
# The United States' Growth Model: Fast Growth, Fair Growth, Green Growth—or All Three?

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## Executive Summary

After World War II, the United States enjoyed a period of sustained progress. Since the beginning of the 21st century, however, the country has faced a series of crises, with serious consequences for its security and prosperity, and for the sustainability of the American dream. This paper is based on three assumptions:

- *First, though the United States' economic model has many strengths, its resilience has been weakened*. Acute economic, social and environmental challenges will need to be addressed in either the short or long term. It is currently unclear whether this will lead to only minor changes to the American economic model or to a more significant transformation.
- *Second, the United States' response to this era of crisis will be an important factor influencing how other countries react*, given the size and influence of the U.S. economy, its position as a "necessary but not sufficient" actor on most global issues, and its potential for technological and social innovation.
- *Third, there is little point in expecting the United States to adopt or advocate policies that run counter to its interests and values*; it is therefore necessary to understand the drivers of, and obstacles to, change in the United States, and to use them to draw conclusions about the types of solution that are most likely to emerge—after an era of crisis.

## The U.S. Economy: How It Works and What It Delivers

The United States remains the world's foremost economic power, with an economy six times larger than it was in 1945. Its prosperity underpins American global leadership, and its ability to influence other countries through trade, investment, the diffusion of technologies, and the spread of scientific, economic and legal models.

Despite past prosperity, however, the Great Recession has heightened concerns that the United States' economic model is failing to deliver to its full potential. Recovery has been anemic, with the economy only slightly larger in 2011 than it was in 2008. The United States faces a series of long-term economic threats, including a decline in competitiveness; a failure to generate sufficient jobs; declining wages for many workers; deteriorating infrastructure and a failure to invest in human capital; increased private and public debt; growing fiscal pressures; and a vulnerability to broader global imbalances.

Historically, growth has delivered substantial social benefits for the American people, as wealth, health and education have all increased. In recent decades, however, most households have seen their incomes shrink in real terms, while only the wealthiest Americans are richer than they were at the beginning of the decade. Inequality has increased and mobility has declined; fewer than half of parents now expect their children to enjoy a better standard of living than they did.

Domestic environmental quality has also improved, and the efficiency with which the economy uses resources has increased steadily. Over time, however, the environment has become an increasingly contentious and divisive political issue. There is little consensus within American society about how to tackle long-term environmental challenges—including resource security, water stress and, above all, climate change.

**Where Next for the United States after the Great Recession?**

Although an abrupt transformation of the American growth model remains unlikely, recession and economic underperformance have intensified pressure for change. There are, however, starkly contrasting visions of the direction the country should take.

The United States is now following a demographic trajectory that is distinct from those of other developed countries. Its population is growing rapidly, and it is aging relatively slowly, although the retirement of the baby boom generation is creating serious economic and social pressures. American towns and cities are projected to grow by 100 million people by midcentury, with their young and mobile populations driving social and cultural change, and significantly increasing demand for resources.

While demography will drive change in American society, the country's political system is likely to continue to frustrate those who wish the government to act decisively to address key challenges. Moreover, political polarization has increased steadily since the 1970s, as has trust in elites and confidence in core institutions. This has created space for protest activities, such as the Occupy movement and the Tea Party, to challenge the status quo.

Despite fears of decline, the United States is likely to continue to play an assertive global role, with Americans consistently rewarding optimistic leaders at the ballot box. The United States is resurgent as an energy producer, and this will boost its geopolitical position, with environmental consequences that are highly dependent on policy responses.

Given these drivers of change, future directions are likely to gain traction if they do not rely too heavily on government action, if they generate wealth for all segments of society and advance a narrow vision of sustainability that stresses resilience to crisis, protection from immediate environmental effects, and addresses stagnating middle-class incomes.

Four broad scenarios can be identified. In the first, the United States continues to try and *muddle through*, rebalancing growth slightly to the middle class, maximizing its energy advantages and delaying action on climate change.

The second scenario—*going for growth*—is characterized by its focus on economic growth and the implicit acceptance of the attendant environmental costs, including the failure to transition the U.S. economy onto a low-carbon pathway. The focus on growth is underpinned by the need to reduce unemployment, which remains at about 7–8 percent and justifies the focus on economic growth at the expense of addressing longer-term environmental challenges. Though this approach is successful at reducing

unemployment, it does not adequately tackle the stagnating real wages of the middle class or declining economic mobility, leading to growing income inequality.

The third scenario—*intelligent design*—is also underpinned by economic growth, though at slightly lower rates than the second scenario, but with a greater role for policy to create jobs with wages that reduce inequality and develop the country's growing energy in ways that provides a pathway to reduced greenhouse gas emissions.

In the final scenario—*emergency response*—further shocks drive change, with extreme weather events providing some potential for increasing sustainability.

**America's Future Direction**

In the absence of action by President Barack Obama to address the key challenges outlined in this paper, the most likely outcome for the U.S., at least in the short term, will be muddling along. However, resurgent economic growth in the U.S. could push the U.S. toward the second scenario—going for growth.

We have developed a series of policy recommendations that would likely push the United States toward the more proactive approach outlined in the *intelligent design* scenario.

These recommendations are grouped into four areas, focusing on

- *Employment and the job crisis:* The most urgent and immediate challenge requires reducing the unemployment rate—but with policies that also address the growth in the long-term unemployed. New training and education opportunities to narrow the mismatch between current skills and new job requirements are also needed.

- *Investment in the future:* This includes areas such as infrastructure, education and innovation, and it would also require increasing the affordability of higher education, improving education outcomes and developing an infrastructure plan that is sensitive to environmental challenges such as climate change. Building U.S. capacity for innovation through measures such as targeted tax policies and more visas for skilled immigrants would provide a long-term base for sustainable growth.

- *America's energy future:* Policies that maximize the U.S.'s new energy endowments in oil and natural gas in ways that contribute to environmental goals would nudge the U.S. onto a high-growth and increasingly environmentally sustainable trajectory. This could be achieved by adopting a carbon tax and regulations promoting energy efficiency.

- *Fiscal rebalancing:* Here the immediate priority is for the U.S. to avoid the fiscal cliff, followed by a comprehensive budget deal that reduces government spending that is timed to more robust economic growth and reform of the tax system that includes new revenues.

Although some are already predicting gridlock in Congress, not all these recommendations would require congressional action, given that President Obama already has the authority to make progress in areas such as environmental regulation, innovation and education policy. Moreover, some of these policy recommendations, such as addressing the fiscal challenge and introducing a carbon tax, could be part of a bipartisan deal.

We also do not expect all these policies to be implemented in the short term, but making progress on them would respond to the main challenges to the U.S. growth model identified in this paper. And building a stronger and more sustainable economy that delivers for a broader range of people will also be a key factor in determining whether we are on the cusp of a new era of U.S. leadership on issues that will have a decisive and positive impact on global prosperity and security in the 21st century.

## Introduction: The United States in Turbulent Times

In January 2000, President Clinton argued that the United States had entered the new century from a position of unparalleled strength. “Never before has our nation enjoyed, at once, so much prosperity and social progress with so little internal crisis and so few external threats,” he said in his final State of the Union Address: “We will make America the safest big country on Earth. We will pay off our national debt for the first time since 1835. We will bring prosperity to every American community. We will reverse the course of climate change and leave a safer, cleaner planet. America will lead the world toward shared peace and prosperity, and the far frontiers of science and technology.”[1]

Despite this optimistic prognostication, the millennial decade was one of profound crisis, with serious consequences for the United States’ security and prosperity, and for the sustainability of the American dream. The dot-com market crashed in March 2000, the latest in a chain of asset price bubbles that burst in Japan in 1991 and East Asia in 1997.[2] The attacks of 9/11 drew the United States into expensive and inconclusive wars that caused significant damage to its international reputation.[3] In 2007, the property market collapsed, triggering near-meltdown in the financial sector, and then a brutal recession that has seen the median American family lose 40 percent of its wealth.[4]

Given at the end of what he described as “a difficult decade,” President Obama’s State of the Union Address was very different in tone from that given by the president 10 years earlier.[5] He painted a picture of the economic “devastation” that had hit ordinary people, and their resulting loss of faith in America’s central institutions, its government, business and media. It was time, he argued, to start anew and rebuild the American dream, drawing on the country’s history of “stubborn resilience in the face of adversity” and the core ideals and values that had made it strong.

Despite the result of the 2012 election, however, Americans remain deeply divided over the country’s future direction. According to a survey of political values across the past quarter century, partisan division was fairly stable until 2002, after which it increased rapidly.[6] The public is especially split on the scope and performance of government, the role the state should play in helping the poor, and the need for regulation to protect the environment.[7] These divisions have shaped the United States’ response to the financial crisis. In September 2008, the initial phases of the banking bailout became enmeshed in the American election, though in the summer of 2011, fundamental disagreements about government debt brought the country close to a deliberate default.[8] A new battle over the debt ceiling is likely in 2013, while the country could fall off a “fiscal cliff” due to a combination of almost $7 trillion tax increases and spending cuts over the next 10 years, starting with a $600 billion economic contraction in 2013.[9]

America is not alone in its lack of direction, of course. The European Union remains incapable of solving the euro crisis, leading to growing expectations that a supposedly “irrevocable” currency union will either shrink or disintegrate.[10] China and India face significant headwinds over the coming years, as China is confronted by its own asset bubble with demographic decline, and India by a combination of political gridlock and

economic slowdown.[11] Their economic success, also, brings new challenges, as their middle classes become increasingly demanding and assertive. At a global level, globalization's "long crisis" has exposed the fragility of the international system.[12] The Group of Twenty (G-20) has failed to emerge as a steering committee for the global economy; though Rio+20 has once again demonstrated how little the set piece summit has to offer.[13]

As governments devote an increasing proportion of their energy to fire-fighting short-term crises, longer-term challenges have been left largely unaddressed. In 2008, an energy and food price shock coincided with, and contributed to, the acute phase of the financial crisis.[14] Commodity markets then crashed, before rebounding sharply, and now remain in a volatile state that is challenging both for producers and consumers of natural resources. High energy prices have been an obstacle to recovery in America and Europe, with an increase in the oil price of $10 per barrel thought to cut growth in the countries belonging to the Organization for Economic Cooperation and Development (OECD) by 0.2 percent.[15] Conversely, many energy exporters are vulnerable to falling prices, with a "fiscal breakeven point" having increased dramatically as they use subsidies and other transfers to try and dampen political unrest. In 2012, due to adverse weather resulting in drought conditions in the United States, another food crisis is intensifying, with 60 percent of American farms experiencing drought in August 2012 and "major impacts on the production of many field crops this year, particularly corn, soybeans, sorghum, and hay."[16]

Climate change may have slipped down the international agenda, but global greenhouse gas emissions rebounded much more sharply than expected after the financial crisis.[17] They have now reached the level at which they would need to peak if the world is to have a 50 percent chance of limiting warming to below 2°C.[18] Although many countries now have voluntary commitments, implementation of a binding agreement to reduce emissions has been delayed until at least 2020. Other "planetary boundaries" are also being threatened, with some scientists warning that global ecosystems are on the verge of a "state change that will be extremely disruptive to civilization."[19] A substantial shift is needed in patterns of global growth if the world is to avoid irreversible environmental damage, as its urban population grows by another billion in just 15 years, and if economies are robust a further 4 billion people join the global middle class.[20] The world remains far from any consensus on how to achieve this shift, despite attempts to focus attention on "green growth" at the Rio+20 Summit.

Although Americans on both sides of the political divide believe their country should continue to play an active role in responding to global problems, the nature and direction of American leadership remains controversial. About two-thirds of Americans believe the country benefits from globalization, but this is below the average for 25 countries.[21] The American public is also relatively skeptical about international financial regulation, with a slight majority fearing that a new regulatory body would make the American economy less productive (compared with an average of a third in other countries). Although there is widespread concern about high commodity prices (especially as they feed through to the gas pump), improving energy independence, principally due to exploitation of shale gas, has persuaded some policymakers that the

United States can now insulate itself from turbulence in the Gulf and other energy-producing hotspots.

Support for robust action at a global level to tackle climate change and other environmental problems is weak, with only a minority of Republicans believing there is solid evidence that the Earth is getting warmer.[22] In the run-up to the 2012 presidential election, post–tropical storm Sandy is estimated to have caused $20 billion in damage to New York, New Jersey and surrounding areas,[23] with scientists arguing that climate change has already increased the likely frequency and ferocity of extreme weather events of this sort.[24] Although this has increased pressure on American politicians—a fact acknowledged by President Obama as he won reelection—it is far from certain that this will translate into increased international engagement by the United States.[25]

The current impasse may be temporary, however. Whether domestically or internationally, the process of political change is probably only beginning to gather momentum. President Obama's reelection is an anomaly in a period when incumbent governments have had a miserable time at the polls, and populist movements and fringe parties have thrived.[26] In the United States, the Tea Party has attacked the political establishment from the right, and the Occupy movement has had a similar, if less far-reaching, impact from the left. The Arab Spring, itself a reaction to economic stagnation, will continue to reshape multiple countries, with highly unpredictable results. Across the world, many countries will experience further political disruptions, with the next 10 years likely to be a fertile period for policy innovation. Elites find themselves broadly discredited, and outsiders will continue to have unusual opportunities to bring new ideas—both good and bad—into the mainstream, if they can make effective and entrepreneurial use of popular frustration with the status quo.[27]

This paper represents an initial attempt to understand the directions this change is likely to take. It is written with three assumptions:

- *First, though the United States' economic model has many strengths, its resilience has been weakened*. Acute economic, social and environmental challenges will need to be addressed in either the short or the long term. It is currently unclear whether this will lead to only minor changes to the American economic model or to a more significant transformation.
- *Second, the United States' response to this era of crisis will be an important factor influencing how other countries react*, given the size and influence of the U.S. economy, its position as a "necessary but not sufficient" actor on most global issues, and its potential for technological and social innovation.
- *Third, there is little point in expecting the United States to adopt or advocate policies that run counter to its interests and values*; it is therefore necessary to understand the drivers of, and obstacles to, change in the United States, and use them to draw conclusions about the types of solution that are most likely to emerge—after an era of crisis.

The paper is divided into three sections. In the first, we review the evolution of the United States' economy in recent decades and the positive and negative effects of the growth it has provided, with a focus on economic, social and environmental outcomes.

In the second section, we set out an analysis of the shifting interests of different groups in American society and the structural, institutional and cultural factors that will inform the process of change. This allows us to identify four broad scenarios for the evolution of the United States' economy, each of which represents a plausible pathway from the current crisis toward a new growth model and political settlement.

In the third and final section, we set out policy recommendations that cover the areas of employment, investment in the future, energy, fiscal rebalancing and American opportunities for global leadership during President Obama's second term.

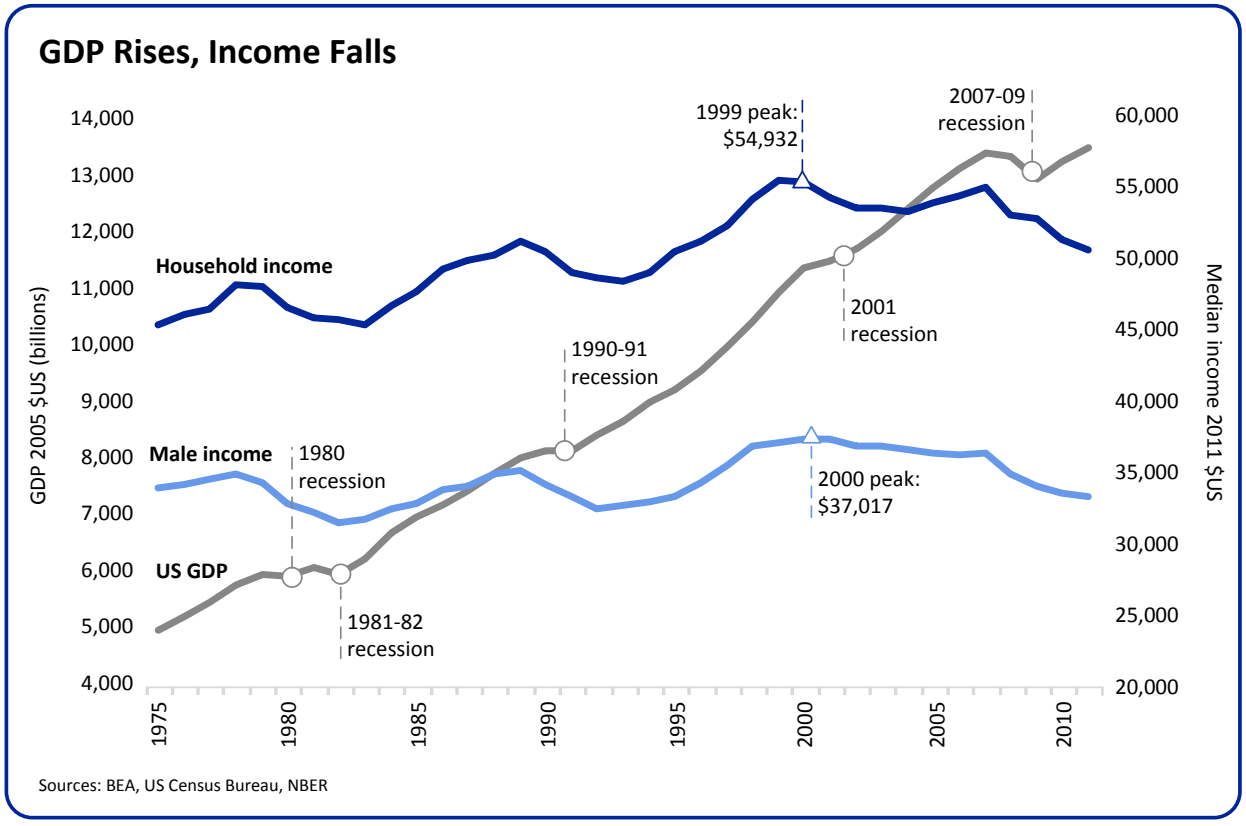
## 1: The U.S. Economy: How It Works and What It Delivers

### Economic Outcomes

The United States is the world's foremost economic power. Since the end of World War II, its economy has achieved relatively steady growth, low unemployment and inflation, and rapid advances in technology. This prosperity underpins American global leadership, supporting a military that dwarfs its rivals, maintaining America's place at the heart of the international system, and influencing other countries through trade, investment, the diffusion of technologies and the spread of scientific, economic and legal models.[28]

In the postwar period, gross domestic product (GDP) has grown in real terms by an average of 2.9 percent a year, or 1.7 percent on a per capita basis, with the economy more than six times larger in 2011 than it was in 1945 (figure 1).[29] Over the long term, the economy has been highly successful in creating employment, with an average of 1.3 million new jobs created each year, and an unemployment rate of below 6 percent.[30] The average worker is also much better paid, with mean annual earnings for males having doubled in the postwar period.[31]

**Figure 1 GDP Rises, Income Falls, 1975–2011**



During this time, the United States has placed a premium on the role of the private sector as the main driver of innovation and productivity, though constraining the role of the government in the economy. The American economy consistently ranks highly when compared with its competitors, and is currently seventh in the World Economic Forum's Global Competitiveness Index.[32] Its other key strengths are the size of its domestic market, the flexibility of its labor market, its commitment to innovation and the sophistication of its business sector.

Labor productivity, which has grown at an average annual rate of 2.4 percent since World War II, has been underpinned by high levels of research and development. The United States spends about 3 percent of GDP on R&D, about average for the OECD.[33] However, it is home to the world's best universities and research institutions, with 7 American universities ranked among the top 10 in 2011, and with the United States accounting for more than a third of citations in the world's science and engineering journals and registering more than half the world's patents.[34] The public sector, meanwhile, has invested in breakthrough R&D, such as through the Defense Advanced Research Projects Agency, which created the Internet.[35] This has allowed the country to remain at the forefront of sectors with high growth potential, such as information technology, biotechnology, pharmaceuticals, personal services and renewable energy.[36]

The economy is highly entrepreneurial, with Americans more likely to set up new businesses than the citizens of comparable countries, and workers prepared to relocate to seek work.[37] The depth and sophistication of the United States' financial markets, including its capital venture sector, provides funding for startups with high growth potential, whereas firms that are less than five years old accounted for almost two-thirds of net jobs created in 2007.[38] Established American companies tend to be more decentralized than their competitors and more open to innovation.[39] American consumers also appear to be unusually willing to try new products and services.[40]

The Great Recession, however, has heightened concerns that the United States' economic model is failing to deliver to its full potential. The recession, which began in December 2007, was the longest and deepest of the 11 experienced since the war.[41] Recovery has been anemic, with the economy only returning to its prerecession size in the third quarter of 2011[42] Moreover, the economy faces the following longer-term threats:

- *Competitiveness appears to have been eroded*. Since 2005, the United States has experienced the largest drop in its score on the World Economic Forum's Global Competitiveness Index of any country.[43] Business leaders have low levels of trust in the ability of politicians, government and other institutions to support growth; believe that regulation places too great a burden on the private sector; and are concerned about a lack of macroeconomic stability.[44] A majority expect American competitiveness to continue its decline.[45]

- *The economy is struggling to generate sufficient new jobs*. Before 1990, the United States returned to prerecession levels of employment in an average of just six months after the recovery was complete. Since then, however, it has experienced

two “jobless recoveries” (1990, 2001), and it is now in the midst of a third, with it expected to take up to five years for employment to recover.[46] As a result, long-term unemployment has been an increasing problem. Only 4 percent of the unemployed had been out of work for more than a year in 1980. This had risen to about 10 percent of total unemployed before the financial crisis and had reached nearly 30 percent of the total by 2010.[47]

- *Many workers are not seeing an increase in their earnings*. Until 1970, male workers saw their wages increase by about 25 percent per decade.[48] Since then, however, they have done much less well, with real median earnings now lower than they were 40 years ago (figure 1), a period when the proportion of men in full-time work shrunk significantly. Poorly educated men have performed especially badly, with men who failed to complete high school seeing their earnings eroded by 66 percent. Women are more likely to work and have seen their earnings grow, but this has not been sufficient to compensate families for the loss of male earning power. As a result, most households have become poorer (see below).

- *Investment in infrastructure and human capital is not world class*. The United States is ranked 24th in the world in the World Economic Forum’s index of quality of overall infrastructure investment.[49] The country needs $2.2 trillion worth of investment in infrastructure over the next five years, $1.18 trillion of which has not been budgeted.[50] School-level education is at or below the average standards for the OECD, despite relatively high levels of expenditures per student.[51] Publicly funded higher education is under pressure, with cuts from both federal and state budgets. Student debt is a growing problem, with $904 billion in loans now outstanding.[52]

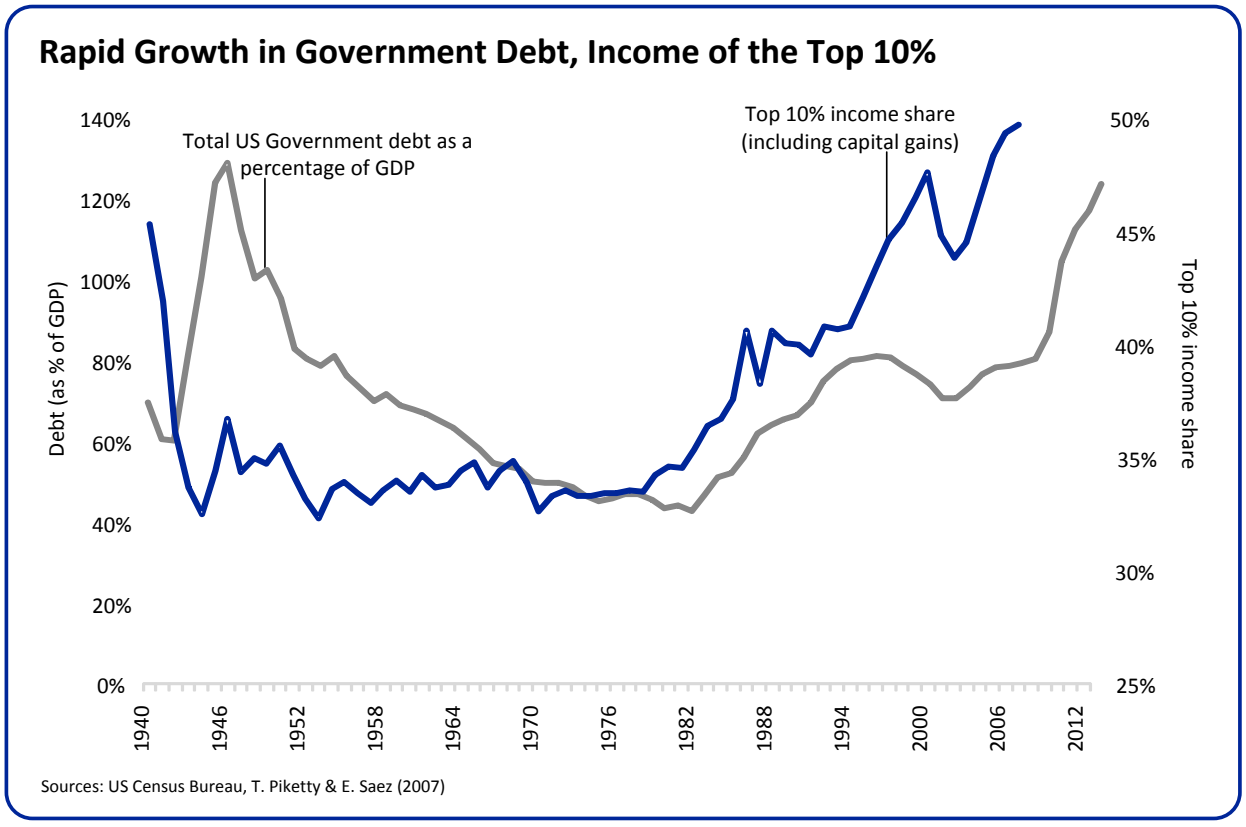
- *Growth has been fueled by high levels of indebtedness*. Total public and private debt grew to almost three times the level of U.S. GDP in 2008, with a third of this debt outstanding to households and about half the rise in consumer spending during the boom years accounted for by increased household debt.[53] Since the financial crisis, households and businesses have begun to pay down their debt, and they are moving toward sustainable debt levels.[54] The deleveraging process, however, is delaying recovery, with the most indebted households seeing the fastest decline in consumption during the Great Recession. Business investment remains low as a percentage of GDP.[55]

- *The United States faces growing fiscal pressures*. The national debt fell throughout the postwar period, before rising dramatically in two waves (1981–95; 2001–12), reaching 123 percent of GDP in 2012 (figure 2).[56] Tax cuts and spending increases fueled the debt after 2001, whereas during the recession, this long-term trend was exacerbated by a loss of tax revenue, an increase in entitlement spending, and the stimulus package and bailout, with the deficit expected to reach 75 percent of GDP in 2013, from 40 percent of GDP in 2007.[57] In 2013, the “fiscal cliff” risks pushing the economy back into recession.

- *The United States’ economy is affected by broader global imbalances*. The current account deficit rose steadily from 1991, peaking at 6 percent of GDP in 2006, but

has now fallen to slightly more than 3 percent of GDP. With Americans saving less than the country's investment needs, the inevitable counterpoint is trade surpluses run by countries such as Germany and China, where consumption levels are low and whose economies are highly reliant on exports to debtor countries. Ben Bernanke, chairman of the Federal Reserve, has argued that a "global savings glut" is an important source of global financial instability and that, in the medium term, it can be effectively addressed if countries with "unsustainable trade surpluses" export less and consume more, whereas countries such as the United States with "large, persistent trade deficits must find ways to increase national saving, including putting fiscal policies on a more sustainable trajectory."[58] The sustainability of the trade deficit will depend on ongoing foreign appetite for American assets.

**Figure 2 Rapid Grown in Government Debt: Income of the Top 10 Percent, 1940–2012**



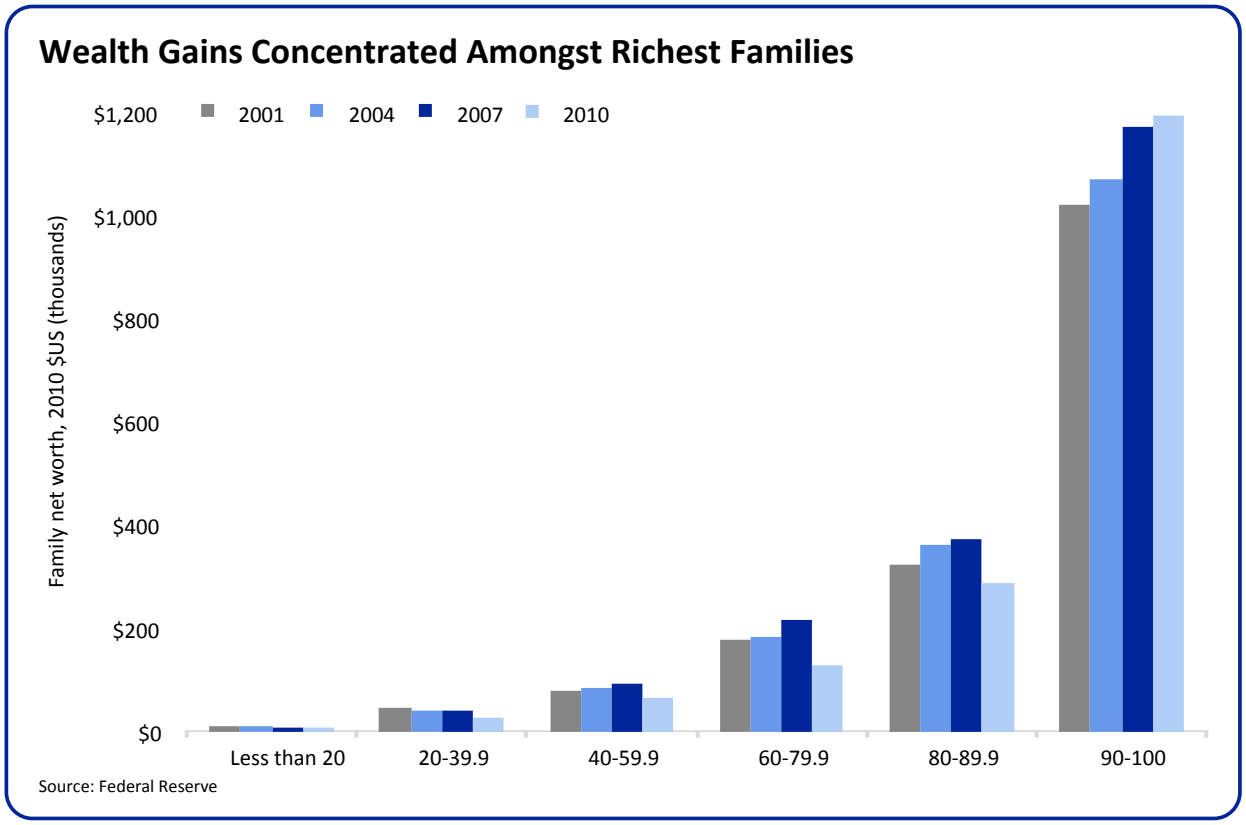

## Social Outcomes

Since World War II, economic growth has delivered substantial benefits for the American people, who are richer, healthier and better educated than they were 60 years ago. The average American born today can expect to live 10 years longer than one born in 1950.[59] Literacy levels have reached 99 percent; and 70 percent of Americans who completed high school in 2009 went on to enroll in higher education.[60] Americans' average income is now nearly 8.5 times higher than postwar levels.[61] Moreover, basic needs account for a decreasing share of the consumption basket, with food nearly

halving its share of disposable income, while money spent on recreation has more than quadrupled.[62] In comparative terms, the United States ranks at the top of the OECD for income and for the quality and affordability of its housing provision. Americans also rate their quality of life more highly than the average for the OECD.[63]

Not all trends have been positive, however, especially in recent decades. Median family income shrank for most Americans between 2001 and 2007, and then fell significantly between 2007 and 2010.[64] Poorer American families (below the 40th income percentile) saw their net worth fall consistently throughout the decade, while all but the richest 10 percent saw pre-crisis gains wiped out by the fall in house prices, leaving them poorer than at the beginning of the decade.[65] For more than half of American families, in other words, economic growth is no longer translating into improvements of living standards.

**Figure 3 Wealth Gains Have Been Concentrated among the Richest Families, 2001–10**




Inequality has risen steeply and is now one of the highest in the OECD, second only to Mexico. After taking into account the redistributive impact of government taxes and transfer payments, the Gini coefficient for American disposable income rose from 0.37 in 1979 to 0.49 in 2007.[66] Though poor and middle-class Americans have seen their living standards stagnate in recent years, the top 1 percent earned 20 percent of income in 2010, and the top 10 percent almost half of all income (figures 2 and 3).[67] Household income is increasingly derived from capital, rather than from labor (although there were

significant capital losses during the recession), and capital income has become steadily more concentrated among the richest households.

At the same time, economic mobility has been declining, with fewer people able to move through income brackets due to ability and hard work.[68] By some measures, the United States is now less mobile than many countries in Europe. Parental socioeconomic status, for example, is moderately correlated with children's educational attainment and income in the United States.[69] And though 84 percent of Americans earn more than their parents did, Germany and Canada both do better on this indicator.[70] Intergenerational mobility also appears to have increased until the 1970s, before decreasing significantly in the 1980s and remaining unchanged since then.[71]

The drivers of inequality and a lack of mobility are complex.[72] Increased competition from trade has created incentives on businesses to increase their efficiency and use technology that reduces the need for low-skilled labor. However, this effect is tempered by the fact that approximately 70 percent of American imports come from developed countries with similar wage costs.[73] Foreign direct investment and the offshoring of jobs might also have contributed to inequality, with the OECD finding that outward FDI has had some impact, although mainly on the upper half of the distribution.[74] Technology has also replaced low-skilled work and increased the demand for high-skilled work, driving wage differentials, while immigration may have also depressed wage costs.

Although these global drivers have an impact on the U.S. economy's ability to deliver broad-based social outcomes, other factors are under national control:

- *Poor education outcomes* at primary and secondary school levels, especially in the worst schools, have contributed to the decline in mobility, as have the increasing costs of the university system, and those of elite universities in particular. Students from wealthier families are much more likely to attend a four-year college program than their less-wealthy counterparts, whereas fewer than 10 percent of students at Harvard, Yale and Princeton receive Pell Grants, a federal scholarship for low-income students. Education has become less of a government priority, accounting for 14 percent of government expenditures in 2008, compared with 23 percent in 1970.[75]

- *Tax and transfer payments* have had less of a redistributive impact over time.[76] The United States is below the OECD average for the progressivity of its tax system, and its transfers are relatively modest and not well targeted.[77] Though effective federal tax rates have fallen for all income groups, richer Americans now pay a small proportion of a much larger income in tax.[78]

- *Deregulation of the labor market* has also had a negative impact on the distribution of income, with the rise in inequality since the 1980s occurring in tandem with a near halving of the rate of union membership.[79] Deregulation, however, has had a broader impact on the market, increasing competition, expanding economic activity and creating employment, which has partially offset the downward pressure on wages from less-regulated labor markets.[80]

- The rising cost of *housing* (34.4 percent of average household expenditures), especially during the property bubble, the need to spend more on *personal insurance and pensions* (11.2 percent), and more expensive *health care* have all placed pressure on living standards.[81] Health care is an especially pressing problem, with the United States already spending more than any other OECD country on health—17.6 percent of GDP in 2010, as compared with below 12 percent in Canada, Germany, Australia and the United Kingdom.[82] Notwithstanding the recent health care reforms, health costs as a percentage of GDP are expected to increase to 34 percent by 2040.[83]

Unsurprisingly, there are signs of popular discontent with the American economic system, with only a third now believing that it delivers fair outcomes for middle- and working-class citizens.[84] Although 68 percent of Americans say that they have achieved or will achieve the American Dream, the proportion who believe they are richer than their parents were at a similar age has fallen 13 percentage points over the past 30 years.[85] Fewer than half of parents now expect their children to enjoy a better standard of living than they did.

**Environmental Outcomes**

The United States has made important progress in its domestic environmental quality and has led on international environmental challenges such as depletion of the ozone layer. In the 1960s and 1970s, American progress on the environment was underpinned by the rise of environmental movements, which increased awareness about the effects of economic growth on the environment. Many of the key American environmental advocacy groups were created then, such as the World Wildlife Fund (1961), the Environmental Defense Fund (1967), and Friends of the Earth (1969). In 1969, the president created the White House Council for Environmental Quality (CEQ); and in 1970, the Environmental Protection Agency.[86] The Clean Air Act and Clean Water Act were passed in 1970 and 1972, respectively.[87]

Broadly speaking, American environmental laws and regulations are guided by the twin goals of protecting the environment for future generations while interfering as little as possible with the efficiency and growth of the economy. All U.S. environmental regulation is subject to rigorous cost/benefit analysis, where environmental and human health benefits are quantified and considered alongside the economic costs to industry and the economy. The United States pioneered market-based approaches to delivering environmental improvements, through a series of experiments that date back to the 1960s.[88] A full cap-and-trade system for regulating sulfur dioxide was launched in 1990 and has delivered significant reductions in emissions at a lower cost than a regulatory option, and a quarter of the original government cost estimates.[89]

Over recent decades:

- Air quality has improved significantly, with reductions in levels of six common pollutants ranging from 7 percent for 8-hour ozone to 75 percent for annual $SO_2$ from 1990 to 2010.[90]

- The Clean Water Act has led to significant increases in the quality of the water received by households and has triggered a rapid recovery of heavily polluted urban waterways.[91]

- The efficiency with which the economy uses resources has also improved steadily. The amount of energy needed to produce a dollar of GDP (after adjustment for inflation) has almost halved since 1980, although the United States still only ranks 61st in the world on this measure.[92]

Internationally, the United States has played an important role in agreeing international environmental treaties such as the 1973 Convention on International Trade in Endangered Species, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. The basis for American engagement on these issues reflected a number of drivers, including concentrated advocacy by American environmental organizations and a calculation that the economic costs of addressing these environmental challenges would be minimal for the United States and overshadowed by the environmental benefits. The benefits of the Montreal Protocol, for example, were expected to exceed the costs by a factor of 65, even if the United States implemented it unilaterally.[93] Implementation by other countries made an already attractive proposition even more compelling.

Over time, however, the environment has become an increasingly contentious political issue. In 1992, environmental issues were a relatively minor source of partisan division, with large majorities of both Republicans and Democrats agreeing that stricter laws and regulations were needed to protect the environment.[94] Today, the environment is more divisive that any issue apart from the social security net, with Democrats now twice as likely to favor environmental controls as Republicans.[95]

Similar divisions have opened up between the United States and other countries on global environmental issues, especially over climate change. In the negotiation of the United Nations Framework Convention on Climate Change, which was agreed to in 1992 and entered into force in 1994, the United States stressed scientific uncertainty and was an early advocate of taking action on the basis of cost/benefit analysis.[96] In 1997, President Bill Clinton signed the Kyoto Protocol but resolved not to submit it for ratification "until key developing countries [also] commit to binding targets."[97] President George W. Bush definitively ruled out ratification in 2001, promising instead to "develop technologies, market incentives and other creative ways to address global climate change."[98]

These divisions complicated American efforts to respond to future environmental challenges, which include:

- *Securing access to resources*. The United States consumes about a quarter of the world's energy and, until recently, has experienced a steady erosion of its energy security.[99] All but one of the postwar recessions in the United States has been preceded by a pronounced increase in the price of crude oil, and all but one oil

market disruption has been followed by a recession.[100] The Great Recession was no exception, with food and energy prices peaking in the summer of 2008 after a long period of decline.[101] Recovery has also been hampered by the resurgence of prices after 2010,[102] and by uncertainty about future oil prices.[103] Rapid growth in demand from emerging markets has been the primary driver of higher, and more volatile, commodity prices, indicating the potential for increased competition for resources in both the short and long terms.[104]

- *Tackling climate change*. During the past 20 years, the United States has experienced intense international pressure to reduce its carbon emissions, which in 2010 were more than double those of the European Union on a per capita basis, and almost three times those of China.[105] U.S. emissions rose strongly before the recession but have since fallen, due to a combination of higher prices, lower growth, increased use of natural gas, and tighter regulations reducing the competitiveness of coal. Emissions in 2010 were 6.4 percent lower than in 2005, putting the United States on a trajectory that would allow it to meet its voluntary commitment under the Copenhagen Accord (a 17 percent reduction in emissions by 2020, from the same baseline).[106] However, even if all countries meet their Copenhagen commitments, the world will still be on track for warming at levels well above 2°C, ensuring ongoing international pressure on the United States to move toward, or beyond, its long-term target (an 83 percent reduction by 2050).[107]

- *Responding to extreme weather events*. The United States has proven relatively vulnerable to extreme weather events, although China and India face greater risks (ranking 19 and 22 places, respectively, above the United States on an index based on fatalities and economic impacts from 1990 to 2009).[108] Hurricane Katrina was America's costliest natural disaster, and post–tropical storm Sandy has again shown the vulnerability of coastal cities. The economic loss from a storm of the same intensity is estimated to double every 10 years. If the 1926 Great Miami hurricane was to hit again in the 2020s, it could be expected to cause $500 billion worth of damage (more than six times the cost of Hurricane Katrina), or about 2 percent of GDP.[109] Drought is also a significant threat, as was seen during the 2012 heat wave, which has had a global impact on food security.[110] Even before Sandy, more than two-thirds of the American public believed that global warming is already affecting weather patterns in the country.[111] This anxiety is now likely to have intensified.

- *Coping with water stress*. The United States is ranked as "high risk" on the Water Stress Index, although, again, the threats facing China and India are greater.[112] The U.S. Southwest, Southeast and West all experience chronic water scarcity, due to unsustainable patterns of building and economic growth,[113] and more than 1,100 counties (one-third of all counties in the lower 48 U.S. states) will experience a future high risk of water shortages by midcentury, with more than 400 of these facing an extremely high risk of water shortages.[114] Temperatures for 2012 through June were the warmest since records began in 1895, and the drought is the worst in more than 50 years.[115] It seems certain to have a significant impact on world food markets, with the United States' corn crop forecast to be the lowest in 14 years and the U.S.

Department of Agriculture predicting cascading price rises for soybeans, animal feed, meat and dairy products.[116]

**The American Growth Model Under Threat**

As this review has demonstrated, in the postwar period the United States has had an impressive track record in delivering economic growth, boosting the living standards of its citizens, and improving environmental standards. America now appears to be reaching an inflection point, however, with a significant majority of its residents believing that the country is heading in the wrong direction.[117]

The reasons for their concern are clear. The resilience of the economy has been challenged by a series of financial shocks, some starting in the United States (the dot-com crash, the housing crisis) and some of which have been mostly international in their impact (the East Asian financial crisis and euro crisis), but with an impact on the United States' economy's growth prospects. Though the U.S. economy has a good track record in bouncing back from shocks, deleveraging in the wake of the Great Recession has hindered its most recent recovery.

The failure to deliver rising living standards to the majority of Americans is not a recent phenomenon, but until recently it was masked by rising debt and asset prices (both mostly tied to residential property). Americans are currently experiencing an uncharacteristic loss of optimism about their country's ability to provide opportunities and social mobility for the middle and working classes, and this has led to anxiety about the sustainability of the American dream.

Environmental threats, finally, continue to pose a serious threat to the sustainability of the current American growth model. The United States currently has a dominant share of global resource markets, but it will face growing competition from emerging markets and possibly also from the next wave of developing countries. Climate change, however, remains the greatest environmental challenge—and with respect to this the United States, which still has extremely high per capita greenhouse gas emissions, is certain to face continued pressure to accelerate the rate at which it switches to a lower carbon growth trajectory.

There is, moreover, a lack of consensus about how to address these problems, with intense partisan divisions over how to respond to the financial crisis, whether and how to tackle economic stagnation among the middle and working classes, and the role government should play in tackling environmental problems. This makes the future highly unpredictable. In section two of this paper, therefore, we explore the interests, norms and values that will inform the future evolution of American society, and the balance it needs to strike between economic growth, social values and environmental constraints.

## 2: Where Next for the United States after the Great Recession?

"We have involved ourselves in a colossal muddle, having blundered in the control of a delicate machine, the working of which we don't understand," wrote John Maynard Keynes in 1930, as the Great Depression deepened.[118] Despite the crisis, however, the human race had not lost its ingenuity, he believed, nor the capacity for its members to work together to provide themselves with higher living standards. The turmoil of the present would soon pass, Keynes argued, but only if policymakers avoided mistakes that would drive them deeper into trouble.

Keynes would find much to recognize in the modern predicament. The Great Recession has been described as the greatest economic challenge the world has faced since the 1930s.[119] More than three years since the leaders of the G-20 countries met in London and promised to "restore confidence, growth, and jobs," the global economy remains extremely fragile, with the International Monetary Fund warning that recovery in the United States remains vulnerable to "fiscal uncertainty, weakness in the housing market, and potential spillovers from Europe."[120] The American economy continues to add jobs, but only at roughly the same rate as the increase in its labor force, leaving unemployment rates stubbornly high.[121]

A crisis often creates a window in which change is possible. There, are, however contrasting visions for the direction the United States should take.[122] Republicans and Democrats remain divided on the role of government, the speed of fiscal retrenchment, the distributional impact of taxation and transfers, and policies on energy and the environment. What, then, can be said about the course the United States will set over the next 20 years? What impact will it have on patterns of growth and the quality of life of the American people? And how will decisions made by the world's largest economy have an effect on people from other countries and on the global environment? This section sets out some of the drivers that will determine the United States' options, based on the norms, interests and values that ensure its choices are likely to be distinctive from those made by other countries.

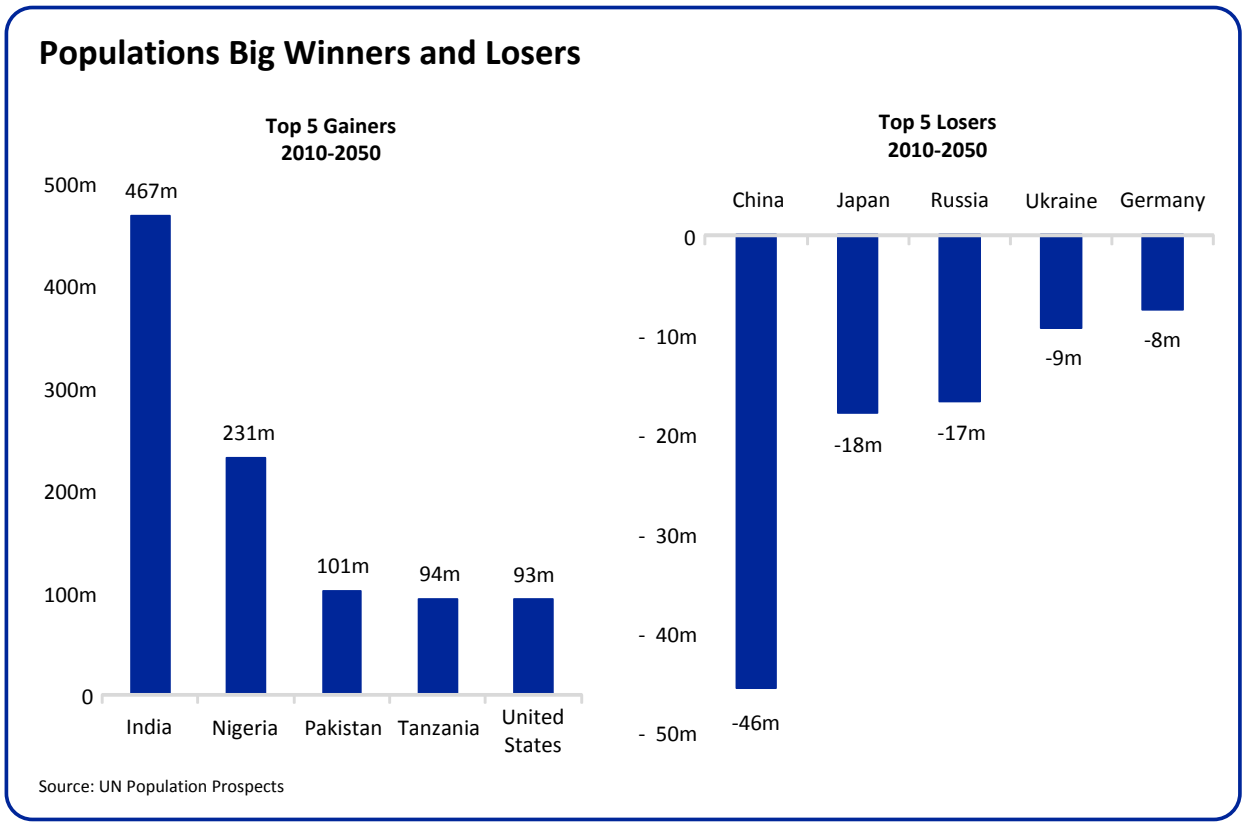
### America's Dynamic Demography

A country's demography offers a window on its future. In coming decades, the United States faces a surprisingly positive demographic picture, one that will set it apart from other developed countries, while posing fresh challenges to global sustainability.

The most striking factor is the continued speed of American population growth. There are projected to be more than 400 million Americans by midcentury, about 90 million above the current level.[123] Only India, Nigeria, Pakistan and Tanzania will gain more people by 2050 (figure 4). In contrast, other major powers (China, Russia, Japan and the European Union) will see their populations decline. As a result, the United States will age much less rapidly than many expect (figure 5). America's median age is increasing only slowly, and is expected to be about 40 years for much of the century. In contrast, Japan's median age will exceed 50 years in 2025, as will Germany's in 2040.

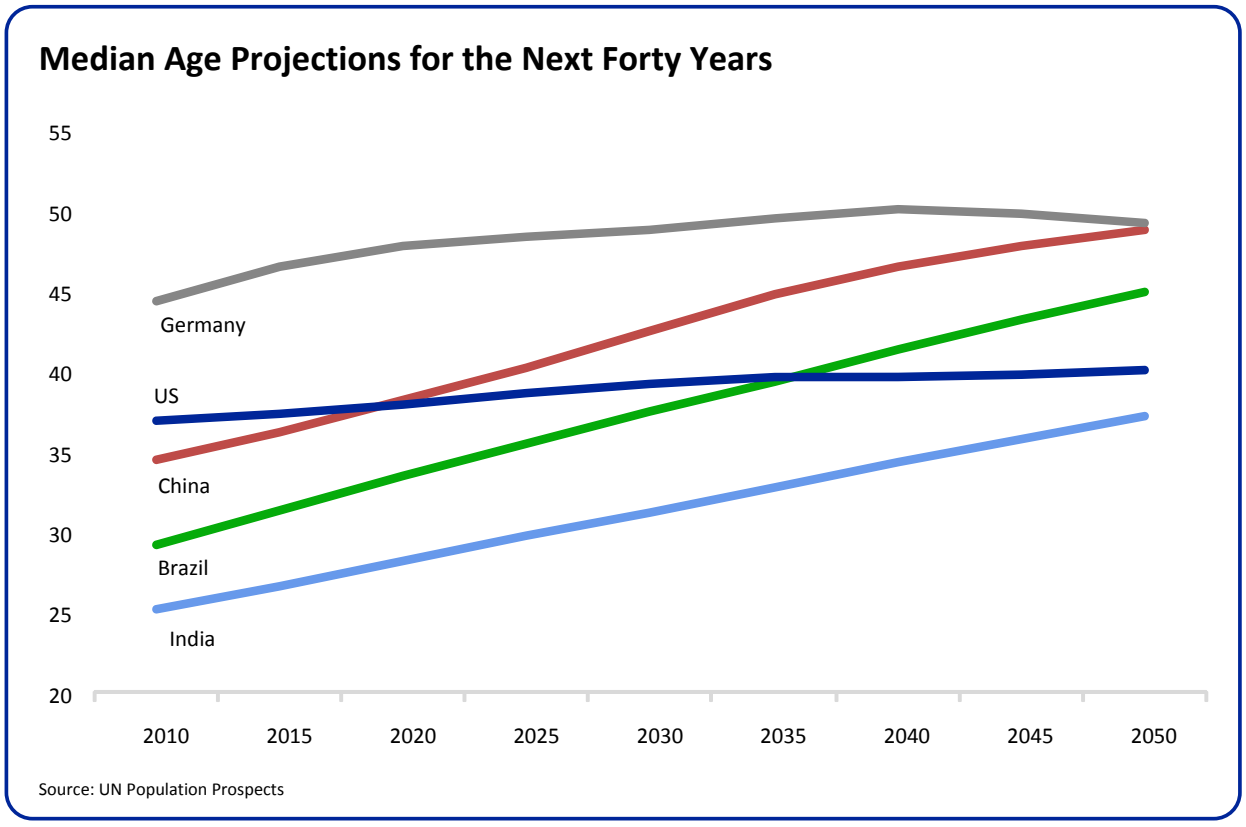
Extraordinarily, on this measure, China will be an older country than the United States before the end of *this* decade.

**Figure 4 Populations of the Largest Countries: Winners and Losers, 2010–50**




The United States will not be immune to the challenges of an aging society, of course, especially as its disproportionately large baby boom generation (born 1946–64) enters retirement.[124] According to the Congressional Budget Office, health and security spending is currently on a trajectory that will see it grow from 10 percent of GDP to 16 percent over 25 years.[125] At the same time, the workforce is shrinking as a proportion of the total population, albeit more slowly than in most other developed countries.[126] Fewer workers will therefore need to be more productively employed if they are to provide baby boomers with a comfortable retirement. This difficult transition will be relatively short-lived, however. By 2040, old-age dependency will have stabilized, with little further aging until deep into the 21st century.[127]

**Figure 5 Median Age Projections for Selected Large Countries for the Next 40 Years**




America's population growth will be confined to its towns and cities, as rural areas continue to lose population. By 2050, the U.S. urban population will have grown by more than 100 million (roughly the same size as the entire American population at the beginning of World War I).[128] This growth will be driven mainly by first- and second-generation immigrants, as the United States continues to have significantly higher rates of net migration than any other G-20 country. As a result, the country's cultural makeup will continue to change rapidly, with non-Hispanic whites expected to be a minority of the population before 2050.

These demographic changes have the following implications:

- *Cities will be critical to rates and patterns of economic growth*. Urban centers that have high concentrations of educated workers, especially those with scientific and technological skills, will account for a growing share of American GDP.[129] Cities that create jobs will thrive, and see their population grow, while the poorest-performing ones will see their populations shrink. This evolutionary dynamic will enhance the ability of the United States to adapt to new economic forces and to make a smoother exit from legacy industrial sectors.

- *A growing population will consume more.* Developed countries with stable populations can expect demand for resources to shrink, possibly significantly, if

efficiency gains also accelerate. The United States, however, is emphatically not in this group. The U.S. government will be under significant pressure to provide tens of millions more people with high standards of living. Such a large number of additional American consumers will inevitably have a significant impact on the global economy and environment.

- *Consumptions patterns may shift*. Changes in the configuration of American cities, and in the preferences of city dwellers, could have a pronounced impact on consumption patterns. Will American cities become more densely populated over time, and therefore efficient in their use of resources?[130] Will the United States' long love affair with the automobile begin to dwindle, with the trend continuing whereby young Americans drive less than previous generations did at the same age?[131] And will there be an ongoing dematerialization of the economy, as consumers switch from physical goods to virtual services?

Demographic trends will also fuel broader social and cultural changes. At present, younger generations are likely to be significantly more progressive than other voters, although how this translates into political preferences will shift as they age.[132] As intergenerational transfers grow, political friction may increase between the young and the old, especially as high participation rates continue to give older voters disproportionate electoral power.[133] Climate change could also emerge as a source of political division, especially as cities continue to be hit by extreme weather events, or if a growing proportion of the young become convinced they will see dangerous levels of climate change within their lifetimes.

A changing ethnic balance will also lead to a political realignment. Nonwhite ethnic groups are much poorer than whites, with more than a quarter of Hispanics and African Americans living in poverty.[134] Both groups are highly aspirational. Although they are much less likely than whites to believe they have already achieved the American Dream, they are correspondingly more likely to think they will achieve it in the future.[135] They will therefore continue to value growth, given their wish to secure better lifestyles, but only if it delivers broad income gains. At the same time, however, nonwhites are significantly less conservative than whites, and more likely to support direct government action to tackle poverty.[136] They can also be expected to become an increasingly powerful lobby for change, if their aspirations continue to be frustrated.

### Deepening Political Distrust

Although demography will drive change in American society, the country's political system is likely to continue to frustrate those who wish to see decisive government action. Polarization in the United States has been increasing since the 1970s, as political extremes increase their representation in Congress, parties become more ideologically homogenous, and the differences between them becomes more stark.[137] In a parliamentary system, this might translate into decisive implementation of policy platforms, but the United States' separation of powers, and the recent dramatically increased use of the filibuster in the Senate, make it much harder for any party to impose its will.[138]

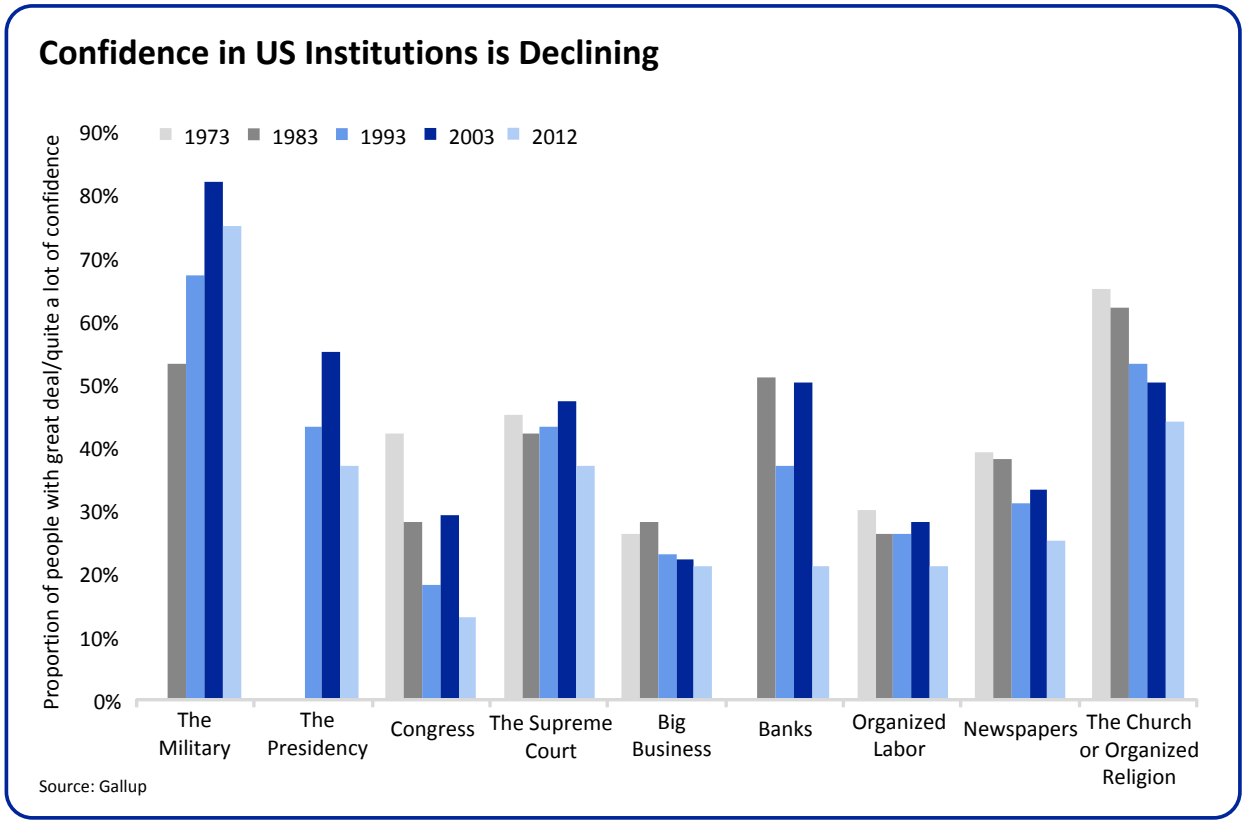
Polarization may prove especially problematic during turbulent times, limiting the United States' ability to respond to unfamiliar challenges. An international review of the political response to past financial crises shows that they are more likely to lead to "greater ideological polarization in society, greater fractionalization of the legislative body, and a decrease in the size of the working majority of the ruling coalition."[139] Coalitions become smaller, governments weaker, and the opposition stronger. This pattern seems to be repeating itself in the wake of the Great Recession, not just in the United States but also across the Western world.

At the same time, a broader loss of trust in elites is making it harder to build the consensus needed to tackle complex challenges. In the run-up to, and in the aftermath of, the Great Recession, policymakers, regulators and financial institutions have been widely perceived as having failed to protect the public good. Alan Greenspan, chairman of the Federal Reserve under four presidents, was lauded as "the maestro" for his control of the U.S. economy.[140] After the financial crisis, however, he admitted to being reduced to a "shocked state of disbelief" by the failure of the market adequately to manage risk. The Financial Inquiry Commission, meanwhile, catalogued a series of "dramatic failures" in government regulation and corporate governance.[141] It found that government agencies were "always behind the curve," both before and during the crisis. They had allowed the financial system "to race ahead of our ability to protect it."

The discrediting of elites is more than a short-term trend. Confidence has been falling in most major institutions, often over many decades (figure 6). The military is the only institution that a majority of Americans trust, commanding greater respect than in the 1970s. Even organized religion is now trusted by fewer than half of Americans. Confidence in business is low, and has fallen significantly since the turn of the century, while faith in banks has collapsed in the wake of the financial crisis. Unions are as distrusted as big business. The presidency is the most trusted of the major political institutions (but with a rating of only 37 percent), along with the Supreme Court (also 37 percent). Congress has always been especially unpopular, but has seen a further collapse in its approval ratings since 2004.

In part, these ratings reflect a broader trust deficit across society, with only 44 percent of Americans agreeing that "most people can be trusted."[142] Trust has declined steadily since the mid-1960s and is currently lower among young people than older people, among nonwhites than whites, and among the less educated than those with a college degree.[143] Inequality appears to fuel distrust, as vulnerable groups react to their own insecurity by being less willing to take the risk of placing their faith in others.[144] If the gulf between ethnic groups, rich and poor, and haves and have-nots remains wide, then levels of mistrust are likely to remain high in American society.

**Figure 6 Confidence in U.S. Institutions Is Declining, 1973–2012**




Although the combination of loss of trust in elites, polarization, and gridlock suggests that the U.S. government will continue to lack direction, this may create space for other actors to challenge the status quo. This challenge could take many forms, including protest movements such as Occupy or the Tea Party, innovation by for-profit or social entrepreneurs, or leadership from states or cities that emerge as laboratories for new approaches. The drivers of political and social change, in other words, may be more likely to come from the margins than from the center.

### A New Era of Global Leadership

Although the United States is certain to face headwinds in the coming decades, this does not mean that its stance will be a pessimistic one. Though fears of American decline will continue to surface, a more confident narrative is likely to predominate at most times.

Even during the crisis, a slim majority of Americans remained optimistic about the country's future over the next 50 years.[145] At the ballot box, meanwhile, they consistently reward optimistic politicians over negative ones.[146] A blind analysis of the speeches of presidential candidates between 1990 and 1984 showed that the candidate who sounded least pessimistic was elected on 80 percent of occasions, creating strong incentives for politicians to emphasize the potential for renewed American leadership.

At the same time, the United States will be able to draw on enduring *absolute* geopolitical strengths, even if its relative power continues to diminish due to the economic success of rising powers. It will continue to benefit from

- Its position as a *dominant security actor*, which it seems certain to maintain for at least another generation, and its privileged position in most *global institutions*.[147]

- Its *internal security*, which is more robust than that of countries such as India (currently tackling a Naxalite insurgency in 125 of its 640 districts)[148] and China (reported to be spending as much on domestic security as it does on defense or growing social tensions in the EU from the austerity measures.[149]

- Its *growth potential*, especially when compared with the EU, but more generally if it manages to use its leadership in key export sectors to exploit the purchasing power of a growing global middle class,[150] or if one or more of the emerging economies suffers an interruption to its growth.

Energy is set to become an additional source of American leadership. High prices send powerful market signals, as was last seen during the energy crisis of the 1970s, which led to both rapid increases in energy efficiency and a substantial growth in supply.[151] On the demand side, a similar shift in American demand is under way today in response to the price shocks of the past five years[152] and to government-mandated improvements in vehicle fuel efficiency standards that are expected to reduce U.S. $CO_2$ emissions by 4.7 billion metric tons by 2025.[153] As a result, despite population growth, the U.S. Energy Information Administration expects growth in energy use to slow to 0.3 percent per year between 2010 and 2035, with per capita consumption falling 0.6 percent in that period.[154]

The supply response has also been strong. As prices have risen, global investment in development has risen sharply. According to Barclays Capital, oil and gas companies are expected to spend nearly $600 billion on exploration and production in 2012, a 10 percent increase on 2011 and more than double the level of six years previously, with investment increasingly directed toward unconventional and deep water oil and gas.[155] This investment is expected to bring significant new production on stream, with the United States one of five countries that account for slightly under two-thirds of the new development. American unconventional oil is now estimated to be profitable when the West Texas Intermediate benchmark for oil is at $55 to $65 per barrel (it has been above this level for most of the past five years).[156]

The prospects for natural gas have been even more fundamentally transformed, in what has been described by one analyst as the “the greatest revolution in the United States energy landscape since the Second World War.”[157] Until recently, the United States was expecting to become increasingly dependent on imported gas, with Alan Greenspan warning the House of Representative’s Committee on Energy and Commerce that “earlier periods of relative [gas] abundance and low prices” were probably over, and that the United States should increase liquefied natural gas imports in order to reduce domestic price volatility.[158] As late as 2006, the International Energy Agency (IEA)

predicted that growth in production in the gas sector would be driven by the Middle East and Africa.[159] Today, however, U.S. reserves have now grown by about 70 percent during the past decade.[160] Production increased by a factor of four between 2007 and 2010, with a gas glut leading to a substantial reduction in prices, and to a growing gap between the cost of gas in North America and the price paid in Europe or Asia.[161]

Although energy will provide a geopolitical boost for the United States, the environmental consequences of these rapid changes to the energy sector remain hard to predict. Global demand for energy is still expected to grow rapidly, despite gains in energy efficiency, whereas the diffusion of new techniques for extracting unconventional oil and gas will see a growth in estimates of remaining reserves of fossil fuels. The trajectory of emissions will depend on the quantity of "new carbon" that is successfully extracted, its price, and whether the energy source it replaces has higher (coal) or lower (nuclear, renewables) emissions. Pressure on United States' emissions is likely to be downward, especially if combined with regulation (limiting coal, supporting renewables) and a carbon price.[162] At a global level, however, this could be offset by increased exports of American coal and by lower than expected energy prices. The IEA has modeled a "golden age of gas" and finds a marginal impact on emissions, leaving the world on a trajectory toward a 3.5°C increase in temperatures, even before additional supplies of unconventional oil are factored into the mix.

Overall, it seems highly likely that the United States will continue to play an assertive global role, supported by a public that overwhelmingly believes that it is best for the United States to be active in global affairs.[163] This, however, is equally *unlikely* to translate into a willingness to see American sovereignty constrained by international agreements, especially in contentious areas such as the environment. Formal treaties, meanwhile, will prove almost impossible to ratify, as can be seen by the fate of the relatively anodyne United Nations Convention on the Law of the Sea, which remains far from Senate ratification even after 20 years.[164] In a partisan age and where appeals to sovereignty still have political salience, gaining the support of two-thirds of the Senate to pass a treaty poses an almost insurmountable obstacle. If the United States is to contribute to international action on global challenges, it will seldom be via this formal route.

Moreover, the United States is likely to use its leadership to enhance its growth prospects, given the speed with which its population continues to grow. This is likely to bring it into conflict with those who believe that it needs to shift to a much less resource-intensive economic trajectory. Given the choice between fast growth and green growth, the United States remains likely to favor the former over the latter.

### Options for the Future

In the run-up to Rio+20, the High-Level Panel on Global Sustainability set out a plan of "global action . . . to enable people, markets and governments to make sustainable choices."[165] The priorities for the future, the panel argued, were "to eradicate poverty, reduce inequality and make growth inclusive, and production and consumption more sustainable, while combating climate change and respecting a range of other planetary boundaries." It called on all countries to adopt a strategy for sustainable development

and to measure the implementation of this strategy through a set of goals that would reflect equally "the economic, social and environmental dimensions of sustainable development and the interconnections between them."

A vision of this kind has no chance of adoption in the United States. In this paper, we have argued that there are powerful reasons for the United States to address threats to its current growth model, given the vulnerability of the current model to shocks, the failure of the American Dream to deliver for a growing proportion of citizens, and the seriousness of climate change and other environmental challenges. However, we have also demonstrated that change will not be easy to achieve, and will almost certainly not follow the pathway suggested by those who wish to see a substantial shift from growth to equity and environmental protection. American leaders are elected by a growing population that places a high value on prosperity. They are unlikely to be returned to office if they fail to deliver economic success, nor will they be rewarded at the ballot box if they are seen as being insufficiently assertive in advancing American interests on the international stage.

Change may be needed to the American system, but the approach recommended by the United Nations, and endorsed at Rio+20, has little appeal to either American publics or its elites. Many Americans remain strongly resistant to any role for the international system in regulating or restraining American growth. If anything, this hostility is growing. Agenda 21, a voluntary action plan agreed to at the first Rio summit in 1992, was denounced at the Republican National Committee *this year* in a resolution that condemned a form of "extreme environmentalism, social engineering, and global political control" that was inherently hostile to the American way of life.[166]

American policymakers therefore face a paradox. On the one hand, the need for—and perhaps also the demand for—a new growth model is strong. On the other hand, the obstacles to its creation are daunting. Although predicting the future is an invidious task, especially when levels of global uncertainty are so high and American politics is so finely divided, we see four broad scenarios that could result from the interplay of these contrasting forces.

- *Scenario 1: Muddle Through.* This scenario sees a continuation of business-as-usual, with a slight rebalancing of growth from the richest Americans to the middle classes, as a result of a combination of recovery and a growth in high-value exports. A period of high energy prices stimulates significant gains in energy efficiency, but also sees the United States emerge as a major producer of unconventional oil, as well as unconventional gas. This increases American energy security, but carbon emissions are only reduced slowly, as cheaper energy prices stimulate demand and reduce the competitiveness of renewables. Pressure is placed on China and India to discover and develop their unconventional carbon reserves, with an inevitable impact on likely climate trajectories. Policymakers increasingly focus on adaptation to climate impacts and on geo-engineering as a potential route to reducing atmospheric concentrations of greenhouse gases.[167] Internationally, levels of trust and cooperation between major powers is low, while a growing number of countries face powerful protest movements from both ends of the political spectrum.

- *Scenario 2*: *Going for Growth.* This scenario builds on scenario 1 but assumes a singular focus on growing the economy. Unconventional oil and shale gas are rapidly exploited and often exported, with lower energy prices boosting the economy. Domestic coal demand continues to fall, but low-cost coal is sold aggressively to emerging markets. Consumption remains a key driver of economic growth, which is rapid but unevenly distributed, with some metropolitan areas prospering and others experiencing a steep decline in their wealth and population. The labor market performs strongly, but it does not generate the jobs needed to reduce income inequality. Economic mobility also remains low, but, on the whole, urban voters continue to support a "growth first" politics. American greenhouse gas emissions fall, but only slowly, while its coal exports boost emissions in other countries. Declining federal government support for renewable energy means that gas does not become a bridging fuel to zero-carbon energy sources. American resilience to risk is strengthened by an improved fiscal position, but increased resources—diplomatic, military and economic—are used to react to, rather than manage, crises, both overseas and at home. America leads still, but in a highly competitive and often fractious world.

- *Scenario 3: Intelligent Design.* This scenario is also consistent with strong levels of economic growth but includes a more deliberate attempt to reinforce positive trends, restrain negative ones, and increase American resilience to a range of risks. Successive presidents focus on employment, through renewed public investment in education and training, additional support for sectors with high export potential, and innovative approaches to regulation, especially in the financial sector. The Federal Reserve places greater emphasis on its mandate to maximize employment, alongside its current focus on interest rates and price stability.[168] In the energy sector, the government takes a strategic approach to maximizing the country's new opportunities, with policies to maximize the potential of gas to reduce emissions (e.g., use in transportation) and some contribution from the energy sector to fiscal consolidation (through reduced subsidies and an increased use of taxation or market instruments).[169] None of these measures are especially dramatic, but taken together they have a measurable impact on sustainability and allow the United States to provide somewhat increased levels of leadership internationally. As a result, geopolitical outcomes are more cooperative, with some innovations in global governance, even though important stresses remain unaddressed.[170]

- *Scenario 4: Emergency Response.* Policy is driven in unpredictable directions by a series of shocks, such as a further breakdown in global financial systems, serious conflict or state failure, or a series of extreme weather events or clear evidence of disruptive climate change. In response to one or more of these shocks, the United States becomes a highly directive actor as it mobilizes what it perceives to be an urgent threat to its security. At a global level, net economic impact is negative, possibly strongly so, as growth slows in a number of countries. The impact on sustainability is hard to predict. It is most likely to be positive if an environmental shock triggers the crisis, although even then outcomes will be highly dependent on the timing of the event and the extent to which appropriate technologies are primed for rapid diffusion. The impact on geopolitics will also be mixed, especially if the

world divides into victims and villains (with the United States on either side) and if coercive measures (e.g., trade sanctions) are used to deliver change. This scenario becomes an increasingly likely successor to the previous scenarios, assuming that patterns of growth mean that the "safe operating space for humanity" continues to be transgressed.[171]

**Determining the Future**

These scenarios have very different probabilities of being adopted. In the short term, *muddle through* is the most plausible course of action for the United States, at the national level at least. Pockets of innovation will be found at state and metropolitan levels, and in the private sector, of course, but they are unlikely to have a decisive impact, given opposing trends in other states and business sectors. Fiscal tightening is likely to reduce space for the adoption of new policies, while any restriction on growth in existing industries will be strongly resisted while unemployment levels remain high. In his second term, President Obama may find that the rewards for United States' leadership are likely to be low, a product of an unsettled and often chaotic international environment. Increased strategic competition between the United States and China would be highly likely under this scenario.[172]

The prospects of a resurgent American economy should not be discounted, however. Growth is currently quite strong,[173] and new housing construction has increased substantially.[174] Assuming some stabilization in the euro zone and no significant weakening in the emerging economies, the U.S. could now see a rapid recovery after a number of false starts. *Going for growth* is a plausible scenario in this case, especially if a growing number of metropolitan areas aggressively pursue growth strategies. Internationally, under this scenario, the United States will sit somewhere in between the rest of the West and the rising powers, with the wealth and established institutions of the former, but the rapid urbanization and appetite for resources of the latter.

Shocks have the potential to make it impossible for the United States to continue to follow the *muddle through* scenario. In the short term, a returning financial crisis is the greatest risk, either in the euro zone or in one or more emerging markets. Conflict—in Iran, for example—cannot be ruled out, and political disturbance in a major oil producer (Iran, Saudi Arabia, Russia, Venezuela) would have a dramatic impact on energy markets. Environmental shocks are inherently unpredictable, but they are expected to become more frequent as climate change intensifies. In the *emergency response* scenario, much will depend on the resilience of American society (defined as the capacity to *absorb disturbance and reorganize while undergoing change*) and on policies that aim to reinforce that resilience.[175] As was seen during the early phase of the Great Recession, the window in which reforms can be implemented is only a brief one. It is therefore critical that potential responses have already been developed and are ready for rapid deployment.

*Intelligent design* is the preferred scenario for those who are convinced of the importance of sustainable development. This scenario does not require a sudden, and unrealistic, change of political and economic direction. Instead, a set of disparate policies have the cumulative effect of pushing the United States onto a growth trajectory

that is at least somewhat more sustainable than the current one. Over time, a new economic model emerges as political and economic incentives shift and the new direction becomes self-reinforcing. This scenario is far from being an easy option, however. On the one hand, even in the best case, environmental sustainability would still be some way off. Climate stabilization, in particular, is likely to remain a distant goal, with the chance of global warming remaining below 2ºC now increasingly remote. On the other hand, most of the policies that might underpin this scenario face daunting obstacles. Significant political skill will be needed to shift American society onto this path.

So what reforms or policy innovations are both consistent with the *intelligent design* scenario and likely to gain traction within contemporary America, given the country's history, current preferences and future opportunities and risks? First, a future direction *cannot rely too heavily on the federal government*. Until the 1970s, postwar U.S. economic policy was underpinned by a form of Keynesian economics that relied on the market but also a role for government to address distributional issues, and used fiscal policy to smooth economic cycles and to achieve key social and environmental goals. Keynesian policies came under sustained pressure, however, as economic growth began to slow, the oil crisis fueled inflation, and a combination of the Vietnam War and the cost of social programs increased budgetary pressure.[176] The result was a shift to a monetarist economic underpinning for economic policy, based on a view that government intervention in the market was a source of instability, and with policy prescriptions that increased the role of the private sector through deregulation and the privatization of government-owned assets.

Today, the role of government appears to have hit another inflection point, but its future direction is hotly contested. There is strong support for a substantial further reduction in the size of government. *The Path to Prosperity*, a Republican budget proposal for 2012, envisages reducing the size of government to 20 percent of GDP while placing a renewed emphasis on "the timeless principles of the American idea: free enterprise and economic liberty; limited government and spending restraint; traditional family and community values; and a strong national defense."[177] The proposed budget argues for a reversal of a "shortsighted financial regulatory overhaul [that] failed to fix what was broken on Wall Street" and attacks the "environmental activism" of the federal government.

An alternative vision is more supportive of a return to a mixed model that delivers new approaches to service delivery and regulation, while imposing more modest spending cuts. During its first term, the Obama administration created fewer regulations than its predecessors, but it has been more prepared to impose regulations in "economically significant" areas, where costs are above $100 million.[178] It has also established a new Consumer Financial Protection Bureau that is expected to take an aggressive approach to its mission, making "markets for consumer financial products and services work for Americans."[179] But even if these latter trends continue, the role of government will still remain constrained, given traditionally low levels of government expenditures, the need to tackle the deficit, and low levels of public confidence in the government's ability to deliver change.

Second, a new growth model is only likely to prosper if it *generates wealth for all segments of society*. U.S. citizens have a relatively high tolerance for inequality. Only a slim majority believe that it is the government's responsibility to take care of people who cannot take care of themselves, with support for a social safety net declining over the past 20 years.[180] It is highly unlikely that any political party will win support if it sets the reduction of inequality as a primary policy goal. However, it is equally unlikely that patterns of growth that fail to deliver benefits to the middle classes can be sustained indefinitely. The politically salient yardstick, therefore, is an absolute one (most Americans are seeing improvements in their living standards), not relative (the gap between rich and poor is closing), though the latter may follow from the former.

Governments are therefore likely to place considerable emphasis on the ability to generate more, and better, employment, with 21 million new jobs needed by 2020 for unemployment to sink below 5 percent.[181] In addition, productivity gains must also support higher wages, if household incomes are once again to continue to increase. In part, this is likely to depend on the United States' ability to exploit emerging international export opportunities in societies with growing numbers of consumers. President Obama has set a target of doubling American export growth by 2014, with his National Export Initiative claiming that an additional 1.2 million jobs were supported by exports between 2009 and 2011.[182]

Finally, policies will need to fulfill at least *a narrow vision of sustainability*, based on two key areas:

- *Greater resilience in the face of crisis*. Federal, state and city governments will see their credibility undermined if they fail to manage risks effectively. The economic crisis is far from over, with the euro remaining under serious threat. The world also faces a number of significant geopolitical risks, including the aftermath of the Arab Spring and potential conflict with Iran, either of which could have a dramatic impact on energy markets. This suggests that the United States is highly unlikely to be able to avoid future shocks but will prosper to the extent it is adaptable in the face of them.

- *Protection from immediate environmental impacts*. American public opinion on climate change is influenced by short-term weather trends, with abnormal shifts in local temperature associated with a strengthened belief in global warming.[183] Natural and environmental disasters—such as Sandy, Katrina, and the Deepwater Horizon Oil Spill—also increase concern about climate change, with more than 80 percent of Americans saying that they experience an extreme weather event or natural disaster each year.[184] Action that explicitly aims to address these threats, either directly or indirectly, is therefore more likely to be supported than more general appeals to protect the planet, especially as weather extremes continue to increase.[185]

On the basis of these criteria, we have developed a series of policy recommendations that are most likely to push the United States toward the more proactive approach outlined in the *intelligent design* scenario. Many of these policies would also push the

United States toward the *going for growth* scenario, but without the social and environmental benefits of the preferred scenario.

We do not expect all these policies to be implemented in the short term, but even a handful of them would begin nudging the United States toward a more sustainable trajectory. This would, in turn, provide a foundation for a new era of leadership from the United States on issues that will have a decisive impact on global prosperity and security in the 21st century.

## 3: America's Future Direction

In this paper, we have argued that the United States faces economic, social and environmental challenges that cannot be effectively managed given existing policies. There are, however, significant social and political factors that block many options for a future direction. In this section, we therefore set out policies that, though challenging to implement, are within the realm of the politically possible. Our expectation is that demand for new policies will grow as globalization continues to be gripped by its long crisis, and that the United States remains relatively well placed to pioneer new approaches, given its geopolitical position, wealth and appetite for innovation. We therefore expect opportunities to break the gridlock, although the windows for reform will often be fleeting.

We group recommendations into four areas, focusing on:

- *Employment*, which is the most urgent priority of the United States to accelerate its recovery from the Great Recession, while addressing underlying structural issues that have led to a decade of poor economic outcomes for most Americans.

- *Investment in the future*, as the key marker of whether the United States is prepared to make farsighted decisions, or whether its resources and political attention are increasingly absorbed by current consumption and immediate crises.

- *Energy*, where there are new opportunities to make strategic use of an increased energy endowment, while reinforcing patterns of resource demand, with a significant resultant impact on the sustainability of the United States' growth model.

- *Fiscal rebalancing,* where the United States must both insulate economic recovery from the process of fiscal reform while also reducing and stabilizing the debt.

Finally, we explore the implications of these policies for renewed American leadership internationally, arguing that President Obama, and his successors after 2016, have the opportunity to reenergize the country's foreign policy if they build on a platform of domestic actions that enhance the sustainability of both America's society and economy.

### Tackling the Jobs Crisis

Nearly 9 million jobs were lost in the Great Recession and its immediate aftermath.[186] During the recovery, policy has had a modest impact on increasing employment, with the Congressional Budget Office estimating that the Recovery and Reinvestment Act has led to between 0.2 and 1.2 million additional people in current employment, with a peak impact on employment at the end of 2010.[187] At the state level, labor markets were strongest in those states that increased government expenditures fastest between 2007 and 2010.[188] But the federal stimulus spending created jobs at an estimated cost of $125,000 per job.[189]

As noted by Ben Bernanke, chairman of the Federal Reserve, “the rate of improvement in the labor market has been painfully slow.”[190] At the rate of job creation in the 2000s, it would take until 2020 to fill the current jobs gap, with Bernanke blaming the troubled housing sector, fiscal contraction at the federal and state levels, and financial stresses in the euro zone. The Federal Reserve, tired of waiting for Congress to act, launched a new round of quantitative easing (QE3) based on its expectation that economic growth will not otherwise “be strong enough to generate sustained improvement in labor market conditions.”[191] This new commitment does not have a fixed end date but is tied to clear evidence that the labor market is improving. This marks an increased commitment from the Federal Reserve to “forward guidance,” signaling that it is prepared to boost aggregate demand (and, as a result, tolerating a higher inflation), until the economy has fully recovered.[192]

Prospects for the United States’ growth now appear strong, although still highly vulnerable to shocks. The housing market appears to have stabilized, deleveraging is advanced, and companies are sitting on large reserves of cash. The immediate priority, therefore, is to maintain QE3 and strengthen the signal sent to the market by underlining the importance of the dual mandate (in contrast to current legislative attempts to remove the Fed’s goal of maximizing employment),[193] while maintaining the current consensus on the Federal Open Market Committee behind a “highly accommodative stance of monetary policy” until employment has increased substantially.[194] The key domestic threat to employment growth derives from the prospect of premature fiscal tightening (discussed below). Internationally, U.S. leadership is needed, especially within the G-20, for a more aggressive attempt to manage contagion within, and from, the euro zone, and to respond to signs of economic fragility in the emerging powers.

Beyond the immediate economic crisis, the focus needs to shift to structural factors, through efforts to tackle long-term unemployment, and geographical and skills mismatches between labor market and labor force. During the recession, there was a substantial increase in the mismatch between available jobs and the skills of the workers available to fill them; with industrial mismatch accounting for about a third of the increase in unemployment (geographical mismatch did not play a significant role).[195] Although this was primarily a cyclical phenomenon, with levels of mismatch quickly returning to prerecession levels—mostly as a result of more rapid recovery in sectors such as construction, manufacturing and retail that were fastest to shed jobs during the downturn—workers with obsolete skills are disproportionately likely to lose their jobs during a recession.[196] Large numbers of workers have been unemployed for more than six months or have exited the labor force entirely.[197] Most of these potential workers will lose skills and motivation the longer they are out of work, leading to what Ben Bernanke has warned of as “modest increase in the sustainable, long-run rate of unemployment,”[198] with the natural rate of unemployment now estimated to have increased to between 5.2 and 6 percent.[199]

A related problem is the long-term failure to generate sufficient jobs that support a middle-class income. At least in its early stages, the recovery has seen a further shift toward low-wage jobs, with mid-wage jobs accounting for 60 percent of the jobs lost in

the downturn, but only 22 percent of those added in its aftermath.[200] Looking forward, the workforce faces significant structural challenges. During the next decade, it will continue to age, increasing the importance of participation rates of older workers. The skills gap is also likely to increase, with the McKinsey Global Institute projecting that in 2020 there will be about 6 million too few jobs for those who have not completed a high school education, though there is likely to be a shortage of workers able to fill jobs that require advanced technical degrees.[201] Middle-class jobs are likely to continue to become increasingly demanding, as routine tasks are exported or offshored. The major priority is to address the skills gap (discussed below), while also

- Implementing an emergency package for the long-term unemployed to increase their chances of finding work as the recovery proceeds, with the aim of bringing the natural rate of unemployment back down to about 5 percent.[202] Options include targeted retraining schemes for the long-term unemployed or wage subsidies for employers who provide them with jobs, drawing on the more successful elements of Germany's Hartz Reforms.[203]

- Supporting the rebound of manufacturing after the recession, with the aim of creating middle-class jobs and supporting robust local economies.[204] The future for the United States is in high-end industries, which are likely to prosper as manufacturing becomes increasingly reliant on technology, less centered on mass production, and less determined by access to cheap labor.[205] This will require greater support for innovation (discussed further below).

- Capitalizing on the opportunities for growth that can be found in America's cities, especially as they continue to experience rapid population growth. They have the greatest ability to escape partisan gridlock at federal levels, offering what Bruce Katz calls a "historic opportunity to usher in a new era of pragmatic, collaborative federalism that capitalizes on the economic power of metropolitan areas and the policy creativity of state and local leaders."[206] Katz proposes that the federal government should fund state and metropolitan development strategies on a competitive basis, and based on their contribution to national objectives, such as the goal of doubling exports.

**Investing for Tomorrow**

A willingness to invest in future generations is critical to the long-term success of any society. In recent decades, however, the United States has seen a rise in consumption, an increase in debt and a failure to invest in education, infrastructure and the innovation needed to sustain prosperity.

The American education system has important strengths, including its elite higher education sector. Its schools, however, are failing large numbers of students, with the American students ranking below average for science and only average for mathematics when compared with other OECD countries.[207] The failure to provide a decent education to black and Latino students is especially consequential, given that they lag two to three years behind their white counterparts.[208] This will have an intensifying economic impact as the workforce becomes increasingly populated by

these groups. Creating better and more affordable education opportunities means reducing costs, improving quality and ensuring that the education system is equipping graduates with the skills needed for the 21st century, with a particular focus on poorly performing groups of students. Challenges include high costs of elite institutions and higher education, access to scholarships and grants, mounting student debt and inequitable payback schemes.

Priorities include:

- Making higher education more affordable and accessible for a greater number of students, thus narrowing the educational opportunity gap. This can be done through an increase in state-sponsored financial aid and granting programs (i.e., further investment in Pell Grant scholarships), providing payments options for students at different income levels, or by freezing or cutting tuition rates.[209] Reform of the student loan payback system is especially important, enabling student loan borrowers to cap their payments at a percentage of income (i.e., at 10 percent of what they make every month).[210]

- Improving educational outcomes by reviewing curricula and assessment systems to match outcomes relevant to future economic opportunities and social challenges. All the world's top-performing and rapidly improving systems have curriculum standards that set clear and high expectations for what students should achieve.[211]

- Addressing the skills gap among adult workers, through increased partnerships between businesses and educational institutions, and a focus on workforce development. Investment could be increased in the federal program Skills for America's Future, an industry-led initiative that improves industry partnerships with community colleges and builds a nationwide network to maximize workforce development strategies, job training programs and job placement.[212] There is also potential to focus federal and state assistance for training on firms and sectors that have the greatest potential to produce high-paid jobs (with randomized trails to measure what works).[213]

Infrastructure is another area where the United States is falling behind, with a pronounced impact on its future competitiveness.[214] According to the American Society of Civil Engineers the United States should spend $1.7 trillion by 2020 to upgrade infrastructure, and current investments are falling short of what is needed by $94 billion a year.[215] The United States currently spends about 2.4 percent of GDP on infrastructure,[216] compared with 5 percent in Europe and 9 percent in China.[217] As well as improving competitiveness, smart investment in infrastructure could put the U.S. economy on a lower carbon path while helping support the investments of the future.

The United States should develop a national infrastructure plan or strategy that strengthens federal support, and improves cooperation between all levels of government and the private sector. In order to increase the sustainability of America's infrastructure, specific priorities include:

- Increased investment in low-carbon mass transportation, thereby reducing fuel use, air pollution and greenhouse gas emissions, while improving the quality of urban life.[218]

- Promotion of innovative financial mechanisms to support green infrastructure investments, through entities such as Connecticut's Clean Energy Finance and Investment Authority, which helps to reduce pressure on public budgets.[219]

- Investment to make infrastructure more resilient to extreme weather events and other natural disasters, given the heightened vulnerability of many U.S. urban areas to a range of threats.[220]

Finally, policies are needed to increase innovation, especially in areas that will equip the United States to compete in industries with high growth potential. Since the 1960s, the U.S federal rate of investment in R&D as a percentage of GDP has declined from nearly 1.3 percent to 0.9 percent, damaging the global competitiveness of the United States' industries.[221] The government therefore should increase federal funding for R&D, especially in clean energy and other low-carbon areas, but also in sectors where the United States holds significant research capacities, including biotechnology, genetics and nanotechnology. Priorities are to:

- Enhance the United States' attractiveness as a place for investment by removing barriers in the tax code, creating new financial mechanisms that combine public and private funding streams, and increasing investment in seed capital and technology funding programs, such as the Small Business Innovative Research Program, which provides about $1 billion a year to U.S. small businesses for early-stage R&D projects.[222]

- Support entrepreneurship through effective immigration policies that entice a highly skilled labor force. H1-B visas are strongly associated with innovation in science, technology and engineering.[223] The cap on these visas should therefore be raised to address skilled labor shortages.

- Support innovation in clean energy and low carbon, through a cohesive set of federal, state and local low-carbon economic growth strategies that will help increase the United States' leadership in these sectors.[224]

**Fueling the Future**

America's energy prospects have changed radically in recent years, as higher energy prices have combined with modest technological innovation to increase reserves of unconventional gas and, more recently, unconventional oil. This is already having an economic impact, with energy prices lower in the United States than in Europe or Asia. In his 2012 State of the Union Address, President Obama claimed that shale gas alone will lead to the creation of 600,000 new jobs by the 2020.[225] Gas production is likely to exceed consumption within a decade, though prices are already low (indicating a gas glut).[226] This creates the potential for exports, supporting the development of stronger and more resilient global liquefied natural gas markets.[227] However, the extent of the

long-term benefits from gas, and in particular their impact on climate change, are highly uncertain. Natural gas has been presented by the American Gas Association as a "bridge" to renewable energy technologies since the early 1980s, but it is unclear whether they remain a bridge to nowhere.[228] Much will depend on the extent to which coal is displaced, whether investment in renewables is crowded out, how quickly tight oil production increases, and—above all—whether lower prices leads to an increase in demand.

Policies are therefore needed to support and direct demand for gas, especially through faster switching from coal to gas for power generation. Coal is still projected to provide 38 percent of United States electricity in 2035, compared with 45 percent in 2010.[229] Earlier decommissioning of inefficient coal plants should be encouraged through ongoing tightening of regulations.[230] There is a real danger, however, that the decline in coal production will be limited by an increase in exports, displacing carbon emissions overseas. Exports in 2011 were almost double those of two years earlier, and have continued to rise rapidly.[231] New coal terminals are planned, with the Environmental Protection Agency calling for a study of the climate change effects of exporting coal from the United States to Asia.[232] Europe—suffering comparative energy scarcity—is also a growing market for American coal.[233]

There is also potential for displacing oil in transportation, especially in heavy vehicle fleets (using compressed natural gas) or through greater use of electric cars (assuming the electricity comes from gas-powered generation). In the medium term, there may be potential for increased use of natural gas light vehicles, which are already made and sold abroad by most major manufacturers, including Ford and General Motors.[234] Again, however, the net effect on emissions will be reduced if prices are lower than would otherwise have been expected.

As a zero-carbon base load source of electricity, there is renewed debate on the role nuclear energy should play in reducing U.S. greenhouse gas emissions. Nuclear energy is currently the fourth-largest source of energy production, and provides more than 19 percent of the United States' electricity. However, since the Three-Mile Island nuclear incident, building nuclear power plants has become increasingly costly, and no reactor has been built in the United States since 1977. The Obama administration has offered loan guarantees to support the construction of four new reactors, although it has faced difficulties finalizing terms with private sector partners.[235] The Nuclear Regulatory Commission has also received active applications for a total of 28 new reactors, though many are unlikely to ever be built.[236] President Obama's goal of generating 80 percent of future electricity from clean energy sources by 2035 probably cannot be met without at least some increased role for nuclear.

Carbon pricing (discussed above) remains the key priority for a more sustainable energy policy. It has the potential to ensure that recent shifts in patterns of energy demand are reinforced, while favoring the supply of low-carbon fuels.[237] A carbon price, by increasing the costs for carbon-intensive industries, would be an incentive for innovation into green technologies that reduce $CO_2$ emissions, complementing other

government policies supporting R&D in clean energy.[238] However, a carbon price should be supplemented by:

- Better regulation of the shale gas industry, in particular to reduce methane leakage, which is essential if gas is to deliver the expected environmental benefits over coal.

- Promotion of investment in gas infrastructure (pipelines, refueling infrastructure/standards, etc.) and of standards for the use of gas in transportation.[239]

- A clean energy standard in the power sector, which would harmonize and strengthen existing regulations and is projected to reduce the sector's emissions by 22 percent in 2025 and 43 percent in 2035.[240]

- Policies to promote more dense patterns of urbanization, building compact cities that are more energy efficient and less reliant on the automobile.[241]

- Continued use of regulation to promote more efficient end energy use or to ensure rapid improvements in the efficient use of resources by energy-intensive sectors, where the government is able to demonstrate substantial environment benefits at an acceptable cost.

**Fiscal Rebalancing**

In the medium term, the United States needs fiscal reform that puts the country on a pathway to sustainable economic growth. However, it must also avoid a sharp near-term fiscal contraction that could endanger the recovery.[242]

The first priority is to manage the so-called fiscal cliff without further action by Congress. On December 31, 2012, the Bush-era tax cuts will expire, and on January 1, 2013, budget sequestration will cut $110 billion from spending. According to the Congressional Budget Office, this is likely to drive the economy back into recession in 2013 and see unemployment at more than 8 percent through 2014.[243] Despite intense partisan differences on this issue, policymakers need to send a clear signal that expenditures will not be significantly cut until the recovery has become entrenched and the labor market has shown significant further signs of recovery. Medium- and long-term fiscal retrenchment should then be used as a "reverse stimulus" when growth is strong, restraining inflation and allowing interest rates to rise more slowly than would otherwise be the case.

A related priority is to address the fiscal crisis at the state and city levels, with 31 states facing a $55 billion shortfall in the current fiscal year and a growing number of municipalities filing for bankruptcy.[244] As the State Budget Crisis Task Force has demonstrated, state budgets are increasingly procyclical, while their deficits are structural and will be closed as the economy recovers.[245] Without action, there is likely to be a serious impact on regional and local labor markets, and on education, health and social sector expenditures. In Alabama, for example, the Jefferson County

bankruptcy has seen residents in some of the poorest districts cut off from water mains and sanitation.[246]

The fiscal cliff offers a window of political opportunity, along with many risks, forcing both political parties to the negotiating table. Most proposals combine some blend of spending cuts and new tax revenues, although most Republicans remain strongly opposed to the latter. The Bipartisan Policy Center has recommended a combination of spending cuts, tax expenditures and rate cuts and new revenues to balance the budget and reduce the debt, at roughly a 50:35:15 percent ratio between now and 2040.[247] This plan would stabilize the debt by 2014 and reduce it to 60 percent of GDP by 2023 and 40 percent by 2035.[248] The Obama administration's National Commission on Fiscal Responsibility and Reform has proposed a 3:1 split, where $1 in revenue would be raised for every $3 in spending cuts.[249]

Beyond the overall aim of reducing debt, any fiscal reform package should also aim to:

- Reform the tax code in ways that tackle income inequality by restructuring provisions for lower- and middle-income taxpayers. Allowing the Bush tax cuts to expire for incomes above $250,000 is a first step toward addressing this challenge.

- Cutting inefficient subsidies, especially those for fossil fuels, in line with the commitment made by leaders at the G-20 in Pittsburgh in 2009. Although these subsidies are protected by powerful political lobbies, their removal may be feasible as part of a broader fiscal package, raising up to $52 billion in additional revenue at a time when the oil and gas sector is performing strongly and does not need public support.[250]

- Shifting taxation from labor to carbon. Although a carbon tax is currently politically difficult, it may win support if it is revenue neutral or is used to prevent income taxes from rising. At $15 per metric ton of $CO_2$ and rising 4 percent in real terms to 2050, it could raise revenues of $80 billion initially and $310 billion by 2050 while also reducing U.S. $CO_2$ emissions by 2.5 metric tons (34 percent) by 2050.[251]

## Conclusion: Renewing America's Global Leadership

We live at a time of rapid change and great uncertainty—a time when strains and crises threaten the current model of globalization, when critical natural systems are facing growing strain, and when governance structures are failing to respond to a growing list of challenges. This crisis of globalization can best be understood as a crisis of unsustainability, as the world struggles to provide a decent standard of living to more than 7 billion people, at a time when resources are constrained, natural systems are under threat, and international and national institutions are ill equipped to manage contemporary risks.

This is not an easy world in which to lead. Trust is low within and between countries. Levels of uncertainty are high, complicating geopolitical calculations and hampering investment decisions. Governments spend much of their time firefighting and have little time actively to shape new policies, approaches and solutions. The United States'

effectiveness in acting alone is diminished, particularly in non-defense-related areas such as economic and environmental challenges, where the rising powers have not yet been prepared to invest in global leadership. The result is a leadership deficit on the defining challenges of our age: building a more resilient economic system; productive employment for the world's young people; stable markets for food, energy, and other natural resources; and climate stabilization.

Is America equipped to renew its leadership on these issues? It has huge potential for technological and social innovation. Its economy has global reach, and its policies and actions shape markets. Favorable demographics, a strengthening economy, growing energy reserves, and a robust and durable geopolitical position all provide the basis for it to take a more confident and assertive stance.

However, the sustainability of United States' global leadership needs to be underpinned by a robust economy that delivers outcomes for a wider range of its population, and at an acceptable environmental cost. Policies that address the key economic, environmental and social challenges outlined in this paper will ultimately be the main drivers and determinants of the scope and effectiveness of the United States' global leadership.

The policies presented in this paper would provide a robust foundation for a new era of American leadership, helping President Obama and his successors to strengthen major alliances and to become a more effective actor in key international forums such as the G-20 and the United Nations. In particular, there are opportunities to:

- *Strengthen the knowledge base needed to underpin international action*. Many of the world's leading scientists are American, and the United States' research centers have comparative advantage across multiple fields. New approaches to both "big" and "open" data have been pioneered in the United States, offering new opportunities to analyze complex crosscutting global issues. The U.S. should do more to deploy these resources internationally, establishing analytical resources that build consensus on the scope of problems and the nature of potential solutions.

- *Pivot to the global jobs crisis.* It is not just America and Europe that lack jobs. The job crisis is a global one. It is most pressing in regions that have the largest proportion of young people in their populations and have the potential to collect a demographic dividend if they can expand their workforce at sufficient speed but risk a destabilizing demographic disaster if they fail.[252] For example, in Africa millions of youths are flooding into the workforce each year, while 60 percent of the continent's unemployed are age 15 to 24 years of age.[253] American leadership on global employment, and on the education and skills needed to underpin it, is essential, especially when the G-20 finally is able to turn its attention from the fallout of the 2008 financial crisis.

- *Strengthen the global trade system*. The United States continues to benefit significantly from global trade, and as 95 percent of consumers reside outside the United States, access to the markets of large emerging economies such as China,

India and Brazil will be increasingly important sources of growth for United States' businesses. The multilateral trading system centered on the World Trade Organization (WTO) is the key source of stability and a driver of trade liberalization. The U.S. should reinvigorate the WTO as the key venue for trade liberalization, which first will require finishing enough of the WTO Doha Round to declare the round over, creating political space for the WTO to focus on new trade priorities such as green energy, food security and electronic commerce.

- *Demonstrate leadership on energy, food and other resources*. Resource markets are likely to remain highly volatile for some years, complicating relationships between major powers, weakening strategically significant fragile states, and discouraging investors from making long-term commitments. The U.S., which is enjoying increasing resource security, has new potential to work with China and India—countries whose rapid growth is seeing them increasingly exposed to global resource markets. In particular, by exporting the technological and regulatory know-how that has underpinned its shale gas revolution, it can diversify global energy production while promoting a relatively clean energy source. It should also lead on extractive transparency, helping ensure that supplier countries are more likely to escape from the resource curse. Domestic action on energy subsidies, meanwhile, will make credible the G-20's commitment to global subsidy reduction, while the Obama administration should deepen its support for efforts to provide universal access to modern energy sources by 2030.[254]

- *Reframing action on climate change*. Concerted international action on climate change has no prospect of success without U.S. leadership. In his second term, President Obama will find his position on climate substantially strengthened by the fact that American emissions are falling and are projected to continue to do so. A new tax on carbon would also be a game-changer. Countries are committed to once again trying to negotiate a new treaty on climate; this time by 2015. The Obama administration should provide an early signal of its level of ambition for this treaty and what it expects other large economies to contribute in terms of timelines and targets for reducing greenhouse gas emissions. It also has the opportunity to open up new space on issues such as black carbon, the Arctic, and noncarbon greenhouse gases such as methane.

President Obama is likely to spend a growing proportion of his second term on foreign policy, especially after the midterm elections in 2014, when attention will begin to focus on electing his successor. He will find that many of America's partners face sustainability challenges that are often more pressing and far-reaching than those experienced by his citizens, sheltered as they are by prosperity, abundant natural resources and distance from most of the world's trouble spots. This will provide him with an opportunity to begin to build a consensus on issues that will often be politically controversial.

As a second-term president, Barack Obama will benefit from the authority that accrues to leaders the longer they spend on the world stage. In his first speech to the United Nations, he told world leaders that they could be remembered for putting off hard

choices and failing to adjust to the challenges of the 21st century, or they could be remembered for their willingness “to see the shoreline beyond the rough waters ahead.” He now has an opportunity help the world strike out for that shoreline, but like any American president after an election, his time is already running out.[255]

## Notes

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