon, Thomas J. Kane & Douglas O. Staiger*  
April 2006

College Grants on a Postcard: A Proposal for Simple and Predictable Federal Student Aid  
*Susan M. Dynarski & Judith Scott-Clayton*  
February 2007

Success by Ten: Intervening Early, Often, and Effectively in the Education of Young Children  
*Jens Ludwig & Isabel Sawhill*  
February 2007

Viewing Education Loans Through a Myopic Lens (Graduate Prize Winner)  
*Sima Gandi*  
June 2008

#### Labor Market Mobility

From Prison to Work: A Proposal for a National Prisoner Reentry Program  
*Bruce Western*  
December 2008

Strengthening One-Stop Career Centers: Helping More Unemployed Workers Find Jobs and Build Skills  
*Louis S. Jacobson*  
April 2009

#### Poverty

New Hope: Fulfilling America's Promise to "Make Work Pay"  
*Hans Bos, Greg J. Duncan, Lisa A. Gennetian & Heather D. Hill*  
December 2007

Better Workers for Better Jobs: Improving Worker Advancement in the Low-Wage Labor Market  
*Harry J. Holzer*  
December 2007

Employment-Based Tax Credits for Low-Skilled Workers  
*John Karl Scholz*  
December 2007

Improving the Measurement of Poverty  
*Rebecca M. Blank & Mark H. Greenberg*  
December 2008

### INNOVATION AND INFRASTRUCTURE

#### Energy & the Environment

A Proposal for a US Carbon Tax Swap: An Equitable Tax Reform to Address Global Climate Change  
*Gilbert E. Metcalf*  
October 2007

A U.S. Cap and Trade System to Address Global Climate Change  
*Robert N. Stavins*  
October 2007

A U.S. Innovation Strategy for Climate Change Mitigation  
*Richard G. Newell*  
December 2008

#### Infrastructure

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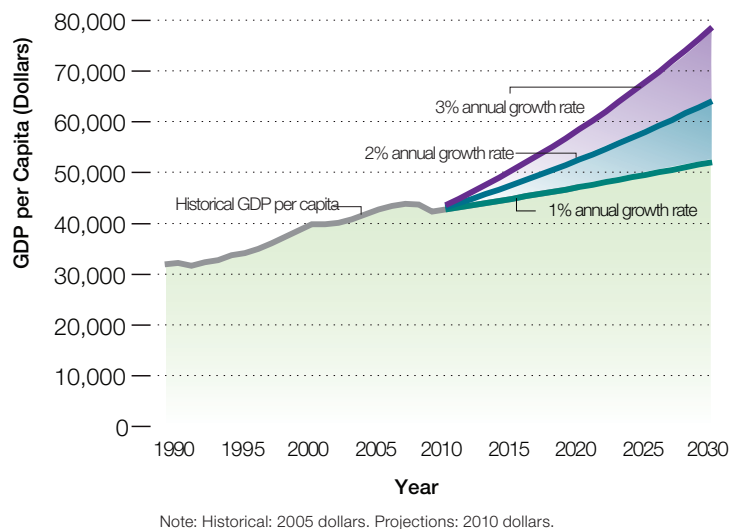
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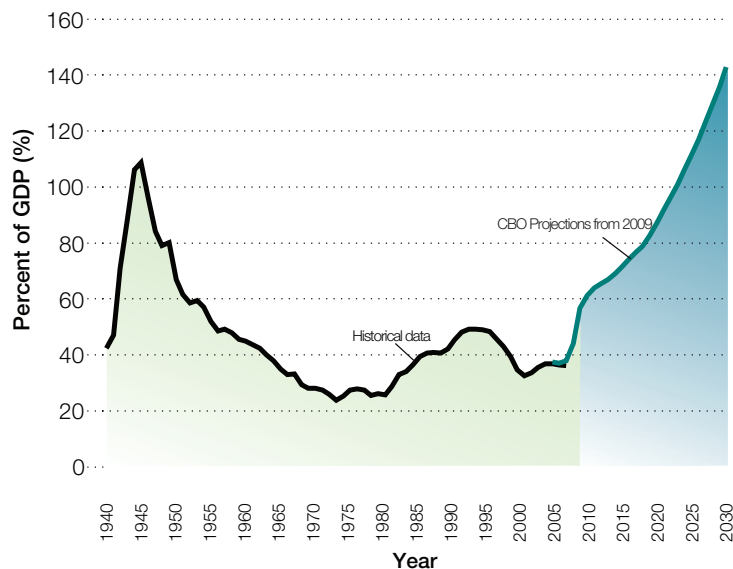
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# From Recovery to Recession to Renewal: An Economic Strategy to Achieve Broadly Shared Growth

**FIGURE 1:**  
*Alternative Paths of Future American Living Standards:  
Historical GDP per Capita and Three Potential Future Scenarios*



**FIGURE 2:**  
*High Levels of Government Debt:  
Federal Debt as a Percentage of GDP*



Each generation of Americans has enjoyed a higher standard of living and access to opportunities not available to their parents. Figure 1 shows growth in real per capita GDP from 1989 to 2009, and, shows three scenarios looking into the future. These scenarios are intended as thought experiments about future GDP per capita growth at 1%, 2%, or 3%. It is evident that even a 1% increase in the growth rate can have substantial impacts on income levels over periods as short as a decade.

Future increases in broad-based prosperity are threatened by a series of challenges that include the poor performance of K-12 education, a decline in public support for research and development, and climate change. In these and other areas, new resources are necessary.

However, our ability to make these investments is increasingly compromised by our difficult fiscal situation. Figure 2 shows the historical federal debt-to-GDP ratio from 1940–2010 and Congressional Budget Office projections to 2030. We are on a path of indebtedness that poses substantial risks to future income growth.

The Hamilton Project believes that the solution is to reprioritize expenditures toward policies that address the threats to long run prosperity and to initiate a program to reduce our indebtedness once the economic recovery has gained sufficient momentum. By undertaking this shift, we can renew the promise of the American Dream for our children, just as our parents did for us.

Source:  
Figure 1: Historical data from Department of Commerce (Bureau of Economic Analysis and Bureau of the Census). Projections are based on The Hamilton Project analysis.

Figure 2: OMB (2010), Historical Tables, Table 7-1; CBO (2007), Figure 1-2; CBO (2009), Table 1-2, 6.