



300 Million Engines of Growth

A Middle-Out Plan for Jobs, Business, and a Growing Economy

June 2013



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Edited by Jennifer Erickson and Michael Ettlinger June 2013

COVER PHOTO

Supporters cheer as they wait for President Barack Obama at his election night party Nov. 7, 2012, in Chicago.

AP PHOTO/PABLO MARTINEZ MONSIVAIS

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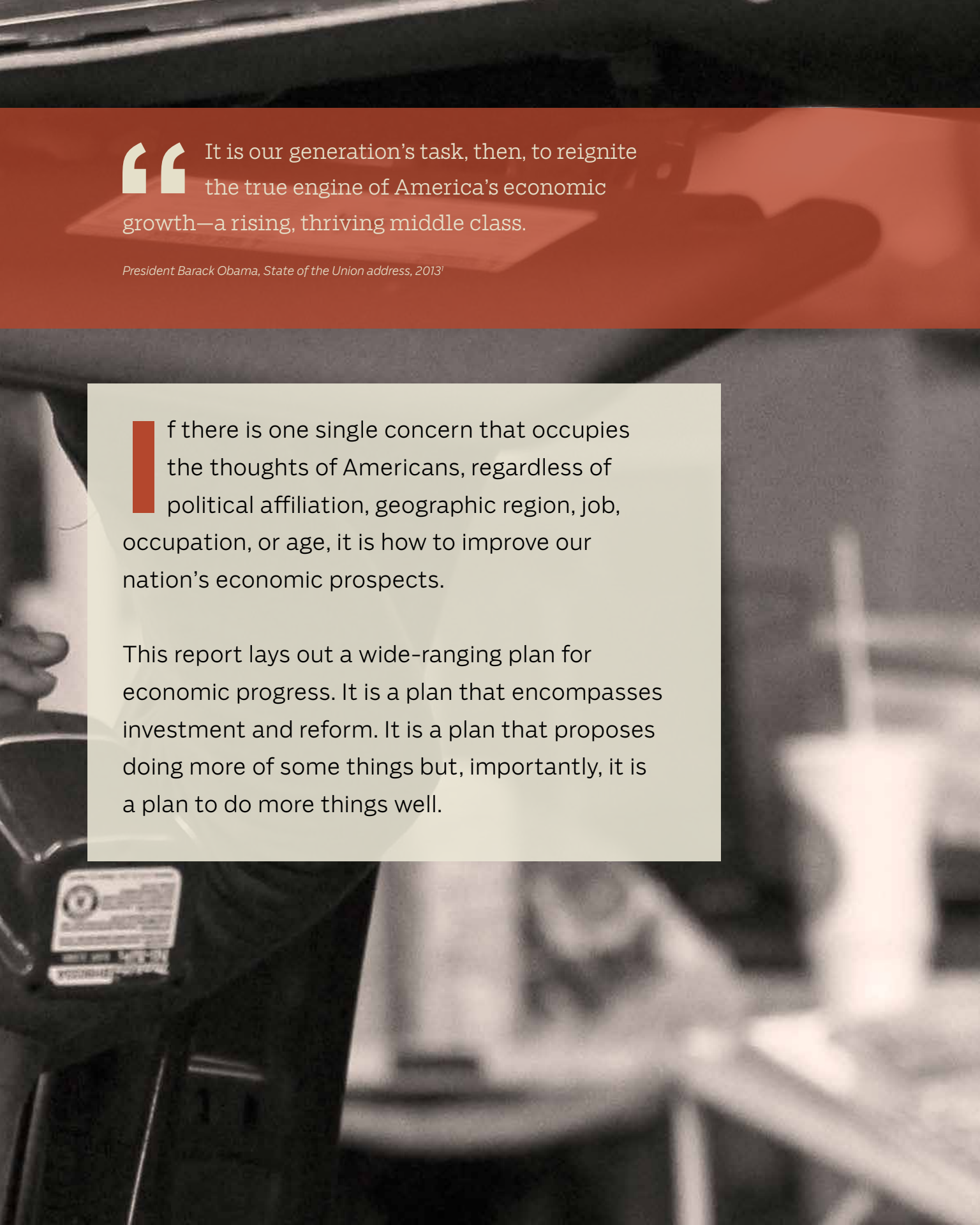
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A black and white photograph of a woman with long dark hair, looking upwards and to the right, working on a car. She is wearing a light-colored shirt. The car's body and mechanical parts are visible in the background. A semi-transparent red rectangle is overlaid on the top left of the image, containing the title text in white.

Introduction and summary

An auto worker assembles parts on the
2013 Dodge Dart at the Chrysler Plant in
Belvidere, Illinois, Feb. 2, 2012.

AP PHOTO/CHARLES REX ARBOGAST



“ It is our generation’s task, then, to reignite the true engine of America’s economic growth—a rising, thriving middle class.

President Barack Obama, State of the Union address, 2013¹


If there is one single concern that occupies the thoughts of Americans, regardless of political affiliation, geographic region, job, occupation, or age, it is how to improve our nation’s economic prospects.

This report lays out a wide-ranging plan for economic progress. It is a plan that encompasses investment and reform. It is a plan that proposes doing more of some things but, importantly, it is a plan to do more things well.

The agenda presented here is based on what we know makes an economy grow and prosper and what we know are the keys to good jobs and a good quality of life, including:

- A well-educated, secure, and growing middle class that underpins strong demand, entrepreneurialism, innovation, and productivity
- Greater private and public investments deployed more strategically
- A fair playing field for business and workers, both domestically and internationally
- Leadership in science and technology
- Effective institutions and governance

out to grow the largest, most dynamic economy the world has ever seen, there is no single policy we can rely on to meet our economic challenges. Rather, we need a set of policies that work together to boost our competitiveness and solve our economic challenges. The starting point for our strategy, therefore, is multifaceted and begins with the understanding that people—their work, their ingenuity, their willingness to take risks, and their desire and capacity to build a better life for themselves and their families—are what cause an economy to grow. In the United States, we have 300 million of these engines of growth. To be successful, a country's economic agenda has to strengthen its people. It has to educate them, train them, and reward them with financial security. This is the core of a middle-out plan for economic growth. In other words, as explained in the box on page 6, to have a strong and growing economy, we need a strong and growing middle class.



To have a strong and growing economy, we need a strong and growing middle class.

The policies we propose are an important step to redefining our nation's long-term economic prospects and to restoring the American Dream of a better life for each succeeding generation.

Economic growth is a complex process fueled by many factors. When we are setting

But while strong, talented people are the most important ingredient in our economic success, they cannot contribute fully if the economic environment in which they perform fails to offer opportunities. For people to build a vibrant economy, they must work in a country committed to technological advancement, readily available capital, quality public infrastructure, a fair playing field for competition, and a strategy for success in the global economy. They must live in a country with thriving businesses, big and small, that are at the vanguard of what's new and are the most efficient in the world.

In short, a robust economy needs strong people working and living in an adaptive economic environment conducive to their success.

Where we are

Our emergence from the Great Recession has been painfully slow. Historically, we have been able to build a bridge out of recessions and find the other side to be as good as or better than where we started. But as we emerge from this recession, we find ourselves in the third in a series of “jobless recoveries” in which unemployment remains elevated well beyond the recovery of growth and profits.

The small stimulus passed under President George W. Bush in 2008 and the larger package passed under President Barack Obama in 2009, plus smaller measures passed since then, restored a level of demand to the economy that created many jobs and prevented others from being lost. Unfortunately, fiscal austerity put in place by the Budget Control Act of 2011 and other tax changes—culminating in 2012 in the so-called fiscal cliff and sequestration-mandated broad, across-the-board spending cuts—are already hurting economic growth in 2013 to the tune of nearly \$300 billion.²

Given that the U.S. economy expanded at a mere 2.5 percent in the first quarter of 2013,³ the first brief section of this report, “Creating jobs now,” offers policies that we believe would give the economy an immediate boost and that should be implemented as soon as

possible. But a lasting economy cannot be built through only short-term measures, which is why we place the focus of this report on longer-term policy suggestions. Adapting to an economic environment that is markedly different from what has come before cannot be accomplished in a year or two or, for that matter, in a single economic plan proposed at a particular point in time.

This raises the question: What has changed that calls us to new policies and approaches? The transformation in the world economy and America’s role in it have many faces. Certainly greater global interconnectedness, and particularly greater international trade in goods and services, are important parts of this transformation. The United States now faces more competition from more directions.

To some degree, this was inevitable. Countries poorer than wealthy ones such as the United States can have more potential to grow quickly, and the rest of the world can benefit by learning from innovations originating in the United States. That happened first with Europe and Japan in the decades following World War II, and it’s now happening with former communist countries and other nations that have turned the corner on economic development.

The increase in competition isn’t a bad thing: A race can bring out the best in us. But we have to up our game if we don’t want to be surpassed by others who are better at adapting to the realities of 21st century economic competition.

Meanwhile, there's a new, less inevitable challenge. We are increasingly seeing countries employ aggressive nationalistic economic policies that may work for them in the short run but that undercut the norms of international economic partnership. These practices reduce worldwide economic growth and directly injure those nations that strive to play by the rules.⁴

The economic relationship among nations is, however, but one of the changes affecting the American economy. Another is the development of new technologies and processes that are revolutionizing manufacturing. The shop floors of today's highly innovative high-tech manufacturing companies look nothing like the labor-intensive assembly lines of the past. Technological advances in manufacturing improve productivity and boost growth, but they also demand new strategies to succeed in today's increasingly competitive global marketplace.

Another fundamental change in the economic landscape is climate change. Its costs to businesses, families, and government are often hidden but are becoming less so. And the solutions offer massive new economic opportunities.

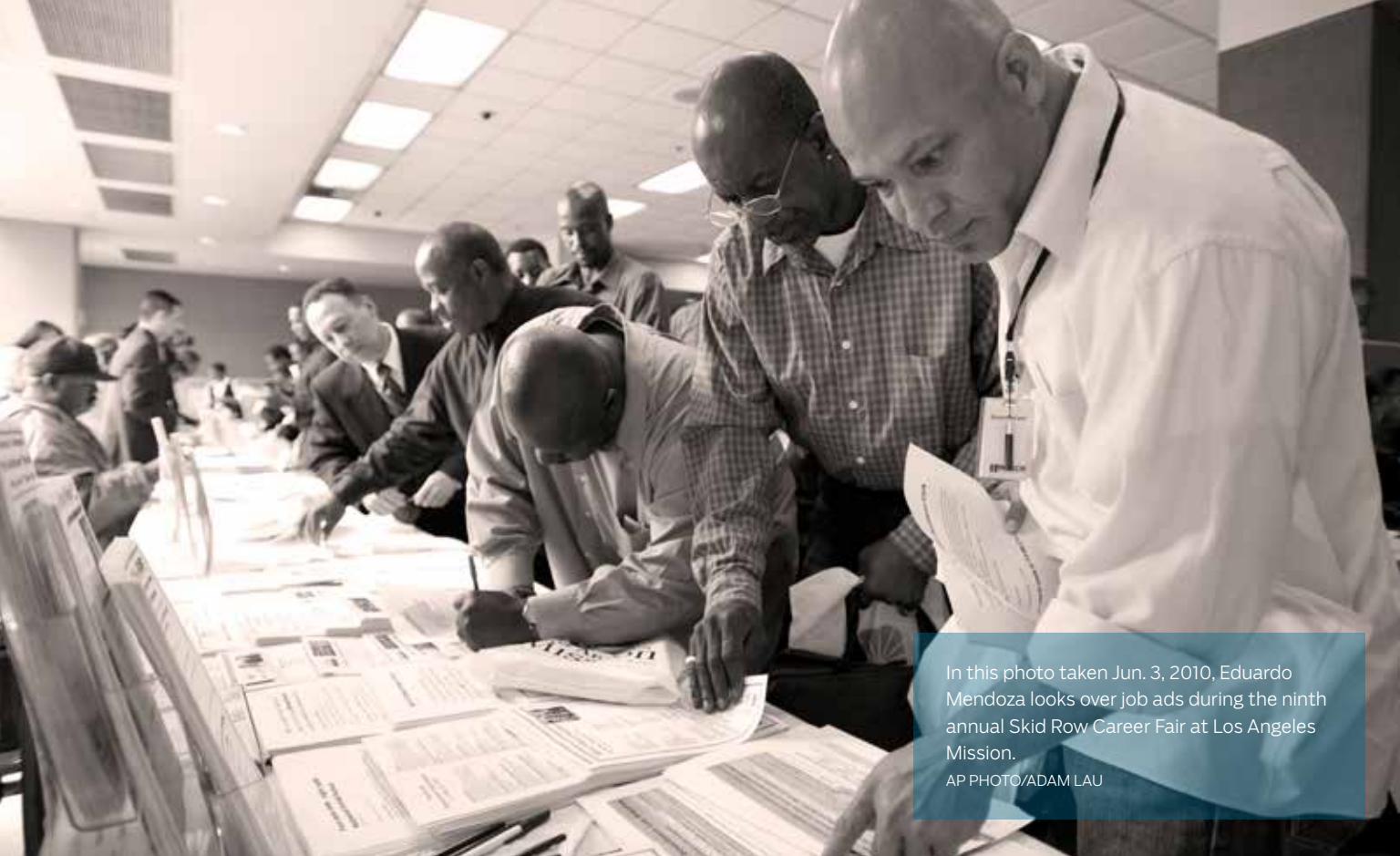
Trade, manufacturing, and climate change are not the only areas of the economy to have changed dramatically in the past generation or so. The financial industry has tripled its share of the economy since the 1950s,⁵ a trend that carries with it both benefits and risks.

Information technology has hugely disrupted industries from publishing to retail, and the result can often mean lower employment. Other countries are also growing their share of the global consumer market and playing an increasing role in setting styles and trends, meaning more competition from around the world for goods and services.

Economic growth faces other headwinds, too, such as the slowing growth of the U.S. labor force and slowing productivity growth. In fact, by 2023 the Congressional Budget Office forecasts U.S. growth will have trended down to just 2.2 percent—far short of U.S. long-term historical growth of 3 percent a year on average.⁶

Where we can go

Properly navigating these changing circumstances can lead to an American and a world economy that has sufficient and good jobs with greater prosperity for all. This is far from the first time we have felt angst over an uncertain economic future even as it has worked out well in the end. During the Great Depression few could have imagined the postwar economic boom brought on by the massive industrialization for World War II and the huge public investments in infrastructure and education that followed. In the 1970s and 1980s, with oil crises, inflation, and Japanese imports seeming to flood the American market, the low inflation and high employment of the 1990s was hard to imagine.



In this photo taken Jun. 3, 2010, Eduardo Mendoza looks over job ads during the ninth annual Skid Row Career Fair at Los Angeles Mission.

AP PHOTO/ADAM LAU

The foundations of the largest economy in the world are still solidly in place, and there is no reason we can't build an economy that capitalizes on our strengths and allows more Americans to participate at the top of their talents. This report describes a set of proposals across a range of areas from education to innovation and infrastructure that are actionable now and would be an important step to putting us on that path.

We divide our policies into two categories: those that strengthen the American people and give them the capability to succeed, and those that build an economic and business

environment that puts these talents to use and rewards them. The policies described in this report are numerous and range in scope, interacting and accumulating to form a plan that will boost U.S. economic growth and generate the good jobs that underpin widely shared prosperity.

We summarize below the key problems we are seeking to address, the approach we take to their solution, and examples of the policies that we propose. The rest of this report offers a more detailed analysis of the problems and the full range of recommended policies.

A strong middle class is the key to economic growth

The policies in this report are grounded in an understanding of economics known as middle-out economics. This concept was explained by CAP economists Heather Boushey and Adam Hersch in their paper, “The American Middle Class, Income Inequality, and the Strength of Our Economy.” The report shows how an expanded and stronger middle class is a cause and not just a result of a stronger overall economy.⁷ It also highlights data showing how an equal-opportunity society—one in which talented individuals can make use of their skills—is not compatible or consistent with a highly unequal society.

For all the disagreements among policymakers, economists generally agree on the ingredients that make an economy grow: human capital, demand, strong institutions and governance, innovation, and financial capital. While all of these are important, since the late 1970s some policymakers have emphasized just one: financial capital. That focus produced supply-side economics and the belief that if government invested its resources in wealthy “job creators,” prosperity for all would rain down.

But it didn’t because the supply siders had it backwards—a strong middle class is the driver of economic growth, not merely an outcome of it.⁸ When one examines the factors that produce a growing economy, the strength of a middle class is critically important to them.

Consider the role of the middle class in these key drivers of growth:

Human capital	A strong middle class better educates itself and demands and gets better education for its children, and this process improves an economy’s human capital. For example, U.S. research shows that states where the middle class receives a higher share of over-all income also have higher test scores. The same is true in international comparisons.
Demand	A strong middle class creates a stable source of demand for goods and services. This motivates businesses to innovate, invest, and hire. If you want to boost demand, you should focus on boosting the middle class because it is the source of most of the consumption in the economy.
Institutions and governance	A strong middle class demands inclusive and trustworthy institutions, and that governments be more responsive and accountable. This drives governments to invest in the kinds of public goods that make an economy stronger.
Innovation	A strong middle class incubates entrepreneurs and innovators. The majority of our entrepreneurs and inventors come from the middle class. That makes sense: strong middle-class families are the ones that have the skills and financial stability needed for successful risk-taking.

Given that the middle class is key to economic growth and given the mounting stress placed on the middle class over the past 30 years due to stagnant wage growth and rising costs,⁹ the question then becomes what policies will grow and strengthen the middle class? Many of the policies in this report are answers to this challenge.

Strengthening the American people

Whatever the future brings, we know that the strength of the American people will be essential to our success. Simply put, in the hyperspeed of today's economy, being able to manage change is a critical skill. We need to empower our people to develop the technologies that will generate wealth and success. Americans must be consumers who inspire innovation and a steady source of demand. They must be entrepreneurs and productive workers in the industries of the present and the future. In short, to reach our potential we need our economy to be fueled by all of America's 300 million engines of growth.

The policies outlined in this section of the report are designed to strengthen individual Americans by building their human capital and making them better equipped to contribute to economic growth.

Make the United States first in education

Americans are falling behind educationally, a trend that impedes our ability to build good lives and a strong economy. While our best schools compete with the best in the world, our average schools do not, and our worst schools have fallen far behind. This situation threatens economic mobility and America's middle class. Only a third of eighth graders perform at or above grade level, and two-fifths of incoming college

students are unprepared for college-level coursework. Our students rank 14th in the world in reading, 17th in science, and 25th in math.¹⁰ The United States ranks 16th in the world in the share of the population ages 25 to 34 that has a college degree, down from third in 1997.¹¹



To reach our potential we need our economy to be fueled by *all* of America's 300 million engines of growth.

In the fractured world of American pre-K-12 education governance, the key to change is enhanced and targeted federal funding to leverage greater access to early childhood education, improved classroom teaching, the discovery and adoption of best education practices, and adequate resources for all schools. At the postsecondary level our plan is to harness the consumer power of better-informed students and their families to demand improved, relevant, more affordable postsecondary education; create more flexible and cost-effective paths to a college degree or credential; and ease the financial burden on students and graduates. These policies would help get American K-12 students back on grade level and the United States back up the list in college and other postsecondary training so that we can produce the skilled



In this Apr. 5, 2012, photo, pre-school teacher Sandra Medina, center, is showered with a confetti egg with students Lyvia Pham, left, 4, Howra Aljumaili, 5, right, and Molly Kiniry, 4, rear right, at the Refugee and Immigrant Family Center in Seattle.

AP PHOTO/TED S. WARREN

and productive workers needed to fuel the growth of an ever-changing economy.

Our education proposals include:

- Creating a federal-state program that will substantially increase enrollment of 3- and 4-year-olds in high-quality pre-K
- Reprogramming and boosting federal funding to states to better target funds to where they will make the biggest difference and to promote new best-practice approaches in improving teaching and encouraging science, technology, engineering, and mathematics, or STEM, education
- Requiring colleges to post public disclosures, similar to nutrition labels, that provide clear and accessible information about costs, quality, and earnings potential of graduates
- Making class credits transferable and allowing credit for learning outside the classroom to save costs and ease the path to degree completion
- Training 1 million students through college/industry partnerships, another million through apprenticeships, and an additional million through career-pathway programs

Raise workplace standards

Weak wage and benefit policies and low workplace safeguards threaten the quality of U.S. jobs. Many employers don't provide paid sick days or family and medical leave to their employees. The value of the minimum wage has declined over the past 40 years.¹² Union membership is down to less than 12 percent of the workforce.¹³ And about 60 percent of new middle-class retirees are at risk of outliving the savings they accumulated over their working lives.¹⁴

To make more jobs good jobs and to strengthen and grow the middle class while substantially reducing poverty, we propose guaranteed paid leave and sick days, better protection in the event of layoffs, a higher minimum wage, better forms of retirement savings, and protection of workers' right to join a union. Such policies improve productivity, reduce turnover, and provide the middle class with the stability needed for risk taking and increased growth.

Our policies to boost workplace standards include:

- Creating and giving workers access to SAFE Retirement Plans, a hybrid between a traditional pension and a 401(k) plan that has many of the virtues of both
- Creating a Social Security Cares program to provide up to 12 weeks of partial wage replacement to support workers who need

to take time off to care for a new child or seriously ill family member

- Requiring adequate severance packages for all employees of companies that offer “golden parachutes” to their top executives upon termination
- Raising the minimum wage and indexing it to half the average wage
- Enabling workers to join unions by passing the Employee Free Choice Act and by making the right to join a union a civil right

Realize the potential of immigration

The United States has more than 11 million undocumented immigrants who are living in the economic shadows, unable to contribute their full potential. Legalizing these 11 million people would add a cumulative \$832 billion to U.S. gross domestic product over 10 years, as immigrants access better jobs, earn higher wages, and spend those higher earnings, generating increased demand for goods and services throughout the economy.¹⁵

At the same time, our broken immigration system prevents many aspiring Americans who would greatly benefit the economy from coming to the United States. It's time to resolve the status of aspiring Americans already in the United States and to create a rational path to citizenship for new Americans—one that will level the playing

field for all workers, raise wages, and grow and strengthen the American middle class.

Our immigration policies include the following:

- Resolving the status of the 11.1 million aspiring Americans currently in the U.S. by providing a pathway to citizenship
- Improving access to permanent visas for foreign graduates of U.S. universities with STEM degrees
- Creating a discretionary pool of visas that can be allocated with flexibility based on determination of broadly defined national interest

Strengthening the economic environment

Even the best-educated and empowered American people will find it difficult to build a new and prosperous American economy if the economic and business environment is not conducive to success. No matter how strong an engine you put into a car, it still needs good roads to run on; in this case, good roads translate to things such as infrastructure and capital. They need institutions and corporations committed to scientific learning and technological breakthroughs. They need a fair playing field so that the United States isn't disadvantaged in global competitiveness and so that the best ideas and the best investments are the ones that win out. They need to live in

a country that has a strategy for ensuring that its businesses lead the world and create jobs here at home.

The policies outlined in this section of the report are designed to create a better American economic environment.

Create the mechanisms for an adaptive national economic strategy

The federal government has a variety of agencies, policies, and programs that engage business and industry. But the ad hoc nature of the relationships, the lack of a governing philosophy, the complexity of the system, and the inadequacy of information on the workings of the U.S. economy lead to inefficiency and missed opportunities. Our plan is to restructure the way government effectuates economic policy so that it can more strategically engage with industries to take advantage of opportunities for advancing U.S. competitiveness.

Our policies to better engage businesses in our national economic strategy include the following:

- Reorganizing the federal trade and business agencies into a single department focused on competitiveness
- Creating a common application for the many federal programs aimed at assisting businesses and entrepreneurs and workers seeking to gain new technical skills

- Engaging directly with businesses in building the economy to promote nascent emerging sectors, respond to international competitiveness challenges, and preserve viable industries facing addressable challenges

- Launching three programs to eliminate waste: Home Star, Building Star, and Rural Star

Promote science and technology research and development

Lead in clean and efficient energy

The United States is dependent on imported foreign oil, is subject to volatile energy prices, and is starting to face the high costs of climate change. Each of these pressures creates a drag on economic growth. In 2012 roughly 6 percent of our electricity came from renewables, and the United States imported \$313 billion in oil.¹⁶ Our country must capture the multitrillion-dollar opportunity of clean energy by stimulating demand, ensuring effective financing, building efficient transmission infrastructure, and prioritizing efficiency. Our goal is for the United States to have clean, sustainable, and economical energy sources—quadrupling renewable use between 2008 and 2020 and slashing oil imports in half—in order to fuel economic growth.

Our energy policies include the following:

- Instituting a \$25/ton carbon tax on all large polluters, starting with power plants
- Launching a comprehensive clean energy investment program

The United States is losing ground in many of the drivers of innovation that will determine technological leadership in the 21st century. It is time to double down on key investments in science and technology and harness the economic potential of top research facilities to spur innovation and economic growth. The goal is to improve public and private investment in research and development and to ensure those dollars are spent effectively, producing the best possible result for the U.S. economy.

Our science and technology policies include the following:

- Increasing government investment in research by doubling budgets for the Department of Energy's Office of Science, the National Institute of Standards and Technology, and the National Science Foundation, and encouraging increased private investment by improving the research tax credit
- Aligning better federal laboratories and research programs with national economic objectives

- Investing in grand challenges with flexible, ambitious, and accessible Frontier Prizes
- Strengthening and clarifying international law around state-owned enterprises to ensure fairer competition with government-backed foreign competitors

Balance trade

The United States imported \$5.6 trillion more than it exported over the past 10 years.¹⁷

Although supplying an array of lower-cost consumer goods, this mounting trade deficit resulted in lower growth and fewer jobs in the United States. Some of this trade deficit is a result of other countries not playing by agreed-upon rules and norms. To resolve this, we need to more aggressively enforce trade laws and norms to ensure a fair playing field on which American businesses and American workers can compete. We also need to more actively promote exports and foreign direct investment. Our goal is to bring our trade into balance by 2022 by making the country more competitive overall through policies described throughout this report, by reducing oil imports, and by adopting the policies described in the trade section.

Our trade policies include the following:

- Creating a process of automaticity—a clearly prescribed chain of enforcement actions for clear-cut trade violations as tracked by a National Trade Compliance Database
- Adopting a currency misalignment trigger that will flag countries that have currency misalignments with the United States and enforcing a timeline for countervailing tariffs in the event of failure to address the problem

- Boosting the capacity of trade enforcement agencies

Rebuild our infrastructure

Roads, bridges, public transit, energy transmission, and communications are at the heart of a well-functioning economy, but American infrastructure recently merited a “D+” grade from the American Society of Civil Engineers.¹⁸ The nation needs a coherent infrastructure strategy, a broadening of private financing for public projects, and a boost in public investments.

Our infrastructure policies include the following:

- Launching a National Infrastructure Council to better align scarce infrastructure resources with the country’s most pressing needs
- Creating a National Infrastructure Bank to encourage private financing of public infrastructure projects that generate revenue through tolls and other user fees
- Ensuring that future infrastructure investments account for the impact of extreme weather, sea-level rise, and other climate-change impacts



In this photo taken on Apr. 15, 2010, new home buyers Fred Archambault and his wife Amy, with their dogs Taz and Fletch, enjoy their new kitchen at their home in Santa Clarita, California.

AP PHOTO/DAMIAN DOVARGANES

Restore the housing cornerstone

Housing represents one-fifth of the U.S. economy,¹⁹ and it critically intersects with many other sectors. The financial industry finances home ownership, the construction industry builds housing, U.S. manufacturers produce much of what goes into the construction and furnishing of homes, and home equity provides a source of financing for small-business creation, as well as postsecondary education. Most importantly, stable, safe, and affordable homes and communities are crucial to all Americans and to strengthening and growing our middle class. We offer a set of policies to build a more responsible and sustainable housing-

finance system that serves all communities, supports homeownership, and encourages development of affordable rental housing.

Our housing policies include the following:

- Replacing Fannie Mae and Freddie Mac with private companies that purchase home loans, issue securities, and charge a fee that covers the cost of a private guarantee, as well as a government backstop in case of catastrophic loss
- Promoting safe and sustainable lending by preventing predatory practices and aligning incentives among borrowers, mortgage originators, securitizers, and servicers

- Preventing unnecessary foreclosures through effective loss mitigation, refinancing programs, and reform of mortgage servicing practices
- Expanding the availability of affordable rental housing and developing new approaches to rental housing that stabilize communities and help families build savings

Ensure capital is available for growth

Dynamic capital markets, which fuel business investment and expansion, are critical to growth. The recent financial crisis highlighted weaknesses that needed to be addressed in our regulatory system. The Dodd-Frank Act was designed to address these weaknesses, so the appropriate implementation of this law is a top priority for stable economic growth. We propose additional policies to support vibrant capital markets.

Our capital market policies include the following:

- Curbing destabilizing elements of high-frequency trading via a financial transactions tax
- Supporting small-business lending via targeted government programs such as the Community Development Financial Institutions Fund, the State Small Business Credit Initiative, the Small Business Lending Fund, and the New Markets Tax Credit

Construct a responsible, pro-growth tax and budget policy

The federal budget is currently out of balance. We are not raising sufficient revenue to pay the government's bills, let alone to make the investments we need for long-term economic well-being. The tax code has too many tax breaks that have outlived whatever usefulness they once had and has become, in some ways, ill-suited to a 21st century economy. On the spending side there are programs that are not a good use of taxpayer dollars and savings to be had through improved efficiency.

Our budget and tax policies include the following:

- Enacting comprehensive personal income tax reform
- Reducing federal health care costs by introducing reforms that will enhance competition, increase transparency, improve health care delivery, and cut administrative costs
- Devising a framework for the key components of corporate income tax reform

Conclusion

No one has all the answers or can predict with precision what the best economic policies will be in five years or in ten. Economic realities are constantly evolving, and policymaking needs to keep up. But while the future will

The importance of sustainable, broadly shared growth

The objective of many of the policies described in this report is to generate strong economic growth for the United States. Sometimes growth as a policy objective gets a bad name. Environmentalists rightly point out that without growth, the environment would be less polluted and climate change would not be the threat it is. Others observe that growth at the expense of quality of life is a pyrrhic accomplishment. And growth in which the benefits are concentrated among very few people is hardly a goal most of us would care about.

On the other hand, economic growth creates jobs and improves quality of life. The experience of the past four years is a case in point. The labor market has been weak, with millions of Americans unable to find jobs and millions more underemployed. It is not a coincidence that the weak labor-market recovery has been accompanied by inadequate economic growth.

The ostensible conflict between economic growth and other objectives is also not preordained. Our plan, for example, is designed to produce growth that is environmentally sustainable because aside from other considerations, an environmentally degraded world has enormous costs associated with it that are bad for the economy by any measure.

As a preponderance of economic research shows, the goal of sharing the benefits of growth widely is directly aligned with the goal of maximizing the aggregate level of growth. If the benefits of growth all go to the top, growth will stall—we've seen that story unfold. It is an unsustainable model doomed to fail. So, while we might say that we support policies that ensure that the benefits of growth are broadly shared because we care about widespread well-being, we don't even need to get to that. We support the benefits of growth being broadly shared because if they are not, then there won't be any growth to broadly share.



Customers shop at the Grand Central Market in downtown Los Angeles on Dec. 27, 2012.

AP PHOTO/NICK UT

always contain unknowns, the policies we propose are grounded in both economic theory and empirical analysis. They would build a stronger economy and provide the means to adapt to changing times.

The United States is at an important juncture. We can proceed as we have in recent years, with income inequality rising, growth stagnating, middle-class incomes

falling, crisis compounding on crisis—all circumstances that have coincided with the growth of a philosophical view that is opposed to any public attempts to address shared economic challenges and a fatalism about America's future. Or we can choose to make investments that need to be made and reform the aspects of our economy that are not performing up to 21st century standards. We just have to agree to do so. ■

Endnotes

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Creating Jobs Now

The United States needs a long-term economic strategy to strengthen and grow the middle class, attracting, creating, and retaining the good jobs of the future. But we also face an immediate need to create jobs fast.

The long-term set of policies in this report includes the following aspects that can be implemented now to pull down our stubborn unemployment rate and to productively engage the nation's best resource—its workers—in revitalizing economic growth.

- **Get housing back on track:** As ground zero for the financial crisis and the Great Recession, the nation's troubled housing market still weighs on economic growth. Our proposals stabilize housing markets—and family balance sheets—and retool the nation's housing finance system for the 21st century, supporting safe and sustainable mortgages and ensuring the availability of stable and affordable rental housing. Such policies will reduce the debt overhang that plagues middle-class families and drags on economic recovery, create jobs in the still-underemployed construction

industry, and increase the value of properties across the country.

- **Build tomorrow's infrastructure:** The United States is in dire need of renewed infrastructure investments. Infrastructure investments provide one of the biggest “bangs for the buck” of any government spending because the new or improved structures drive private-sector growth and increase economic productivity by lowering costs for businesses and families. An additional \$58 billion annually in federal infrastructure investment can pull in more than \$70 billion from other sources per year¹ and can help create hundreds of thousands of new jobs.²
- **Improve energy efficiency:** Energy consumption comprises a large share of family budgets and continues to contrib-

ute to America's trade deficits. Efforts to improve energy efficiency will not only create jobs today but also will ease the strain on family's disposable incomes. Three energy-efficiency initiatives—Home Star, Building Star, and Rural Star, which provide incentives for property owners and small businesses to invest in energy-saving technologies—should be part of any short-term jobs plan. These programs would generate 250,000 new private-sector jobs broadly throughout the economy, while also leveraging between \$3 and \$4 in private investment for each \$1 in incentives—all while saving people an estimated \$4 billion per year in energy costs for years to come.³

- **Create a Pathways Back to Work Fund:**

We support a \$12.5 billion government fund to subsidize summer and year-round jobs and support services for hundreds of thousands of low-income youth and adults. It would also support a competitive grant program of local initiatives for work-based training and skills development. A similar proposal was included in President Obama's FY 2014 budget proposal.⁴

- **Offer every child ages 3 and 4 the opportunity to participate in a high-quality public preschool program:** Early childhood programs have a high return

on investment and are critical to our economic growth plans. We propose a preschool initiative that enables children whose families are at or below 200 percent of the federal poverty line to enroll free of charge. Children from families above 200 percent of the poverty line should be charged a sliding tuition co-pay. High quality preschool also brings with it the stimulative effect of creating good middle class jobs for early childhood educators.

- **Rehire teachers and other public-service workers:** The labor-market recovery has been hampered by ongoing contraction of state and local public-service workers. More than 700,000 jobs have been lost since late 2008, especially among teachers and other education professionals.⁵ The proposed American Jobs Act of 2011 called for preventing the layoffs of 280,000 teachers and protecting jobs for first responders.⁶ This support for local communities is still needed today and represents a down payment on longer-term education reforms and investments needed for America's 300 million engines of growth.

In total, we calculate that these programs are capable of delivering 2.5 million jobs per year on top of the continued job-market recovery. ■

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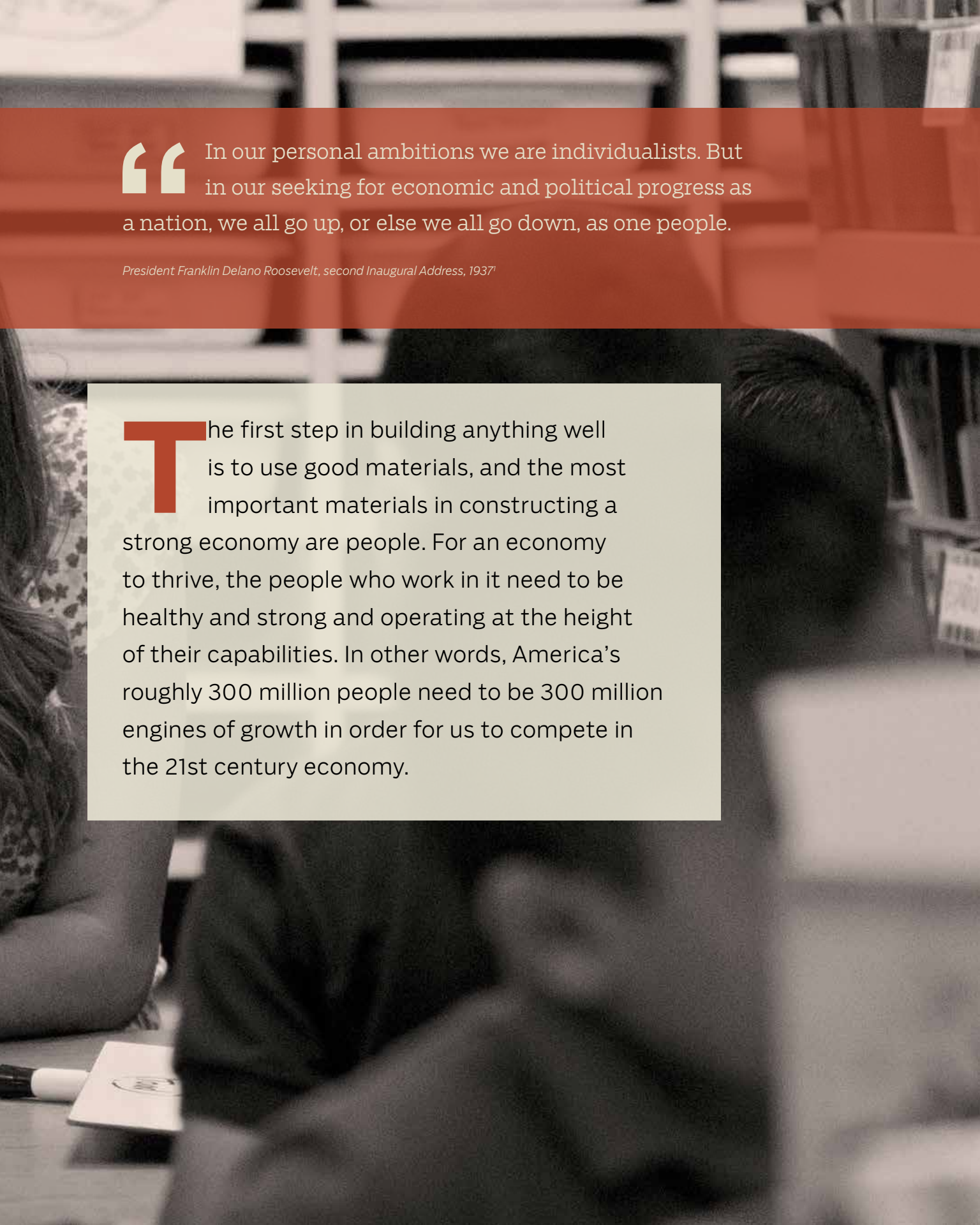


SECTION 1 • INTRODUCTION

Strengthening the American people

In this May 23, 2013 photo, first grade teacher Lisa Cabrera-Terry works on a writing exercise with some of her students at Jay W. Jeffers Elementary School, in Las Vegas.

AP PHOTO/GREGORY BULL



“ In our personal ambitions we are individualists. But in our seeking for economic and political progress as a nation, we all go up, or else we all go down, as one people.

President Franklin Delano Roosevelt, second Inaugural Address, 1937¹

The first step in building anything well is to use good materials, and the most important materials in constructing a strong economy are people. For an economy to thrive, the people who work in it need to be healthy and strong and operating at the height of their capabilities. In other words, America's roughly 300 million people need to be 300 million engines of growth in order for us to compete in the 21st century economy.

Education is key. Keen minds must be sharpened so they can devise, invent, and innovate. Skills must be developed and knowledge acquired so we are all effective and efficient at our jobs, valued in the international labor market, able to attract good pay, and able to contribute to national productivity and production. Skills and knowledge enhance value in the economy and make it stronger, which benefits everyone in the form of greater national income and better jobs.

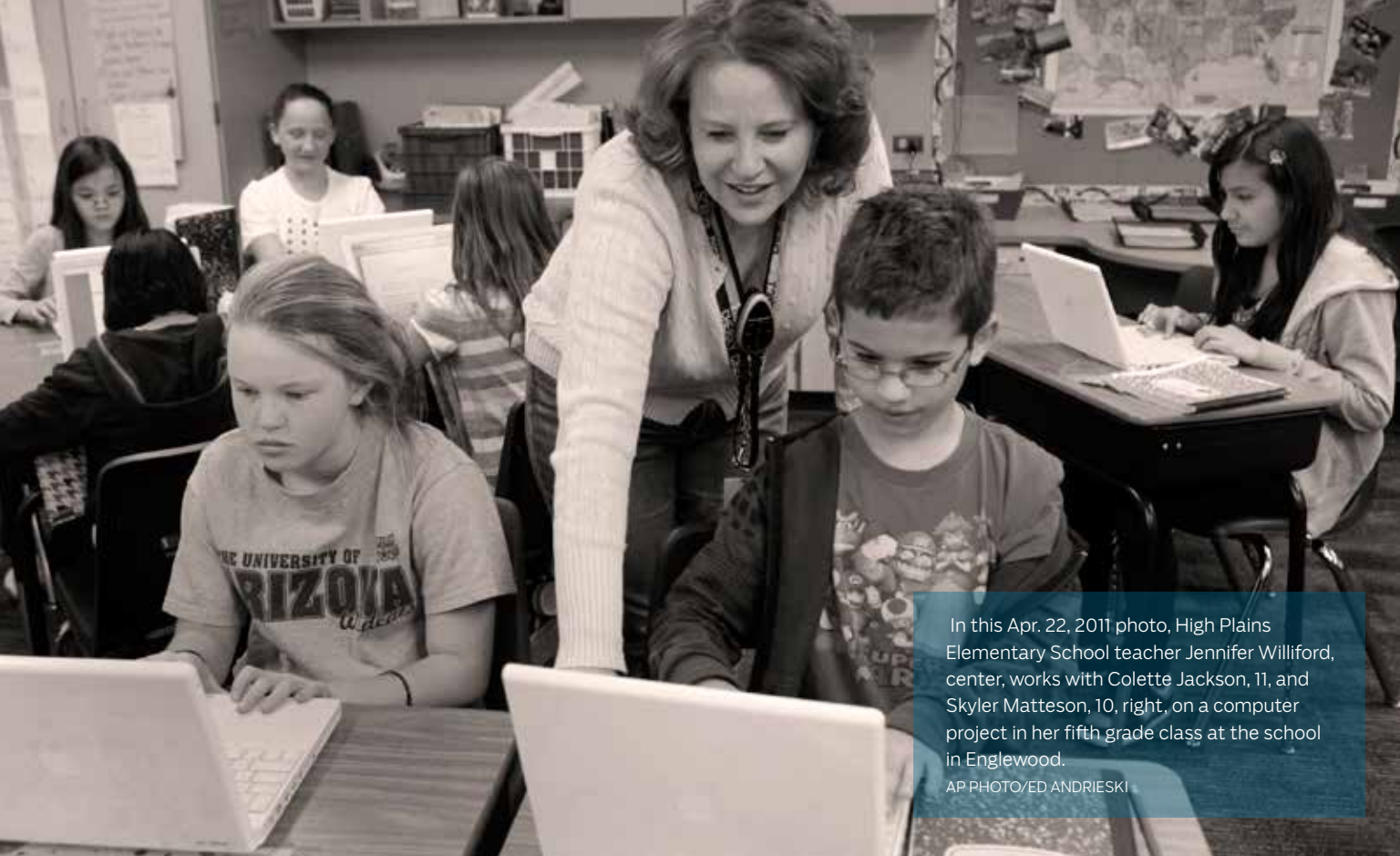
When people are living in or near poverty, it takes a huge economic toll, as well as a human one. People in poverty can't afford to invest in their skills, they are more likely to have health problems that limit their ability to work, and they obviously cannot provide a reliable customer base for the nation's products. Children growing up in deprivation are far less likely to advance in their education and achieve later in life. So, while we call out some specific antipoverty measures later in this section, every policy that helps strengthen our people, from pre-K enrollment to union membership to immigration reform, is an antipoverty policy.

To contribute to the economy, middle-class families must be secure families. A family that is too financially insecure to take risks is a family with breadwinners who can't take action to do what's best for them and the economy as a whole. They can't risk changing jobs to ones where their talents might be put to better use or moving to a different state where there are better opportunities, taking the time to improve their skills, or

taking the risk of starting their own business. The Wright Brothers could tinker with airplanes because they had a bicycle shop to support themselves. Bill Gates could choose the less-safe course of founding Microsoft because his next meal did not depend on his next paycheck.

The income, assets, and economic security of the middle class are also important because they provide a steady source of consumer demand in the economy. The bellwether of the greatest period of U.S. economic growth was a reliably growing and expanding middle class—one with growing income and assets and with the economic security to allow for sustained and widespread increases in the standard of living. Businesses could make investments and hire new employees with the confidence that whatever the short-term ups and downs, there was a growing customer base with the means to provide them with revenue. That market is also what put U.S. corporations at the leading edge of consumer trends and knowing how to satisfy consumer demand. The competition for American consumer dollars has driven innovation that has made U.S. corporations worldwide market leaders.

Stable middle-class families also build stable communities that invest in education, that are protected from the high costs of crime, and that are the building blocks of our national economic community. For all of these things to happen, Americans need good jobs, health care, and confidence that their retirement will be secure.



In this Apr. 22, 2011 photo, High Plains Elementary School teacher Jennifer Williford, center, works with Colette Jackson, 11, and Skyler Matteson, 10, right, on a computer project in her fifth grade class at the school in Englewood.

AP PHOTO/ED ANDRIESKI

Immigrants, too, are among our 300 million engines of growth. They come here to work and contribute their labor, energy, and creativity, and they have always been an important part of America's economic success. For them to fully contribute, they must have legal status and a pathway that permits success even as we ensure that they play by the same rules as everyone else.

To strengthen America's 300 million engines of growth, we propose policies to:

- **Make the United States first in education:** We should improve educational

attainment by reforming and investing in education, from pre-K to job training and higher education. At the primary and secondary level, we propose enhanced, targeted federal funding to leverage greater access to early childhood education, improved classroom teaching, the discovery and adoption of best education practices, and adequate resources for all schools. At the postsecondary level, we should harness the consumer power of better-informed students and their families to demand improved, relevant, and cost-effective services and create more flexible paths to a college degree or credential.



In this Jul. 3, 2012 photo, OUR MicroLending specialist Alfonso Benavides, left, says good-bye to Josefina Urbina at her business, J'S Multiservices in Miami.
AP PHOTO/WILFREDO LEE

- **Raise workplace standards:** We must ensure that more jobs are high-quality jobs that strengthen and grow the middle class and bring more people into the economic mainstream by requiring paid leave and sick days, offering better protections in the event of layoffs, legislating a higher minimum wage, creating better forms of retirement savings, and protecting the right of workers to join unions.
- **Realize the potential of immigration:** It is well established that as the U.S. population ages, the share of workers in the economy is declining. Yet we also raise barriers against millions of aspiring Americans who desperately want to work here. We propose policies to create a path to citizenship for the 11 million undocumented immigrants now living in the economic shadows and to build an immigration system that attracts talent for competing in the global economy. ■

The connection between human capital and economic growth

A vast literature has studied the role of investment in people—what economists call investment in human capital—in promoting economic growth. The overall conclusion from this body of work is that investment in the education, training, and health of people has a critical impact on economic growth.

When investment in human capital is strong, labor productivity or output per person increases, which contributes to faster economic growth. The workforce is more skilled and flexible and thus better able to adjust to changing technologies, which leads to lower levels of unemployment and less economic inefficiency. Greater investments in people lead to higher wages and higher lifetime earnings, which promote a higher quality of life. With a more skilled and knowledgeable workforce, innovation and invention are enhanced, leading to entrepreneurial dynamism and greater long-term growth. Higher levels of human capital also lead to greater civic involvement and participation in the political system.

Studies find that differences in the levels of human capital among nations explain a large part of the differences in national economic-growth rates. Research by Gregory Mankiw, David Romer, and David Weil, for example, suggests that human capital accounts for two-thirds of economic growth.²

Endnotes

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Make the United States first in education

Any credible economic strategy must start with the foundation of education. People need skills and knowledge to grow an economy. They need to enter the workforce with abilities ranging from proficiency at reading, writing, and mathematics to more job-specific capabilities such as the ability to run a milling machine or to calculate the skin friction for an aircraft wing.

Not everyone needs the same type of education or the same number of years in a classroom. Some skills are better taught at school and others on the job. Education should not stop with entry into the workforce. The skills people need to maximize their potential change over time—and everyone needs to keep up.

Right now many people in this country are not contributing what they could and living with

a lower quality of life than necessary because they have not had the education they need to unlock their potential. There are waiters who could be chefs, teacher's aides who could be teachers, computer techs who could be tech-firm CEOs, and prisoners who could be doctors. There is nothing wrong, of course, with being a waiter, a teacher's aide, or a computer tech because each of these positions is essential, but it holds back the nation's growth when

anyone had the potential to contribute more if he or she wanted but was held back by a lack of educational opportunities.

The United States used to have the best-educated population in the world. In the early 1900s it was “virtually alone in providing universally free and accessible secondary schools.”¹ By the 1950s, nearly 85 percent of 14 to 17-year-olds in the United States were enrolled in full-time secondary school—compared to less than 20 percent in most European nations.² Following World War II, the G.I. Bill dramatically increased attainment of college degrees at a rate that was decades ahead of other countries.

While elements of our education system are still excellent, we have lost our overall edge. According to the Organisation for Economic Co-operation and Development, or OECD,

the United States “is the only country where attainment levels among those just entering the labor market (25-34 year olds) do not exceed those about to leave the labor market (55-64 year olds).”³ And it’s not just the economically advanced countries that are gaining on us. In 2007 China surpassed the United States in the number of STEM graduates, and by 2030 China’s college graduates will outnumber the entire U.S. workforce.⁴

America is losing ground in educational attainment at a time when the world economy increasingly rewards national economies with higher skills. To maintain our position as the world’s economic leader, we need to regain our former status as the world’s premier developer of its natural abilities. The policy solutions that follow for improving public education and postsecondary/workforce systems are designed to do precisely that. ■

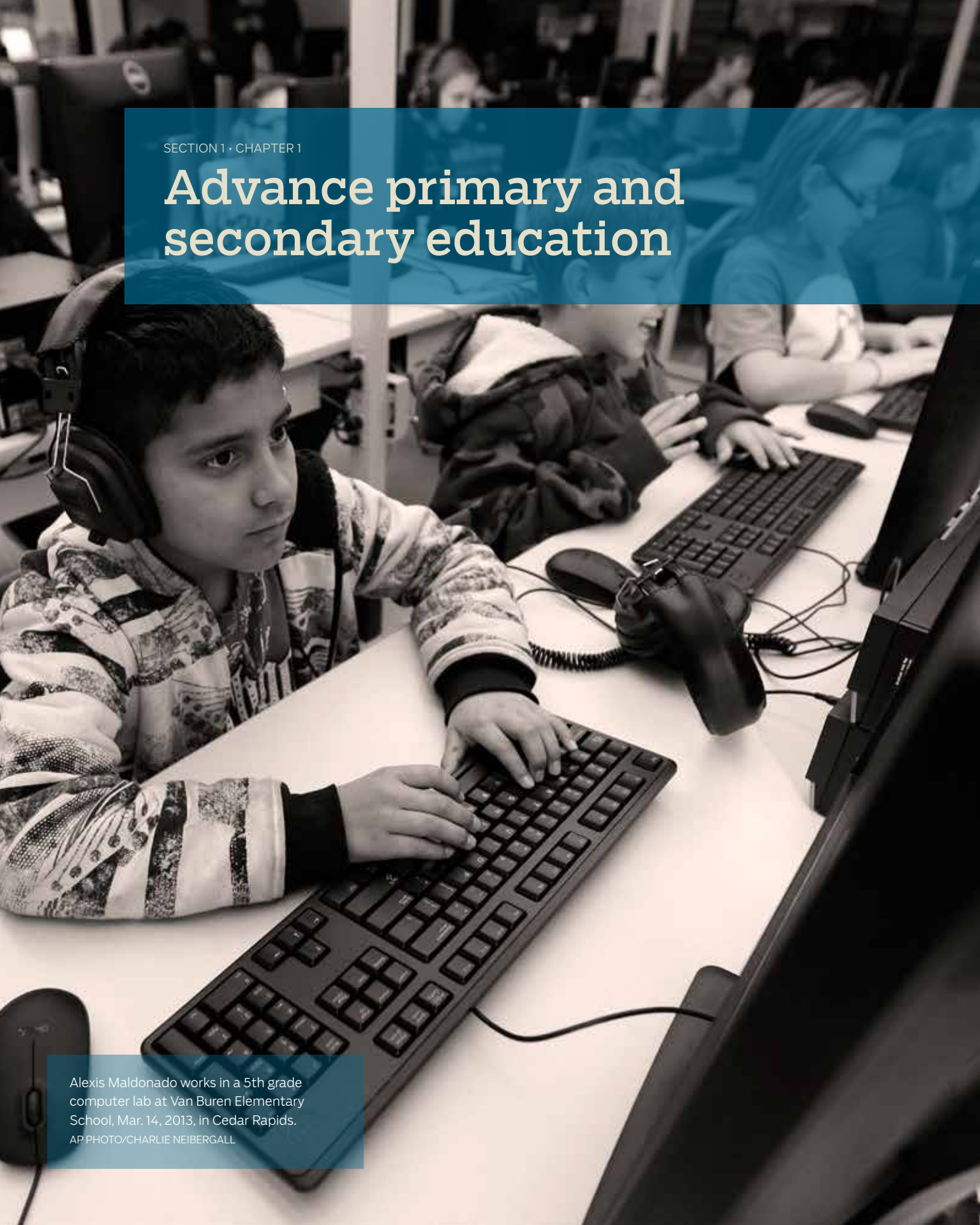
The importance of inclusiveness in education

Though the United States provided free secondary education throughout the 20th century, the quality of those schools was often grossly unequal. Righting the wrong of segregation was both a moral imperative and an economic one. After all, denying educational opportunities to any Americans both denied them the American Dream and denied everyone else in the economy the benefits of their skills.

Economic research has borne this out. Economists Peter Klenow, Chang-Tai Hsieh, Erik Hurst, and Charles Jones showed that “up to 20 percent of the aggregate wage growth in the last 50 years in the U.S. could be explained by expanded opportunities in the labor market for women and African Americans.”⁵

In much of the 20th century, the United States forfeited the economic growth that could have been unleashed by millions of Americans being educated up to their full potential. While laws have changed, the quality of education is still uneven and still disadvantages children of color. The education gap between students from rich and poor families remains greater in the United States than in many other nations.⁶ States and districts across the country spend \$334 more on every white student than on every nonwhite student.⁷ These disparities can add up for high-minority schools. California schools, for example, that serve 90 percent or more nonwhite students receive \$191 less per pupil than all other schools and \$4,380 less per pupil than schools serving 90 percent or more white students.⁸

By 2020 a majority of American school-age children will be children of color, and these are our engines of future economic growth.⁹ If we fail them, we will fall far short of our national economic potential in the future.



SECTION 1 • CHAPTER 1

Advance primary and secondary education

Alexis Maldonado works in a 5th grade computer lab at Van Buren Elementary School, Mar. 14, 2013, in Cedar Rapids.
AP PHOTO/CHARLIE NEIBERGALL

Children in the United States are not consistently graduating high school with the skills they need to pursue higher education or jobs. A 2009 report by McKinsey & Company on the gaps in primary and secondary school achievement argued that the United States is experiencing “the economic equivalent of a permanent national recession.”¹³

The report noted that, “If the United States had in recent years closed the gap between its educational achievement levels and those of better-performing nations such as Finland and Korea, [gross domestic product] in 2008 could have been \$1.3 trillion to \$2.3 trillion higher. This represents 9 to 16 percent of GDP.”¹⁴

With only about one-third of eighth graders proficient in key subjects, our education system is simply not delivering the goods. Some of what has to be done needs to occur outside of our schools since attainment is strongly affected by the economic circumstances of the children who attend. The policies described later in this report to expand the middle class, improve economic security, and put

children in a better position to succeed are important to improving our educational outcomes. But much also needs to be done in the schools themselves.

To maintain our position as the world’s economic leader, we must regain our former status as the world’s premier developer of its natural abilities. Below we propose a framework and a set of policies to make this happen.

The education reform policies articulated in this section follow a five-part framework:

- Enroll more children, especially low-income children, in high-quality prekindergarten programs

- Increase funding of underfunded schools
- Address the incoherence of a K-12 governance system in which 14,000 local school districts are responsible for almost 100,000 schools
- Improve the overall quality of the teaching and education-leadership workforces
- Embrace innovation and experimentation

investment.¹⁶ And the benefits go not only to individual participants but also to their families and society at large.

A study by the Federal Reserve Bank of Minneapolis, for example, calculated that the annual real rate of return on investments in one pilot preschool program exceeded 16 percent, a full 12 percent of which went to the general public and the government.¹⁷ A recent National Institutes of Health study of Chicago's preschool program for low-income families projected that the program will generate up to "\$11 of economic benefits over a child's lifetime for every dollar spent initially on the program."¹⁸



Research shows that early childhood education produces the highest economic rate of return of any educational investment.

While preschool enrollment in the United States has increased to 74 percent among 4-year-old children and to 51 percent among 3-year-old children, the lowest-income and most disadvantaged children are the least likely to participate in preschool programs—and children from middle-class families aren't faring much better.¹⁹

Policies to expand access to high-quality prekindergarten programs for 3- and 4-year-old children

All children should have access to high-quality preschool. Children who participate in these programs do better in school, are more likely to graduate and attend college, and are more likely to transition to successful adult lives.¹⁵ Indeed, research shows that early childhood education produces the highest economic rate of return of any educational

The federal government, in partnership with states, should offer every child ages 3 and 4 the opportunity to participate in a high-quality public preschool program. We propose a preschool initiative that enables children whose families are at or below 200 percent of the federal poverty line to enroll free of charge. Children from families above 200 percent of the poverty line should be charged a sliding tuition co-pay.

We estimate the annual federal cost of this expansion to be \$12 billion, depend-

Primary and secondary education policies

Problem: American workers are falling behind educationally, threatening their ability to build good lives for themselves as well as a strong economy. Only a third of U.S. eighth graders are proficient in math and reading,¹⁰ and two-fifths of incoming U.S. college students are unprepared for college-level coursework. Our students rank 14th in the world in reading, 17th in science, and 25th in math.¹¹ Out of 27 industrialized countries, the United States ranks 22nd in high school graduation rates.¹²

Solution: Enhanced, targeted federal funding will leverage greater access to early childhood education, improved classroom teaching, the discovery and adoption of best education practices, and adequate resources for all schools. The measures described later in this report to bring more families into the middle class will also play an important role in improving education outcomes.

Key policy ideas:

- Establish an early childhood education system, in which the federal government and states share the costs, to enroll more children ages 3 to 4 in prekindergarten programs.
- Boost federal Title I funding for low-income schools and reform its dissemination.
- Collect and publish school-level achievement and accountability data to evaluate the educational productivity of schools and districts in order to identify and propagate best practices.
- Use federal grant programs to promote effective teacher evaluation and professional development, upgrade STEM teaching, reform compensation systems, and tie teacher tenure to performance and career progress, not years of service.
- Use a federal formula and competition-based funding streams to encourage states and districts to experiment with longer, redesigned school days and expanded school years.
- Other proposed policies include increasing the use of technology in classrooms, developing standards for instructional tools, and rethinking school governance structures.

Outcomes: The United States will rank first in the world on most international rankings, more than 90 percent of our students will perform at or above grade level for major subjects and will graduate from high school ready for college and careers, and the need for remedial education at the college level will be virtually eliminated. ■

ing on the length of the class day and the sliding tuition rates. This cost should be split between the federal government and the states. The federal government should provide grants to state education agencies based on a matching formula that considers district concentration of poverty, state fiscal effort, and the cost of providing education. States should contribute their own funding to receive the federal match.

Preschool expansion should be paired with robust reforms to ensure that the early gains that children make in preschool are supported and enhanced as they transition to kindergarten and the early grades. A highly successful example of this is the Child-Parent Centers, a preschool program that provides services for low-income families with children as young as age 3 and includes a school-age program extending into third grade. Cost-benefit analysis of the Child-Parent Centers has shown it to be highly effective and well worth the investment.²⁰

Policies to expand, target, and reform K-12 funding

To give all children access to the quality education needed to reach their full potential, we must ensure that all schools receive the funding they need to educate their students, and we need to be smarter about how we spend that money. Too many schools, typically middle- and low-income schools, are underfunded and, as a result, struggle to provide high-quality education.

Improve the targeting of state and district funding systems

The manner in which schools are governed—entrusting the bulk of the responsibility to local and state governments—is at least part of the school-funding dilemma. The majority of school funding—approximately 90 percent²¹—comes from state and local sources fueled by property, sales, and income taxes, and the manner in which these funds are distributed to schools is grossly inequitable.²²

To address this problem, states should move their funding to student-based budgeting systems, also known as weighted student-funding systems, that allocate dollars based on the extra educational needs of certain groups of students—for example, those from low-income families, English-language learners, and students with disabilities. We propose adding requirements in federal funding streams such as Title I of the Elementary and Secondary Education Act, or ESEA, that require or encourage states to move to weighted student-funding systems as a condition for receiving funds.

Increase, simplify, and reform ESEA Title I funding

While school funding is heavily dependent on state and local dollars, ensuring that our schools are fully funded is a national priority that demands a national response—especially with respect to low-income schools that cannot raise adequate funds from their own communities.



The \$14.5 billion Title I program is the primary method by which federal funding is distributed to low-income schools.²³ We propose increasing the level of Title I funding but also, just as important, allocating it more effectively than it has been thus far.

We propose an increase in Title I funding of \$1 billion, an amount designed to accomplish two objectives. The first goal is to mitigate the fact that most low-income schools are severely underfunded, unable to attract the best teachers and administrators, or provide adequate counseling, technology, facilities, and other services and investments that students need. The second objective is to ease the disruptions that the change in the Title

I formula we are proposing, discussed next, would cause to schools that lose some of the funding they have come to rely on.

We also propose a new, simplified Title I formula. The current formula results in funds flowing disproportionately to school districts with low concentrations of children in poverty, very large school districts, and districts in wealthy states. In the Center for American Progress report, titled “Bitter Pill, Better Formula: Toward a Single, Fair, and Equitable Formula for ESEA Title I, Part A,” we proposed collapsing Title I’s four current formulas into one transparent, more fair, and less complex formula that better fulfills the original purpose of the program: providing additional resources

to districts serving concentrations of children from low-income families.²⁴

Finally, we propose changing the rules governing one of the conditions to receive Title I aid. Title I's goal of providing additional resources for low-income students is obviously undermined if state and local districts just cut their own funding of schools that receive the federal aid. Ostensibly, there is a rule to prevent that. But the rule's method of calculating how much different schools within a district receive in state and local funding is arcane and has a loophole that allows districts to mask funding inequalities.²⁵ We propose changing the rule to a much simpler and direct calculation that would more clearly require at least equal per-pupil state and local support at Title I schools.

Improve education productivity

With dollars scarce and education so important, we need to ensure that schools operate as productively as possible. Yet currently only two states, Florida and Texas, produce school-level productivity measures.

We propose that the U.S. Department of Education encourage states to collect more educational-productivity data. It can do this by requiring state-based longitudinal data systems that receive federal grants to collect information about the cost effectiveness of educational expenditures within their states. States might, for example, track the performance of individual students over time to better understand the cost effectiveness of specific programs or curricula.

To be sure, this solution won't by itself allow us to compare the cost effectiveness of educational spending between states. That's because different states currently use different state-wide tests to assess their students, so we lack a common baseline to compare cost effectiveness across states. Nonetheless, our proposal is an important first step in encouraging states to at least begin to evaluate and compare the productivity of their schools and districts.

Policies to improve school governance

Successful education reform demands that we re-examine some hoary assumptions and familiar structures. It seems ever clearer that our traditional faith in local control by elected municipal school boards cannot cope with today's realities, whether that involves changing demographics, new opportunities for digital learning, intense fiscal pressures, statewide and nationwide virtual schools, and myriad forms of interdistrict choice. This is especially true in urban America.

A book produced by the Center for American Progress in collaboration with the Thomas B. Fordham Institute, titled *Education Governance for the Twenty-First Century*,²⁶ outlines in detail the problems with our current system of 14,000 local school districts, mostly overseen by elected boards of education, responsible for almost 100,000 schools, with blurred lines of responsibility, uneven funding, and shocking inefficiencies. The current ungainly structure broadly hinders efforts to nationally improve how we educate.

The U.S. Department of Education should partner with states to lead a national conversation on educational governance. It should address the hard questions and debate the merits of governance reforms such as mayoral control, district consolidation, and school-funding systems. And it should produce and disseminate research and best practices that explore alternative forms of governance.

Policies to reform the teacher and education-leader workforces

Teaching is at the heart of education. Yet public education has failed to accommodate changes in the labor force and embrace ways to ensure we have the best possible teachers and school leaders, and that they are appropriately rewarded and supported, in our school systems.

There has, however, been substantial progress of late. States have launched efforts to reform their education systems, and issues of quality and effectiveness of teachers and principals have entered the vocabulary of reformers and political leaders. It is now recognized that tenure and experience do not automatically equal effectiveness, and better tools for evaluating educators are being developed and implemented. In many states, teacher evaluation has become the mechanism for determining professional-development needs, identifying areas of the teacher pipeline that need shoring up, and determining if high-performing educators are being fairly distributed among schools. These issues were not the focus of discussion two years ago.

There is still, however, much work to be done, and the federal government has levers available to facilitate reforms at the state and local level.

First, investments from ESEA's formula-funded \$2.5 billion Title II Teacher Quality State Grants program should be refocused. Despite large federal investments in this program over time, there is near-universal agreement that these dollars have not significantly improved teacher effectiveness.²⁷ We therefore propose shifting at least 25 percent of Title II funds from formula to competitive grants and adjusting the rules governing the formulaic dollars to ensure that they are used in ways proven to improve teacher effectiveness.

We also propose that an additional 2.5 percent of these funds be dedicated to improving state capacity to develop and implement better educator-evaluation systems. And, along with the Obama administration, we propose eliminating or consolidating a number of programs within Title II of ESEA that are too small to have much of an impact.²⁸

We also embrace the administration's proposal to create a \$400 million competitive Teacher and Leader Innovation Fund.²⁹ These funds should be used to support innovative strategies by states or districts to develop more aggressive recruitment strategies, strengthen tenure processes, retain and reward effective teachers and principals, and institute career ladders for teachers, among other reforms.

Finally, we embrace the administration's proposal to create an \$80 million STEM Teacher



In this Apr. 18, 2013 photo, Burgess-Peterson Elementary School first grader Ju' Ryver Battle, center, works through a lesson with instructor Kamean Daniels, left, as part of Atlanta Public School's after-school remediation program.

AP PHOTO/DAVID GOLDMAN

Pathways program that focuses on recruiting, preparing, and placing talented STEM educators in high-needs schools.³⁰

The above funding streams should be used in the following ways to improve teaching in America.

Strengthen teacher compensation and incorporate career ladders

The current pay system used by most school systems is the single-salary schedule, which fails to recognize the differences among teachers in terms of skill and knowledge, as well as market demand for specific disciplines

such as math and science. Most systems remain wedded to two measures—years on the job and advanced-degree attainment. Scores of school districts have taken strides toward sensibly differentiating teachers' pay, often with the support of philanthropic foundations or the Teacher Incentive Fund program. But more needs to be done.

Teachers should receive differential compensation based on their levels of effectiveness; career-ladder positions should be determined by roles and responsibilities, areas of specialty, and service in hard-to-staff schools. And student academic growth should be a significant factor when measuring teacher effectiveness.

To maximize effectiveness, compensation policies must be aligned with improvements in other human-resource policies such as teacher evaluation, tenure policies, and professional development. Evaluation and teacher training are discussed below. With respect to professional development, formal career ladders should be developed that offer teachers paths to advance into different roles and responsibilities.

Policymakers must view compensation reform as a strategy to recruit, motivate, and reward talented teachers. Compensation reform can also build the capacity of public schools to take on the hard work of systemic improvement that is so critical for raising student achievement. Current initiatives in science, technology, engineering, and math are not succeeding in providing enough of our students with the knowledge needed to compete in these critical areas. We must make teaching science and math an attractive option by offering higher levels of compensation to teach these subjects.³¹

The proposed Teacher and Leader Innovation Fund and other competitive grant programs should support more research and technical assistance to explore innovative models of compensation reform.

Tie teacher tenure to performance and student achievement

The initial impulse for developing tenure laws was to protect teachers from unfair dismissal, but current tenure laws are anach-

ronistic and create more problems than they solve. It makes the process of dismissing an ineffective tenured teacher prohibitively lengthy and expensive in most states and districts, and teacher tenure-evaluation processes remain largely disconnected from teachers' performance in the classroom or student achievement.

The Teacher and Leader Innovation Fund and other competitive-based programs should be used to encourage states to change their tenure statutes to explicitly mandate that teacher retention and dismissal decisions are driven by teacher effectiveness. Connecticut and Michigan have recently made such changes.³²

Improve teacher evaluations

The changes in teacher compensation and tenure that we describe above are premised on the availability of rigorous systems of teacher evaluation. The Center for American Progress, together with The Education Trust, has developed a specific set of actions for states to implement robust evaluation systems that incorporate measures of teacher impact on student growth, as well as rigorous observations of practice based on multiple observations per year, among other measures. The results of such evaluation systems can be used not just for compensation and tenure decisions but also to guide professional development, identify inequities in how the best teachers are distributed among schools, and to hold teacher preparation programs accountable for the performance of their graduates, which we discuss more below.

Recent federal policy has already pushed states to adopt most of these recommendations.³³ But we should build on this momentum by using the competitive grant programs described above to create additional incentives for adoption of these practices.

Strengthen teacher education and training

We propose greater accountability for teacher-preparation institutions. Our current system for holding U.S. teacher-education programs accountable has failed to guarantee program quality. Despite wide variation in quality, of the more than 2,000 teacher-training programs, states only identified 38 in 2010 as low performing.³⁴ Moreover, 27 states have never identified a single low-performing program since these requirements went into effect more than a decade ago.³⁵

States must replace the current toothless accountability policies and assert their authority to impose real consequences on ineffective programs. Specifically, we call for states to establish a single set of common standards for teacher-preparation programs to ensure that quality is defined the same way, no matter where the program is located or where the graduate is employed. We also recommend that every state's teacher-preparation program accountability system includes a teacher-effectiveness measure that reports the extent to which program graduates help their pre-K-12 students learn. In addition, program graduates' per-

sistence rates in teaching, which track their continued employment, should be reported for every teacher-preparation program. Feedback surveys from preparation-program graduates and from their employers should be part of state program accountability. Lastly, a new system of teacher-licensure tests should be designed and implemented for state accountability.

States can be moved in these directions by amending the requirements of Title II of the Higher Education Act. These requirements can be specified through regulations—indeed, the administration began this process in 2010. The U.S. Department of Education should move forward quickly with this regulatory effort.

Improve postgraduate professional development

The state of professional development in the nation's schools systems is highly problematic. Professional development often includes one-time workshops that focus mostly on awareness or general knowledge rather than specific skills, courses that are not adequately connected to practical and relevant skills improvement, and models that have little basis in what is known about effective instruction, curriculum, or classroom interactions.

Professional development should be provided continuously over the course of the entire school year with groups of educators sharing best practices and getting guidance from peers, and it should include work with a



In this photo taken on Mar. 27, 2012, kindergartners at Moss Haven Elementary school work in a student garden in Dallas.
AP PHOTO/LM OTERO

coach—all across multiple lessons and subject areas. Professional development should also be integrated with evaluations so it is focused on where it is most needed.

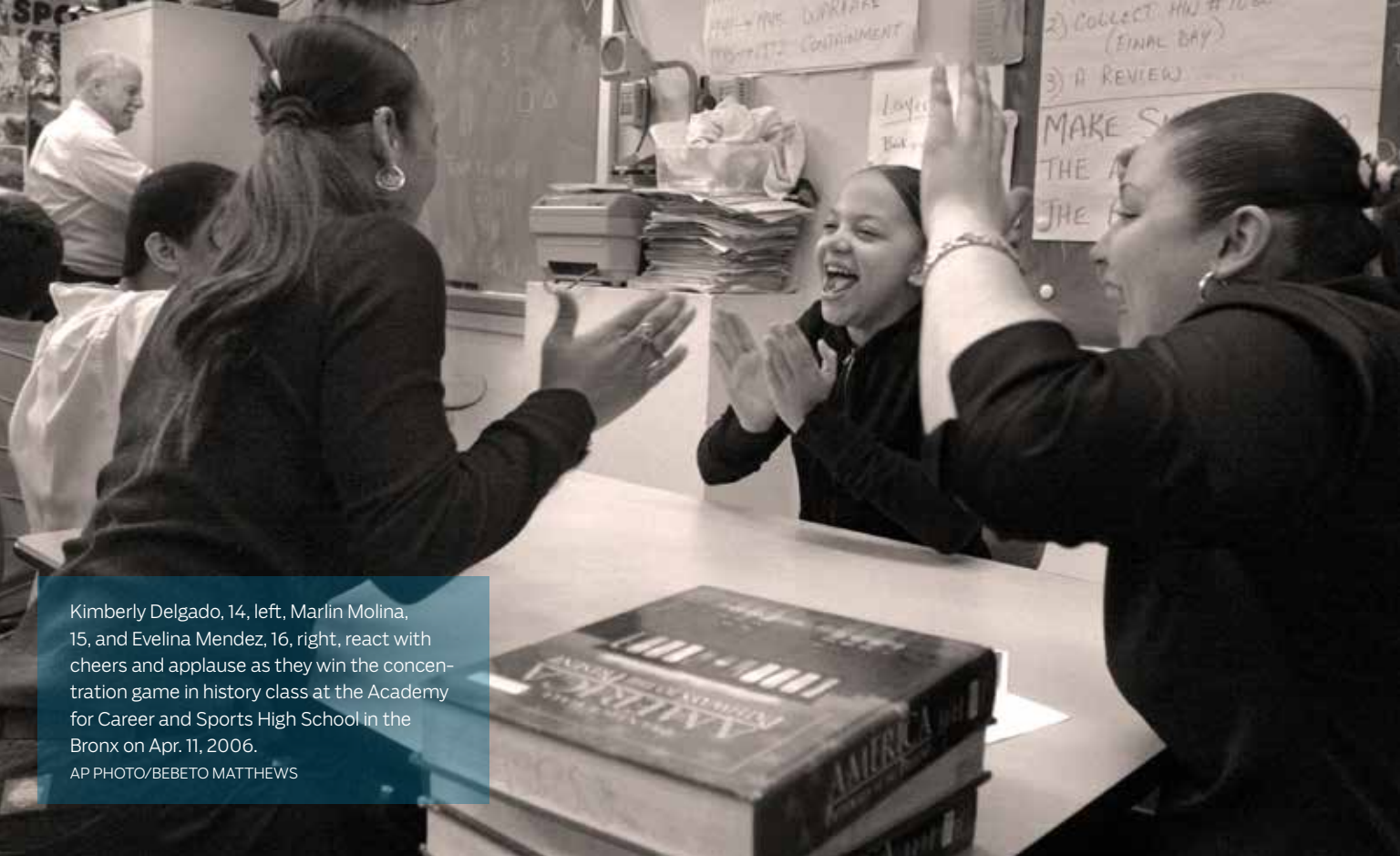
Competitive-grant ESEA Title II dollars should be used to create incentives for these improvements in professional development. In addition, formulaic Title II funds should be more contingent on results. Districts should be required to conduct comprehensive audits of all of their investments in professional development to determine whether their spending provides real opportunities for teachers to improve. Funding would be contingent on training that makes a difference or plans to improve that training.

Policies to encourage educational innovation and adoption of best practices

Given the performance of many of the nation's schools, we should not be afraid of change.

The federal government's current role in bringing about change has been primarily to encourage experimentation and the development and dissemination of best practices. We propose an expansion of this role using \$8.5 billion of additional funding for the following existing or proposed federal programs:

- Race to the Top, or RTT
- Teacher Quality State Grants



Kimberly Delgado, 14, left, Marlin Molina, 15, and Evelina Mendez, 16, right, react with cheers and applause as they win the concentration game in history class at the Academy for Career and Sports High School in the Bronx on Apr. 11, 2006.

AP PHOTO/BEBETO MATTHEWS

- Investing in Innovation Fund, or i3
- Supporting Effective Charter School Grants
- Charter Schools Program
- Promise Neighborhoods
- Social Innovation Fund
- Teacher Incentive Fund
- Advanced Research Projects Agency for Education
- Time for Innovation Matters in Education

Of the existing funds, many have been very effective at promoting positive change. The RTT and i3 programs have spurred significant education reforms. More than 25 states changed their education laws or policies to

prepare for the first two rounds of the RTT competition even before the grant winners were announced. The Teacher Incentive Fund has spurred dramatic changes to teacher compensation, evaluation, and other human-capital approaches that improve teacher effectiveness. Advanced Research Projects Agency for Education, or ARPA-ED, is now a small program that funds industry, universities, or other innovators to identify learning science and technological breakthroughs that can transform teaching and learning. In total, all of these programs represent less than 3 percent of federal education spending but have the potential to identify and expand significant innovation. We believe these funds

should largely continue on the paths they have been on but offer the following as areas of focus for additional funding.

Encourage rigorous curriculum and national standards

A growing body of research suggests that a teacher's instructional tools—textbooks, homework, practice sheets, etc.—make an enormous difference in student learning. One recent study found that the selection of a certain math curricula over another can lead to higher achievement among first- and second-grade students.³⁶ The federal government can play a key role here. For one, it can help fund and distribute best practices around the Common Core State Standards,³⁷ as it has through Race to the Top. For another, the federal government can fund research around effective curricula. The Department of Education's Doing What Works program devotes some effort to curriculum development, as has Race to the Top, but these efforts should be expanded with a particular focus on STEM subjects.

Make better use of technology

Technology can help provide students with the skills and knowledge they need in more cost-effective ways. Technology can also create more personalization of educational material. Students vary as learners, yet schools basically treat all students the same. Technology can help teachers personalize

their teaching to individual students and their particular needs and skills.

The National Educational Technology Plan recommended that every student and educator have at least one internet-access device.³⁸ Some states and districts have already taken some important steps in this regard. Idaho, for instance, recently used federal, state, and private funds to launch an initiative to establish high-speed broadband connections for every school.³⁹ But policymakers can do more.

To start, we need better metrics on how technology is used currently in schools, a research program the federal government should fund. We also need more innovative programs similar to i3 that reward forward-thinking schools and districts. And we need to use technology to augment the way schools deliver instruction. One model is the Rocketship schools in San Jose, California, which incorporate online learning in the school day. As a start, future i3 rounds should have a specific technology focus.

Encourage experimentation with school hours and days

Expanded and quality learning time in the form of longer school days or expanded school weeks or years has proved to be highly effective, especially for students in high-poverty schools. The Center for American Progress Action Fund, with the National Center on Time & Learning, has proposed the Time for Innovation Matters in Education Act, or TIME Act. The act would amend ESEA to provide



In this May 11, 2011 photo, 3-year-old Ben Johnson, right, joins in a song at an Early Childhood Family Education program in Waconia, Minnesota.
AP PHOTO/CRAIG LASSIG

funding to states and districts for the creation of expanded-learning-time initiatives to lengthen the school calendar by a minimum of 300 hours for all students in participating schools.⁴⁰ The U.S. Department of Education should also continue to use federal competitive-based grants and its waiver authority to encourage increased learning time.⁴¹

We also propose reconfiguring school time in other nontraditional ways. Experts believe that Carnegie Units—a system of earning high-school credits based on the length of time a student has studied a given subject—and other seat-time-based policies are one of the biggest barriers to

better, improved learning.⁴² Some states and districts have taken important steps forward. In New Hampshire, for example, high schools recently began giving students credit based on demonstrated mastery of course-level “competencies,” which are the skills and knowledge that are outlined in the state’s curriculum frameworks.⁴³ Idaho also recently passed a law to change the state’s public-school funding formula so that funds follow a student taking online or dual-credit courses in which the student received both high school and college credit.⁴⁴ Federal funding streams—both formula- and competitive-based—should encourage states and districts to experiment with learning time.

Promote experimentation with new schooling models

Over the past 20 years, states and districts have experimented with new models of schooling, including charter schools, career academies, virtual schools, early college high schools, dual-enrollment programs, and schools working in partnership with community groups to provide a wide range of services to children. Some pioneering districts have authorized and oversee a

portfolio of various school models that increase choice and spur innovation across the system.

The federal government should continue to support such work through programs such as the Charter Schools Program, Promise Neighborhoods, and i3. By supporting such reforms, the federal government can send a strong signal to states and districts that reinventing school models is critical to meeting the needs of all students. ■

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SECTION 1 • CHAPTER 2

Advance postsecondary education

Graduate Leland Shelton is congratulated as he is acknowledged by President Barack Obama during his 129th commencement ceremony address at Morehouse College May 19, 2013, in Atlanta.

AP PHOTO/CAROLYN KASTER

Ensuring that our economy benefits from the talents of our citizens requires that educational opportunities include accessible and affordable high-quality postsecondary education and workforce training. Research by the Georgetown Center on Education and the Workforce has shown the increasing need for higher levels of education and training in the labor market.

Between 1973 and 2018 the “jobs available for workers with postsecondary education are projected to increase from 28 percent to 63 percent of all occupations.”² In other words, in the near future almost two-thirds of jobs in our economy will require some type of education or training beyond high school.³

Our education and training system is not on pace to meet this demand. Only 41 percent of adults ages 25 to 54 have a two-year degree or higher, with an additional 19 percent having spent some time in college.⁴ Overall our workforce is projected to encounter a deficit of skilled workers in the next five years, fall-

ing short by 3 million workers with college degrees and almost 5 million workers with postsecondary credentials.⁵

But this is only part of the story. Boosting the education and training of our 300 million engines of growth would also increase productivity, innovation, and entrepreneurship, which would improve the efficiency of the national economy, create new products, and generate more wealth for everyone.

That’s why our plan focuses on developing the world’s best-educated workforce—so we can take advantage of the long-term need for

highly skilled workers while also driving the global economy toward the new industries and markets that our skilled workers help to create.



In the near future almost two-thirds of jobs in our economy will require some type of education or training beyond high school.

To do so, we must first identify the problems in our higher-education system that prevent us from developing a sufficient number of welleducated and highly skilled workers.

Seventy percent of high school graduates enroll immediately in two-year or four-year colleges,⁶ but less than 60 percent of fulltime students who enroll in bachelor's-degree programs complete their programs within six years, and only 30 percent of students enrolling in two-year institutions complete their certificate or associate's-degree program within three years.⁷ Some colleges graduate less than 10 percent of the students who initially enroll; a few colleges graduate none.

One reason for low success rates in both enrollment and completion is that some high school graduates are poorly prepared for college study, with 4 out of 10 who enroll as

undergraduates requiring some type of remedial instruction.⁸ Additionally, the lack of high-quality advising and counseling services often leads students to make bad decisions about where to enroll and what to study.⁹ Another factor is the rising cost of college: According to student surveys, more than 50 percent of students who fail to graduate cite the high cost of tuition and fees.¹⁰

Colleges and universities must improve in each of these areas. Federal taxpayers provide approximately \$150 billion annually to higher education—through student loans, Pell Grants, and campus-based aid.¹¹ It is unacceptable to continue sending taxpayer dollars to institutions that enroll students but do not ensure those students persist to a degree.¹²

College also has become increasingly unaffordable for low-income and middle-class families. The average net price of a single year of college education in 2012-13, after accounting for grant aid and federal tax credits, and including room and board, was approximately \$12,100 at a four-year public institution and \$23,800 at a four-year private institution.¹³ Over the past 30 years, the cost of sending a student to a public four-year college, after adjusting for inflation, has increased by 250 percent.¹⁴ (see Figure 1)

One of the reasons public institutions have been raising tuition and fees is that state spending on higher education has been in continuous decline. According to the College Board, inflation-adjusted state appropriations per full-time-equivalent, or FTE, student declined by 25 percent over the past five years.

Postsecondary education

Problem: The inability of many Americans to access and complete high-quality, affordable postsecondary education threatens the economic mobility of America's 300 million engines of growth and the U.S. economy overall. The United States ranks 16th in the world in the proportion of college-educated adults among those ages 25 to 34, down from ranking third in 1997.¹

Solution: Harness the consumer power of better-informed students and their families to demand improved, relevant, and cost-effective postsecondary education. Create more flexible and cost-effective paths to a college degree or credential, ease the financial burden on students and graduates, and better connect training to industry.

Key policy ideas:

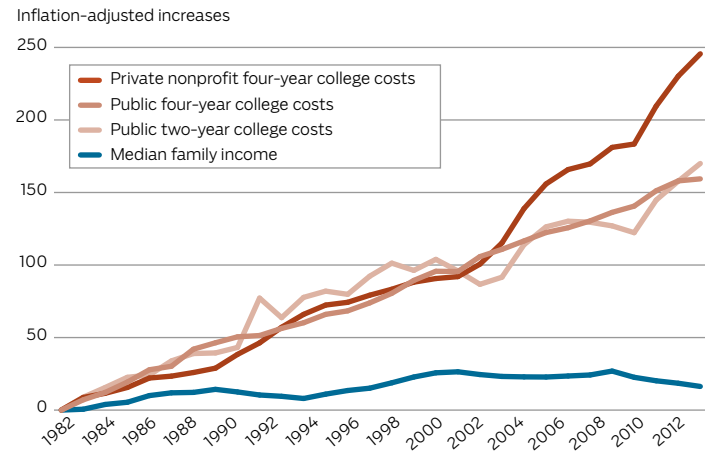
- Improve public disclosure of important information about postsecondary education institutions and programs. Expand and improve the recently released College Scorecard to include additional information about value, including graduates' earnings. Mandate the use of easy-to-understand and standardized financial-aid offer letters and the release of public-accreditation reports.
- Encourage students to make informed, better choices about what program to pursue, including seriously considering whether to major in STEM fields by showing, as part of the College Scorecard, the higher employment and salary levels of engineering and science graduates.
- Standardize articulation agreements to help the 6 million students who will transfer between schools at some point in the next five years to progress toward their degrees and credentials.
- Use prior-learning assessments to help more students receive credit for knowledge and training acquired outside the classroom and translate high-quality, free online coursework into college credit.
- Create the Workforce Investment Trust to train 1 million adult workers in community college and industry partnerships, 1 million adult workers in registered apprenticeships, and 1 million adult workers in career-pathways programs.

Other policies include raising the maximum Pell Grant award, automatically enrolling high-risk student-loan borrowers in income-based repayment plans, and deploying "college ambassadors" to provide counseling to hundreds of thousands of first generation and low-income high school students. We also propose universal access to career-navigation services.

Outcomes: High-quality postsecondary education will be available to all Americans, with the United States ranking first in the world in the proportion of adults who earn a college degree or postsecondary credential. ■

FIGURE 1

College costs and median family income, 1982 to 2012



Sources: The College Board, Annual Survey of Colleges; National Center for Education Statistics, Integrated Postsecondary Education and Data System.

The drop was 10 percent in 2011-12,¹⁵ the largest single-year drop in at least 50 years.¹⁶

As a result of declining public investment and rising tuition costs, college students and their families are more in debt than ever. High debt burden has led to serious financial struggles for recent graduates. According to the U.S. Department of Education, 13 percent of student-loan borrowers defaulted on their federal loans within three years of their first payment coming due, and at for-profit schools the default rate is 23 percent, more than double the rate at public and nonprofit schools.¹⁷ Frequently, the former students who default did not complete their educational program and are punished twice—once for their failure to graduate and then for their default. High levels of default and delinquency carry a high human cost and are also a drag on overall economic growth.¹⁸

For all Americans to reach their full potential, policymakers need to ensure that more students complete a high-quality postsecondary education, that students graduate with the knowledge and skills necessary for success at work and in life, and that a college education is more affordable for low-income and middle-class families.

We propose reforming the postsecondary landscape by making the entire system more accountable to students and taxpayers via policies that:

- Harness the consumer power of students and families
- Create flexible and cost-effective paths to a college degree or credential
- Invest in higher education while holding schools accountable for results

Policies that harness the consumer power of students and families

Imagine signing up to buy a product or service without knowing its cost, its quality, or the likely benefits of purchasing it. Each year, millions of students do exactly that when they enroll in postsecondary education. And their lack of information is hurting them and allowing educational institutions to sell “defective products” that don’t serve the purpose for which they are sold. Increasing access to information will not only help individuals, it also can make colleges better.

Colleges and universities obscure the price families will pay by burying tuition information on their websites and using complicated discounting procedures. They also avoid concrete measures of quality or return on investment, offering only oblique information such as student-faculty ratios. As a result, students make choices about where to go, what to study, and how to pay for college with insufficient information to guide their choices.

This information asymmetry has consequences for individual students, the higher-education market, and the economy as a whole. Students often find themselves deep in debt and lacking a degree or credential of value, either because the quality of their education was poor or because the skills they garnered do not match what the labor market needs. And because student choices are ill-informed, these decisions are not properly regulating the higher-education market; colleges are free to raise tuition at will and to offer programs of varying quality that bear no relationship to the job market. In the end, the economy suffers—students enter the workforce but don’t or can’t contribute to their full abilities.

As the Center for American Progress illustrated in its “Buying College” report, the answer to this problem is deceptively straightforward but will have a dramatic effect, empowering Americans to demand useful degrees at a reasonable price.¹⁹ Give students and their families better information, and it will change their decision making. In turn, better decisions will change colleges, as institutions respond to better-informed demand.

The federal government already collects huge quantities of information about colleges each year. But few students and parents use this vast resource, and there is also information that is not currently collected but that would be useful. For the greatest impact, students need easy-to-understand, easy-to-find information. And, when necessary, they need support from knowledgeable advisors. To achieve this, we propose:

- Expanding and improving the U.S. Department of Education’s College Scorecard, providing tools to making comparisons easier
- Requiring colleges to use easy-to-understand standardized financial-aid letters
- Making accreditation-agency reviews publicly available
- Creating an expanded college-ambassador program
- Guiding individuals through the training maze with career-navigation services

Expand and improve the U.S. Department of Education’s College Scorecard

The College Scorecard provides prospective students with key information that can help them make an informed decision on their education. We propose expanding the College Scorecard to include information about the value of the education provided by detailing earnings information

from the Social Security Administration for those who completed or failed to complete a postsecondary education program. This information should be obtained at both an institutional and a program level. New tools should be developed to make comparisons easier. And efforts should be made to train high school counselors and others engaged in college outreach on how to access and use the College Scorecard to support better-informed student choice.

The virtue of nutrition labels on food is their standardization and ease—they are readily accessible any time you pick up a product. In similar fashion, allowing college students

to have key facts and data when they most need it, the U.S. Department of Education should ensure that information about the College Scorecard is widely disseminated and that postsecondary institutions prominently display their College Scorecard with a link to a comparison tool on the front pages of their websites, as well as on applications and marketing materials.

With these tools, students and parents would be able to compare colleges with respect to the success of their graduates and the likely cost of attendance. Colleges would be forced to compete with each other based on quality and value rather than reputation and marketing.

FIGURE 2

How the College Scorecard could look after incorporating new, valuable information

	College X	College Y	College Z
What is the average net price?			
How much has the net price changed in the last 2 years?			
What percentage of students graduate?			
Are students able to repay their student loans after they graduate as measure by default rates?			
What is the average amount a student borrows for an undergraduate education?			
What percentage of former students have earnings three years after graduating?			
How much did those graduates earn on average?			

Consumer information and STEM education

Educating students for employment in science, technology, engineering, and mathematics is a national priority. Studies show that 40 percent of science and engineering students switch to different majors during their time as undergraduates.²⁰ Providing students with real-world data—comparing outcomes for different programs at the same school—may encourage more college students to continue their course of study. Consider these starting salaries for recent college graduates:²¹

- Engineering: \$62,000
- Computer science: \$61,000
- Health sciences: \$45,000
- Math and sciences: \$40,000
- Humanities and social sciences: \$35,000

As important as these additional tools would be, having more granular or customized information—such as cost information by family income and graduation rates for students from different academic and economic quintiles or racial/ethnic group—would be helpful to students and families in making the decision about where to enroll and what to study. For this reason, information about employment rates and average salaries by academic major should also be provided.

Require colleges to use easy-to-understand standardized financial-aid letters

One of the keys to changing colleges through better consumer information is ensuring that families are making conscious choices about how much they will pay for college and how

they will finance it. But colleges make this inquiry nearly impossible by using financial-aid offer letters that are filled with jargon, that mix loans in with scholarships, and that leave students wondering just how much they will need to pay out of pocket. Moreover, each college has its own format for offering financial aid, so it is extremely difficult to compare the offers from one school to another.

This confusion is easily fixed with a standard format for financial-aid offers. In July 2012 the Department of Education released a Financial Aid Shopping Sheet, a model financial-aid offer letter, that makes it easier for prospective students to locate their net price, distinguish gift aid from loans, and quickly see performance outcomes for students who enroll at the institution.²² More than 700 institutions agreed to adopt the Shopping Sheet.²³ In addition, the Consumer

Financial Protection Bureau has been working to develop a tool to ease comparisons between institutions and aid offers. Congress should require that all colleges that participate in federal student financial-aid programs use a common financial-aid letter based on the Department of Education's Financial Aid Shopping Sheet.

Make accreditation-agency reviews publicly available

There is no simple way for college-bound students to ensure that they are picking an institution that is providing quality programs overall. Creating a comprehensive measure of the quality of college programs would be a complicated undertaking, but there is a way to give families the information they need.

Accrediting agencies perform in-depth reviews of colleges. Reports summarizing these reviews are currently confidential, but Congress should direct accrediting agencies to make the results of the reviews public, providing students and families with an objective analysis of a college's performance as the newly available information is digested in college guides and other information sources.

Create an expanded college-ambassador program

Students who make informed choices about college seek advice from people who have

experience with the college-choice process, including peers, parents, neighbors, teachers, and counselors. But research shows that many students, particularly low-income students, do not have access to sound advice. The federal government should ensure that students have advisors to help them in these important decisions.

The federal government has long supported programs that help low-income, first-generation college students prepare for and succeed in postsecondary education. Indeed, these efforts were at the heart of the war on poverty: Since 1964, the federal TRIO Programs have supported postsecondary-education outreach and student-support services designed to encourage individuals from disadvantaged backgrounds to enter and complete college and postgraduate education.²⁴ In addition, the Gaining Early Awareness and Readiness for Undergraduate Programs, or GEAR UP, supports early college-preparation and awareness activities at the state and local levels to ensure low-income elementary- and secondary-school students are prepared for and pursue postsecondary education.²⁵ It is difficult, however, to scale these programs because of the per-participant cost.

The National College Advising Corps, or NCAC, developed an innovative way to help high school students get advice about college. NCAC places trained recent college graduates as college ambassadors in high schools to help students navigate the college-search, admissions, and financial-aid processes. Congress should create a program modeled on NCAC



In this Mar. 31, 2010 photo, Tania DeLeon, 20, right, an administration of justice major at Folsom Lake College, works with her supervisor Sarah Aldea in the outreach department at her on-campus job in Folsom, California. AP PHOTO/RICH PEDRONCELLI

that allows college seniors at participating institutions to receive federal work-study funding for working as trained college counselors for low-income and first-generation high school students.

Guide individuals through the training maze with career-navigation services

The need for better information is certainly not confined to the world of traditional college students. In fact, working adults often need as much or more help and face more complicated decisions. Choosing whether to give up a portion or all of family income—

not to mention time—to pursue higher education or job training is a difficult and stressful decision.

Career-navigation experts—such as career counselors, career advisors, and career coaches—can help workers chart the course of their careers through a complex labor market. These experts are trained workforce professionals who can draw upon various resources to assist workers interested in advancing their careers.

The problem, however, is that the public-workforce system is vastly underfunded. As a result, access to career-navigation services

is often limited to unemployed workers or individuals receiving public assistance.²⁶

The federal government should take the following steps to make career-navigation services universally available;

- States should ensure that One-Stop Career Centers provide information about the full range of public resources available to support the career-navigation process. Information about the availability of federal student aid for vocationally oriented education and training, for example, would be immensely helpful for workers contemplating career changes.
- States and the federal government should ensure that One-Stop Career Centers provide up-to-date access to information about the educational and training opportunities available in the local area and online. When providing such information, the centers should ensure that those they serve have the most timely and relevant information about the outcomes for program completers, including the information available on the Department of Education's College Navigator and College Affordability and Transparency Center and on the training provider's website consistent with the gainful-employment regulations.
- The federal government should develop and maintain an integrated self-help system, customizable by states and One-Stop Career Centers, for individuals to track their career development through an

online account, which would include information on an individual's employment history, education, and professional skills. The online account should be interoperable with leading social-media tools and be linked to information about a broad range of career options and labor-market data. Workers interested in education and training programs should be able to find detailed information on providers in their region and financial aid.

- Congress should appropriate an additional \$1 billion annually to allow for the needed enhancements to the nation's workforce-development system. Millions of adults use this system and for it to be effective it needs to be a more integral resource to develop the long-term skills of the workforce.

Policies to create flexible and cost-effective paths to a college degree or credential

The elite edge of our existing system of higher education still offers the best learning opportunities in the world. But our traditional model of elite higher education—designed for 18- to 22-year-old full-time students who attend a single school for four years—is not the right path for every student or every occupation.

For many modern students, traditional campus-based universities do not offer enough flexibility to fit their complicated lifestyles. More than one-third of undergraduate stu-

dents are over the age of 25, and many of these students work full time or support dependents of their own.²⁷ A lot of these older students have acquired college-level learning that comes from noncredit programs, corporate or military training, workplace-based learning, volunteering, and other activities. And some students are taking massive open online courses or earning “digital badges” for specific skills. Too often, traditional colleges refuse to recognize these accomplishments because they were attained outside the classroom; even credits obtained at other colleges are often deemed unacceptable.

Fortunately there are models for addressing this shortsighted treatment of outside learning. As the Center for American Progress discussed in its 2010 report, “Degree Completion Beyond Institutional Borders,”²⁸ recognizing legitimate outside sources of education could expand access to high-quality higher education, reduce costs, and reward individuals for their skills, capabilities, and knowledge instead of just the amount of time spent in a classroom.

Access to these higher education models should be expanded via policies that:

- Require colleges to ease credit transfers
- Move toward competency-based programs and offer academic credit toward degree attainment for prior learning
- Expand access to free and low-cost courses
- Expand access to open-education resources

- Expand community college and industry partnerships for job-training programs
- Develop 1 million apprenticeships in high-growth industries

Require colleges to ease credit transfers

Too many colleges put up barriers to earning a degree or credential by refusing to accept credits earned at other schools. With more than one-third of college students transferring schools at some point in their studies, this is a serious problem.²⁹ A typical student can earn as many as 20 credits more than is necessary to graduate. This barrier is both an impediment to individual attainment of a college degree and an obstacle to achieving national goals for college completion.³⁰

Articulation agreements solve this problem by specifying how credits earned at one institution will be accepted by another toward one of its degree programs. The most common type of articulation agreement is one between a state’s community college system and its four-year college system that enables students earning an associate’s degree to enroll at a four-year college as a junior. Unfortunately, these agreements are not available to all students who need them.

Congress should amend the Higher Education Act to require all public colleges and universities whose students receive federal student aid—such as Pell Grants, Stafford Loans, GI Bill benefits, support from Employment and Training Administration at the Labor Department,



In this photo taken Nov. 15, 2012, Peter Struck, Associate Professor of Classical Studies at the University of Pennsylvania prepares to record a lecture on Greek Mythology in Philadelphia. 54,000 people from around the world took his class online for free — a “Massive Open Online Course,” or MOOC, offered through a company called Coursera. AP PHOTO/MATT SLOCUM

Temporary Assistance for Needy Families at the Department of Health and Human Services, or educational assistance at the Department of Defense—to at a minimum participate in a common statewide articulation agreement. Statewide articulation agreements should:

- Provide for a common core curriculum across all public institutions within the state, with common course numbering for core classes
- Guarantee that an associate’s degree fulfills the first two years of core studies at a public four-year institution within the state, and encourage states to negotiate articulation agreements with other states³¹

Offer degree credits for prior learning

Prior-learning assessments, or PLAs, measure what a student has learned outside of the college classroom, evaluate whether that learning is college level, and then determine the appropriate number of college credits. PLAs are closely tied to the learning outcomes one would expect from an equivalent college course.

Prior-learning assessments can save between \$1,600 and \$6,000 for 15 credits in the case of the typical adult college student.³² And PLAs help adult students complete their degrees: A study by the Council for Adult and Experiential Learning found that “graduation rates are

two and a half times higher for students with [prior-learning assessment] credit.”³³

The federal government should implement the following policies to expand credit for prior learning:

- The Department of Education should encourage institutions to adopt competency-based programs that make it possible for students to begin their post-secondary education by having what they already know tested. Appropriate credit should be given for the competencies that students bring with them to the program.
- Before an institution can participate in programs offered to active-duty service members or their families by the Department of Defense or in the GI Bill program, it must agree to accept credits earned by service members or veterans through college-level military training.

Expand access to free and low-cost courses

Modern technology is creating opportunities for more students to access high-quality educational resources at little or no cost. The online education landscape has dramatically expanded in recent years, encompassing both traditional higher-education behemoths such as the Massachusetts Institute of Technology and Harvard University—which are partnering to offer access to some of their courses for free—as well as new entrants, including the Khan Academy and Mozilla’s Open Badges

Initiative.³⁴ Such developments are promising news for all college students and lifelong learners—especially the millions who don’t have access to an elite private university.

The problem, of course, is that finishing a free online course doesn’t get a student any closer to a college degree or credential. As this educational format matures, the Department of Education should work with states, accreditors, or other intermediaries to develop mechanisms to assign academic credit to high-quality online learning. One possible approach might be to have states, accreditors, or other third parties develop and implement robust competency-based assessments that are aligned to common course numbering. This would allow high-quality massive open online courses, or MOOCs, to be readily accepted into existing core courses in the state’s public higher-education system. Students who complete a preapproved MOOC and pass a sanctioned assessment would receive credit for passing the public system’s equivalent course.

Another approach might be to use a Social Impact Bond structure to promote the offering of courses by MOOCs that result in academic credit being awarded by institutions of higher education. Under this approach, the federal government would agree to compensate MOOC providers after a student had completed a course and an institution of higher education accepted the associated credit. To ensure adequate quality safeguards, payment for the MOOCs might be deferred until the student completes the following academic term or the entire program.

Expand access to open-education resources

Open-education resources, or OERs, are educational materials produced by one party that others are licensed to use free of charge. For students who struggle to afford college textbooks, which often cost more than \$1,000 per year, open-education resources offer the potential for cost savings as state legislatures, colleges, and new publishing companies embrace OER and lowcost digital textbooks. Washington state, for example, created an Open Course Library stocked with free materials for 42 introductory community-college courses.³⁵

The U.S. Department of Education should help to expand access to open-education resources and free or lowcost textbooks by:

- Modifying the cost-of-attendance provisions of the federal student-aid programs to specifically cover a textbook fee that could be paid to a third party such as a state or nonprofit agency to provide free or low-cost textbooks
- Assembling a central repository for free digital textbooks—a federal Digital Textbook Initiative—modeled on the California Digital Textbook Initiative³⁶

Expand community college and industry partnerships for job-training programs

While a traditional four-year college education is the right path for many students, it

is not the only way to earn a high-quality degree or credential. Many students—especially older students—prefer a shorter post-secondary program that is linked to specific career opportunities. Such programs can lead to substantial increases in earnings.³⁷ Moreover, while our economy is projected to have a shortfall of as many as 5 million skilled workers in positions that require some college education but less than a bachelor's degree, our workforce-training system is not meeting this demand for training: Fewer than 200,000 adults earn a degree or credential each year with support from the Adult and Dislocated Worker Program, authorized by the Workforce Investment Act of 1998, which provides quality employment and training services to assist eligible individuals in finding and qualifying for meaningful employment, and to help employers find the skilled workers they need to compete and succeed in business.³⁸

These programs provide three types of service:

- Core services, which includes outreach, job search and placement assistance, and labor-market information available to all job seekers
- Intensive services, which includes more comprehensive assessments, development of individual employment plans, and counseling and career planning
- Training services, in which customers are linked to job opportunities in their communities, including both occupational training and training in basic skills, and



In this photo taken Sept. 20, 2011, teacher Rodney Brown speaks to students at a job training workshop at Department of Employment Services in Washington.
AP PHOTO/JOSE LUIS MAGANA

are asked to use an “individual training account” to select an appropriate training program from a qualified training provider

As the Center for American Progress outlined in its report, titled “Let’s Get Serious About Our Nation’s Human Capital,”³⁹ the workforce-training system should expand the availability of community college and industry partnerships to help millions of workers learn new skills. These programs typically focus on education and job-training programs that can be completed within two years and lead to industry-recognized credentials and certificates.

The partnerships combine public and private resources to create education and training programs that are tightly linked to regional

economic development. By partnering with employers, community colleges develop programs that are directly aligned with up-to-date job requirements and also ensure that course offerings are based on projected job openings. For their part, private-sector partners get to work with community colleges to design a curriculum for each program that is directly relevant to their industry practices.

The bipartisan Strengthening Employment Clusters to Organize Regional Success Act, or “SECTORS Act,” and the president’s Community College to Career Fund are proposals that would expand support and access to such partnerships,⁴⁰ but we believe they are too modest. The workforce system should be restructured into a Workforce Investment

Trust (see next section for a further description) that supports a robust community college and industry partnership system. The Workforce Investment Trust would enroll 1 million workers annually in public-private partnership programs that support one to two years of postsecondary education or training in a high-growth sector.

Develop 1 million apprenticeships in high-growth industries

Arguably the most underutilized form of postsecondary education and training is the apprenticeship model. During the course of

an apprenticeship, an apprentice is a paid employee who is also enrolled in a structured training program. The training program typically lasts two to four years and includes a minimum of 2,000 hours of formal on-the-job training and hands-on work experience, along with at least 144 hours of classroom instruction that can be provided inhouse or by a local community college or technical college. Apprenticeship completers earn an average starting salary of \$50,000 and make as much as \$225,000 more than comparable job seekers in their lifetimes.⁴¹

There are only 400,000 registered apprentices in the United States. In comparison, Germany, with less than one-third of our population, supports 1.8 million apprentices, and approximately 500,000 private companies participate. If the United States reached a similar per-capita level of apprenticeship training, our system would support almost 7 million apprentices.⁴²



There are only 400,000 registered apprentices in the United States. In comparison, Germany, with less than one-third of our population, supports 1.8 million apprentices, and approximately 500,000 private companies participate.

In the upcoming reauthorization of the Workforce Investment Act, Congress should create a new \$2 billion program as part of a new Workforce Investment Trust (described below) to support an additional 1 million apprentices annually. The program should provide grant-making authority to the Office of Apprenticeship—a small agency at the Department of Labor—and direct it to work with state and local workforce-development agencies to develop relationships with private-sector employers in high-growth and emerging industries such as health care, information technology, and advanced manufacturing. Grants could take three forms:

Postsecondary-education policies for veterans

More than 10 million veterans work in our economy today,⁴³ and they have been one of the foundations of our prosperity ever since the Serviceman's Readjustment Act of 1944, better known as the GI Bill, helped send almost 8 million veterans of World War II to college and job-training programs.⁴⁴

This report includes numerous policies that will benefit veterans, but the following four were specifically designed with veterans in mind:

- **Competency-based transcripts:** The Military Credentialing and Licensing Task Force is doing important work to help translate military experience to relevant civilian applications. As men and women begin their service, the military should already be thinking about how to equip them for their return to civilian life. As soon as they begin training for their first assignment, the knowledge, skills, and competencies they acquire during their military service should be captured in a competency-based transcript. Service members should be encouraged to add experience outside of their military service to that transcript and to develop a plan for civilian life after their service.
- **GI credits:** We should give veterans every opportunity to go to college. But when an institution of higher education requires a medic who served in Iraq to take Nursing 101 as a degree prerequisite, it is a waste of both time and money for the medic and American taxpayers who are paying the tuition bill. Schools that accept either Defense Department or GI Bill funds should be required to grant "GI Credits" for demonstrated prior learning in training and in the field based on prior-learning assessments.
- **Veterans' apprenticeships:** Veterans are perfect candidates for the high-skilled jobs that our economy has to offer, as their training in the armed forces has already given them the "soft skills" that employers have said are so difficult to find in today's labor force. Indeed, a coalition of large companies—including GE, Alcoa, Boeing, and Lockheed Martin—have already announced an initiative to train and hire veterans,⁴⁵ and even more have committed to do so through the Chamber of Commerce.⁴⁶ We believe that the government also has a role to play in honing veterans' skills and bringing them to bear and can do so through our apprenticeship proposal.
- **Access to career-navigation services:** All Americans, and especially veterans, can benefit from one-on-one assistance in developing a career path. The military has already taken a first step by changing the Transition Assistance Program to a weeklong "reverse boot camp" that will provide resume-writing classes and mock job interviews to transitioning troops.⁴⁷ President Obama also used his executive authority to establish a national Veterans Job Bank and authorize 6-months of career counseling for post-9/11 veterans. These initiatives can be enhanced by connecting them to the broader range of career navigation services, as described in this report.

CAP's plan for veterans will provide fuel for our country's long-term economic growth. It is the smart thing to do and the right thing to do.

- Annual grants to employers to partially offset the costs of apprenticeship training
- One-time grants for sector-based public-private partnerships to buy equipment that would support registered-apprenticeship training
- Seed money for sector-based public-private partnerships to develop industry-recognized credentials in high-growth and emerging industries

Policies to invest in higher education while holding institutions accountable for results

While a college education in the United States has never been universally available at no cost as is sometimes the case in other countries, we have for decades offered a variety of assistance to ensure that college is possible for a growing number of students. But our national commitment to maintaining the best-educated and most highly skilled workforce in the world is in doubt. Over time, public support for public institutions of higher education has declined, despite the fact that more than 70 percent of undergraduates enroll at these institutions. Student tuition at public institutions of higher education rose from 23.3 percent in 1987 to 47 percent in 2012.⁴⁸ And many policymakers are proposing additional cuts to critical federal programs such as Pell Grants and Stafford Loans.

To continue on this path would be an economic disaster. A recent report by the National Science Board, titled “Diminishing Funding and Rising Expectations,” found that continuing increases to tuition and fees will threaten our ability to develop the next generation of scientists and engineers, who are crucial for innovation-led economic growth.⁴⁹ The study stressed that a stronger commitment to public funding “is imperative if our Nation is to increase the number of highly skilled U.S. science and engineering graduates and compete in today’s knowledge-driven global economy.”⁵⁰

We must return to making the investments that are necessary, but we also need to ensure that the investments are producing college degrees and postsecondary credentials. Colleges should expect taxpayer dollars to correlate to degree completion not enrollment rates. And job-training providers should expect taxpayer dollars to support programs that are directly linked to growing opportunities in the labor market.

We suggest policies that are designed to boost public investment while also helping lower college costs, make it easier for families and students to finance higher education, and reward schools and job-training providers who prepare their students for long-term success by:

- Boosting Pell Grants to provide more opportunities for low-income students
- Creating a Workforce Investment Trust



In a Jun. 4, 2009 photo, Specialist Steffen Tucker, right, takes notes along with other students during a Music Appreciation class at the SSG Glenn H. English Jr., Army Education Center of Austin Peay University at the Fort Campbell Army Base in Kentucky. AP PHOTO/JOSH ANDERSON

- Making income-based repayment the default option for high-risk borrowers
- Implementing performance-based funding in federal and state support of higher education

Boost Pell Grants to provide more opportunities for low-income students

The Pell Grant program is the nation's premier financial-aid program for low-income college students. Pell Grants are awarded based on financial need and do not need to be repaid by the recipient. Nearly 10 million low income college students receive Pell Grants each year.⁵¹

Unfortunately, the Pell Grant program no longer covers as much of a student's college expenses as it once did. In the 1970s, a Pell Grant covered about 70 percent of a student's education at a public four-year university.⁵² The average Pell Grant in the 2012-13 academic year, however, covered less than one-third of those college costs.⁵³

Under current budget projections, the Pell Grant program as currently constructed will be underfunded by approximately \$23 billion over the next 10 years.⁵⁴ One of our first orders of business is to fill that projected shortfall and ensure that the maximum Pell Grant award reaches its scheduled increase to \$6,030 by 2017.

But \$6,030 is still not enough. An additional \$20 billion, amounting to a 3 percent annual increase, should be added for Pell Grants between 2018 and 2022 to boost the maximum value to \$6,990 by 2022. Boosting Pell Grants by this much would enable the program to retain more of its intended buying power and allow more students to stay in school.

Create a Workforce Investment Trust

Postsecondary education is not limited to a four-year bachelor's degree; it also includes community colleges, vocational training, and registered apprenticeships. Each of these options offers the means for upward economic mobility and a pathway to the middle class. Unfortunately, our workforce system is not meeting its potential to help adult workers enroll in postsecondary education and job training—which means we need to fundamentally reform the system.

As CAP proposed in its report, titled “Let’s Get Serious About Our Nation’s Human Capital,”⁵⁵ Congress should reform the workforce system in the course of reauthorizing the Workforce Investment Act in 2013. As part of the reauthorized bill, it should create a single agency—the Workforce Investment Trust—that has as its sole focus helping up to 3 million adults enroll in job-training programs each year. The Workforce Investment Trust should be designed according to the following principles:

- Most workers need some type of education or skills training beyond high school.

- Job-training programs should include pathways to postsecondary credentials and certificates with labor-market value.
- Postsecondary-training programs should be linked to emerging career opportunities through community college and industry partnerships, registered apprenticeships, and career-pathways programs.

The new agency’s mission should focus on:

- Helping college-ready adult workers retrain in community colleges, technical colleges, and registered apprenticeships to learn new skills being sought by high-growth industries in their regions
- Enrolling adult workers who need remedial coursework into career-pathways programs that will eventually lead to postsecondary credentials
- Assisting very low-skill adults to enroll in programs that provide basic adult education while simultaneously introducing participants to entry-level occupational training that will help them build a foundation for economic mobility

The purpose of the Workforce Investment Trust is to shift the priorities of the workforce system to long-term skills training, instead of rapid job search and re-employment at any cost. The agency would be charged with developing a new generation of skilled workers to replace our aging workforce and to fill emerging jobs in new industries.

The Workforce Investment Trust should be funded at \$10 billion annually, which is enough to enroll 3 million adults in high-quality training programs, including:

- 1 million adult workers in community college and industry partnerships
- 1 million adult workers in registered apprenticeships
- 1 million adult workers in career pathways and contextualized programs

Funding would include \$7 billion currently spent on federal training programs plus \$3 billion in annual funding. This influx in training would result in an increase of more than 1 million workers earning credentials annually, thereby helping to avert a national shortfall of skilled workers that could cripple future economic growth.

Make income-based repayment the default option for high-risk borrowers

The income-based repayment program, or IBR, enables low-income borrowers to limit their student-loan payments to no more than 10 percent of their discretionary income. This is an important repayment option for low-income students to maintain access to higher education. Students should not be forced to forego or drop out of college because of the risk that they will not be able to repay their debt.

Unfortunately, only a small percentage of eligible borrowers enroll in the program, which means that some students are unnecessarily defaulting on their student-loan debt.⁵⁶ Congress should make income-based repayment the default repayment option for federal student-loan borrowers. This could be accomplished either by having the IRS collect student-loan payments through the wage-withholding system or explicitly giving the Department of Education access to IRS or Social Security earnings information. Borrowers should be given the ability to opt out of the wage-withholding system for loans, since student-loan borrowers whose incomes may start low but increase substantially early on in their careers will not benefit from enrolling in IBR.

Implement performance-based funding in federal and state support of higher education

We not only need to be sure that students can access education, but also that once they do, they are well placed to complete degrees. For years, colleges have been allowed dismal graduation rates and high student-loan defaults, only to receive ever-increasing amounts of student financial aid. A partial solution to this problem, as described earlier in this section, is to have the Department of Education make graduation rates, employment rates, future earnings, average student debt, and student-loan-repayment rates available on the College Scorecard and in other consumer-oriented tools.



Students walk across campus at the University of Vermont on Apr. 30, 2012 in Burlington.

AP PHOTO/TOBY TALBOT

But that isn't enough. To encourage postsecondary institutions to serve students better, in the upcoming reauthorization of the Higher Education Act, Congress should add

an institutional-performance component to the federal student-aid system. Evidence from the states suggests that this can work.⁵⁷ ■

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SECTION 1 • CHAPTER 3

Raise workplace standards

United Auto Workers Local 174 president John Zimmick works in his office in Romulus, Michigan, Mar. 22, 2013.

AP PHOTO/PAUL SANCYA

Good jobs are the centerpiece of building a strong middle class that can contribute to economic growth. A family that has good jobs is a family that can contribute to building a community that offers good education for its children, that doesn't miss days of work because of ill health, that can take the risk of starting its own business, that can spend its time doing more than struggling to get by, and that can contribute to national innovation.

Good jobs also enable workers to purchase more goods and services, thereby providing the economic demand that gives firms the confidence to make new investments. Similarly, workers have lower rates of turnover and absenteeism when they have good jobs and are thus more productive.

In a sense, this entire policy agenda is about creating good jobs. That is, of course, the ultimate goal of a sensibly designed economic agenda—even if mediated through other policies such as education or trade law.

But there are also direct interventions that can make more jobs good jobs.

What makes a job a good job? Pay obviously matters. But what about health insurance or retirement security? As the family structure has changed and most workers now have to take on responsibilities to care for the young, the aging, and the sick, paid leave and family friendliness are also critical elements of a good job. Other features of good jobs include disability insurance and severance pay in the event of dismissal.


One way to make all jobs in the United States good jobs, at least by some measures, is to make these features of employment universal. Short of universality, though, features that are important in a good job can be made more widespread by way of policies that create incentives to employers to provide those benefits or make it easier for employees to provide them for themselves.

- Increase income
- Raise federal contracting standards

Policies to boost retirement security

The retirement-savings system is obviously important to each of us individually. But it is also important to us collectively, especially as our population ages. A system in which people undersave during their working years burdens each subsequent generation that must support them. This strain on subsequent generations puts a strain on the whole economy because it undermines a secure standing in the middle class. And workers without a secure retirement base are less likely to take risks such as starting a business, going back to school to change careers, or saving for their children's education. In addition, a system that structures benefits in a way that requires people who have the means and will to save for their retirement to oversave to protect against the "risk" of living a very long life is inefficient.

The biggest problem currently facing our retirement system is undersaving. As the first generation of workers depending primarily on 401(k) plans rather than the increasingly rare but more secure defined-benefit pension starts to retire, it is clear that the private-retirement system is failing many Americans. The typical near-retirement-age worker with a 401(k) has accumulated enough money to provide a monthly retirement payment of only about \$575, and that small amount is at greater risk than if it came from a traditional



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Below is a set of such policies, as well as some that directly affect pay and those designed to level the playing field of the employment relationship, particularly the ability to join a union. These policies will:

- Boost retirement security
- Make jobs more secure for those with families
- Help bridge periods of unemployment

Raising workplace standards

Problem: Many of our jobs lack benefits and protections that other countries take for granted such as sufficient minimum pay, pensions, leave time, and effective collective-bargaining rights. Without these workplace standards, we have a weakened middle class, as many of our 300 million engines of growth are unable to produce to their full potential.

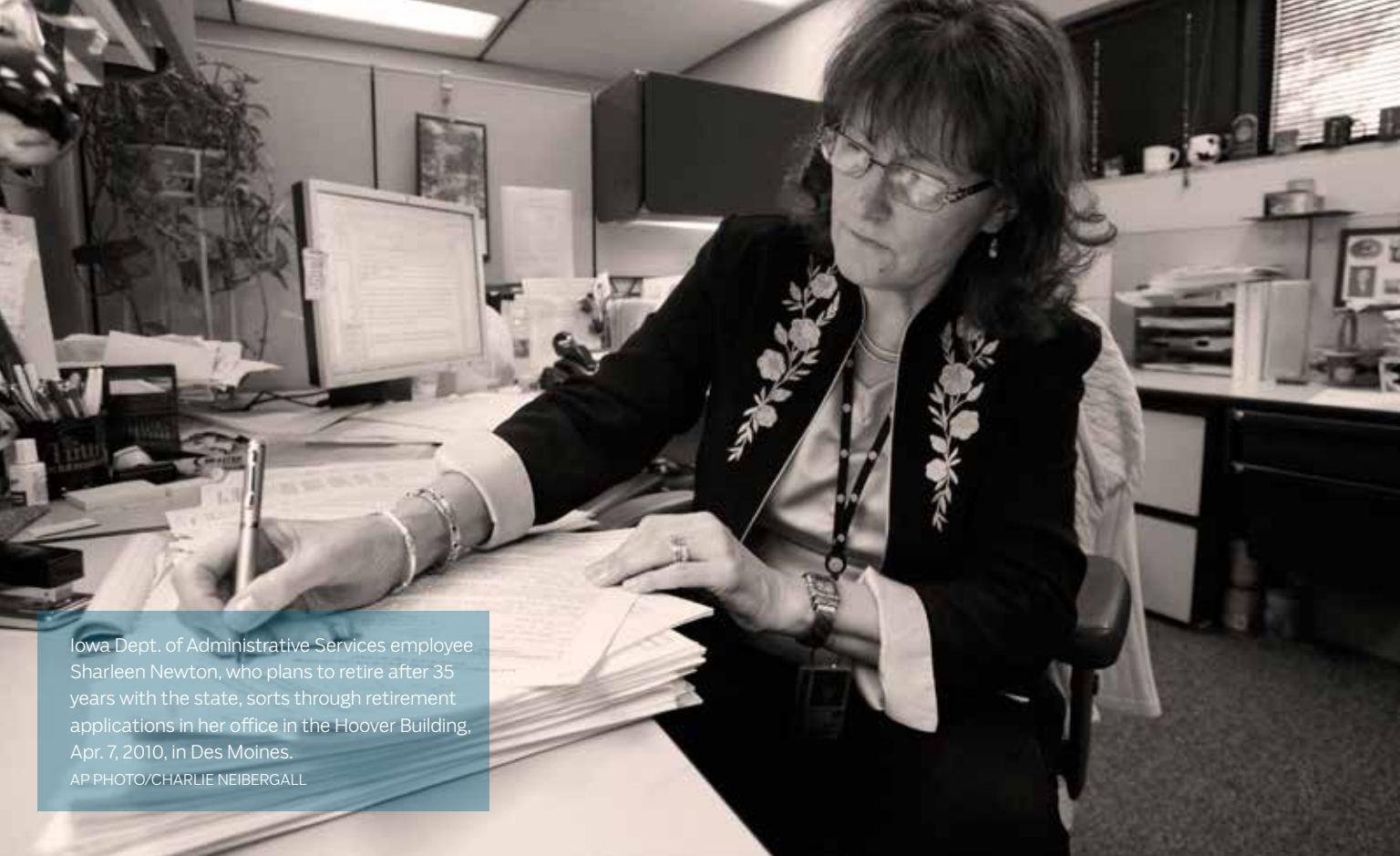
Solution: Require paid leave and sick days, better protection in the event of layoffs, a higher minimum wage, better forms of retirement savings, and protection of the right of workers to join a union.

Key policy ideas:

- Give workers access to SAFE Retirement Plans—a hybrid between a traditional pension and a 401(k) plan, with many of the benefits of both.
- Expand access to subsidized child care for low-income parents by doubling access to federally subsidized child care for low-income families from 22 percent to 44 percent.
- Create a Universal Savings Credit that replaces all current employer and employee deductions for retirement, health, and education, and correct the upside-down nature of current incentives that confer the greatest benefits on the wealthy.
- Require adequate severance packages for all employees of companies that offer “golden parachutes” to their top executives.
- Increase the minimum wage to half of average income.
- Create Social Security Cares to provide up to 12 weeks of partial wage replacement to support workers who need to take time off to care for a new child or a seriously ill family member.
- Enable workers to join unions by passing the Employee Free Choice Act, as well as making the right to join a union a civil right.

Other proposed wage and benefit policies in this report include reforms to the unemployment system, passing the Paycheck Fairness Act, raising federal contracting standards to promote worker-friendly policies, and the promotion of inclusive capitalism.

Outcomes: The United States will lead rather than lag behind the world in policies that strengthen workers and enhance their security. All workers will have paid family and medical leave and access to high-quality child care. More than 90 percent of near-retirees will have retirement savings sufficient to last their life expectancy. ■



Iowa Dept. of Administrative Services employee Sharleen Newton, who plans to retire after 35 years with the state, sorts through retirement applications in her office in the Hoover Building, Apr. 7, 2010, in Des Moines.

AP PHOTO/CHARLIE NEIBERGALL

pension.¹ Making matters worse, less than half of all workers even have a retirement plan at work, and that figure has been declining over the past few decades.²

Americans, therefore, are deeply worried about their ability to retire: Half of all workers say they are not confident that they will have enough money for retirement.³ Indeed, the accounting firm Ernst & Young estimates that 59 percent of new middle-class retirees will outlive their retirement savings.⁴ Boston College's National Retirement Risk Index estimates that 51 percent of households are at risk of having an insecure retirement, meaning they will be unable to maintain their preretirement standard of living.⁵

Social Security provides an essential baseline of income for retirees, and it must be strengthened to ensure that it continues to do so, as the Center for American Progress has already proposed.⁶ But Social Security was never intended to be people's only source of income for a comfortable retirement. As a result, the failure of the private-retirement system could have devastating human and economic consequences.

A private-retirement system that increases savings and security, on the other hand, would have a number of positive economic consequences. First, boosting retirement savings would lead to a greater pool of patient, long-term capital available for productive invest-

ments. Second, retirement security enables people to take full advantage of their productive capabilities. Having a secure base enables people to take risks such as starting a business or going back to school to change careers, and it protects the next generation from having to provide for aging parents. Finally, when people have adequate personal retirement savings, they have less need for government services.

To enable more Americans to retire with dignity and receive the economic benefits of doing so, we must make saving for retirement easier, cheaper, and more secure.⁷ We can do this by:

- Creating a new SAFE Retirement Plan—a hybrid plan that takes the best qualities of both traditional pensions and 401(k) plans
- Opening up to the public the Thrift Savings Plan—the 401(k) for federal employees that has model features such as low fees and sensible investment options
- Reforming tax incentives for retirement savings by establishing a new Universal Savings Credit

Under these proposals Americans would be covered for retirement in one of the following ways: under their current pension or 401(k) plan, under a SAFE Retirement Plan, or through an expanded Thrift Savings Plan. They would also benefit from a more effective incentive to save via the Universal Savings Credit.

We also recommend requiring automatic enrollment in plans in order to boost participation and increase savings balances.

Create a SAFE Retirement Plan

The Secure, Accessible, Flexible, and Efficient Retirement Plan, or SAFE Retirement Plan, takes some of the best parts of defined-contribution plans such as 401(k)s and the best parts of defined-benefit plans such as traditional pensions, including consistent monthly payments, portability, and constant cost to employers.

What makes this plan unique is that the risks of not meeting target benefits would be spread among a broad swath of workers and retirees over a long time horizon rather than borne solely by employers, as they are in a traditional pension plan, or by individual workers, as they are in a 401(k). While payout levels in the SAFE Retirement Plan are not guaranteed, the plan is far less risky for workers and retirees than a 401(k) because its long investment time horizons produce more stable and predictable investment returns, and risk is more broadly shared.⁸

This hybrid approach is also much more efficient than a 401(k). Compared to a typical 401(k) plan, the SAFE Retirement Plan would provide the cost efficiencies of a defined-benefit pension—46 percent lower costs that come from professional money management, long investment time horizons as an ongoing investment fund, and the ability to spread risks across multiple generations.⁹

More details about the SAFE Retirement Plan can be found in a CAP report, “Making Saving for Retirement Cheaper, Easier, and More Secure.”¹⁰ This model has been working well in the Netherlands.¹¹

Open up the federal Thrift Savings Plan to the public

Despite the cost and risk advantages of a SAFE Retirement Plan, some people prefer to have greater control over investments and other decisions, as allowed in 401(k)-style plans. These people should be able to invest in the Thrift Savings Plan, the 401(k)-style plan currently available for federal employees. As the Center for American Progress wrote in “The Promise and the Peril of a Model 401(k) Plan,” the Thrift Savings Plan is a model 401(k) because it has, among other features, very low fees, strong oversight, smart and limited investment options, and an annuity option.¹²

Previous CAP research indicates that these low fees enable the typical worker earning \$30,000 per year to gain the equivalent of an additional \$900 per year of contributions.¹³

Create a Universal Savings Credit

To complement these new retirement savings vehicles, we would reform the retirement savings provisions in the tax code to simplify the system and allow for more equitable savings incentives for low- and middle-income earners.

Policy measures to help people build more wealth already exist. There are tax advantages to saving for retirement, education, and health care. But these existing savings incentives are inefficient in that they create few additional savings for the foregone tax revenue. The inefficiencies exist because the tax advantages favor

especially high-income earners with high marginal tax rates, who often do not need to save more and simply take advantage of the tax rules to shift savings from non-tax-advantaged forms to tax-advantaged forms. That is, most of the existing savings would have happened anyway, and the tax incentives are largely just a windfall for higher-income taxpayers. The myriad existing savings incentives are also complex, raising the administrative burden of the U.S. savings system, complicating the tax code, and prompting the creation and use of tax shelters.

We propose streamlining all existing savings incentives into one Universal Savings Credit. The Universal Savings Credit would create a single refundable credit that would replace all employer and employee deductions to retirement, health, and education savings accounts. The credit will be a flat matching percent of all contributions to qualified savings vehicles. There will be progressive savings matches and a credit that is at least equivalent to a tax deduction that will leave the vast majority of taxpayers either as well off or better off with the Universal Savings Credit than they are with current incentives.

This will lead to more economic security for millions of middle-class households because they will receive a larger tax incentive for saving than is currently the case, and because the U.S. savings system will become more comprehensible. Greater efficiencies will allow people to keep more of their money and take better advantage of savings incentives than is currently the case, thus creating more wealth



In this Apr. 19, 2013 photo, Jen Grey, center, works with her children on projects in Barre, Vermont.
AP PHOTO/TOBY TALBOT

and economic security, which will lead to faster economic growth.

Policies to make jobs more secure for those with families

It used to be that most families had a stay-at-home spouse, most often a wife, who could care for the young, the aging, and the sick. Now, most workers have to take on these responsibilities of care since most wives have jobs, and there are more single-parent households. Yet our public policies do not universally guarantee the availability of time off to deal with personal or family emergencies. Public policy does not even guarantee

sick days, let alone paid sick days, and child care is out of reach for millions of families with incomes too high to qualify for a subsidy but too low to afford care on their own.

To keep workers on the job and productive requires that we find new ways for them to have time to balance care and work.

Most workers lack access to paid family and medical leave through their employers, with negative consequences for individual workers and the economy overall. As workers with care responsibilities withdraw from the workforce or limit their time at work, the national economy is denied the benefits of their skills, they take home less income in the short run,

are less likely to earn raises and promotions at the same pace as their peers, and have less access to retirement benefits.¹⁴

National data consistently show that access to any form of parental leave, paid or unpaid, makes women more likely to return to work after giving birth.¹⁵ Among new mothers who worked while pregnant and were able to take paid leave, approximately 9 in 10 (87.4 percent) returned to work within one year of giving birth. In contrast, among new mothers who had to quit their jobs, just less than half (48.2 percent) returned to work within a year; among new mothers who were let go, just more than half (55.7 percent) returned to work within a year.¹⁶ Women who take paid leave and return to work are 39 percent less likely to receive public assistance and 40 percent less likely to receive food stamps in the year following a child's birth than women who return to work without taking leave.¹⁷

Paid leave makes similarly sound economic sense for workers needing time off to provide care for an ill family member or to recover from their own serious illness. A study conducted by the National Alliance for Caregiving and the American Association of Retired Persons found that, of the approximately 65.7 million Americans who serve as unpaid caregivers to the elderly or special-needs children, two-thirds reported a reduction in their labor-force participation. A further one in five reported taking a leave of absence to deal with their caregiving responsibilities.¹⁸ Rather than forcing workers to reduce their work hours or quit their jobs, paid family and medical leave would enable

them to provide care and facilitate their return to work afterward.

Workers also need time away from work to recover after their own serious illnesses, yet only five states offer temporary disability insurance to workers and only 37 percent of workers have access to it through their employer.¹⁹ Without paid leave, workers often return to work before they are fully recovered for financial reasons. Access to paid leave is associated with workers experiencing quicker, more complete medical recoveries.²⁰

Offering paid family and medical leave would make workers more likely to return to employment and to return more quickly than if they were fired or forced to quit when they need medical or caregiving leave. Guaranteeing paid sick leave will mean that workers don't have to show up to work sick or risk losing their jobs for catching the flu. And expanding access to subsidized child care and enhancing the quality of child care will allow more of our engines of growth to return to the workforce and build their skills. The discussion that follows details this three-pronged approach.

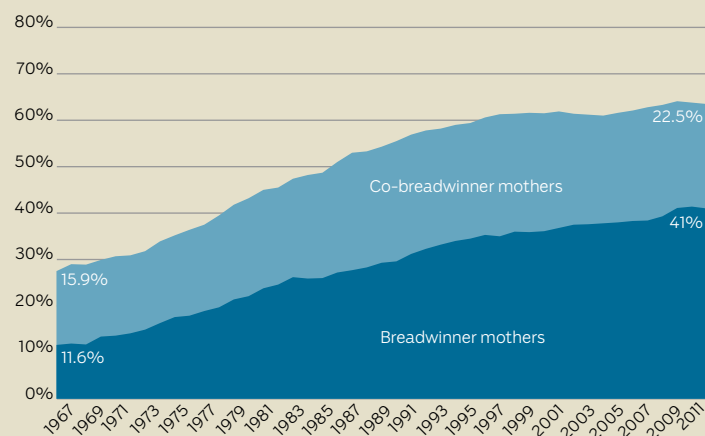
Implement Social Security Cares, a national paid family and medical leave program

To ensure families' economic security and a stronger economy, which are both facilitated through sustained employment, we propose the adoption of Social Security Cares, a national paid family and medical leave program that promotes smooth workforce

Economic security for women and families²⁴

Today's families are increasingly reliant upon working mothers as breadwinners or co-breadwinners. (see Figure 3) Four in five U.S. families with children are headed by either two working parents or a single working parent, and thus most families have to navigate issues such as costly or inadequate child care, a lack of paid family leave, and the persistent wage gap, just to name a few.

FIGURE 3
Share of mothers who are breadwinners or co-breadwinners, 1967–2011



Source: Sarah Jane Glynn and Jeff Chapman's analysis of Miriam King and others, "Integrated Public Use Microdata Series, Current Population Survey: Version 3.0," available at <https://cps.ipums.org/cps/index.shtml> (last accessed May 2013).

While social and economic changes created this new reality, political decisions have shaped the struggles so many families now face. Our nation's lawmakers have failed to craft public policies that effectively address today's challenges and make this possible. Working women are especially disadvantaged by the lack of policy solutions, in part because they continue to take on a larger share of the family caretaking responsibilities—for both the young and elderly members of their families—and because the hurdles they face in the workplace and at home only compound over time, setting them back economically in ever-worsening ways over the course of their lifetimes.

Throughout this report we propose policies to improve women's lives and build family economic security—from universal childcare to paid sick days to policies that will make work more remunerative such as increasing the minimum wage.

re-entry after taking time off due to the arrival of a new child, the need to care for a seriously ill family member, or a worker's own serious illness. It would be administered through the Social Security Administration, which has the existing capacity to determine eligibility and

process payments.²¹ As described in the 2012 Center for American Progress report, "Social Security Cares: Why America Is Ready for Paid Family and Medical Leave," this initiative would provide up to 12 weeks of partial wage replacement for time off to care for a new child or

seriously ill family member or to recover from one's own serious illness. Eligibility would be based on the same criteria as Social Security Disability Insurance, which requires a recent work history that is age-adjusted to allow younger workers and those who have recently graduated college to still qualify.²²

Because Social Security Cares could be funded through a small increase (less than 0.5 percent) in the payroll tax, the cost to the government would be limited to the initial start-up costs to the administration. For a complete discussion of ways Social Security Cares can be funded, see the 2009 CAP report, titled "Helping Breadwinners When It Can't Wait," and the 2010 report, titled "Building It Up, Not Tearing It Down."²³

it also has benefits for the larger economy by reducing emergency room health care costs,²⁶ and it saves businesses money by helping them retain their workers.²⁷

In order to promote employment security and ensure that workers do not have to choose between their job and their health or the health of their families, we propose guaranteeing workers the right to paid sick days. The United States is the only advanced economy that does not guarantee paid sick days.²⁸ Forty percent of U.S. private-sector workers today have no such leave,²⁹ and nearly a quarter (23 percent) of adults say they have either lost a job or been threatened with job loss for taking time off from work when they or a family member were sick.³⁰ Workers who lack access to paid sick days are 1.5 times more likely to go to work sick than those who are able to take paid leave.³¹ This includes more than two-thirds of restaurant workers who report having served, cooked, or prepared food while ill.³²

These actions have real costs for employers and the economy. According to recent research from the U.S. Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health, workers with paid sick leave are 28 percent less likely to suffer nonfatal work-related injuries.³³ Higher workplace injuries drive up employer worker-compensation costs. In general, the absence of paid leave was found to contribute to low productivity and high employer costs. The *Journal of Business and Economics* reported on the cost of "presenteeism"—being at work but sick



The United States is the only advanced economy that does not guarantee paid sick days.

Guarantee workers the right to paid sick days

Providing paid sick days to workers has benefits for individual families such as helping the one-third of parents with children under age 6 in child care who worry about losing their pay or their job if their child gets sick.²⁵ But



In this photo taken, Apr. 18, 2013, Johnathan Lara, an employee of the child care center at the California Family Fitness center, plays with a toddler at the center in Sacramento. AP PHOTO/RICH PEDRONCELLI

and underproductive—and found that it costs employers \$180 billion annually, far outpacing the cost of employee absenteeism.³⁴

We propose allowing workers to earn paid sick days that can be taken to recover from illness or to care for an ill family member, receive preventative care, or recover or seek services in connection with sexual assault, stalking, or domestic violence. As outlined in the Healthy Families Act, workers would accrue up to seven sick days per year, with at least one hour of paid sick time earned for every 30 hours worked and the option for employers to provide more time if they choose.³⁵

Provide quality child care to young children of working parents

We know that expanding access to high-quality child care is critical for children. But investing in child care will also generate large benefits for parents and employers and will help spur economic growth. Studies have demonstrated that parents with reliable child care are better able to get and maintain jobs and are able to work longer hours and earn more income.³⁶ Improving the availability of child care could also save employers billions of dollars from avoided employee absences and increased worker productivity.³⁷

As CAP describes in its report, “Investing in Our Children,” in addition to our proposal for pre-K education described earlier in this report, we propose overhauling the existing federal child care funding system for children ages 0 to 3 years old.³⁸ This overhaul would:

- Expand access to subsidized child care by doubling access to federally subsidized child care for low-income families, from 22 percent to 44 percent.
- Increase the federal child care subsidy to make child care more affordable. The size of the federal subsidy currently falls considerably below the average cost of care.³⁹ This subsidy gap creates significant affordability challenges even for those low-income families who are lucky enough to receive any subsidy.
- Improve the quality of child care by requiring states to adopt child care standards that are developmentally appropriate, cover all essential areas, and promote early learning gains.
- Double enrollment in Early Head Start, an extremely effective education program for young children.

Policies to help bridge periods of unemployment

The unemployment-insurance system supports economic growth in times of high unemployment by making sure that, even when unemployed, workers can

afford basics, keeping commerce alive even in times of high unemployment. The unemployment-insurance system is one of the most important economic stabilizers we have. It also promotes labor-market efficiency because workers with access to unemployment benefits do better at matching their skills with new job offers.⁴⁰ To ensure that this system works and that workers aren’t knocked out of the middle class due to temporary job loss, we propose reforming the unemployment-insurance system to improve its effectiveness and to improve national equity in the program.

Expand and reform the unemployment-insurance system with ‘automatic triggers’

In good times, when unemployment is low and growth is high, more money flows into the unemployment-insurance system because employers pay taxes for every employee on their payroll. In times of high unemployment, when growth is faltering, employers pay less in taxes because they have fewer employees, and workers get access to income to tide them over while they search for a new job. These payments help stabilize demand and shore up family budgets. Estimates are that unemployment benefits added \$2 to the economy for every \$1 spent on the program during the past few years.⁴¹

To be an effective automatic macroeconomic stabilizer, the unemployment-insurance system must also replace a reasonable share of unemployed workers’ lost income for a

significant share of workers still looking for a job. Further, benefits must be available for a reasonable amount of time, relative to macroeconomic conditions. Thus, as the unemployment rate rises, and the probability of finding a job falls, unemployed workers will need more weeks of benefits.⁴² Finally, the system must remain solvent in the process of meeting these two goals.

The unemployment-insurance system is currently successful at neither reasonable wage replacement nor covering everyone who is involuntarily unemployed. The Great Recession has shown that most of the state trust funds were undercapitalized, and the shortfall further limited the effectiveness of unemployment insurance as an automatic stabilizer. The Department of Labor reports that the typical worker only has about one-third of his or her pre-job-loss wages covered by unemployment benefits,⁴³ and benefits fail to adjust sufficiently during periods of high unemployment. Furthermore, there are wide differences in benefit levels across states and across workers, another factor that limits the automatic stabilizing impact of the unemployment-insurance system.

In looking at the effects of the unemployment-insurance program on economic growth across states, economist Wayne Vroman of the Urban Institute found that states that covered more unemployed workers were 50 percent more effective in stabilizing their economies through unemployment benefits, compared to states that covered fewer unemployed workers.⁴⁴

We propose to:

- Provide greater federal support to ensure greater benefit parity across states and greater parity in eligibility, which will promote equity, as well as greater macroeconomic growth and stability across states.
- Reform the “automatic trigger” at the state level so that when unemployment rises, unemployment benefits provide more weeks of benefits automatically—rather than requiring an act of Congress—until the unemployment rate comes back down.

We describe this plan in greater detail in the report, “Toward a Strong Unemployment Insurance System.”⁴⁵

We should not wait until the next economic crisis to proceed with needed reforms to the federal and state roles and responsibilities for oversight and funding of the unemployment insurance system. We know the system has real flaws, and fixing them now will put the economy on firmer footing if another downward swing puts large numbers of Americans out of work.

Require that companies that give bosses ‘golden parachutes’ also give ordinary workers reasonable severance

Workers who lose their jobs often receive no help from their former employers and are forced to rely solely on inadequate unemployment benefits while they look for a new job. Meanwhile, chief executives who lose their



In this Jul. 18, 2012 photo, from left, family members Trenton Sunderland, Mandy Sunderland, Kenny Vassar and Lyndell Vassar, prepare food at their Dairy Queen restaurant in Woodward, Oklahoma.

AP PHOTO/SUE OGROCKI

jobs—even in cases of poor performance or misconduct—often receive golden parachutes worth millions of dollars. In 2011, 78 percent of CEOs and 80 percent of nonexecutive officers had golden parachutes that provided cash severance payments.⁴⁶

This double standard undermines the American notion of fairness in the workplace and weakens middle-class families. If it makes sense to give golden parachutes to highly paid CEOs, who are likely to have considerable wealth to protect them against a loss of employment, then it makes even more sense to offer at least an adequate level of severance to rank-and-file employees—who are unlikely

to have assets to fall back on and who are more likely to lose their jobs through no fault of their own. That is why we propose requiring that public companies offering severance packages to their top executives also offer adequate severance to all other employees.

This policy will provide a two-fold benefit for the middle class. First, it would enhance economic security by requiring many companies to provide adequate severance in the event of layoffs. Second, it would discourage the excessive golden parachutes that waste corporate resources. In addition, as is true of unemployment benefits, it would help the national economy during economic downturns

by providing middle-class workers with the means to maintain a somewhat higher level of consumption when they are between jobs.⁴⁷

We propose that if a company offers a severance package to its executives in excess of the CEO's base pay, it must also offer to the rest of its workers at least a basic severance package of two weeks of pay per year of service. This policy would give employees terminated without cause a legal right to reasonable severance benefits if the company's executives have a severance provision in their contracts or if they have been given a golden parachute upon dismissal. Our policy would ensure that companies would no longer be able to offer extravagant landings to their top executives while denying workers basic protections.

Policies to increase income

Policies to strengthen and grow the middle class by increasing income have benefits both for American workers and also for the country's economic growth. As incomes rise, so, too, does demand, which in turn fuels economic growth.

Increase the minimum wage and index it to market wages

For approximately 20 years, from the late 1940s to the late 1960s, the minimum wage was roughly 50 percent of the average wage.⁴⁸ Unfortunately, over the past four decades we have allowed the value of the minimum



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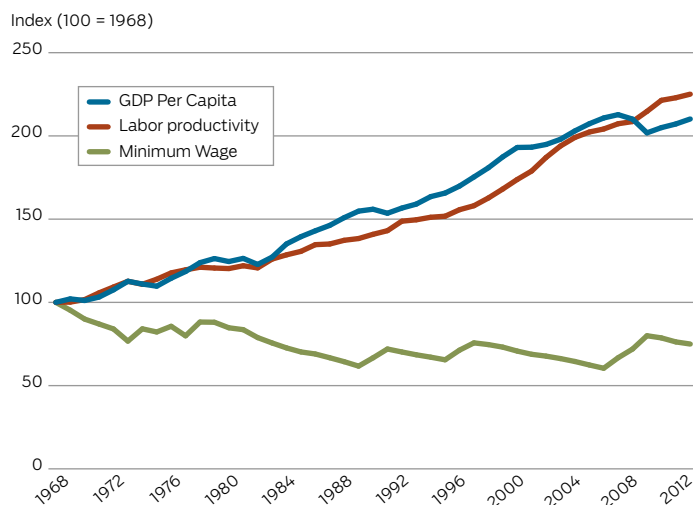
wage to decline significantly, even as workers have become much more productive and the country much richer.

Since 1968 the inflation-adjusted value of the minimum wage has declined by 31 percent and is now far less than half the average wage.⁴⁹ On February 1, 1968, the minimum wage was \$10.50 in today's dollars, compared to \$7.25 today.⁵⁰ Over the same time period, worker productivity (the measure of output per hour of work) increased by 123 percent, and inflation-adjusted per capita gross domestic product grew by 105 percent.⁵¹ (see Figure 4)

Increases in the minimum wage don't just raise wages for those earning the minimum wage; they spill over and ripple out to boost wages for those higher up the wage ladder and closer to the middle class.⁵²

FIGURE 4

The minimum wage has fallen behind, while worker productivity and GDP per capita have climbed



Source: Authors' calculations using data from the Bureau of Labor Statistics, Bureau of Economic Analysis, and the Wage and Hour Division of the Department of Labor.

Not only would an increased minimum wage be of direct help to workers, but it is also likely to increase the economy's output. The minimum wage helps increase productivity in several distinct ways. Increasing wages can improve morale and effort and therefore boost productivity.⁵³ A higher minimum wage also has been shown to reduce turnover, as workers remain in their jobs longer.⁵⁴ Finally, raising wages boosts consumer demand, which will help the recovery in the short term and spur business to make new

investments in the future.⁵⁵ Researchers at the Federal Reserve Bank of Chicago found that a \$1 minimum-wage increase boosts household income and spending by \$2,800 over the year.⁵⁶

Opponents of raising the minimum wage claim that it will reduce employment, especially now, when unemployment is already elevated. A significant body of academic research, however, has found that raising the minimum wage does not result in net job losses, even during hard times.⁵⁷

We propose that the minimum wage be increased and then annually indexed to the growth of the average wage—as measured on a three-year moving average to smooth out temporary fluctuations. Indexing to inflation is good, but indexing to one-half of the average wage would be better because it would help ensure that workers reap some of the economic gains they help create and would also raise living standards as the country becomes richer.

We should also increase the sub-minimum wage for tipped employees to the same level as other workers.

Ensure that workers who want to form a union are able to do so

Union membership is at record lows. Critics claim that, with only 12 percent of workers currently unionized, unions are not important to the modern economy. But the truth is that if you care about rebuilding the middle class and the economy, you also should care about unions.

Indeed, boosting union membership is one of the most important things that can be done to increase wages and benefits, reduce inequality, and strengthen and grow the middle class. Unions—especially in workplaces with other high-performance practices—help boost the productivity of workers by reducing turnover, giving workers communication channels to improve conditions, and increasing the availability and quality of training programs.⁵⁸

Today the union-election process is stacked against workers who want to form a union. It works as follows. First, workers discuss the issue among themselves and then gather at least 30 percent (but usually more than half) of the workers' signatures to ask for an election. Then the National Labor Relations Board, or NLRB, attempts to set up an election, and in the election a majority of workers must vote to form a union in order for one to be certified.

Companies have many tools available to oppose the union, even while the election process is underway. They can legally require workers to attend anti-union meetings, compel employees to have one-on-one conversations with their direct supervisor, and prevent workers from discussing the union except outside of work or when they are on break. The pro-union workers must campaign during nonwork hours, and yet they face outdated regulations that allow employers to provide less than full contact details—no email addresses, for example.

When companies cross the line—harassing and intimidating workers or even firing



Boosting union membership is one of the most important things that can be done to increase wages and benefits, reduce inequality, and strengthen and grow the middle class.

them—enforcement is difficult, and the penalties for violating labor laws are insufficient. Enforcement comes far too late to make a difference, and penalties are often so low that many anti-union corporations view it as a cost of doing business.

Moreover, companies are able to manipulate the system with frivolous pre-election hearings to delay elections and prevent them from ever occurring.⁵⁹ According to research by John-Paul Ferguson of Stanford Business School, 35 percent of the time that workers file a petition for an union election, the election does not take place.⁶⁰

And after workers have voted for a union as their bargaining representative, many corporations still fight the union by delaying negotiation of a first contract that governs wages, benefits, and working conditions. As a result, just more than half of newly elected unions

reach a first contract with their employer after two full years of so-called negotiations.⁶¹

Workers have a fundamental right to organize unions and collectively bargain. But today the system is so broken that anti-union employers who blatantly violate this right face few repercussions.

To ensure that workers who want to form a union are able to do so, the following changes need to be implemented:

- The National Labor Relations Board should help put an end to needless election delays and modernize the union election process by enacting regulations that reduce unnecessary litigation, streamline pre- and postelection procedures, and facilitate communications via the kinds of digital channels upon which people now depend.⁶²
- Congress should pass comprehensive labor-law reform such as the Employee Free Choice Act, which establishes a fair process for workers to decide on union representation; expands coverage so more workers are provided the right to organize; establishes meaningful penalties and remedies for workers who are fired or discriminated against for exercising their right to organize; and includes measures to promote productive collective bargaining for first contracts—so that workers can negotiate for improved wages and benefits.⁶³
- Congress should make the right to join a union a civil right.⁶⁴ This would give workers who are discriminated against in exercising

their right to organize a private right to sue, just as workers have a right to sue if they face other forms of workplace discrimination.

Pass the Paycheck Fairness Act

In 2010, the latest year for which data are available, the average woman working full time year round earned 77 percent of what the average full-time year-round male worker earned.⁶⁹ The gender wage gap persists even when taking into account years of experience, job tenure, education level, and time out of the workforce.⁷⁰ In fact, even when factors such as race, occupation, work experience, and union membership are taken into account, about 40 percent of the wage gap remains “unexplainable by measureable factors.”⁷¹ Workers with the same educational achievements—same type of college, same grades, same fields of study—who take the same kinds of jobs and have the same kinds of families still end up earning different salaries based on gender. College-educated women earn about 5 percent less than their male peers straight out of college, and the wage gap grows to about 12 percent 10 years later, even when they keep working on par with those men.⁷²

With approximately two-thirds of women either breadwinners or co-breadwinners for their families,⁷³ a woman’s loss of wages from gender discrimination has a significant economic impact. The Paycheck Fairness Act would be an important step in helping close the gender wage gap by banning workplace policies that prohibit workers from dis-

Unions are a source of strength for the middle class

Sociologists Bruce Western of Harvard University and Jake Rosenfeld of the University of Washington have calculated that one-third of the increase in male wage inequality from 1973 to 2007 was due to decreasing unionization—about the same amount they ascribed to the increasing payoff of a college education.⁶⁵ Similarly, research by the Center for American Progress Action Fund found that if unionization rates increased by 10 percentage points—to roughly the level they were in 1980—the typical middle-class household, unionized or not, would earn \$1,501 more a year, about the same effect as boosting college graduation rates by the same margin.⁶⁶

As unions became weaker over the past four decades, they became less able to achieve their objectives for workers—and the middle class has paid the price. In 1968, when 28 percent of all workers were members of unions, the share of income going to the nation's middle class was 53.2 percent.⁶⁷ Since then, union membership steadily declined alongside the share of income going to the middle class. By 2011 the middle class received only 45.7 percent of income, the smallest share since these data have been reported, and union membership had dropped to less than 12 percent of workers.⁶⁸

cussing their salaries with co-workers, and providing funding for negotiation training for women and girls.

Promote inclusive capitalism

Inclusive capitalism—granting workers ownership stakes in a company or a share of its profits based on workers' collective performance—encompasses everything from broad-based profit sharing and stock options to worker cooperatives and employee stock-ownership plans. For workers, inclusive capitalism often empowers them by increasing their participation in decision making,⁷⁴ and it is associated with higher pay and benefits,⁷⁵ as well as greater long-term wealth accumulation.⁷⁶

For businesses, inclusive capitalism is often associated with increased productivity, profitability, and likelihood of survival, as well as greater worker loyalty and effort, lower turnover rates, and a greater willingness on the part of workers to suggest innovations.⁷⁷ Investors also come out ahead when companies adopt capital-sharing programs since companies that adopt partnership approaches make profits over and above the cost of sharing ownership with employees, according to a review of more than 70 empirical studies.⁷⁸

Despite the positive benefits of inclusive capitalism, more than half of all workers have no access to inclusive-capitalism programs.⁷⁹ One of the reasons why more companies haven't developed broad-based



In this Mar. 6, 2012 photo, an ironworker with Local Union 416, carries steel rods for a retaining wall at a construction site in Los Angeles.

AP PHOTO/DAMIAN DOVARGANES

profit-sharing programs is that, for some, these programs simply aren't on the radar as a way to improve firm performance and reward and empower employees. Business schools don't commonly teach inclusive-capitalism programs, government unevenly promotes them, and companies that would benefit from them often don't have the technical expertise or knowledge to adopt them.

The federal government can encourage more companies to adopt broad-based sharing programs by creating an Office of Inclusive Capitalism, housed in the Department of

Commerce (or the reorganized Department of Competitiveness, as we advocate for later in this report). The office would fund regional assistance centers to promote outreach and provide technical assistance to private-sector businesses, incentivize universities to increase awareness and study of inclusive capitalism programs among emerging business leaders and academia, and serve to improve government knowledge and support for inclusive capitalism. The office would also be able to promote awareness of benefit corporations—more commonly called B-corps—so that entrepreneurs who are interested in

incorporating their businesses include in their charters the responsibility to benefit both shareholders and society.

Policies to raise federal contracting standards

As a major purchaser of goods and services, the federal government has the potential to significantly influence the labor market. More than one-fifth of the American workforce—approximately 26 million workers—are employed by companies that have contracts with the federal government.⁸⁰

Unfortunately, millions of federal contract workers are paid very low wages, and their employers too often do not comply with federal wage and safety laws.⁸¹ By continuing to do business with companies that fail to comply with the law and that pay very low wages, the federal government drives down standards, makes it hard for companies with better workplace practices to compete, and contributes to the weakening of the middle class.

Instead, the government should leverage its power as a major purchaser of goods and services to raise workplace standards. Indeed, when the federal government has used its purchasing power to raise standards—for example, ensuring that contractors ensure equal opportunity to women and minorities—it has had significant success.⁸²

Congress should enact legislation to ensure that government stops awarding federal contracts to companies that significantly and persistently violate the law and instead encourages agencies to do business with companies that provide middle-class jobs.⁸³

It can do this by:

- Clarifying the standards for evaluating whether bidders demonstrate a satisfactory responsibility record
- Strengthening the existing contractor-responsibility database by including contractors' complete records of legal violations—including workplace-law violations
- Requiring that the appropriate government agencies supply guidance to government-procurement officials on how to interpret a company's legal record
- Increasing public access to responsibility and workplace information
- Requiring that federal agencies evaluate contract bidders on the quality of their labor and workplace practices, just as is done for a bidders' past performance, small-business subcontracting plan, technical approach, and managerial capacity

This proposal is explained in more detail in the CAP report, "High Road Government."⁸⁴ ■

Policies to move Americans out of poverty

The strategy described in this report rests on growing and strengthening America's middle class. As highlighted at the start of this section, a key component of this is moving Americans out of poverty and into the middle class. In effect, then, every policy in this document that is pro-growth and pro-jobs is also designed to be antipoverty.

That said, it is worth detailing just how much work we have to do in this space, along with some specific policies that are acutely important to alleviating the incredibly high human costs of poverty.

About 46 million Americans live under the poverty line, but a full one in three struggle to get by on low incomes, undermining their potential as part of the country's 300 million engines of growth.⁸⁵ In addition to the enormous toll this takes on people and communities, allowing 15 percent of the population to live below the poverty line hampers our ability to maximize human potential and grow the economy.⁸⁶

The detrimental effects of poverty are especially apparent when one considers that 16 million of the Americans living in poverty are children under the age of 18,⁸⁷ and that the United States has the second-highest child-poverty rate in the developed world.⁸⁸

Changing this reality is an economic imperative, as well as a moral one. A growing body of economic research demonstrates that high levels of poverty hinder overall economic growth. In 2007, a Center for American Progress study led by Harry Holzer of Georgetown University and the Urban Institute found that child poverty costs the U.S. economy about 4 percent of GDP per year in lost adult productivity and wages, increased crime, and higher health expenditures.⁸⁹

Among the explicitly antipoverty policies in this report are calls to increase the minimum wage, invest in education, improve employment and training programs, expand paid sick days, continue emergency-unemployment compensation, expand high-quality child care, and support asset building among low- and middle-income Americans.⁹⁰

These policies promote consistent participation in the labor force and make it possible for lower-income families to weather volatile economic cycles that might cause unemployment or reduced hours of work. We also recommend a set of policies that can be especially effective and targeted to significantly reduce the level and impact of poverty on families and the economy. These policies include the following:

- Make permanent the improvements to the earned income tax credit and the child tax credit for low-wage working families passed under the American Recovery and Reinvestment Act. In addition, the earned income tax credit for childless workers should be expanded since currently a single childless adult earning poverty wages is the only group taxed deeper into poverty by our federal tax system. To this end, the amount of the credit for childless workers—and the income level at which it phases out—should be increased significantly. Furthermore, the age at which childless workers can begin to receive the credit should be lowered to 21 from the current eligibility standard of 25.
- Increase participation in the Supplemental Nutrition Assistance Program, or SNAP, to 85 percent of eligible households, from about 75 percent in 2010, by expanding outreach and improving accessibility.
- Expand free school lunches to children in families making less than 185 percent of the federal poverty line (or \$35,317 per year for a family of three⁹¹), and streamlining the program by eliminating the co-pay required of children in families making between 130 percent and 185 percent of the federal poverty line.
- Raise the monthly Supplemental Security Income for the elderly, blind, and disabled at least to the poverty level.
- Invest in affordable housing by capitalizing the National Housing Trust Fund and expanding the availability of rental subsidies for families facing severe rent burdens.

These policies are particularly important in our effort to make it possible for the safety net to not only catch people but also to help them remain employed or re-enter employment and increase their economic well-being. Taken together with other parts of our economic plan, these policies can move millions of Americans out of poverty, expand the middle class, and propel economic growth.

The Center for American Progress Action Fund's Half in Ten project is an initiative to cut U.S. poverty in half in 10 years, in partnership with the Coalition on Human Needs and The Leadership Conference on Civil and Human Rights. For a complete analysis of the economic benefits of reducing poverty and poverty-alleviation policies, see the 2012 Half in Ten report, "The Right Choices to Cut Poverty and Restore Shared Prosperity."⁹²

Endnotes

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SECTION 1 • CHAPTER 4

Realize the potential of immigration

Demonstrators wave American flags during
an immigration rally, May 1, 2013, in Las Vegas.
AP PHOTO/JULIE JACOBSON

Immigration has long been instrumental to America's economic success. One of the core competitive advantages the United States has is that in the 21st century, people are still willing and eager to travel great distances, endure hardships, and bring their families here to live and work. Just as it was an economic benefit to the United States when Ellis Island opened 120 years ago to welcome its first arrival, a 15-year-old girl from Ireland,¹ so too is it an economic benefit to lay out a roadmap to citizenship for a 15-year-old child brought here by parents who have since lived and worked in the United States for years.

In other words, not only do we have 300 million engines of growth, we have many more aspiring potential citizens who can contribute to national prosperity.

New Americans bring new ideas and new influence. As University of Michigan Professor Scott Page has noted, “diverse groups of people bring to organizations more and different ways of seeing a problem and, thus, faster/better ways of solving it.”²


Immigrants and their children have founded 40 percent of Fortune 500 companies, from Ford Motor Company to Google to AT&T³ This kind of entrepreneurialism translates to jobs. As a report by the Partnership for a New American Economy noted, “immigrant-founded Fortune 500 companies alone employ more than 3.6 million people, a figure equivalent to the entire population of Connecticut.”⁴ Immigrant-owned businesses currently employ 1 in 10 American workers.⁵

The benefits that new Americans bring to the country accrue to the overall population. An analysis published by the Federal Reserve Bank of San Francisco found that “on net, immigrants expand the U.S. economy’s productive capacity, stimulate investment, and promote specialization that in the long run boosts productivity.”⁶ The economic boost

for example, finds that each farm job supports three more “upstream” jobs in things such as packing or transporting produce.⁸

Immigrants benefit the economy, but immigration within a reformed immigration system is key to realizing the following benefits fully:

- **Jobs and wages:** We would have gained 309,000 jobs in the two years following the depth of the recession in mid-2009 if we had passed immigration reform in that year.⁹ What’s more, we know that immigration has an overall net positive effect on the wages of native-born workers.¹⁰ In fact, providing legal status to undocumented immigrants in 2013 would mean an increase of \$470 billion in the cumulative earnings of all Americans over the next decade.¹¹
- **Increased revenues:** We already collect revenues from undocumented workers. The Social Security Administration estimated, for example, that undocumented workers contributed \$12 billion in Social Security taxes in 2010 alone.¹² And we know that providing legal status to undocumented immigrants will increase their earnings. The taxes paid on these additional earnings would sum to \$109 billion in federal, state, and local taxes over the next 10 years.¹³
- **Growth:** Research by economist Robert Lynch and economic researcher Patrick Oakford shows that providing legal status to the 11 million undocumented immigrants currently in the United States would add a cumulative \$832 billion to U.S. GDP over a decade.¹⁴



**When the new earnings
of immigrants are spent,
this increased purchasing
power has a demand-side
impact that ripples through
the economy, generating
additional income, spending,
and economic activity.**

from providing a pathway to citizenship not only adds to productivity and output but when the new earnings of immigrants are spent, this increased purchasing power has a demand-side impact that ripples through the economy, generating additional income, spending, and economic activity.⁷ And economists find that immigrants generally complement rather than compete with native workers. The U.S. Department of Agriculture,

Immigration policies

Problem: In the United States more than 11 million undocumented immigrants currently live in the economic shadows, unable to contribute their full potential. Compounding this problem is a broken immigration system that blocks many aspiring Americans from coming to the United States and contributing to our economy.

Solution: Create a clearer, safer immigration system that serves our long-term interests.

Key policy ideas:

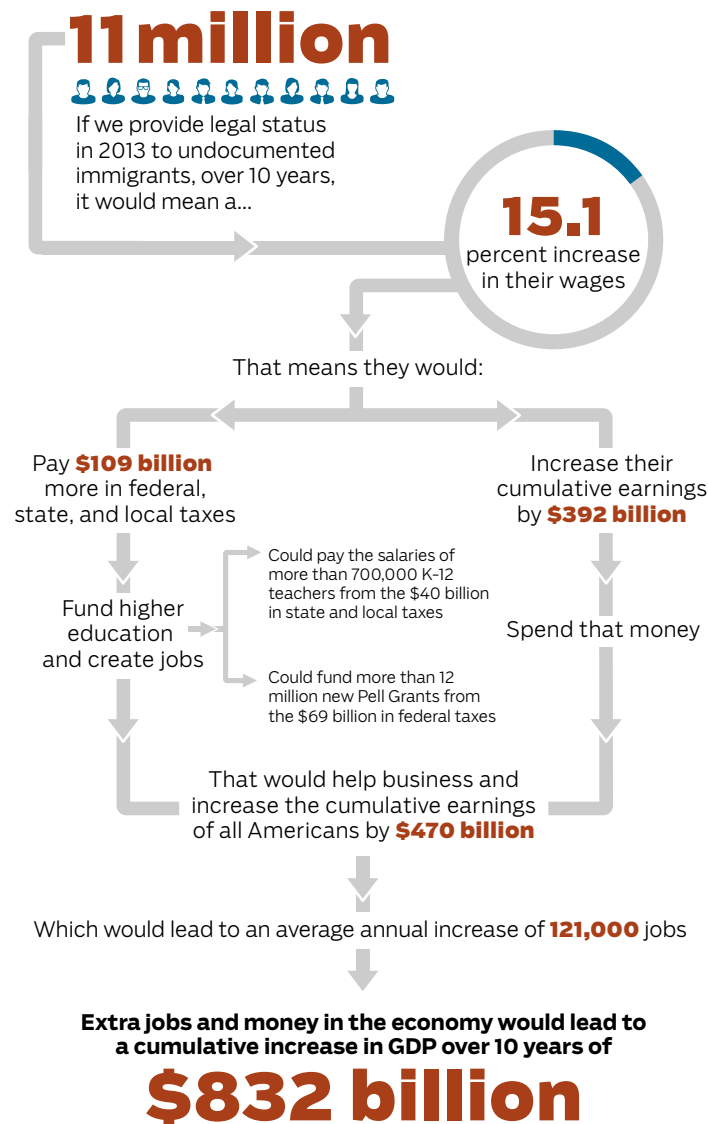
- Resolve the status of the 11.1 million aspiring Americans currently in the United States by providing a pathway to citizenship.
- Foster family reunification by clearing system backlogs and providing a clear system going forward.
- Improve access to permanent visas for foreign graduates of U.S. universities with STEM degrees.
- Create a discretionary pool of visas that can be allocated with flexibility based on determination of broadly defined national interest.

Other proposed policies include expanding funding to the Department of Homeland Security's civic engagement and integration program so that we can maximize the potential of new American citizens.

Outcomes: The status of 11.1 million aspiring Americans will be resolved by providing a pathway to citizenship, and a well-functioning immigration system will serve our economic needs. ■

FIGURE 5

How legalization and citizenship help the economy



Robert Lynch and Patrick Oakford, "The Economic Effects of Granting Legal Status and Citizenship to Undocumented Immigrants" (Washington: Center for American Progress, 2013), available at <http://www.americanprogress.org/issues/immigration/report/2013/03/20/57351/the-economic-effects-of-granting-legal-status-and-citizenship-to-undocumented-immigrants/>.

One of the biggest challenges facing developed economies is aging populations. Compared to its peers, America is a young country. Among the industrial nations in the G7, we have the lowest median age and the lowest old-age dependency ratio (senior citizens relative to working-age citizens);¹⁵ only the United States and France are having enough babies to meet population-replacement levels.¹⁶ Recent data reveal that it is the immigrant and minority groups already living in the United States that are closing the population-replacement gap.¹⁷

The vast majority of the 11.1 million undocumented workers in the United States have been here for more than a decade, live in families with children, and came to the United States to make a better life for themselves and their families.¹⁸ Our broken immigration system makes it hard for even some of the most qualified workers to stay in America and pushes others into the shadows of the informal economy at enormous cost to both native and immigrant workers. Opportunistic employers devalue native workers' wages by underpaying undocumented workers. Undocumented workers, in turn, are left without labor protections, and bad-faith politicians find the political space to pass anti-immigrant laws attempting to force immigrant workers and their families from their states—while mainly just forcing them further underground.¹⁹

Getting immigration right would be a huge economic boon to the country. We need legislation that accomplishes the following four goals:

- Resolving the status of the 11.1 million aspiring Americans already in the United States through a rigorous but fair pathway to citizenship
- Creating legal channels that serve our long-term interests and protect legal immigration
- Protecting U.S. workers from a race to the bottom
- Fostering an inclusive American identity

Policies that resolve the status of the 11.1 million aspiring Americans already in the United States through a rigorous but fair path to citizenship

While demagogues may talk about mass deportation in one form or another, the only sustainable way forward is to create an immigration process based on a fair and realistic program for registering new Americans and putting them on a path to citizenship—which also carries with it huge economic gains for the country fueled by increased purchasing power of workers with legal status. We propose providing a pathway involving background checks, learning English, and the payment of back taxes and a fine. We must also ensure that the road to citizenship can be completed in a reasonable amount of time so that the pathway is not a pathway in name only.



Our broken immigration system makes it hard for even some of the most qualified workers to stay in America and pushes others into the shadows of the informal economy at enormous cost to both native and immigrant workers.

Policies that create legal channels that serve our long-term interests and protect legal immigration

Right now we have a system that does not suit our economic needs. We educate people with advanced degrees in science, technology, math, and engineering, only to deny them the ability to stay and use their talents to invent new products and start new businesses in this country. We keep families separated through a system that is difficult to navigate, and we maintain backlogs that convince some people that it makes more sense to skip the formal system entirely.



Milagros Rodriguez, top right, who is originally from the Dominican Republic, works with a customer at her salon, the Woodside Beauty Salon, in the Queens borough of New York, Jun. 14, 2012.

AP PHOTO/SETH WENIG

We need to improve access to visas for foreign graduates of U.S. universities who receive STEM degrees, as well as for those who have the drive to start the next big company and the vision to develop the next breakthrough product. And we need to both clear the current green-card backlog through a discrete and dedicated channel of additional visas and, going forward, create a discretionary pool of visas that can be allocated with flexibility based on a determination of broadly defined national interest. Immigration policy should not be viewed as a zero-sum game in which there can be no increase in employment-based visas without a cut in family-based visas. Both serve the national interest, as evidenced by the fact that the founders of Google, Intel, Yahoo,

and eBay all came to this country not through the employment-visa categories but rather through the family or refugee categories.²⁰

Policies that protect U.S. workers from a race to the bottom

By providing all American workers—immigrant and native-born alike—with labor protections, we both protect individuals and also prevent the destabilizing effects of eroding labor standards. The exploitation and mistreatment of immigrants harms all workers in the United States. When immigrants are paid below the minimum wage, it brings

down wages for all workers. The key here is ensuring a level playing field based on strong worker protections for all employees within the United States and ensuring that workers do not fear retaliation from their employers because of their status. To do that we need to invest in worksite-enforcement mechanisms and also levy tough fines against employers who violate employment and labor laws.

Policies that foster an inclusive American identity

There is strength in America's diversity and the shared commitment to national values of democracy, equality, freedom, opportunity, and

hard work. Just as new Americans in the 19th and 20th centuries advanced their personal and professional fortunes as they learned English and became active in their civic communities, so too will new Americans in the 21st century. We should expand funding to the Department of Homeland Security's civic engagement and integration program. Dedicating resources to new citizenship initiatives and programs to help prepare "receiving communities" for their new immigrant populations will pay significant social and economic dividends. Similarly, programs such as the Welcome Back Initiative, which works to ensure that professional immigrants can retrain to use their skills in this country, will help us maximize the potential of new Americans.²¹ ■

Endnotes


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SECTION 2 • INTRODUCTION

Strengthening the economic environment

In this Mar. 18, 2009 photo, workmen continue construction on a bridge over the Miami River in Dayton, Ohio.
AP PHOTO/MARK DUNCAN, FILE



“ Our real problem, then, is not our strength today;
it is rather the vital necessity of action today to
ensure our strength tomorrow.

President Dwight D. Eisenhower, State of the Union address, 1958¹

The policies described so far in this report will equip Americans to produce economic growth and compete in the world economy. Better education and training means that businesses will have available to them more capable workers, which will attract more jobs to the United States and make our businesses more innovative and more productive—which in turn means stronger growth overall.

More security for middle-class families will mean more stable domestic demand and thus increased incentive for companies to invest in design and production close to the source of this demand—which also means more jobs and growth. And those stable middle-class families will have greater flexibility to take risks such as starting a new business, taking time for more education, or switching to a better-fitting job—another important contributor to growth and jobs.

But even a car with a superior engine needs good roads to drive on. What we haven't addressed yet is the market environment in which our 300 million engines of growth operate. After all, we can educate and train ourselves to be the most productive workers in the world but still underperform as an economy if our tax system creates incentives to move jobs overseas; if our country neglects the basic research that underpins innovation; if the playing field for international trade is tilted against us; if we cede the industries of the future to other countries; if existing industries fall behind because we ignore market failures; if our transportation system is crumbling; and if our energy is dirty and expensive and the supply unsustainable.

In this section, we describe what government can do with businesses to create an economic environment that utilizes all of our superior resources at a sustainable, high-functioning level. We offer proposals for actions the government should take in the context of an economy where the private sector takes the lead in capital allocation, risk-taking, innovation, and business efficiency.

We identify in this part of this report where and how government should be interacting with the private sector to promote good jobs and growth. Many of the proposals here are in the rich tradition of the Erie Canal, aerospace, pharmaceuticals, and the internet—endeavors in which government engagement and the legal and regulatory framework that government provides have been critical to the nation's economic success.

Our proposals vary in depth and detail according to their importance to the economy, the need for reform, and the current status of government involvement. So, for example, health care comprises 18 percent of GDP,² but because the Affordable Care Act – whose successful implementation is critical to individual Americans and to our economy – is still being phased in we narrow our focus to the selected cost-containment measures described in the tax reform and the federal budget section.³ On the other hand, housing, energy, trade, and infrastructure present large, unaddressed challenges, so we offer proposals for these areas in greater detail.

Our discussion of creating the economic environment for growth focuses on policies to:

- **Create the mechanisms for an adaptive national economic strategy:** Economic policies must be evaluated continuously to see if they are working as intended and whether they are responsive to a changing economy and the actions of other countries. To this end, we offer a plan for revamping critical parts of the federal government's economic-policy-making



The Illinois Department of Agriculture Building roof, which was transformed into a 22,000-square-foot roof covered with live plants and solar panels, was part of a \$1.8 million project to replace the old, badly leaking roof with an energy-efficient and environmentally friendly installation.

AP PHOTO/SETH PERLMAN

apparatus. With more useful data, this apparatus will evaluate the interventions government is making and will better inform investments to ensure that emerging industries gain strong footholds in the United States and that older industries successfully adapt to evolving economic conditions.

- **Lead in clean and efficient energy:** The energy industry must evolve. Other countries have recognized this reality and are taking action, and the ones that transform to cleaner sources of energy that are used more efficiently will have a huge economic advantage in the future. With this transformation comes growth and

jobs. For all these reasons clean, efficient energy is part of our agenda.

- **Promote science and technology research and development:** If the United States leads the world in science, it will be here where new technologies develop, where the ideas emerge for the commercial use of that research, where the corporations that profit from that commercialization are located, where those profits fuel greater prosperity, and where many of the people in those industries are employed. We therefore offer a set of policies to ensure that the United States leads the world in scientific and technological research.

- **Balance trade:** Though it would be unwise to promote policies that shelter U.S. industries and workers from beneficial competition, a number of trading rules and practices expose U.S. producers to unfair competition. We offer a set of policies to ensure proper enforcement of international- and domestic-trade laws and norms.

- **Rebuild our infrastructure:** Railroads, the power grid, airports, and highways are critical to economic efficiency, whereas bad roads and bridges cost the economy billions. The growth of a company in Ohio or Virginia will be held back without the means to efficiently transport its goods across the country or overseas, resulting in less business and fewer workers. This is why we offer a suite of policies to fix the nation's increasingly dilapidated infrastructure.

- **Restore the housing cornerstone:** Housing sits at a critical intersection of many other areas of the economy. The financial industry backs construction and purchases, the construction industry builds the buildings, and U.S. manufacturers produce much of what goes into them. Homeownership can provide


families with stability, as well as the ability to build equity, and for all families—whether they own or rent—shelter that is safe and affordable is a prerequisite for well-being. For these reasons, we offer a set of policies to support the housing market in offering a range of affordable and sustainable homes located in stable, healthy neighborhoods.

- **Ensure capital is available for growth:** The allocation of capital so it produces real economic investment and good jobs is central to a strong economy. Many of the rules and regulations of the Dodd-Frank Act have yet to be fully implemented, but there are selected policies that we believe should be considered in addition to those steps.

- **Construct a responsible, pro-growth tax and budget policy:** Government is a major player in the economy, so it's important that the means government uses to raise revenue and the way it uses those tax dollars are economically sensible and efficient. That's why we offer recommendations for reforming the way government taxes and spends its resources. ■

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SECTION 2 • CHAPTER 1

Create the mechanisms for an adaptive national economic strategy

Businessman Earl Kluft, who manufactures luxury mattresses, checks a machine at his factory in Rancho Cucamonga, California, May 9, 2012.

AP PHOTO/DAMIAN DOVARGANES

This report offers a strategy and a vision for U.S. economic policy. But the U.S. and world economies are constantly changing. Adapting to these changes is, of course, primarily the job of the private sector. In fact, it is imperative that government not put in place policies that impede that adaptation. But as the private sector adapts to change, so must the public sector.

Economic policy has to be dynamic to be effective, and individual policies must be evaluated continuously to see if they are working as intended and whether they are the best match for the current economic world. This is why we offer a plan for revamping the federal government's economic policymaking apparatus both in terms of decision making and data gathering.

Currently, at the macroeconomic level, the Council of Economic Advisers and the National Economic Council help guide policy, while the Federal Reserve is charged with working to ensure maximum employment and stable

prices that provide a sound environment for growth. All three are staffed by top experts and play an important part in the country's economic policymaking. When it comes to engaging businesses and industries at a more microeconomic level, however, there is more that can be done to create a streamlined institutional organization that effectively uses better data to inform sound strategy and that follows a clear set of principles for when to engage with particular industries.

In his 2011 State of the Union address, President Obama said America needs “a

government that's more competent and more efficient," and noted that "we can't win the future with a government of the past."¹

For government to more effectively engage businesses, we propose policies to:

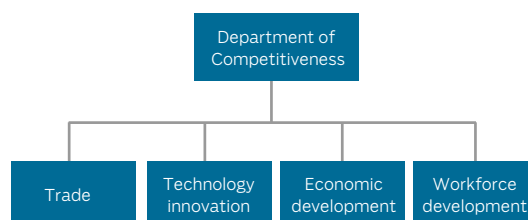
- Reorganize relevant trade- and business-focused agencies into a Department of Competitiveness or a Department of Business
- Provide better information on the economy through reform of our statistics infrastructure and creation of a National Economic Strategic Assessment, both of which will allow us to take stock of opportunities and existing investments
- Engage business with targeted, well-timed interventions

Policies that reorganize relevant trade- and business-focused agencies

The business-related economic-policy functions within the government are currently fragmented among different agencies and offices, and their activities are not adequately coordinated. This disorganization hampers the nation's ability to pursue effective economic strategies. To address this, a single cabinet-level Department of Competitiveness or Department of Business should be created to house the federal government's activities related to trade, technology innovation, economic development, and workforce development.

In December 2010 the Center for American Progress proposed the creation of such a Department of Competitiveness in our report, "A Focus on Competitiveness: Restructuring Policymaking for Results."² In January 2012 President Obama similarly called for a government reorganization that could improve competitiveness and efficiency. The president's reorganization plan is slightly less expansive than the one we proposed, but either approach would be a vast improvement over the current situation. Creating such a department would improve government efficiency, enhance information systems, and better enable policymakers to assess, understand, and augment American economic policy with a unified and comprehensive strategy.³

The department as proposed by the Center for American Progress would bring together four federal economic-policy functions:



- **Trade:** Consolidate more than seven agencies with trade-related functions that currently operate independently, thereby eliminating redundancies, improving efficiency, and allowing trade agencies to work together strategically.⁴
- **Technology innovation:** Bring together the agencies and programs that support the research, development, and commercialization of science and technology.⁵ By

Mechanisms for an adaptive national economic strategy

Problem: The federal government has a set of agencies, policies, and programs that engage, support, and protect business and industry. But the complexity of the system, the inadequacy of information on the workings of the U.S. economy, and the ad hoc nature of interventions all lead to inefficiencies and missed opportunities that could otherwise create a stronger environment for the success of America's 300 million engines of growth.

Solution: Reorganize government to foster a more disciplined and structured economic strategy, reform statistical analysis that can inform dynamic economic policy, and pursue targeted, well-timed interventions to help grow the private sector.

Key policy ideas:

- Reorganize the federal trade and business agencies into a single department focused on business and competitiveness.
 - It is necessary to respond to other countries' interventions to maintain or develop important industries.
- Conduct regular strategic economic assessments based on improved industry and sector data.
 - Losing or failing to develop a particular segment of industry would have broader supply-chain implications that would have deleterious effects for the broader economy.
- Directly partner with businesses in building the economy when:
 - Intervention is needed in an important emerging sector because the time horizon for returns is too long to attract sufficient private capital.
 - A viable firm or industry has experienced a failure and needs temporary rescue.

Other proposed policies include streamlining the ways in which businesses and entrepreneurs interact with government agencies via the common application.

Outcomes: The U.S. government will be organized effectively to support economic growth and to work with business and will monitor and facilitate the competitive environment for current industries, while making targeted interventions to stay at the cutting edge of industries of the future. ■

consolidating the programs that support innovation, the United States can spur growth by establishing a coordinated innovation strategy and streamlining industry access to these programs.

- **Economic development:** Combine economic-growth programs that are currently administered by a range of agencies such as the Economic Development Agency, the Small Business Administration, and others.⁶ Combining federal efforts that support communities and small businesses will promote U.S. economic success by improving access to programs, boosting efficiency, and better cultivating the growth of regional economies—all of which are crucial to overall economic growth.
- **Workforce development:** Combine existing programs that support state and local workforce-development programs, including the Employment and Training Administration in the Department of Labor, the Office of Vocational and Adult Education in the Department of Education, and multiple small programs in the National Science Foundation. Incorporating workforce-development administration into economic-competitiveness strategy will enhance economic success by ensuring that industries have access to the talent pool they need to be successful.

Policies to conduct regular strategic assessments of the economy using improved data

Better data and regular assessments of economic policy will improve government's ability to act strategically to support private-sector-led growth. For this reason, we propose reorganizing U.S. statistical systems and launching a quadrennial National Economic Strategic Assessment.

Reorganize U.S. statistical systems

Currently, the U.S. federal data-collection system does not provide the information needed to underpin thoughtful, comprehensive economic strategy. Instead, the goal of federal economic statistical agencies today is to provide macroeconomic data to assist policymakers in managing the business cycle.⁸

"Economic Intelligence," a 2012 report from the Center for American Progress, offers a specific plan to address this problem. In this report, statistical expert and George Washington University Research Professor Andrew Reamer explained that "federal competitiveness policy, if one existed, would systematically identify and address barriers to the efficient functioning of markets."⁹ Reamer estimates that the additional annual funds needed to maintain adequate statistical

The common application

A cohesive business-oriented department would make it easier for businesses to engage in the myriad programs created to help promote their success. It is often challenging, for small businesses especially, to navigate the more than 300 assistance programs for businesses, startups, and entrepreneurs that offer help for everything from starting retail businesses in economically distressed communities to working to find market uses for high-tech inventions developed in university laboratories. That’s why the Center for American Progress, in its 2012 report, “Rewiring the Government for Competitiveness,”⁷ proposed creating a “common application” across programs to simplify the assistance-application process. A single government department designed to engage business would not only make creating a common application easier to implement but would offer many other channels for improving the services government offers to business.

FIGURE 6
The current system of interaction between businesses and the government

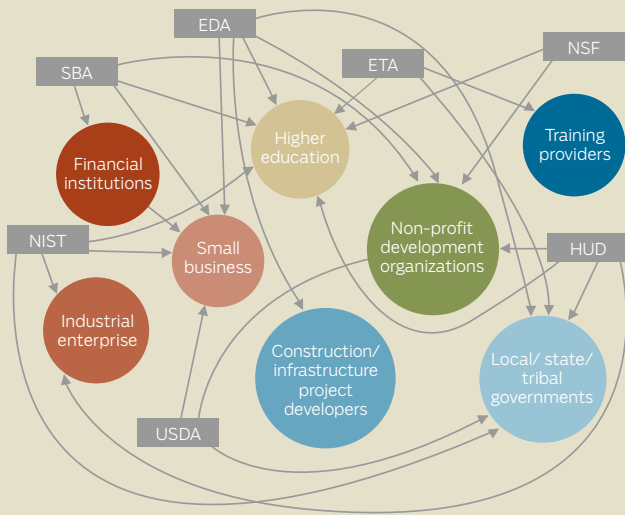
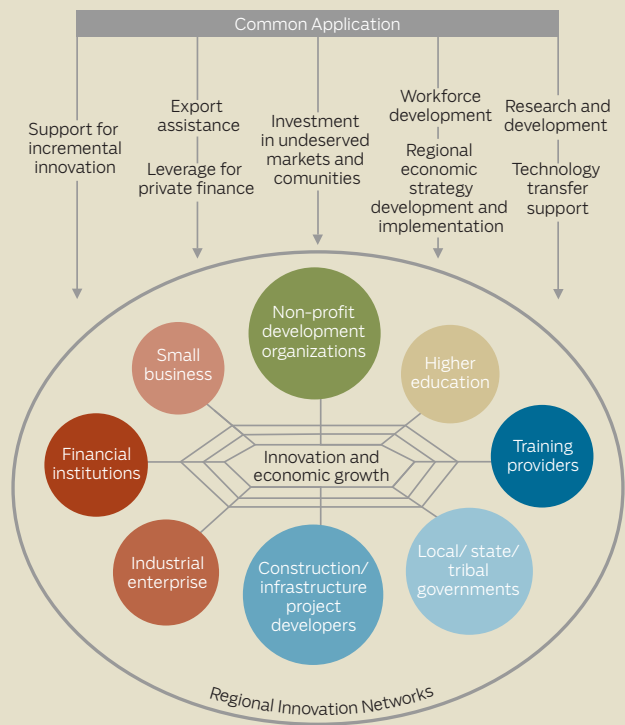


FIGURE 7
Our proposed common application system





U.S. Senator Michael Bennet, D-Colo., center, helps as Solar City employees Jarret Esposito, left, and Jake Torwatzky, right, install a solar panel on a home in south Denver on Jun. 18, 2010.

AP PHOTO/ED ANDRIESKI

programs to guide competitiveness policies would cost less than \$300 million—a small amount compared to the positive effect such data could have on overall economic growth of the nearly \$16 trillion U.S. economy.¹⁰

In particular, the United States should ensure that data systems are sufficient for:

- Traded-sector analyses through provision of data that allows analysts to assess the competitiveness of individual industries
- Measurement of intermediate outcomes using data on innovation and entrepreneurship

- Conducting of factor analyses through provision of data on factors affecting competitiveness, including research and development expenditures; workforce, education, and training; business finance; and energy

- Evaluation of the effectiveness of programs through a program within the Census Bureau to assess the effectiveness of targeted federal support to the private sector

Additionally, improved data that is publicly available can give companies and entrepreneurs more information on the dynamics of the marketplace, thereby encouraging new investment and innovation.

Launch a National Economic Strategic Assessment

With improved data, government should conduct a quadrennial comprehensive National Economic Strategic Assessment to inform our long-term national economic strategy. Such an assessment would explore the deep and interconnected relationships between industries in order to better understand both the investments government is already making, as well as the sources and potential for growth and innovation in the U.S. economy. It would identify nascent industries and determine whether interventions are needed, and would look at existing areas of strength such as aerospace, biopharma, and technology.

More specifically, the National Economic Strategic Assessment would do the following:

- **Assess how U.S. conditions compare with conditions in other countries with which we compete:** The assessment would provide detailed industry-level analysis of the competitive, technological, and regulatory landscapes and would compare these with industry-level actions being taken by other nations with which U.S. businesses and workers compete. As a result, we will be able to assess whether our market strength is rising or declining.
- **Take stock of specific industry-level government supports:** The assessment would inventory current federal policies and programs—including tax expenditures, loan guarantees, financial assistance,

research and development, procurement, trade policy, workforce training, efforts to convene government and industry, and other policy supports—that directly affect particular industries.

- **Evaluate the cost effectiveness of existing supports and recalibrate as necessary:** Based on an understanding of the overall competitive landscape and the inventory of current policies, the assessment would offer recommendations for how to better target interventions to support growth. This step would include both evaluating narrower interventions and identifying opportunities to enhance aspects of the economic environment that are important for a broad range of industries such as workforce development and specific infrastructure improvements.

As with the data collected by a reformed statistical service, the National Economic Strategic Assessment will provide valuable information to the private sector about where new investment and growth opportunities exist in the U.S. economy and where people can invest in their skills for career development.

Use targeted, well-timed interventions

Many of America's most successful businesses and industries started or grew to flourish because of government engagement. The Wright brothers' big early customer was the U.S. Army. Google started as a research project funded through the National Science

Foundation and other federal agencies.¹¹ And, of course, entire industries such as nuclear medicine owe their existence to discoveries made in national labs.

There are a number of ways governments can intervene in targeted ways to promote the advancement of sectors of the economy, industries, or technologies. These include:

- Convening/coordinating meetings and conferences
- Providing scientific or engineering research
- Procuring
- Regulating
- Directly subsidizing, through direct investments, loans/guarantees, and tax breaks

These types of supports are delivered through a variety of mechanisms. In some cases—for example, scientific research—there are institutions in place such as the National Science Foundation and the National Institutes of Health that have resources and the discretion on how to use them. In other cases, Congress makes more narrowly targeted interventions.

Investment in broad scientific research is relatively uncontroversial. The issue becomes more complicated the more the public involvement becomes associated with a specific industry or company. There are certainly examples, especially in other countries, that suggest the need

for some caution, particularly when noncompetitive industries are propped up at taxpayer expense. But there are situations where public support is more than justified—where an intervention at a critical time can be the difference between a country leading in that industry going forward or a country losing that industry to another country. This is true now more than ever, as countries around the world compete for the most lucrative industries that create the best jobs.

To ensure that interventions are made at the right places and the right times, we first need the architecture described above to make sure that there is an institutional framework conducive to smart choices and, second, we will require some guidance as to when intervention is appropriate.

We have identified four situations where we believe that targeted intervention is both justifiable and important for economic growth:

- Support for nascent industries
- International parity
- Supply-chain sustainability
- Temporary rescue of otherwise-viable industry

Support for nascent emerging industries

Government involvement can be critical where there is an industry that is primed for growth and expansion, that is likely to be important in the future, and that has the



Genentech Inc. Mark Nagel works on an experiment in a research laboratory at Genentech headquarters in South San Francisco.
AP PHOTO/PAUL SAKUMA

potential to provide good jobs but is not yet completely commercially viable.

The Wright brothers, for example, took their first flight without government assistance, but they quickly turned to looking for customers for their invention—and the only viable customer was the military.¹² The improvements in their design and the development of the aircraft industry in the United States were due to the existence of a reliable customer in the form of the U.S. Army.

International parity

Government involvement can also be merited when it is necessary to respond to other

countries' interventions to maintain or develop industries that we see as critical.

While we need to take care not to follow other countries in a race to the bottom to maintain industries that might not otherwise be viable, there are clearly examples where other countries—consistent with trade law or not—are investing in critical industries, and if the U.S. government does not take a more active role, then the industry and its jobs will leave our shores. The first priority in these situations is to use the full force of the law to enforce trade agreements, but additionally when there is a race for industrial leadership, such as in

A strong and innovative U.S. manufacturing sector

Economists and policymakers increasingly agree that manufacturing—which contributes \$1.8 trillion to U.S. gross domestic product¹⁸ and makes up 60 percent of all U.S. exports¹⁹—is one sector of the economy that deserves special attention. It is an area where there is substantial intervention by other countries, where supply-chain issues are critical, and where nascent technologies can require nurturing.

While its share of GDP since 1950 has declined from 27 percent to 12 percent²⁰ and its share of U.S. employment dropped from 36 percent to 11 percent,²¹ manufacturing is still a key sector of our economy. As Gene Sperling, President Obama’s top economic adviser, puts it, manufacturing “punches above its weight,” because it contributes to the success of a number of other sectors and to America’s ability to produce cutting-edge research and technology.²² The sector has also been a bright spot in the economic recovery, gaining 500,000 jobs since 2010.²³

Many of the policies discussed elsewhere in this document—such as trade policy, investments in education and workforce development, a strong national infrastructure network, streamlined and targeted government programs aimed at business, and improved research and development—are critical to supporting U.S. manufacturing. In addition to pursuing these broader priorities, the United States should expand and strengthen the following policies that specifically target manufacturers:

- **National Network for Manufacturing Innovation:** Fully fund the president’s \$1 billion request to establish a National Network for Manufacturing Innovation. This network, comprising up to 15 new manufacturing institutes, would help manufacturing firms overcome challenges related to innovation, product development, product design, and more.²⁴
- **Manufacturing Extension Partnership:** Double funding for the Manufacturing Extension Partnership to \$256 million. The partnership helps small- and mid-size manufacturers develop process improvements and innovation strategies.
- **Domestic Production Deduction:** Target the Domestic Production Deduction to domestic manufacturing activities and double the deduction for advanced manufacturing activities, as the president has proposed.

nanotechnology, a level of support is often necessary and justified.

Supply-chain sustainability

Government involvement can be critical where losing or failing to develop a particular segment of industry would have severe implications for the wider economy in terms of jobs and output.

Solar photovoltaic, or PV, cells are one example of an industry that has suffered as a result of a vanishing supply chain. Although the first PV devices were invented here, the United States now produces only 6 percent of the world's PV cells.¹³ A major reason the country has failed to grab more of this fast-growing market is that many of the shared technologies (for example, semiconductors, flat-panel displays, light-emitting diodes, and solid-state lighting) have already relocated to Asia.¹⁴ Had the United States not long ago ceded production of key component technologies for PV cells, we would be better positioned today to compete in the solar-energy industry.

Temporary rescue of otherwise-viable industries

Government involvement can be warranted when a firm or industry needs temporary rescue but is otherwise a viable source of economic strength and good jobs.

In 2009 U.S. automakers were producing competitive products. After all, GM had regularly produced more automobiles than any other company in the world through 2007, and it only dropped to second when

the recession hit.¹⁵ But structural problems in its business put the entire industry at risk and in the midst of the Great Recession, only the government was in a position to step in. To let GM and Chrysler fail would have had huge repercussions across the U.S. economy, leading to an estimated loss of \$97 billion in personal incomes.¹⁶ The public investment saved the industry and with it, more than 1 million jobs.¹⁷

Similar to any investment, some interventions will be more successful than others, and some will have unpredictable outcomes. But that doesn't mean we shouldn't make the effort.

In the situations we describe above, good investments can be made, as they have been in the past. And the decision making process will only be improved with a better structure for making choices about economic strategy (see our policy for a government reorganization) and a better information base (see our plans for better data via the National Economic Strategic Assessment).

There are a number of specific technologies and industries that should be given a close look right now in terms of targeted public support, as they have the potential to be an economic strength and source of good jobs for the United States going forward.

3-D printing

A quiet revolution in the manufacturing process is underway, which "may have as profound an impact on the world as the coming of the factory did,"²⁵ according to *The Economist*. Science

Progress describes tools for 3-D printing, also known as additive manufacturing, as operating much like inkjet printers “except that they can use materials like plastics, carbon fiber, or titanium to print 3-dimensional objects instead of 2-dimensional documents,”²⁶ and they will allow for rapid, custom, and inexpensive manufacturing of everything from art projects to robots to artificial organs and bones.

Recognizing this potential, the federal government has partnered with the private sector to open the Additive Manufacturing Innovation Institute in Youngstown, Ohio—a \$30 million investment in what President Obama has called “the manufacturing jobs of tomorrow.”²⁷ The institute is the pilot under the president’s proposed new National Network for Manufacturing Innovation (described above), which will “bridge the gap between basic research performed in universities and national laboratories, and production enterprises, particularly SMEs (small and medium enterprises).”²⁸

Nanotechnology

Advanced technology constructed on a microscopic scale has the potential to revolutionize numerous sectors of the economy. Some early applications of nanotechnology are already in use, as in the construction of the wingtips of Lockheed Martin’s F-35 Lightning II fighter, which uses a nanotech-reinforced plastic that is 25 percent to 30 percent lighter than the current industry standard material.²⁹

The future applications of nanotechnology are even more fascinating, from nanoparticles

that can bind to blood clots and dissolve them before they cause serious damage or death³⁰ to nanoscale transistors that could store a computer’s entire high-capacity memory on one chip.³¹ These future developments are exciting, but the government still has a role to play in getting the necessary research and infrastructure in place. The United States has already invested \$18 billion through the National Nanotechnology Initiative since its establishment in 2000.³² This initiative has had a “catalytic and substantial impact” on the growth of the U.S. nanotechnology industry, according to the latest report by the President’s Council of Advisors on Science and Technology,³³ and it should be continued.

Personalized medicine

Every human being is different, with a different genetic map, but our modern medicinal treatments treat everyone almost identically—even though the Department of Health and Human Services says that most of today’s drugs only work for 60 percent of patients or less.³⁴ The work of the Human Genome Project, funded by \$2.7 billion in federal investments and completed in 2003,³⁵ started a revolution in genetic mapping that has the potential to change that paradigm, tailoring drugs and treatments to the individual.

But there are still many barriers that must be overcome, and the National Human Genome Research Institute says that “although genomics has already begun to improve diagnostics and treatments in a few circumstances, profound improvements in the effectiveness of healthcare cannot

realistically be expected for many years.”³⁶

There are, in fact, differing views on whether the promise of this science will ever come to fruition. Funding basic research should therefore be emphasized. If there prove to be promising possibilities in the private sector that justify government help—whether it be financial, in the form of convenings, or otherwise—then prudent seed investments should be made.

Clean energy

Clean energy represents such massive and fundamental opportunities for the American economy—both as a sector in and of itself and as an input to other sectors—that we have devoted a separate section of this report to capturing this opportunity through smart and effective interventions. ■

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A black and white photograph of a large industrial facility, likely a power plant. In the foreground, a man wearing a hard hat, safety glasses, and a high-visibility vest is walking down a metal staircase. The background shows a complex structure of pipes, metal platforms, and a large cylindrical tank. The sky is clear and bright.

SECTION 2 • CHAPTER 2

Lead in clean and efficient energy

Steve Royall, senior plant manager of Pacific Gas & Electric's Colusa Generating Station, climbs the stairs on one of the facilities Heat Recovery Steam Generator, near Maxwell, California, Nov. 15, 2011.

AP PHOTO/RICH PEDRONCELLI

Capturing the energy opportunity by ensuring we have reliable sources of energy that are both sufficient and sustainable is a critical element of our strategy to grow the U.S. economy. We stand at a crossroads that will define our competitiveness—as well as our national security—for generations.

Do we invest in infrastructure and technology that will see the continued expansion of green jobs and manufacturing, or do we allow this race to be won by China and Europe? Do we continue an unsustainable trade deficit fueled by foreign oil imports, or do we become more self-sufficient? Do we stand as helpless bystanders to the devastating effects of climate change, or do we shape the future and protect our people by creating a low-carbon economy?

If our 300 million engines of growth live in a country that is failing to compete in the biggest growth industry of the 21st century; if they live in a country that is increasingly vulnerable to

volatile energy prices and has no plan for the coming years of rising long-term energy costs; and if they live in a country where the health and climate costs of fossil-fuel pollution continue to take an incalculable toll, then we will fall short of our economic potential.

It is likely that clean energy is the only possible energy of the future. The continued acceleration of climate change and the continued disappearance of finite fossil-fuel resources, which will likely be felt in the economy not as scarcity but as price increases, together will cause the world to switch to a clean energy economy. The policies outlined in this report to get us to a clean energy future are needed, notwithstand-

ing the growth in natural gas. After all, the problem is not only the finite nature of fossil-fuel reserves but also that we must constrain their use to avoid climate catastrophe and we must prepare and encourage the clean energy revolution that will bring new technologies and jobs. We need to plan for the transition to a clean energy economy or risk falling behind the rest of the world in these technologies.

than any other country in the world.² But the rest of the world is not complacently sitting on the sidelines. It is catching up rapidly and, in some cases, has begun to pass us by. To maintain our leading position and take advantage of this tremendous opportunity, we need to build on what's gotten us this far. Fundamentally, we need a policy environment that encourages investment in clean energy.



With stronger demand drivers, more large-scale financing, and a continued commitment to the necessary infrastructure, we can be on a path for getting 35 percent of our electricity from renewables by 2035.

This switch will be one of the greatest economic opportunities of our lifetimes. That's why Germany, China, Saudi Arabia, India, South Korea, Japan, Spain, France, and other countries around the world are positioning themselves to capture this opportunity.¹

The United States is currently a leader in this field. In 2011 we invested more in clean energy

There are three pieces to this policy environment: demand, financing, and infrastructure. The Center for American Progress first laid out this three-pronged approach in its 2009 report, "The Clean Energy Investment Agenda."³ Recent years have validated this approach. Demand (primarily through state-level renewable energy standards) paired with financing (through tax credits and tools such as the Department of Energy's Loan Guarantee Program) and infrastructure (such as new transmission lines to carry wind energy and workers trained for clean energy jobs) can rapidly move clean energy forward.

Now is the time to take the next step in the transition to a clean energy future. With stronger demand drivers, more large-scale financing, and a continued commitment to the necessary infrastructure, we can be on a path for getting 35 percent of our electricity from renewables by 2035.

At the same time that we make new investments in our electricity sector, we can take similar steps and cut our oil imports in half by 2020. Doing this will keep more American money at home, rather than send-

Energy

Problem: The United States is currently dependent on imported foreign oil, faces volatile energy prices, and is starting to face the high costs of climate change—all of which drag on our economy and present high direct and indirect costs to America's 300 million engines of growth.

Solution: Capture the multitrillion-dollar opportunity of clean energy by stimulating demand, ensuring effective financing, building efficient transmission infrastructure, and prioritizing efficiency.

Key policy ideas:

- Institute a \$25/ton carbon tax on large power plants to allow businesses to price carbon and invest accordingly to limit pollution.
- Launch a comprehensive clean energy investment program that includes direct support of \$9 billion per year for research and development in both the public and private sector, the extension of the wind energy production tax credit, the launch of a green bank that would provide a range of financing tools to enable clean energy deployment, and public market-financing tools.
- Launch three specific programs to eliminate waste: Home Star (\$6 billion rebate plan for homeowners to upgrade with energy efficiency), Building Star (\$6 billion in incentives for businesses to retrofit commercial and multifamily residential buildings), and Rural Star (\$4.9 billion loan authority for rural electric cooperatives).

Other policies we propose include eliminating \$4 billion in annual tax breaks for oil and gas companies and creating a future oil reduction technology fund to invest in research, development, and demonstration for clean vehicles. The fund would be fully supported by one cent of every dollar of profits from the big five oil companies.

Outcomes: The United States will have clean, sustainable, and economical energy sources that fuel economic growth. We will receive 12 percent of power from renewables by 2020 and cut oil imports by half. ■



Central Maine Power technician Gary Sturgis installs one of the first "smart" meters Sept. 28, 2010 at an apartment building in Portland, Maine.

AP PHOTO/JOEL PAGE

ing it abroad in exchange for a fossil fuel. Of course, this policy of reducing oil imports will only reap environmental benefits if it's paired with tools to reduce overall demand and doesn't simply increase drilling in the United States.

Our plan for sustainable energy will put people to work, put money in people's pockets, and put our country on a path that avoids the most catastrophic effects of climate change.

We propose policies to:

- Quadruple our share of renewable electricity by 2020

- Use efficiency to put money back in people's pockets
- Slash our oil imports in half

Policies to quadruple our share of renewable electricity by 2020

The amount of renewable energy used for electricity in the United States doubled from 2008 to 2012.⁴ We can do this again by 2020. This would move us to 12 percent of power from renewables by 2020, quadrupling since 2008, and putting us on course to 35 percent by 2035, a goal the Center for American

Progress called for in “Helping America Win the Clean Energy Race.”⁵

The way to quadruple U.S. renewable energy is focusing on demand, financing, and infrastructure.

Demand for renewable energy

The entrenched status quo in the energy world is strong. People who own coal-fired power plants would be happy to keep running them with as few controls on the pollution that they emit as possible. We need policy tools that build on our current momentum and hasten the shift away from the power sources that emit the most pollution that causes climate change.

There are multiple ways to do this. We could implement a clean energy standard. We could start a cap-and-trade program. We could have the Environmental Protection Agency regulate carbon dioxide. Each of these would be valuable, and any tool that puts a price on carbon—either a real price (through something akin to cap and trade) or a shadow price (through something similar to direct regulation) would get the job done.

We believe that the policy most likely to drive significant economic growth in the short term while also tackling the climate change problem is a tax on carbon emissions, starting in the electric-utility sector and slowly expanding to other parts of the economy. Setting a carbon tax will directly relate to our plans for eco-

nomic growth by encouraging private-sector investment in new power plants and reducing industrial carbon pollution to avoid the most catastrophic effects of climate change that would devastate our economy.

We therefore propose a tax of \$25 per ton on carbon pollution from large power plants—the largest uncontrolled emissions source, accounting for roughly one-third of our total greenhouse gas pollution.⁶ This tax should be introduced over several years, starting at \$6.25 in 2013 and ramping up to \$25 by 2015, then increasing at 5 percent each year thereafter. For more on this policy idea, see the Center for American Progress issue brief, “A Progressive Carbon Tax Will Fight Climate Change and Stimulate the Economy.”⁷

We estimate that such a carbon tax will raise approximately \$500 billion in revenue over the next 10 years. Of that, we propose to invest \$200 billion in research and development of advanced clean energy technologies, deployment incentives for such technologies, and international climate and energy commitments. In addition, it is important that revenue be allocated to ameliorating any effects of the tax on middle- and low-income Americans through a broader tax-reform initiative and other mechanisms.

A tax on carbon as we propose would price in some of the climate-change-related externalities of fossil fuels currently borne by society at large such as costs of damage associated with extreme-weather events, severe storms, more frequent hurricanes

and tornadoes, among others—particularly by more vulnerable Americans who are less able to protect themselves. The marketplace would adapt to this more accurate pricing, as power companies shift to cleaner sources of power and energy efficiency. We estimate that the effect of such a tax will be that power-plant emissions will fall approximately 20 percent in 10 years.

Addressing emissions from the power plants of the electric-utility sector is just one of the steps that must be taken. In the case of the quarter of emissions that come from the transportation sector, fuel efficiency and carbon-pollution tailpipe standards are currently projected to slash emissions by billions of tons.⁸ The remaining emissions are from industrial facilities, agriculture, and commercial and residential buildings.⁹ We must reduce pollution from these sources as well, eventually applying a carbon tax to these sectors as the next step to be taken after the utility sector.

Financing for renewable energy

The second thing we need is effective financing for large amounts of clean energy.

The private sector invests in energy in ways that lead to suboptimal outcomes. Companies underinvest in research and development, are unwilling to bear risks related to deployment of new technologies, and do not have to include the cost of externalities in investment decisions. These factors lead to fewer investments in new energy

technologies and a continued reliance on dirty, inefficient technologies.

The government can play a role in balancing energy investments by creating incentives for clean-tech investments and by funding advanced high-risk, high-reward research that companies are unwilling to undertake. There is a history of successful government investments in energy, from rural electrification to drilling techniques that make possible the current increases in “tight” oil (that is, oil that is trapped in underground rock formations) and shale-gas production.

There are three primary ways that the government invests in clean energy: direct spending, tax incentives, and credit support through loans and loan guarantees. Public market financing provides a fourth means. A comprehensive clean energy investment program will utilize all four tools, recognizing that each one meets specific needs. By instituting a carbon tax, we will raise significant funds to be invested in new energy technologies.

These tools are:

- **Direct spending:** The government should provide direct support of \$9 billion per year for research and development in both the public and private sector. In the public sector, this should be continued mainly through the Department of Energy and its affiliated labs. The Advanced Research Projects Agency–Energy, or ARPA-E, program, which invests in private-sector research, should be strengthened by doubling the funding



North America's first floating wind turbine is lowered into the Penobscot River at the Cianbro Corp., May 31, 2013, in Brewer, Maine.

AP PHOTO/ROBERT F. BUKATY

for it: \$9 billion dollars would get us back to the peak level of government investment in energy R&D in the late 1970s.

- **Tax incentives:** The production tax credit for wind energy has been a huge driver for deploying clean energy at scale¹⁰ by leveraging at least \$10 in private investment for every \$1 in tax credits. Thanks to this investment incentive, the United States now produces enough wind energy to power more than 13 million homes. This credit—set to expire at the end of 2013—should be extended for several years, and improved by making new technologies such as offshore wind eligible for

different tax-credit structures that better suit their risk profile.¹¹

- **Credit programs:** The Department of Energy Loan Guarantee Program should be improved upon with a new Clean Energy Deployment Administration¹² or Green Bank, which would provide a range of financing tools to enable clean energy deployment. In addition, the Rural Utilities Service should be utilized to the maximum extent possible, allowing for rural areas to reap the benefits of clean energy.
- **Public market-financing tools:** Ultimately, we need to finance clean

energy the same way that we finance traditional energy: through public equities and corporate debt. There are multiple ways to encourage this, but the most likely is to adapt master limited partnerships and real estate investment trusts to meet the needs of clean energy technologies.

Infrastructure for renewable energy

Finally, we need to make sure we have ways of getting clean power from where it's generated to where it's used and ways to make sure the power is available when it's needed. This will require transmission, energy storage, and smart-grid technologies.

Transmission is primarily a challenge of planning, permitting, and paying for it. Thankfully, there are already systems in place to begin addressing these challenges, and they need to be allowed to work. The Federal Energy Regulatory Commission is dealing with planning and paying for transmission through its implementation of FERC Order 1000, which required public policy considerations to be factored into transmission planning.¹³ The Council on Environmental Quality should continue to lead the Rapid Response Team for Transmission, which is coordinating permitting efforts across the government.¹⁴

Energy storage and the smart grid are more complicated. To begin with, government needs to make research, development, and demonstration investments in critical promising technologies such as batteries that operate at the necessary scale. The federal

government can also move the smart grid forward by building on the lessons of the internet revolution, as described in CAP's report, "The Networked Energy Web."¹⁵

Policies that use efficiency to put money back in people's pockets

In addition to generating cleaner electricity and employing alternative transportation fuels, we must use energy more efficiently. McKinsey & Company estimated that the United States wastes \$130 billion in energy per year.¹⁶ This is a misallocation of resources on a colossal scale, and eliminating this waste will cut our oil imports, reduce our carbon-pollution footprint, and save scarce financial resources that can be redeployed into other areas of the economy.

Three specific programs that can reduce this waste are:

- Home Star, which would launch a \$6 billion rebate plan, offering homeowners incentives to upgrade to more efficient appliances, insulation, windows, and other off-the-shelf products and technologies
- Building Star, which would allocate \$6 billion to provide incentives for businesses to retrofit commercial and multifamily residential buildings by leveraging \$3 to \$4 in private funds for every \$1 in public money spent
- Rural Star, also known as the Rural Energy Savings Program, which would set up a \$4.9 billion loan authority to allow rural

electric cooperatives to lend money to their customers to pay for energy-saving building improvements

The effect of these three programs in terms of carbon pollution would be “the equivalent to taking 4.6 million cars off the road,” and would create 250,000 jobs in the process.¹⁷

Policies to slash our oil imports in half

The purchase of foreign oil is a significant part of our trade deficit. As prices rise, families and businesses pay more at the pump, and a large portion of these additional funds

go overseas. Reducing consumption of foreign oil will keep more dollars at home to be invested in other goods and services here. The policies we have outlined above will decrease our reliance on foreign oil and allow us to slash our oil imports in half by 2020.

The new modern fuel economy standards that took effect for model year 2012 vehicles have already begun to reduce oil use.¹⁸ These savings will accelerate as the standards become more effective, culminating in doubling fuel economy by 2025.

In addition to cars going further on a gallon of gasoline, we propose to invest heavily in alternative, non-petroleum-based transporta-

Green jobs

According to a 2012 Bureau of Labor Statistics analysis, green jobs and services accounted for 3.1 million jobs in the United States.²⁰ The vast majority of those jobs (2.3 million) were in the private sector, and they pay well. In fact, a Brookings Institution analysis found that green jobs pay 13 percent higher than other industry jobs.²¹

Moreover, from 2008 to 2010 green jobs outperformed the job growth of the overall economy by two to one.²² And in 2010, 25 percent of all new construction undertakings were green-building jobs.²³

The truly exciting trend is that green jobs are being created all across different industries—from recycling and waste reduction to the transportation sector. Green jobs are transforming our economy, making it more efficient, less polluting, and more competitive in new technologies and global industries. Our nation has always been on the cutting edge of innovation, and we are already seeing investments in the clean economy pay dividends. By enacting strong progressive policies, this trend will continue and accelerate.



Bobby Bailey stretches to tighten a screw that holds a corner of a solar panel at the O2 Energies solar power farm in Newland, North Carolina, Aug. 4, 2011.

AP PHOTO/BOB LEVERONE


tion options so that drivers are less reliant on gasoline or diesel fuel, and less vulnerable to petroleum-fuel price spikes. This plan includes investing in electric vehicles and public transportation and the infrastructure to support these alternatives.

We propose raising the revenue for these investments through the following measures:

- Eliminating \$4 billion in annual tax breaks for oil and gas companies¹⁹
- Creating a future oil reduction technology fund to invest in research, development, and demonstration for clean vehicles, paid for by dedicating one cent of every dollar of profits from the big five oil companies ■

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SECTION 2 • CHAPTER 3

Promote science and technology research and development

In this Sept. 19, 2011 photo, Rebecca Allred, a second-year chemistry doctoral student at Yale, works at Kline Chemistry Laboratory at Yale University in New Haven.

AP PHOTO/JESSICA HILL

Technological innovation promotes higher wages¹ and long-term economic growth.² It underlies the competitiveness of every industry in America—from ongoing innovation in agricultural methods to computer engineering, biomedical engineering, advanced manufacturing, aerospace, and energy. About half of every dollar added to the nation’s GDP since the 1940s has come from advances in science and technology.³

And as we move into the 21st century, economists expect advances in science and technology to become more and more influential as determinants of national success in the global marketplace.⁴

Despite the critical role of public investments in research and innovation in seeding new industries that can lead the way to long-term economic growth, our public- and private-sector investments as a share of GDP remain below 3 percent, while nations such as Japan and South Korea are nearing 3.5 percent and continue to rise.⁵ Even China, though

its combined public and private investment level is low at 1.5 percent, is on a steep path that could meet or surpass that of the United States in short order.⁶

At the same time, governments and investors from other countries are harvesting U.S. intellectual property for ideas they can bring to their shores and build there. U.S. investors appear often to be discouraged from investing in potentially transformative new technologies by instead looking for the next big complex derivative or the next Silicon Valley web-service company.



Public research spending brings a substantial return on investment, estimated by various economists to be between 30 percent and 100 percent or more.

Ensuring that our economy continues to grow and provide opportunities requires that we increase our national investments in science, technology, and engineering—the building blocks of innovation. Specifically, we propose policies that:

- Increase government investments in science and engineering research
- Build partnerships linking academia, industry, government, and nonprofit players to promote innovation
- Institute an improved research tax credit for business
- Invest in grand challenges through a Frontier Prize purse
- Reform the national laboratory system to ensure these unique assets are aligned with public and economic needs

- Encourage the transfer of research from lab to market through better data about the impacts of publicly funded research

Policies that increase government investments in science and engineering research

Public investments in research—in new ideas—are among the best investments we can make. Public research spending brings a substantial return on investment, estimated by various economists to be between 30 percent and 100 percent or more.⁷

The president's 2014 budget requested significant increases for the National Science Foundation, the National Institute of Standards and Technology, and the Department of Energy's Office of Science—ranging from 6 percent to 10 percent.⁸ We believe these are exactly the right investments to be making in our national-innovation systems, and we propose that future budgets commit to an explicit doubling of funding by 2020 for these three key agencies from their 2012 levels, to a total of \$25.6 billion.

Policies to encourage public-private partnerships linking academia, industry, government, and nonprofits

History has shown that increasing the pool of scientific knowledge through traditional

Science and technology research

Problem: Living and working in a country that leads the world in innovation is key to the prosperity of America's 300 million engines of growth. But the United States is falling behind its peers in many of the key drivers of innovation that will determine technological leadership in the 21st century.

Solution: Focus on key investments in research and harness the economic potential of top research facilities to spur innovation and economic growth.

Key policy ideas:

- Double our public investments in three key science and engineering research agencies: the Department of Energy's Office of Science, the National Institute of Standards and Technology, and the National Science Foundation.
- Build public-private partnerships linking academia, industry, government, and nonprofit players to promote innovation and bottom-up regional economic growth.
- Institute a new and improved research tax credit for business that is insulated from the annual reauthorization process and that is refundable to small businesses and startup companies.
- Invest in grand challenges with flexible, ambitious, and accessible Frontier Prizes.
- Better align federal laboratories and research programs with economic development by reforming the stewardship model of the labs and lowering barriers to transparent collaboration with industry.

Other policies include gathering and releasing better data about the economic output of federally funded university research to encourage best practices in developing academic entrepreneurship.

Outcomes: The United States will be first in the world in public and private investment in research and development as a percentage of GDP. ■

forms of basic and applied research is a smart bet. But in the 21st century, when innovation is so intertwined with advances in science and technology, we need to not only continue to increase the size of that pool of knowledge but also to make it easier for U.S. businesses to make use of what's already in it.

In designing programs to achieve these goals, we believe there are essential characteristics to their success. These include building on existing assets and relationships, which often means focusing at the local and regional level. It also includes taking a network-lifecycle approach to innovation—not only encouraging individual firms to innovate on their own but also encouraging the formation of networks of firms, research institutions, supply-chain companies, and other stakeholders that are in the same field. Finally, it's important that support not be prematurely linked to single technologies before the dust has settled on what approaches are best.

FIGURE 8

21st century innovation policy

Instead of picking winners, encourages vigorous contest by many high-caliber competitors by investing in cross-cutting platforms and shared resources to support many approaches to accomplish the same goal

Network-lifecycle approach to innovation, encourages collaboration among interdependent stakeholders

Regional focus, leverages and builds on existing technological, industrial, human capital assets of regional economies and business ecosystems

Targeted, strategic investments from agencies

Adopting such an approach means that:

- Researchers in universities and federal labs, through more informed interactions, make better decisions about what avenues of research might be most valuable to major industries
- Small innovative businesses at the regional level, through their connections with academia, gain access to state-of-the-art digital modeling and testing facilities to innovate
- Educational institutions train students with the skills needed by local industry, large and small
- Breakthrough discoveries and inventions developed in university labs have a clear ladder to market readiness, investment, and implementation

In terms of concrete steps, in addition to simply increasing the funding for research and development for key agencies, we propose expanding and making permanent a number of Obama administration initiatives aimed at achieving these goals.

Using executive authority in its first term, the Obama administration repurposed existing competitive federal grants and other programs to encourage large and small manufacturers to come together with universities, community colleges, federal labs, and nonprofit economic-development organizations to share resources and promote



This photo released by Michigan State University in East Lansing shows doctoral student Xu Lu, who is part of a team that has developed a new thermoelectric material designed to more cheaply capture waste heat energy produced by car engines and industrial processes .

AP PHOTO/G.L. KOHUTH, MICHIGAN STATE UNIVERSITY

innovation in strategic industries.⁹ Critical innovation-centric expansions have included programs such as the Jobs and Innovation Accelerator program, the Department of Energy Regional Innovation Clusters, the Economic Development Administration i6 program, the National Additive Manufacturing Innovation Institute, and the Investing in Manufacturing Communities Partnership. All of these programs delivered grant funding to public-private research, education, and industry consortia in regions around the country to invest in coordinated workforce, research, and infrastructure projects in targeted sectors.¹⁰

We support expanding these efforts as part of the broader increase in innovation and research support. Fully funding the National Network for Manufacturing Innovation, as called for in the preceding manufacturing section of this report, to link academia and industry to accelerate innovation, would be a great first step. The Center for American Progress, in its briefs “The Geography of Innovation”¹¹ and “Accelerating Regional Job Creation and Innovation,”¹² has called for expanding the Economic Development Administration’s efforts in building the kind of economic-development partnerships that should be widely replicated. Additionally, Congress should immediately appropriate the

A legacy of key investments in American competitiveness¹⁴

One of the lessons of the 20th century is that when the United States made smart investments in its competitiveness, the dividends were huge. Investments in research and development proved critical in laying the groundwork for America to be the global leader in innovation, advanced by the world's most productive workers. Examples of these efforts include:

Department of Energy Labs: 1943 to present

The department was founded in 1943 in response to the need to mobilize the nation's scientific assets to support the war effort. Projects included the Manhattan Project and development of radar technology.

What we invested: A few million dollars in the early 1940s, growing to about \$10 billion, or 0.06 percent of GDP, in 2012.

What we got: The optical digital recording technology behind music, video, and data storage; fluorescent lights; communications and observation satellites; advanced batteries now used in electric cars; modern water-purification techniques that make drinking water safe for millions; supercomputers used by government and industry; more resilient passenger jets; better cancer therapies; and the confirmation that it was an asteroid that killed the dinosaurs 65 million years ago.

National Science Foundation: 1950 to present

The National Science Foundation, or NSF, was championed by Sen. Harley Kilgore (D-WV), a New Deal politician and small businessman with a deep distrust of the laissez-faire attitude toward science and large monopolies that, at the time, controlled much of America's scientific enterprise. In response to these issues, the NSF was founded "to promote the progress of science; to advance the national health, prosperity, and welfare; [and] to secure the national defense."

What we invested: Just \$3.5 million for its first full year of operation in 1952 (roughly \$29 million in 2012 dollars), growing to \$7 billion, or 0.05 percent of GDP, in 2012.

What we got: Google, which was started by two students working on a research project supported by the National Science Foundation, is today worth an estimated \$250 billion and employs 54,000 people. This investment alone would make up all or almost all the costs of the NSF reaching back to its inception, but NSF funding has also been instrumental in the development of new technologies and companies in a range of industries, including advanced electronics, computing, digital communications, environmental resource management, lasers, advanced manufacturing, clean energy, nanotechnology, biotechnology, and higher education.

DARPA: 1958 to present

Founded in response to the launch of Sputnik to ensure the United States had cutting-edge military technology, the Defense Advanced Research Projects Agency, or DARPA, now operates as a small R&D team within

the Department of Defense. It delivers world-leading technology both on the battlefield (Stealth fighter jets) and off (the internet). Described as “one hundred geniuses connected by a travel agent,” DARPA continues to work with universities and teams across the country to push scientific and engineering boundaries, focusing on projects such as a human exoskeleton and mobile robots capable of assisting in medical procedures.

What we invested: \$246 million in the first appropriation in 1962 (\$1.6 billion in 2011 dollars), growing to reach nearly \$3 billion, or 0.02 percent of GDP, in 2012.

What we got: The team that would go on to pioneer technologies that brought us the internet, the global positioning system, or GPS, and Siri for the iPhone.

The Apollo Space Program: 1961–1969

Two months after the Soviet Union put the first man in orbit, President John F. Kennedy announced his intention of putting a man on the moon, saying, “No single space project in this period will be more impressive to mankind, or more important in the long-range exploration of space; and none will be so difficult or expensive to accomplish.” In fixing a national ambition and rallying resources behind it, the United States went from never having put a man in orbit to landing a team on the moon in less than a decade. At the height of the Apollo program’s efforts, it employed 400,000 Americans and worked with 20,000 partnering institutions.

What we invested: \$24 billion, or \$150 billion in 2011 dollars.

What we got: Massive technological advancement and the start of huge opportunities for technology transfer, leading to more than 1,500 successful spinoffs related to areas as disparate as heart monitors, solar panels, and cordless innovation. And now, a fledgling private-sector American space industry with real growth potential, which in 2012 completed the world’s first private-sector cargo delivery to the international space station.

Human Genome Project: 1988–2003

Started as a joint project between the Department of Energy and the National Institutes of Health, the Human Genome Project ultimately helped coordinate the work of scientists in countries around the world to map the human genome. In a joint telecast in 2000, President Bill Clinton and U.K. Prime Minister Tony Blair announced the first phase was complete with the release of a public working draft of the “genetic blueprint for human beings.” The project has ushered in a new era of medical and scientific advancement.

What we invested: \$3.6 billion (roughly \$5.7 billion in 2011 dollars), or approximately .005 percent of GDP, averaged over 15 years.

What we got: Critical tools to help identify, treat, and prevent causes of disease—and huge opportunities for the high-growth American biotechnology industry, which accounted for more than \$750 billion in economic output, or 5.4 percent of GDP, in 2010, and which now depends heavily on these advances in genetics.

\$100 million in direct spending and \$300 million in loan-guarantee authority it has already authorized under the America COMPETES Reauthorization Act of 2010¹³ to expand these kinds of partnerships on a competitive basis all across the country.

Policies to institute a new and improved research tax credit for business

Economists have long recognized that private-sector investments in scientific research and development suffer from acute market failures, defined as inefficiencies in the distribution of goods and services.¹⁵ New knowledge, ideas, and innovations can be readily appropriated, adapted, and emulated by others in the economy. These spillovers can create a disincentive for people and businesses to invest in research. After all, if a good portion of the value of that research will end up in the hands of others, the investment may not be worth it even though it might yield substantial social returns. Because of the potential for market failures, economists widely agree on the benefit of public policies that create incentives for private-sector R&D.¹⁶

Ideally, a policy to leverage private R&D spending and capacity would specifically encourage the incremental investments beyond the research that private-sector investors would be willing to fund of their own volition. Otherwise a tax benefit that gives more than an incremental incentive might provide windfall profits by rewarding a company for something it was going to do anyway. What's

more, an ideal policy would restrict the incentive to truly worthy "scientific" endeavors that yield broad social benefits and that are discouraged by market conditions.

Since it is impossible to actually determine how much R&D a company would support in the absence of a tax incentive, a policy can at best only adopt decidedly arbitrary metrics for establishing what portion of a company's R&D spending is "incremental." What's more, in practice it is very difficult for policy to distinguish between what should qualify as research and development expenses deserving of support and what should not—as evidenced by a spate of recent court rulings in cases considering the scope of the existing U.S. research tax credit.¹⁷

While the current U.S. research tax credit is designed with these issues in mind, real implementation problems create uncertainty and distorting inefficiencies in business investment decisions, and lead both companies and the IRS to devote considerable resources for auditors, tax lawyers, and other expensive consultants—not to mention lobbyists—to navigate the fuzzy definitions governing the current research tax credit. Recognizing the practical problems of implementing a theoretically ideal incentive to boost private R&D spending, we propose a tightening of standards and both a broadening and simplification of the incentive by:

- **Establishing a simplified, level credit at a reduced rate:** Our current mechanism for delivering R&D tax incentives to the private sector offers a 10 percent credit for



Sylvia Earle, center, puts on her helmet as Dale Stokes, left, and Roger Garcia, right, assist before a dive to the undersea research laboratory owned by NOAA, Aquarius Reef Base, Jul. 13, 2012, in the Florida Keys.
AP PHOTO/LYNNE SLADKY

any R&D spending above prior levels of R&D spending by the firm. In practice, this is a poor and complicated way to target the credit. Instead, we propose that businesses receive a level credit on total qualified research and development expenses, not just the ostensibly additional portion. A flat credit stimulates R&D spending by reducing the average cost of research investments for which there are significant social benefits. A flat credit also eliminates much uncertainty over the amount of the credit by simplifying complicated and arbitrary formulas aimed at trying to ascertain what amount of research is “incremental,” and this simplification means reduced costs of compliance for both businesses and the IRS.

- **Making the research tax incentive permanent:** In recent years, Congress has extended the research credit on a year-to-year basis, even letting it expire for entire years before renewing it retroactively. The perpetual uncertainty of renewal has made it more difficult for businesses to plan, and it likely diminished the credit’s incentive effect. Making the tax credit permanent eliminates uncertainty and recognizes the broad benefits to the overall economy from private R&D investments. Congress should, however, continuously review the credit to ensure that it is serving its purpose cost effectively.
- **Ending the bias against small business R&D:** Large corporations receive

a disproportionate 65 percent of the research tax credit but are fewer than 4 percent of companies claiming the credit. Small companies are disadvantaged by the complexities and costs associated with claiming the credit, and start-up companies may not yet have incomes sufficient to benefit. Moreover, research shows that smaller companies tend to produce higher-quality R&D.¹⁸ To further encourage innovation in America's small businesses, this simplified credit will be refundable for small businesses up to a cap; for large companies, the credit will remain nonrefundable.

- **Honing eligibility to focus on innovation:** Legal costs associated with intellectual-property registration or licensing and interest payments pertaining to R&D expenditures would be excluded from eligibility. Compensation through stock options, which require no current expenditure from the employer, will also be excluded. Because the worth of stock options is premised on future realized gains in valuation from innovation successes, there is already ample market incentive to conduct quality research in this regard.
- **Clarifying internal-use software eligibility:** Companies have many motivations to develop software for their own use, and the nature of this business practice is changing with the evolving nature of information technology and the service-sector economy. But not all internal-use software—such as that developed for administrative or management purposes—advances scientific

or technical knowledge. In light of existing confused guidance on what software is eligible for the credit, we propose clarification to focus tax incentives on maximizing the social return from internal-use software development.¹⁹ Software developed for internal administrative or management purposes will be ineligible for the credit.

- **Creating incentives for economically strategic research:** Companies conducting R&D in industries and activities deemed important in the government's quadrennial National Economic Strategic Assessment (see chapter on creating the mechanisms for an adaptive national economic strategy) will qualify for a bonus R&D credit.
- **Denying credit claims on amended returns:** The tax credit aims to provide businesses with an incentive to increase their R&D spending above the level they would otherwise choose. A significant share of R&D credit claims are, however, made on amended tax returns. Sometimes these amended returns are filed years after R&D spending decisions have been made, suggesting that the credit was not a factor in the company's decision to perform the research. To target the credit to new research that might not be conducted without the credit, the credit should have to be claimed on tax returns when they are initially filed.
- **Standardizing record-keeping requirements and integrating credit with national statistical systems:** The IRS should issue guidelines to clarify a com-

The power of innovation prizes

When the Spirit of St. Louis finally touched down in Paris after its record-breaking 33.5-hour nonstop flight from New York, Charles Lindbergh didn't just earn a place in the history books. He also earned a \$25,000 award from New York hotel owner Raymond Orteig, who had offered the prize to any aviator who could make the transatlantic journey.²⁵ With Lindbergh's achievement came a sudden explosion in the public's interest in air travel: by 1930, just three years later, the number of airports in the United States had doubled.²⁶

Innovation prizes have sometimes been the proverbial carrot, creating intense competition and spurring new heights of ingenuity. The Orteig Prize is just one example of a phenomenon that has long propelled technology forward, from the Ansari X Prize that sent Burt Rutan and his SpaceShipOne into orbit, to Carnegie Mellon's Fredkin Computer Chess Prize, which prompted IBM to build the powerful Deep Blue supercomputer that beat chess grandmaster Garry Kasparov.²⁷

We are living in a second golden age of innovation prizes, and while U.S. government agencies have supported relatively small innovation prizes in recent years, we also see scope for a basket of larger prizes that can capture the imaginations of scientists and engineers and answer some of our most pressing national challenges. For example, innovation prizes could be awarded for:

Printing the first kidney (synthetic biology and 3-D printing): New biomaterial science, new ways of growing cells outside the body, and new technologies to supply blood to organs are already converging to enable the creation of tissues and organs in the laboratory. Printers using cells rather than ink are manufacturing small pieces of implantable bone and even the model of a fully functioning human liver.²⁸ The first research entity to print a working human kidney that can be implanted into a patient in need would win the prize.

Decoding the blood proteome (personalized medicine): The proteins encoded by the human genome are the machines of human biology. While each cell contains the same genetic information, it is largely the levels and actions of proteins that determine biology. But to understand the proteins, we need new technologies that will allow us to measure hundreds or thousands of proteins in a sample. The invention of a "protein identifier" would be the single most powerful step we can take toward advancing personalized medicine for both preventative and proactive medical care, and would provide a window into the health and disease states of an individual and make its inventor a prizewinner.

Developing high energy-density solid-state batteries for electric vehicles (energy): Current electric vehicles use Li-ion battery systems that are heavy and cumbersome because of required cooling devices and support materials in the battery cells. With advancements in materials science, development of solid-state batteries that do not require cooling and the extra bulk of conventional Li-ion battery systems could result in dramatically cheaper and higher energy-density batteries for electric vehicles, thereby lowering costs and increasing the range of these vehicles. The inventor of a cheap, high energy-density solid-state battery would win the prize.



The federal laboratory system has now grown to more than 300 facilities, spends \$35 billion annually, is the source of thousands of new inventions and medical treatments each year, and represents one of the most significant federal investments in innovation.

pany's necessary record keeping documenting research expenses qualifying for the tax credit. Credit recipients will be required to report specific quantitative data that will integrate with a retooled national statistical system (detailed in the chapter on creating the mechanisms for an adaptive national economic strategy) and can integrate with existing efforts to measure the economic impact of public R&D support such as those of the government's STAR METRICS consortium.²⁰

Policies to increase investments in grand challenges

As demonstrated by President Obama's April 2013 announcement of the Brain Research through Advancing Innovation Neurotechnologies, grand challenges can fuel innovation. The 2010 America COMPETES Reauthorization Act allows agencies to conduct innovation prize competitions.²¹ Since the act's enactment, there have been more than 200 competitions supervised by more than 25 agencies.²² These prizes are cost effective and promote greater investment in R&D and areas of research that may otherwise be neglected.

For this reason, we propose a Frontier Prize allocation of \$100 million a year to allow agencies to offer innovation prizes that would fund both discrete, smaller challenges such as the Department of Agriculture's Apps for Healthy Kids challenge, which for \$60,000 generated more than \$5 million in investment,²³ as well as a small number of large challenges that can capture the imagination of scientists and engineers in the private and university sectors. An example of the latter is the \$15 million Scottish Saltire Prize, which has encouraged international investment in renewable energy in the North Sea.²⁴

The government can also play a part in encouraging the current revival of innovation prizes by creating a platform for prize philanthropy. Right now, government agencies make up the vast majority of organizations with challenges

posted on the website, challenge.gov, an online platform for agencies to post challenges and for the public to propose solutions. The administration should encourage more citizens, corporations, and foundations to submit prizes to this platform. Some amount of the Frontier Prize purse could also go to offering matching funds for prizes developed by citizens, corporations, and foundations.

Policies that better align federal laboratories with economic needs

Since 1846, when the first federal laboratory was established—the Smithsonian Institution—the federal government has invested directly in research to address national needs and promote scientific and technological advancement.²⁹ The federal laboratory system has now grown to more than 300 facilities, spends \$35 billion annually, is the source of thousands of new inventions and medical treatments each year, and represents one of the most significant federal investments in innovation. Though a quarter to a third of this spending occurs in labs originally built for defense purposes, many of the Cold War-era nuclear research labs today are vibrant, multidisciplinary environments with programs ranging from biology to computer science, in addition to nuclear physics research.³⁰

Labs of all stripes and diverse origins often play an important role at the interface of federal investments in R&D and private-sector com-

mercialization of new products and services. In fact, many significant private-sector technological successes have been born from national lab research and partnerships between labs and industry—from fluorescent lights to digital memory to the discovery of “good” cholesterol and satellite communications.³¹

Counting just the largest labs operated by the nine federal agencies with research budgets of more than \$500 million, in FY 2010 (the most recent year for which complete data is available) more than 4,783 new inventions were reported, almost 1,200 new patents were issued, and 8,525 cooperative R&D agreements, called CRADAs, with industry were carried out.³² Technologies licensed from just the National Institutes of Health, the largest nondefense national lab system, yielded nearly \$6 billion in revenue for companies doing business in the United States in FY 2011.³³ And this figure does not include the products made possible by non-patented breakthroughs in basic science.

The lab system, however, was built in a piecemeal fashion over many decades, without a coherent mission or standardized management procedures. Science, technology, and the state of the economy have all changed in the decades since many parts of the lab system were formed, but the vision for the mission of the labs and how they interact with industry has not kept pace.

Reforming the stewardship model, management practices, and relationships of the labs with industry would help to maximize the



The aircraft Solar Impulse is prepared for the second leg of the 2013 Across America mission, early May 22, 2013, at Sky Harbor International Airport in Phoenix. The plane's creators, Bertrand Piccard and Borschberg, said the trip is the first attempt by a solar airplane capable of flying day and night without fuel to fly across America.

AP PHOTO/MATT YORK

economic and societal opportunities of the labs and meet the challenges of 21st century innovation-based competition.

Reform the federal lab-stewardship model

Most federal labs nominally serve the mission of a particular mother agency in the federal government but, as a practical matter, funding is often fragmented. Pacific Northwest National Lab, for example, originally a nuclear-testing facility, now receives only 17 percent of its funding from its sponsor agency, the Office of Science, and the rest comes from places such as the Department

of Defense, the Department of Homeland Security, the National Nuclear Security Administration, and other government and private-sector clients.³⁴

Further, these funding streams from separate agencies can be overly prescriptive with regard to technological pathways. Money is appropriated by technology to be researched, rather than problems to solve, which forces lab managers to pursue courses of research even if they are not technically or economically promising. Acquiring funding via many small pots of money, with many strings attached, limits the flexibility and therefore the effectiveness of lab management.

The White House Office of Science and Technology Policy should set up a National Research and Development Management Council with representation from all of the key stakeholders in national labs: directors of the federal laboratories; the relevant sponsoring agencies such as the Department of Energy, the Department of Defense, the National Institutes of Health, and others; the contractors in charge of managing labs; the scientific establishment that makes use of laboratory facilities; and the industry leaders who partner with labs. This council would be tasked with assessing how the sponsoring agencies can maintain necessary oversight of lab operations while reducing red tape, speeding up bureaucratic processes, and leaving the scientific decisions to the scientists.

As a first step, this group should issue recommendations to create more flexibility and coherence in the streams that fund lab work and reduce technical micromanagement in grant opportunities. Rather than fulfill thousands of pre-prescribed and unrelated grant requirements from potentially dozens of agency sources, while simultaneously trying to fulfill top-down requirements from sponsor agencies, the scientists who manage labs should have the flexibility to scale up or scale down research programs, invest dollars flexibly, and pursue outside partnerships as needed to meet the mission requirements of any funding program. Such reforms would also allow the labs to provide excellent service to client companies paying in full for access to the capabilities and services that labs maintain in excess of what is needed by agency stewards. With respect to the latter, it

is important that the national labs not simply become private contractors to the detriment of important research serving national priorities. Nevertheless, private-market actors' willingness to invest is one relevant indicator of what avenues of research are likely most able to successfully meet national technical and economic objectives.

Reward innovation in the marketplace

Another related issue with the federal lab system is that the transfer of technology to the market—where it can solve real-world problems and create economic growth—is not a major part of the mission of federal labs. In 1980 Congress legislated that “technology transfer, consistent with mission responsibilities, is a responsibility of each laboratory science and engineering professional.”³⁵ Congress, however, provided neither guidance nor funding to enable labs to carry out this directive. And technology transfer remains “an underfunded mandate,” according to the Institute for Defense Analysis.³⁶

But relationships with industry, managed properly and with transparency, can be very beneficial to both the scientific and economic outcomes of research. There are two major reasons for this. First, ensuring that valuable inventions currently sitting idle in laboratory intellectual-property portfolios can find commercial homes helps establish U.S. technological leadership, benefits U.S. industry, and creates jobs. Second, the missions of the agencies, government, and public can be better

served by better leveraging the capabilities and capital of the private sector to do collaborative research that is mutually beneficial to the public mission and private objectives.

To strengthen these relationships, two actions should be taken. First, lab-sponsoring agencies should be required to adjust their annual performance-evaluation procedures for lab managers to reward lab managers for proactively engaging with and forming productive partnerships with industry. Implementing these changes could likely be done through executive authority alone, in the context of better implementation of the Stevenson-Wydler Technology Innovation Act of 1980, which already calls for labs to maximize commercial outcomes of publicly funded research to the greatest degree possible without compromising the government mission of the labs.³⁷ In the longer run, Congress should build upon or amend the Stevenson-Wydler to set benchmarks and more clearly emphasize industry engagement as a priority in lab management and evaluation.³⁸

Second, the administration should review the conflict of interest policies at all of the federally funded research and development centers to remove unnecessary roadblocks to collaboration with industry, while ensuring that science continues to be guided by unbiased scientific opinion. In some labs, for example, it is considered illegal for scientists to do work for the government in any field related to a patent they own. This restriction prevents many accomplished scientists and inventors from using their talents in

the national lab system or forces them to choose between furthering the frontier of knowledge and applying their discoveries in the real world. One national laboratory, the National Institute for Standards and Technology, took steps in 2010 to change this policy.³⁹ These reforms could serve as a model for broader reform to encourage other labs to contribute to the economy, while serving their publicly guided science missions, and to ensure that highly skilled researchers aren't barred from contributing to lab and agency missions and vice-versa.

Policies that encourage market adoption of university discoveries and inventions by collecting better data

Universities are engines of innovation and economic growth. Yet few statistics are gathered in a systematic way about their contribution to commercialized innovation, the launch of new firms, and job creation. The lack of high-quality data about the overall performance of these invaluable assets is distressing and leaves us behind many other industrialized nations.⁴⁰ Getting better data on how universities move research and discoveries into the marketplace would allow for better benchmarking of universities against one another and more rapid propagation of best practices in technology innovation.

Several efforts are now underway to develop new metrics to measure university contributions to the economy, and Congress called broadly for more and better reporting of

university innovation data in the America COMPETES Reauthorization Act of 2010.

The administration should use the authority granted by Congress in that act to convene stakeholders to implement new across-the-board metrics to be reported by universities annually. These efforts should build upon the existing partnerships established under the STAR METRICS consortium,⁴¹ which seeks to establish the economic and social returns to government-funded R&D, the National Center for Science and Engineering Statistics, the Association of Public and Land Grant Universities, and the Association of University Technology Managers, and engage other stakeholders, including the federal science agencies, associations, and industry. Building upon the existing voluntary reporting of some metrics by research universities, the administration should gather input from

these stakeholders and set a timeline for implementation of new measures of university economic engagement.

Although we have focused on the direct value to the economy of commercial ideas that develop out of university research, there will always be ways that universities promote innovation and benefit society that simply cannot be measured. Academic publishing is effectively a global economic intellectual commons, where ideas are exchanged and built upon. So while numbers can help us better understand how universities are most effective in moving research to technology, any attempts to better understand the functioning of, and thereby improve upon, our nation's engines of innovation must not detract from a core American value: that the pursuit of new knowledge and education are ends unto themselves. ■

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SECTION 2 • CHAPTER 4

Balance trade

In this Oct. 18, 2011 photo, crew members look on as containers are offloaded from the cargo ship Stadt Rotenburg at Port Everglades in Fort Lauderdale.

AP PHOTO/WILFREDO LEE

Goods and services trade—exports plus imports—now account for nearly one-third of overall U.S. economic activity,² meaning trade’s importance to the economy has never been greater. The United States is the world’s largest exporter,³ with exports directly supporting an estimated 9.7 million jobs.⁴ At the same time, the United States is also the world’s largest importer, and herein lies the problem. Over the past 30 years, our trade balance has been shifting in the wrong direction—toward more imports than exports—and reached a \$560 billion deficit in 2012.⁵

While imports can be a boon to U.S. economic productivity and American living standards, providing consumers and business with access to a larger variety of goods and services at lower costs than would otherwise be the case, there is also a price to pay.

Mounting trade deficits present two key problems for the U.S. economy. First, the economic benefits made possible by import-

ing also carry offsetting costs, including job losses domestically. Second, in order to pay for the imports from abroad that exceed U.S. exports, the U.S. economy must balance this trade deficit by selling assets—stocks, bonds, and other assets such as companies and real estate—to overseas purchasers.

Our trade imbalance has resulted from a number of factors. One is, of course, the

rapid industrialization of developing-country economies, which are now becoming more able to compete with the United States in terms of the range and sophistication of what they produce. At the same time, as documented elsewhere in this report, the United States has failed to keep up with some of the basic building blocks of competitiveness. But another reason we've lost ground is that the rules of the road for trade are outdated, too easy to violate, and too difficult to enforce—and oftentimes countries are too willing to violate international norms and laws.

Other countries' bending of the rules of trade is a problem we must address. But, realistically, we must strike a balance between the need to take strong, appropriate action to protect U.S. interests and the risk of other countries taking actions that could be extremely damaging to our economy. We must recognize that we are dealing with sovereign nations that have their own interests and their own objectives and do not necessarily see their actions and positions the way we see them. After all, for a country that is trying to raise the living standards of large swaths of people living in poverty and that sees the rise of advanced-economy countries as not entirely the consequence of honorable behavior, bending the rules can appear to be a virtuous and astute economic strategy.

That said, the purpose of the legal arrangements for trade is explicitly to balance the interests of all parties' involved to promote shared prosperity and rising global living standards. Once those agreements are in

place and international norms are set, we cannot tolerate our trading partners violating agreed-upon terms at our expense. Inaction leaves American businesses and workers at a global disadvantage and undermined by a tilted competitive playing field.

In fact, the entire world economy is hurt when damaging economic distortions that have been carefully negotiated through trade agreements are allowed to creep back into the system. Violating the rules undermines the incentives for innovators and creates incentives for producers to move to less efficient locations. If global trade rules are not enforced, then the architecture of world trade is undermined, as distrust in trade relations leads more and more countries to shirk the responsibilities of a rules- and norms-based system.

What is best for the U.S. economy and for all the economies of the world is a set of clear, enforceable rules in international trade and investment, consistently enforced. Such rules, in conjunction with improved U.S. competitiveness, appropriate export promotion, and an eased path for foreign direct investment in the United States, are the keys to balancing U.S. trade and allowing U.S. businesses and workers to compete fairly and successfully with the rest of the world.

We propose policies to:

- Require greater monitoring and transparency by trade enforcement agencies, automatic enforcement actions where appropriate, and greater enforcement resources and authority to conduct these activities

Trade

Problem: The United States imported \$5.9 trillion more than it exported over the past 10 years.¹ This trade deficit resulted in lower growth, fewer jobs, and higher inequality in the United States—all of which impede the prosperity of America's 300 million engines of growth.

Solution: Aggressively enforce a fair playing field on which American businesses and American workers can compete, by making some enforcement actions more automatic, broadening enforcement tools, improving employment and labor practices abroad, and promoting exports and foreign direct investment.

Key policy ideas:

- Double the original funding of the Interagency Trade Enforcement Center to \$52 million annually.
- Create a process of “automaticity”—a clearly prescribed chain of enforcement actions that kick in for clear-cut trade violations as tracked via a National Trade Compliance Database.
- Enforce a currency misalignment trigger that will identify countries with misaligned currencies and trigger a timeline to begin counter-vailing tariffs within 90 days.
- Strengthen and clarify international law around state-owned enterprises to ensure fairer competition.

Other policies that will lead to more balanced trade include promoting exports and foreign direct investment, as well as promoting a virtuous circle where quality jobs that offer appropriate compensation and respect labor rights and social protections will advance the development of the global middle class, which is good for workers abroad and workers here at home.

Outcomes: Trade will be balanced by 2022. ■

- Introduce a currency misalignment trigger to address undervalued currencies
- Clarify international law to hold state-owned enterprises accountable to mutually agreed-on rules and norms of trade
- Enact a set of policies focused on intellectual-property rights infringements
- Promote the creation of quality jobs to increase import demand in presently export-driven economies
- Expand export promotion
- Increase efforts to attract foreign direct investment to the United States

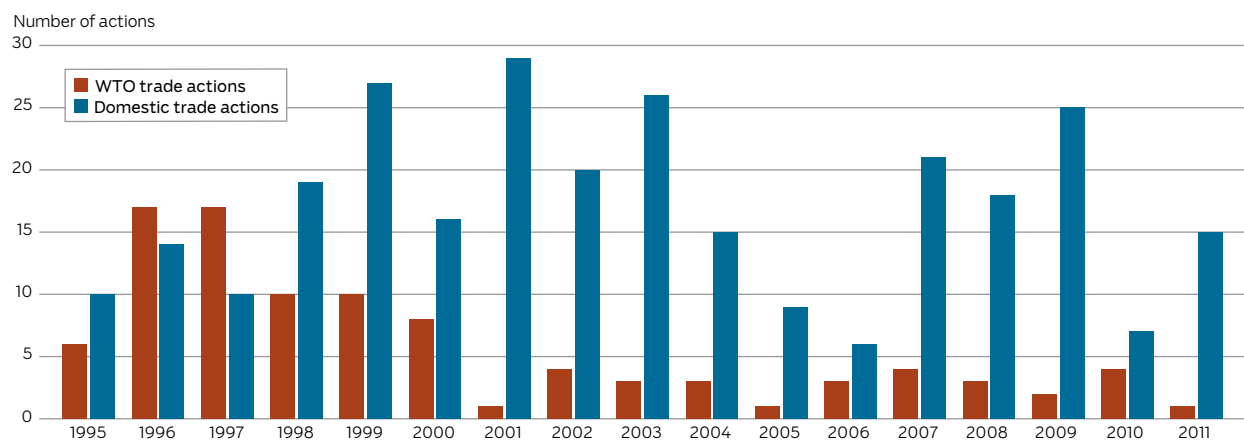
In addition to the policies outlined in this section, rebalancing trade will require other parts of the larger economic plan identified in this report to come into effect to make U.S. workers and businesses better equipped to compete.

Policies that increase monitoring and play a more active role in initiating trade cases

The current system in the United States for dealing with trade violations is cumbersome. Our trade enforcement agencies rely too heavily on American workers and American businesses to be the initiators. Those seeking redress are often forced through an arduous, lengthy, and arbitrary process and are potentially subject to retaliation by the coun-

FIGURE 9

Trade actions initiated, 1995 to 2011



Source: Chad P. Bown, "Global Antidumping Database" (World Bank, 2012), available at <http://econ.worldbank.org/ttbd/gad>; Chad P. Bown, "Global Countervailing Duties Database" (World Bank, 2012), available at <http://econ.worldbank.org/ttbd/gcud/>; World Trade Organization, "Dispute Settlement Database," available at http://wto.org/english/tratop_e/dispu_status_e.htm

try against which they petition. Remedies are often slow in coming, particularly when the enforcement mechanism is through the World Trade Organization, or WTO. Because of a lengthy adjudication process, by the time remedies are put in place, irreversible damage has sometimes already occurred.

Despite the growth of trade and the scope of infractions, there has been a relatively low level of trade cases initiated over the years (see Figure 9).

But that's not because U.S. representatives can't win these cases. According to an August 2012 publication by the Office of the U.S. Trade Representative, or USTR, since 1995 the United States had filed 99 complaints, of which 71 had been concluded. Of these cases, 67—or 94 percent—were resolved either to U.S. satisfaction without completing litigation, or the U.S. won on the core issues, leaving only four cases in which the United States did not prevail.

So, while the United States has a very good track record, at an average of fewer than six cases per year, we don't contest violations as often as we should. That is why the Obama Administration's efforts to streamline efficiency in U.S. trade policy with the Interagency Trade Enforcement Center (ITEC) is so important. There are certainly more violations occurring than are disputed, and other countries should know that U.S. officials are willing to bring cases. Trade sanctions cannot serve as a credible deterrent

unless there are expectations that rules will be enforced.

The goal, then, is for the trade agencies to be much more active in bringing cases. Focusing on WTO complaints, historically USTR tends to only bring cases that it believes it is highly likely to win. The strategy is driven in part by the desire to minimize diplomatic fallout, but the net effect is fewer cases brought and less redress for U.S. parties injured by the flouting of trade rules.

To make progress in addressing trade violations by other countries, we must give U.S. trade agencies the tools and the authority they need to take more actions on their own, as well as seek improvement in international enforcement bodies. These new mechanisms must ensure that our trade partners know we will respond speedily and forcefully to any clear-cut violations.

To accomplish this, we propose:

- More transparency, accountability, and action via changes to the National Trade Estimate Report, the creation of a National Trade Compliance Database, and better statistical information
- More enforcement capacity by allocating \$52 million to the Interagency Trade Enforcement Center and giving subpoena power to the United States Trade Representative

Automaticity in trade enforcement

One approach that we rely on in several of our recommendations is to make trade enforcement more automatic. “Automaticity” is defined as an automatic chain of events that ensues upon the finding of a trade infraction. This concept of automatic policy responses is not foreign to the world trading system and is incorporated in aspects of the WTO’s governance structure in “automatic chronological progression for settling trade disputes.”⁶ We propose applying this mechanism in U.S. domestic trade laws.

Taking some element of discretion out of whether to bring enforcement actions for certain types of violations has two benefits. First, it takes the burden of initiating complaints off of corporations and unions. This is particularly important because multinational corporations are reluctant to initiate action against countries in which they do business or where they would like to gain market access because those countries might retaliate. Second, by taking some discretion out of the hands of government officials, automaticity relieves the officials of some of the pressure from outside interests to refrain from taking action. While discretion can never be completely removed, nor should it be, automaticity tilts the decision making toward more active enforcement.

- Advocacy by the United States for improved WTO rules to ensure faster and more effective remedies

Increase transparency, accountability, and action

Better enforcement of trade rules must begin by improving the way we monitor trade flows, industry dynamics, and the policies, laws, and trade practices of partner countries. Current monitoring and enforcing rules of international trade often rely on ad hoc and arbitrary processes that result in few enforcement actions after damage has already been done to U.S. businesses, workers, and communities.

To address this, in conjunction with proposals in later sections, we propose the following policies.

Make the Trade Barriers Report a more effective tool

The National Trade Estimate Report on Foreign Trade Barriers, also known as the “Trade Barriers Report,” is published by USTR each year and tracks trade barriers in 62 trading partner nations.⁷ The report provides a trove of information on areas where American workers and American businesses are being disadvantaged by unfair trade practices.

Two ways it could be a more powerful tool would be for it to summarize, by country,

what actions our trade enforcement agencies are taking to address listed infractions, and to summarize what additional tools—either in the form of changes to U.S. laws, regulations, or practices, or changes to international agreements—would make it easier for agencies to enforce trade rules.

Launch the National Trade Compliance Database to catalog compliance with clear, quantifiable trade rules and trigger their enforcement

When determining if a country is fulfilling its trade obligations, there are some categories for which it is readily apparent whether the country is in compliance or not—for example, negotiated tariff reductions on traded goods. For clear-cut compliance categories, the United States should have a policy of automating, to the extent possible, certain aspects of trade enforcement and detailing in advance the actions that will be taken when a violation is found.

To facilitate this, we propose the creation of a National Trade Compliance Database that will list all of the provisions in our trade agreements that are quantifiable and clear cut, what the available remedy is under that trade law, whether there is a current violation, and what steps have been initiated by U.S. trade agencies to bring the violating country into compliance. Upon a finding of noncompliance, agencies would be required to begin seeking the pre-specified remedies. There would be no waiting for a complaint from a business or union—there would simply be action.

As the United States moves forward with new trade agreements such as the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership, it will be important to make rules and remedies more straightforward and amenable to this approach to enforcement.

Consider two examples of WTO violations where automaticity would compel a WTO claim under this policy:

- Export restraints: China's WTO accession protocol stipulates that China can impose specified export duties on no more than 84 items. Yet 352 products are expected to face export duties in 2013.⁸ This constitutes a clear violation of China's WTO obligations.
- Failure to submit required notifications: Another common trade violation occurs when a country fails to submit required notifications to the WTO on its trade policies, subsidies, or customs and import-licensing procedures. The Indian government, for instance, frequently fails to notify the WTO about new rules or publish information in its Official Gazette.

Expand businesses' statistical reporting to include financial and operating data for the consolidated business entity on a global and country-specific basis

Current statistics allow the government and private analysts to understand business activity within the U.S. economy. But what is needed to better analyze and understand the competitive position of individual businesses,

specific industries, and the overall U.S. economy—including how trade violations affect businesses—is information on how U.S. business operations and workers fit into the larger global economy.

Much of this information is readily available to authorities through data reported to U.S. national statistical systems. More information should, however, be collected in conjunction with other reforms to modernize the U.S. statistical infrastructure in order to allow a comprehensive analysis of the global nature of many industries' production and supply chains, to improve detection and enforcement of trade-law violations, and to facilitate National Economic Strategic Assessments, as we propose in this report.

Increase enforcement capabilities

The measures we describe to improve monitoring and make enforcement more automatic will lead to better enforcement of trade laws, but to achieve our goals, agencies need more resources and more authority to carry out this mandate. In 2012 President Obama requested \$26 million to create the Interagency Trade Enforcement Center, or ITEC, a new department within the U.S. Trade Representative's office, to increase the number of trade lawyers and investigators available to handle trade cases, coordinate trade enforcement actions among agencies, and leverage more aggressive enforcement across the government. ITEC presents a huge opportunity to advance enforcement efforts.⁹

Funding the Interagency Trade Enforcement Center with \$52 million—a doubling of the initial authorization request—would both help alleviate the USTR's capacity constraints and leverage more aggressive enforcement for the better-endowed International Trade Administration. Raising ITEC's funding would be a smart investment in ensuring that America's industries and workers can compete on a fairer international playing field.

In addition, the USTR should be granted subpoena authority, which would serve two purposes. First, it would give cover to companies that want to cooperate but fear retaliation. Second, subpoena authority would enable the USTR to gather the information it needs to move ahead. Rules would, of course, have to be developed to appropriately circumscribe the scope of the authority.

With all these measures, trade agencies would therefore be expected to launch more investigations and seek redress without waiting for a business or union to file a petition. Trade violators' reliance on U.S. inaction is a status quo that is long past due to expire.

Institute stronger mechanisms at the WTO

The United States should be leading an effort within the WTO to make enforcement more effective. Bringing a case, waiting for three years for it to be adjudicated, and then making the remedy prospective—thus rewarding the violator for three or more years of behavior in violation of the rules—is not the path



A man counts U.S. dollars at a currency exchange outlet in New Delhi, India, Jul. 29, 2011.

AP PHOTO/MANISH SWARUP

to a world of fair trade that causes all boats to rise, as was originally envisioned. The WTO's lack of ability to enforce in itself works as a barrier to trade since illegal practices are allowed to persist. While revamping the WTO enforcement mechanism is obviously a complex task that will take long years of negotiation, it is an important one.

Policies to introduce a currency misalignment trigger

Another important application of the principal of automaticity relates to undervalued currencies where countries are intentionally

seeking an unfair trade advantage by distorting the relative price-levels of goods traded between countries. Though it is important to note that countries may have good reasons to manage their exchange rates—for example, to maintain financial stability—both the World Trade Organization and the International Monetary Fund proscribe exchange-rate policies intended to upset the balance of trade. These institutions have not, however, taken the initiative to address this problem.

Current U.S. policy under the 1988 Omnibus Trade and Competitiveness Act, requires the Treasury secretary to twice a year submit to Congress a written assessment of interna-

tional exchange rate and economic policies affecting the U.S. economy. The goal of this is to identify and address exchange-rate misalignments and other policies of trading-partner countries that lead to material imbalances in the United States' current account, which measures the balance of exports and imports plus the balance of income flows between the United States and other countries. When the Treasury Department identifies problems, the law requires the secretary to enter negotiations with offending countries to achieve realignments consistent with reducing current account imbalances.

Current U.S. policy suffers three key problems. First, the policy's ambiguity is compounded

by its neglect in specifying clear thresholds for assessing exchange-rate misalignments, current account imbalances, and official accumulation of U.S. dollar foreign-exchange reserves. Second, it leaves too much open to discretion, leaving decision makers too vulnerable to outside pressure as they decide whether to identify countries as using currency to unfairly skew the balance of trade with the United States. Third, the policy provides no credible penalties to endow U.S. officials with the bargaining power they need to succeed in negotiations when a partner country's exchange rate and economic policies are problematic.

We propose a currency misalignment trigger.¹² Under our proposal, a combination of

China's currency misalignment

While China provides the highest-profile example of how exchange-rate manipulation and related international economic imbalances can harm the U.S. economy, economist Joseph Gagnon identified the top 20 countries engaged in "currency manipulation" in the 2000s, proving the problem is bigger than any one country.¹⁰

Persistent U.S. bilateral imbalances with China illustrate both the difficulties in redress and the importance of considering exchange rates alongside broader factors contributing to unbalanced trade. For years, China maintained an exchange rate pegged to the U.S. dollar at a fixed level widely perceived as undervalued. The practice effectively makes Chinese exports cheaper for buyers in the United States, and makes U.S. goods more expensive for consumers in China and elsewhere in the world. What's more, from an employer's perspective, the exchange rate makes U.S. wage costs seem artificially higher and Chinese wage costs and investments in Chinese production facilities artificially lower, thus denying U.S. workers the opportunity to compete on a fair playing field. China's currency policy contributed to the U.S. trade deficit with China growing to nearly \$300 billion in 2012, according to Bureau of Economic Analysis statistics.¹¹

Remedying China's exchange rate would be a significant step toward ensuring a fairer competitive playing field and a more stable global economy.

FIGURE 10



exchange-rate misalignment, current account imbalances, and official accumulation of U.S. dollar foreign-exchange reserves surpassing explicit thresholds would trigger an automatic response requiring the Treasury secretary to enter negotiations with offending partner countries. Then, should those negotiations fail, escalating countervailing duties would start to go into effect.

The thresholds for the trigger are:

- Exchange-rate misalignment greater than or equal to 10 percent, relative to the level

estimated by an analysis of fundamental equilibrium exchange rates, or FEER. Such estimates calculate exchange-rate adjustments needed to achieve medium-term adjustment of international economic imbalances, a key policy goal for the United States and the international monetary system.¹³

- Bilateral current account deficit exceeding 5 percent of the total U.S. current account deficit.
- Dollar foreign reserve holdings exceeding 12 months of expected imports and total

(public and private) short-term external debt obligations.

Under our proposal, the Treasury would report on each of these indicators in its periodic reports to Congress on international economic and exchange-rate policies. Two of the three conditions being met and sustained for one year would trigger an automatic response from the Treasury, requiring negotiations with the offending trading partner. Note that we recommend that there be no official label of the countries identified in this process as a “currency manipulator.” The country would simply be one with a currency misalignment, subject to negotiation and remedy.

After identification of a country by the threshold test, the Treasury would face a strict timeline for negotiations. If a plan to rebalance the misaligned exchange rate is not agreed to within 90 days, then, as shown in the accompanying chart, gradually escalating countervailing tariffs would take effect.

Critically different from the current approach on exchange-rate misalignment and international imbalances, this policy, once triggered, sets in motion a sequence of automatic policy actions with incrementally escalating countervailing duties that give trading partners an incentive to resolve imbalances with the United States.

We propose, however, that the president have the authority to halt the imposition of the countervailing tariff if he specifies reasons why implementing them would be inconsistent with achieving other national priorities

with partner countries. The currency misalignment trigger should not, for example, prevent countries from adopting emergency exchange-rate policy measures in response to potential international financial stresses or broader crises, as occurred in Japan following the 2011 tsunami.

But setting the default toward action, instead of inaction, strengthens the U.S. hand in international trade relations and gives certainty to the consequences of violating international rules and norms on exchange rates without forcing actions so drastic as to be counterproductively disruptive to the economy.

Such a policy would be strengthened if adopted by other countries, and the United States should encourage its widespread adoption.

Policies that strengthen international law to hold state-owned enterprises to agreed-upon standards

In the highly competitive global economy, many countries are developing strategies to support industries that can expand exports. One way to do this is through subsidies. But deploying prohibited or excessive subsidies that cause material injury to trading partners or failing to notify the WTO and trading partners of the full extent of subsidies constitutes a trade violation that injures U.S. workers and firms.

The WTO’s Agreement on Agriculture and the Agreement on Subsidies and Countervailing

Measures outline which subsidies are illegal and eligible for action. U.S. trade remedies law also includes countervailing duty provisions that offset foreign government subsidization of imported goods when subsidization is found to cause or threaten material injury to a domestic industry.

But remedying illegal subsidies in practice is complicated by three closely related factors:

- **Difficulty in differentiating between normal business activities and business subsidies in non-market economies:**

Business subsidies, by definition, involve government support for business activities. To determine whether such support exists, one has to differentiate between what is “government” and what is “business.” In the United States, Western Europe, and other market economies, this is usually easy. But for nonmarket state capitalist economies, this can be quite difficult. Massive state involvement in the economy—especially in state-owned enterprises involved in finance, production, and distribution—is much more prevalent in these countries. It can be challenging to ascertain when a government entity that operates as a business is behaving as a regular business or when, through its business transactions, it is subsidizing another domestic business at the behest of the government. Even ostensibly private entities in such countries can be so closely connected to the state through either formal or informal relationships that they, too, can be providing subsidies at the behest of the government. A related problem is that it is difficult to determine if a state-owned

enterprise is itself being subsidized by the government with which it, in some fashion, shares its financial books or if it is operating in a straightforward, business-like manner.¹⁴

- **Ambiguity in the definition of a state-owned enterprise:**

This complication spills over into the world of trade law. Under the WTO, monetary assistance can only be called a subsidy if the government or a “public body” provides it. But the meaning of “public body” is not well defined. The WTO’s Appellate Body, in a recent case, found that a state-owned enterprise is a “public body” if it “possesses, exercises, or is vested with government authority.”¹⁵ As a practical matter, this means that the International Trade Administration must now, on a case-by-case basis, determine if entities are “vested with government authority” in bringing actions to impose countervailing duties. That requires looking at the law under which the entity is incorporated, actions by the entity or its management, and whether the government exercises “meaningful control” over the entity. Such an investigation is difficult in countries where the relationships that define these things are often opaque.

- **Complexity of discerning the existence and scale of the subsidy:**

In state-capitalist economies, a company may be heavily under the influence of the state for some purposes and not others, and it may be motivated by the desire for profits for some purposes but motivated by state interests for others. And a subsidy for a business may come more in the form of the cumulative



Port of New Orleans Napoleon Container Terminal is seen on the Mississippi river.
AP PHOTO/JUDI BOTTONI

impact of such a system than from single, clear-cut transactions. The accumulation of preferred access to bank capital, below-market-rate financing, favorable tax treatment, capital injections, and other advantages may add up to a meaningful subsidy even if no individual subsidy is of much significance. This makes it difficult to discern when and where illegal subsidization occurs and what the scale of the subsidy is.

A great deal of energy and resources are applied to resolving these ambiguities when a particular case calls on authorities to do so. The effort required effectively limits the feasibility of fully addressing the problem of U.S. businesses and workers trying to compete

against subsidized competitors. Solving this will be difficult, but the United States should try to ensure that our government agencies are in the best position possible to address illegal subsidies and that the WTO's rules enable rather than hinder aggressive enforcement.

To do this, the United States should:

- Push the WTO to more broadly define what a “public body” is and when a business is acting as a public body, so that all the various mechanisms through which governments may deliver subsidies are accountable under international trade law. In addition, the WTO rules need to be revised to set more clear-cut param-

eters for determining what activities are done at the behest of the government, how businesses benefit from their association with government, and what the cumulative level of subsidy is. There should be presumptions of subsidy when specified thresholds of government engagement are met and when there are benefits that appear to be better than obtainable on the open market.

- Negotiate rules in new trade agreements that ensure state-owned enterprise operations are consistent with the principles of “competitive neutrality.” That is, public-sector business activities that are in competition with those of private-sector entities should not have competitive advantages simply by virtue of their government ownership or control. These rules are immediately relevant for the Trans-Pacific Partnership negotiations currently underway.
- Require in new trade agreements that countries report their state-owned enterprises and the countries in which they operate, and that the enterprises provide basic data on operations and financials to their trading partners on an annual basis.

Policies that address intellectual-property infringements

Innovation is critical to economic growth and competitiveness. The exploitable value of innovation resides in the form of intellectual

property, making intellectual property, like all valuable things, a target for theft. Policing intellectual-property theft is, however, much harder than tracking down a stolen car. In areas where technology is rapidly evolving, it is often difficult to tell whether an evolution is based on a stolen idea with a few enhancements or constitutes something fresh and new. Additionally, there are many complicated relationships between individuals and companies that make standards for ownership and conditions for transfer of ownership of intellectual property unclear.

Intellectual-property issues extend far beyond the unlicensed production of pharmaceuticals, software, and other media to valuable industrial technologies and organizational practices. Intellectual-property issues have as much to do with foreign direct investment rules that require technology transfer as they do with protecting information technologies from outright theft.

The protection of intellectual property is essential for an innovation-based economy such as the United States. Based on its own research and extensive consultation with stakeholders, USTR compiles a “priority watch list” of countries that have extensive intellectual-property rights, or IPR, infringements.¹⁶ USTR identified 13 countries on the priority watch list in 2012: Algeria, Argentina, Canada, Chile, China, India, Indonesia, Israel, Pakistan, Russia, Thailand, Ukraine, and Venezuela.¹⁷ USTR focuses its IPR-enforcement efforts on the countries that are on the list. But as of now, USTR relies heavily on bilateral dialogue as the best

way to resolve IPR disputes. If that doesn't work, it goes through the World Trade Organization's dispute settlement procedures. But this way of dealing with countries that violate intellectual-property laws is not a significant enough deterrent. The U.S. International Trade Commission estimated that "U.S. firms' reported losses from IPR infringement in China amounted to about \$48 billion in 2009."¹⁸ These are not just dollars lost but in some cases are businesses and jobs lost as well.

To protect U.S. intellectual properties, the United States government should:

- Include obvious forms of intellectual-property-rights rules in the National Trade Compliance Database. An example of an IPR requirement that could be put in the database would be government use of only licensed copies of protected software.
- Establish a 90-day time limit for negotiations with WTO member countries that are on the Special 301 Priority Watch List. After that, cases would be referred to the WTO's dispute-settlement board and the appellate body if needed. The board's authority to issue decisions that allow the United States to impose trade sanctions would put pressure on the infringing country to not drag out negotiations. If the United States and the infringing country have signed other agreements that have IPR protections, USTR would have the option of using dispute-resolution mechanisms or remedies specified in those agreements instead of going to the WTO.
- Use new trade agreements as opportunities to define consequences of different forms of IPR infringements. The Trans-Pacific Partnership negotiations, for example, offer an opportunity to write new agreements that provide for consequences to kick in automatically if an investigation confirms that there is an IPR infringement, whether those consequences involve domestic redress or taking a case to the WTO.
- Put IPR reform on the agenda for the WTO. The WTO's agreement on the trade-related aspects of intellectual-property rights, or the TRIPS agreement, establishes minimum levels of intellectual-property protections that WTO members have to give one another. But these minimum standards provide inadequate protection, especially in today's world where rapid technological advances and global value chains are making it easier to violate intellectual-property rights. Current language has failed hugely in this area, and greater protections are needed.

Policies that show global leadership to make more jobs 'just jobs'

In order to rebalance the long-running U.S. trade deficit, the U.S. economy will need to start exporting more, and the government can play a key role in achieving this goal. Ninety-five percent of the world's consumers, accounting for 75 percent of the world's purchasing power, reside outside the United States and are potential customers for the

goods and services produced by American workers and businesses.¹⁹

Rising living standards through the creation of “just jobs”—jobs that provide appropriate remuneration, labor rights, and opportunities for upward economic mobility—help create new markets for U.S. products, thus improving opportunities to export and creating jobs at home.²⁰ Just jobs also help create a fairer, competitive global economic playing field so that countries cannot leverage poor labor standards for economic gain.

The United States can play an important role in creating this virtuous circle of broad-based economic growth by making just jobs a priority in its foreign assistance, trade, and investment policies. Specifically, we recommend:

- Promoting greater coordination across U.S. government international agencies and consistency in their policies to ensure maximum impact in promoting just jobs internationally, especially in technical assistance to help other countries spur job growth
- Requiring integration of just jobs into the overall development objectives of the U.S. Agency for International Development
- Promoting strong labor provisions in all trade and investment agreements, starting with the Trans-Pacific Partnership and the Transatlantic Partnership, and working with international partners to incorporate a discussion of employment/jobs in multi-lateral trade discussions
- Updating the U.S. Foreign Assistance Act of 1961 to ensure that countries receiving foreign direct assistance comply with the same basic labor criteria that we use before granting a nation trade preferences
- Assuming leadership by U.S. representatives in fleshing out a specific plan for just jobs in the G20



Ninety-five percent of the world's consumers, accounting for 75 percent of the world's purchasing power, reside outside the United States and are potential customers for the goods and services produced by American workers and businesses.

Policies that promote exports

More exports mean more jobs created and more business investment in the U.S. econ-



In this Jul. 13, 2012, photo, a container ship from China is offloaded at Massport's Conley Terminal in the port of Boston.

AP PHOTO/STEPHAN SAVOIA

omy, which is why President Obama launched the National Export Initiative in 2010 with a goal of doubling exports by the end of 2014.²¹ In fact, the International Trade Administration estimates that every \$1 billion in U.S. exports supports approximately 5,000 new jobs.²² Part of the key to boosting U.S. exports lies in previously outlined policies that build human capital and invest in innovation—ensuring we have high-quality goods and services to export—and another key component is encompassed in policies already outlined in this trade section, which will ensure a fair playing field for competitive U.S. workers and businesses in the global economy. But more can be done to help businesses compete and expand exports to the world market.

Specifically we recommend:

- Ensuring that partnerships between federal, state, and local governments are assisting small and medium-sized businesses in increasing exports so that they are able to tap into growing overseas consumer markets
- Expanding, as necessary, the availability of export financing via the Export-Import Bank, to ensure that U.S. firms are competitive vis a vis firms from other nations with export banks that operate at higher authorization levels as a percentage of their GDP
- Boosting high-tech exports by continuing to streamline the export-licensing process

to further reforms that move appropriate export categories from the stringent and vague U.S. Munitions List to the more specific and easier to navigate Commerce Control List

Policies to increase foreign direct investment

There is a strong relationship between higher levels of foreign direct investment, or FDI, and domestic economic growth.²³ Moreover, the jobs created by foreign companies are a driver of middle-class growth because their average wages are 30 percent higher than average full-time wages in the economy as a whole.²⁴

Although the United States continues to lead the world in total FDI inflows, it has fallen from a peak of 45 percent of global FDI inflows in 1984 to just 15 percent in 2011.²⁵ In recognition of the critical role of FDI in the American economy, in 2011 the President's Council on Jobs and Competitiveness recommended a goal of attracting \$1 trillion in FDI over five years.²⁶

The key to attracting high-value FDI is making the United States a better place to do business through the broad range of proposals in this report that improve areas such as education and infrastructure. So, as with boosting

exports, many of the keys to growing FDI will be found in investments in our broader plan to boost the competitiveness of our workforce and our economic environment.


There are three further steps that we should take, though. We recommend:

- Increasing support for Select USA—the inward investment arm of the Commerce Department—as suggested by the president in his 2014 budget²⁷
- Restoring and expanding the collection of foreign direct investment statistics, which were eliminated from the Bureau of Economic Analysis's portfolio as a result of a reduction in the Department of Commerce's FY 2008 budget, so that these data can be used to analyze where the best opportunities are for expanding FDI²⁸
- Conducting more research at a federal level to clarify when FDI is beneficial and when it is not—keeping in mind that there are instances where investment in the United States may not be motivated by normal commercial objectives but instead by national objectives such as gaining technological leadership and the jobs that go with it.²⁹ ■

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SECTION 2 • CHAPTER 5

Rebuild our infrastructure

Workers perch on the structure of the Checkered House Bridge on Jun. 18, 2012 in Richmond, Vermont.

AP PHOTO/TOBY TALBOT

Quality infrastructure is a foundational building block that allows us to work together, get our goods to market, get ourselves where we need to go, and get clean water to our homes. One of the reasons for America's 20th century success was not just that we were the largest economic power in the world but also that we were well connected.

From the vibrancy of the ports of Los Angeles and New Orleans and the western states' electrification made possible by the Hoover Dam to the great digs that cleared 21 miles of tunnels and 58 miles of tracks for the New York subway system and the grand project of connecting states and cities with more than 42,000 miles of roads in the national highway system, American infrastructure allowed American workers and businesses to compete and excel at home and abroad.

As our infrastructure has eroded, however, so too has the economic advantage it once gave us. In 2010 public spending on infrastructure

was about \$132 billion a year for transportation, energy, and water improvement—far short of the estimated \$262 billion a year in required spending over the next 10 years to get our infrastructure up to par.¹ It's not surprising, then, that our infrastructure report-card grade from the American Society of Civil Engineers is a "D+."²

Having neglected our infrastructure for too long, it is now time to invest—and to do so in a strategic, cost-effective way. For this reason, we propose policies to:

- Launch a National Infrastructure Council

- Leverage private-sector investment via a National Infrastructure Bank
- Substantially increase federal investment

Infrastructure investment also carries the benefit of adding much-needed jobs to our economy. Studies have indicated that for every \$1 billion of government infrastructure spending, between 4,000 and 18,000 jobs are created.³ This is why President Obama’s Jobs Council called infrastructure investment a “two-fer,” meaning it results in job creation in the short term and greater economic competitiveness over the long term.⁴

Policies to launch a National Infrastructure Council

The White House should create a National Infrastructure Council made up of the representatives of more than a dozen infrastructure-oriented agencies to assist with the integration of infrastructure planning between private partners, federal agencies, and state and local governments (see box on page 196). The council would not shift authority from the agencies that it represents but would function as a centralized policy planning and coordination entity.

Specifically, it would:

- Assure that improvements made to infrastructure by one state, department, or agency will be taken into account by all other planning entities

- Increase the economic and societal returns of infrastructure funding by developing a best-practices institute that creates models for construction cost reduction, accelerated project selection, and preventative maintenance
- Collect and assist states in developing prospective projects that are good candidates for collaboration with private-sector partners
- Consolidate water quality and quantity oversight in an accountable way by increasing the communication and integration of the five federal agencies and departments—the Army Corps of Engineers, the Department of Transportation’s Maritime Administration, the Environmental Protection Agency, the Federal Emergency Management Agency, or FEMA, and the Department of Agriculture—that currently play a role in water infrastructure
- Report to Congress and the public on infrastructure issues of national importance such as accounting for the impact of climate change on infrastructure needs and developing need-based measures for distributing federal funds for infrastructure

Federal investment in infrastructure is currently conducted in a fashion that does not fully integrate infrastructure improvements by each federal agency into one overarching solution to each specific area of need. The Department of Transportation, for example, which manages freight-rail improvements through the Federal Railroad Administration, does not coordinate with the Army Corps

Infrastructure

Problem: The highways, bridges, railways, water systems, and power systems that form the bedrock of an economy—our infrastructure, without which we cannot work or even get to work—currently gets a D+ grade from the American Society of Civil Engineers, at a huge cost to American workers and businesses.

Solution: Develop a coherent infrastructure strategy, encouraging the private financing of public projects, and increasing federal direct investment in infrastructure.

Key policy ideas:

- Launch a National Infrastructure Council to help departments and agencies better align scarce infrastructure resources with the country's most pressing needs.
- Create a National Infrastructure Bank to encourage private financing of public infrastructure projects that generate revenue through tolls and other user fees.
- Add \$58 billion in new annual federal infrastructure investments—almost \$600 billion over the next decade—to build roads, bridges, public-transit systems, ports, waterways, dams, levees, and water systems.
- Change formula funding for infrastructure so that all funds are allocated based on needs.

Other proposed infrastructure policies include reforming federal highway policy to remove the bias against maintenance and repair, and ensuring future infrastructure investments account for the impact of extreme weather, sea-level rise, and other climate-change impacts.

Outcomes: The United States will earn an “A” on infrastructure readiness from the American Society of Civil Engineers and will eliminate the infrastructure-funding gap. ■

Composition of a National Infrastructure Council

Critical to the success of this council is its leadership in acting as a trusted neutral party with deep expertise in infrastructure. The council should include the directors and commissioners of the following federal agencies and departments:

- Department of Agriculture, Office Rural Development
- Department of Agriculture, Natural Resources Conservation Service
- Department of Commerce, National Oceanic and Atmospheric Administration
- Department of Defense, Army Corps of Engineers
- Department of Energy, Office of Electricity Delivery and Reliability
- Department of Interior, Bureau of Reclamation
- Department of Transportation, Federal Aviation Administration
- Department of Transportation, Federal Highway Administration
- Department of Transportation, Federal Railroad Administration
- Department of Transportation, Federal Transit Administration
- Department of Transportation, Maritime Administration
- Environmental Protection Agency, Office of Ground Water and Drinking Water
- Environmental Protection Agency, Office of Wastewater Management
- Federal Communication Commission
- Federal Emergency Management Agency
- Federal Energy Regulatory Commission

of Engineers on freight improvement in the Mississippi River basin. As a result, the limited federal funds spent on infrastructure are not dispersed in a way that most efficiently utilizes the entire transportation system in the United States.

A national interagency infrastructure planning council can help to ensure that departments and agencies make the best use of scarce resources across all federal infra-

structure-investment programs.⁵ Although Congress sets out the general rules for where infrastructure funds are spent and, to some degree, how they are spent, agencies have some ability to increase the efficiency of infrastructure spending. That is most likely to occur if the key agencies work together and if White House leadership is applied to accelerate efforts to better align infrastructure resources with the nation's most pressing infrastructure needs.

A national infrastructure council could also ensure that timely and appropriate decisions are being made in regard to infrastructure decisions around information and communications technology, which is an increasingly critical component of our national economic competitiveness.

Policies that leverage private-sector investment via a National Infrastructure Bank

In October 2011 President Obama's Jobs Council recommended the creation of a "new national infrastructure financing organization that complements existing programs and attracts private capital to infrastructure projects."⁶ Indeed, at a time of inadequate federal funding for infrastructure and tightening state budgets, policymakers should look to encouraging the private sector to help finance large-scale infrastructure projects.

That's why we propose the creation of a National Infrastructure Bank, a federal entity that would provide partnerships between state governments and their private investors with direct loans and loan assistance to help large infrastructure projects get off the ground. A National Infrastructure Bank would be accountable to both Congress and the executive branch and would closely coordinate strategy with the National Infrastructure Council. While encouraging private investment in infrastructure will not make up the entire funding shortfall our infrastructure is facing, it can help scarce federal funding go to areas not suitable for public-private partnerships.

Private-sector investors and companies can be important players in the funding of infrastructure projects by providing up-front financing in exchange for a dedicated stream of revenues from user fees or taxes. A National Infrastructure Bank would support these projects by providing direct loans, loan guarantees, or credit assistance, which would lower the costs faced by state and municipal governments and their private partners. The bank would create a more efficient environment for private investors to participate in rebuilding public assets.

The National Infrastructure Bank should be federally capitalized with at least \$10 billion in federal credit subsidies, and Congress should provide it with at least \$30 million annually to support the banks' administrative operation.

The idea of such a publicly chartered investment bank is not new. The European Investment Bank makes substantial infrastructure investments all over Europe.⁷ Meanwhile, the United States is missing an opportunity. Large infrastructure investors are putting their capital to work in other countries, where publicly chartered investment banks are making the process of identifying and investing in large-scale financially viable projects routine, predictable, and clear.⁸ Some of that capital could instead be put to use here in the United States.

There is ample evidence that once a ready and financially viable pipeline of projects is created, investors will pony up.⁹ A review by the Organisation for Economic Co-operation and Development found that one of the main bar-

riers to investment in infrastructure in the United States is that the “United States infrastructure market is immature and has not provided many opportunities to investors,” in part because of a lack of transparency for private-investment opportunities.¹⁰

In addition to providing direct loans and credit enhancement, a National Infrastructure Bank can also identify worthy multistate and intermodal projects and can assist states in adapting to project finance in infrastructure. In this role, the bank would review the merits and financial feasibility of large-scale projects. This analytical function is especially important where integrated infrastructure projects are undertaken—for example, where road projects are built in tandem with rail, or where freight projects are built in tandem with port expansions. Projects of this sort have no federal “home,” and as such, private financiers and state and local agencies seeking support have to make redundant pitches to different federal agencies.

An infrastructure bank can also help states and municipalities adapt to project finance in infrastructure. While the universe of significant infrastructure projects in the United States that can be debt financed is immense, when it comes to the basic program documents, sample contracts, and financing worksheets that enable project flow, many state and local governments are unprepared. In addition, there are projects that are financeable but so small (less than \$50 million) that going into the current debt market is prohibitively expensive.¹¹

We estimate that there may be as much as \$20 billion annually in financeable transportation and water projects that could be readied for market investment.¹² The creation of public-private partnership resources and the aggregation of debt issuance by a centralized federal bank can help motivate the implementation of project finance on the state and local levels.

Here’s an example: In spring 2012 the mayor of Chicago, Rahm Emanuel, announced the formation of the Chicago Infrastructure Trust, or CIT.¹³ The trust is a city effort to match public infrastructure needs to private investors on a case-by-case basis. The city financed the administrative costs of the trust with \$200,000 in 2012 and issued grants totaling \$2.5 million to help finance projects.¹⁴ In return, the trust is expected to oversee \$7 billion in infrastructure improvements in the city.¹⁵ As *The Economist* pointed out, “several financial institutions have already lined up to make investments totaling \$1.7 billion, among them Macquarie Infrastructure and Real Assets, Ullico, Citibank, and JP Morgan.”¹⁶ Given that such a large amount of private infrastructure funding can be encouraged just through connecting public projects with private investors, an infrastructure bank that combines this function with loans and loan assistance will be able to provide significant funding to help improve infrastructure in the United States.

For more information, see the Center for American Progress’s report, “Creating a National Infrastructure Bank and Infrastructure Planning Council.”¹⁷



In this Jan. 23 2013 photo, a contractor works at the Second Avenue Subway construction project in New York.
AP PHOTO/MARY ALTAFFER

Policies to increase federal investment in national infrastructure

Along with drawing in private investment to finance a larger share of the infrastructure improvement in the United States, the federal government should also increase its own funding for infrastructure. To invest in America's competitiveness and future economic growth, we recommend:

- Increasing annual federal funds spent across all infrastructure sectors by \$48 billion, along with \$10 billion in new federal loan authority.¹⁸ This amount would incentivize an additional \$11 billion in state
- and local matching funds and leverage an additional \$60 billion in private investment for a total of \$129 billion in new infrastructure investment annually. These funds would improve U.S roads, bridges, public transit, ports, airports, waterways, dams, levees, and public water and sewage systems. In addition, this sum would support investments in improving the national energy grid.
- Converting all federal infrastructure-funding formulas to need-based formulas. Not only are current investments inadequate, existing federal investments do not always flow where they're most needed. A quarter of the highway funds are distributed via

archaic distribution formulas that drive funds disproportionately to selected states without regard to need.¹⁹ Every dollar inefficiently doled out through the highway bill is taken away from an important project elsewhere. Instead of relying on outdated formulas, all funds should be distributed through need-based formulas or programs that distribute funds based on objective metrics of usage, ability to relieve congestion, impact on greenhouse-gas emissions, and cost effectiveness.

- Require infrastructure funds to “fix it first,” meaning pay for necessary ongoing maintenance and repair costs where those investments would be more cost effective. Federal highway policy includes a bias toward new construction and major repairs over capital maintenance, caus-

ing existing infrastructure to erode to the point where the cost of repair ends up being more expensive than the cost that would have been incurred with routine capital maintenance.²⁰ When it comes to water systems, federal funds cannot be used for basic repairs unless those repairs are needed to meet federal standards for water quality.²¹ As a result, water systems usually wait until a water-main breaks to make needed repairs. By permitting federal funds to pay for ongoing capital improvements, the overall cost of maintaining our infrastructure can be reduced and business productivity can increase.

For more details on infrastructure proposals from the Center for American Progress, see our report titled “Meeting the Infrastructure Imperative.”²² ■

Adapting to climate change

The United States recently had a deadly and costly reminder of the effects of climate change when Hurricane Sandy battered the East Coast in October 2012, claiming more than 100 lives and costing \$60 billion in federal disaster relief and recovery.²³ Yet despite its severity, Hurricane Sandy was only one of 25 climate-related extreme weather events that each caused at least \$1 billion in damages in 2011 and 2012, with the total for all these events being \$188 billion in damages.²⁴

According to estimates, we've seen nearly a fivefold increase in extreme-weather disasters in the past three decades.²⁵ Scientific consensus holds that there is a strong relationship between extreme weather and climate change, and analysts have concluded that the increasing frequency of disasters is driven by climate change and is likely to continue into the future.²⁶

Other effects of climate change include:

- Sea-level rise of 2 to 6 feet by 2100, in addition to the 8-inch or more increase that some U.S. coastal areas have already experienced in recent decades²⁷
- Increased frequency of extreme weather, including heavy-precipitation events and longer and more extreme droughts and heat waves, with resulting challenges to livestock and crop production, migration of diseases and pests, and loss of species and their natural habitats

While mitigating the effects of climate change is crucial, some climate change will continue to occur even if we immediately cease emitting carbon dioxide.²⁸ Mitigation must therefore be coupled with climate-change adaptation in which we prepare for the impacts of previous emissions. As a nation, we need to quickly and practically assess our vulnerabilities to climate change and take measures that enable us to avoid or minimize possible disruptions and damages to communities, local economies, and public health. Taking strong steps on adaptation will also convert climate-change impacts into potential opportunities for our country and fellow citizens.

In order to adapt to climate change, we recommend that a lifecycle analysis that includes consideration of the impact of climate change on a project is included in the criteria by which federal projects are assessed. The Federal Emergency Management Administration, or FEMA, estimated that every \$1 spent on resiliency yields \$4 in future benefits.²⁹ As a result, direct federal funds through programs such as the Highway Trust Fund and federal loans through the national infrastructure bank described above should be tied to projects that help communities and their infrastructure become more resilient to climate-change-related impacts.

To further assist communities in reducing their vulnerability to extreme weather, we propose the creation of a community resilience fund dedicated solely to providing financial and technical assistance to vulnerable communities threatened by future extreme-weather events.³⁰

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SECTION 2 • CHAPTER 6

Restore the housing cornerstone



Potential first-time home buyers Janet and Greg Schieber tour a home for sale in the Highland Park area of Los Angeles.

AP PHOTO/DAMIAN DOVARGANES

Housing represents one-fifth of the U.S. economy and is critical to many other areas of the economy—from finance to construction and manufacturing. Since the sluggish housing market remains one of the biggest drains on our economic recovery and a liquid, stable, and equitable market is critical to a long-term growth plan, digging a way out of the current crisis and charting a responsible path forward is a key piece of our economic-growth strategy.

The historic crisis in the housing market eviscerated \$7 trillion in home equity³ and left more than one in four homeowners owing more to the bank than their houses were worth.⁴ As families struggle through the ongoing crisis, the U.S. mortgage market remains on life support. The federal government—through Fannie Mae, Freddie Mac, and the Federal Housing Administration—backs more than 85 percent of new home loans made each year, as private capital has withdrawn from most parts of the market.⁵


Homeownership plays a central role for many in America's middle class as they build wealth and save for the future, capitalize small businesses, seek to pay for college, and look for economic security in challenging times, particularly the elderly. According to a 2012 Pew Research Center study, homeownership comes just behind job security and health care when it comes to people's perceptions of what it takes to be in the middle class.⁶ Policies for a strong and stable housing market are an important part of a long-term economic strategy.

Yet more than four years after Fannie and Freddie were placed under government conservatorship, policymakers have made little progress winding down the mortgage giants and establishing a sustainable system of U.S. housing finance. Meanwhile, lenders have significantly tightened credit standards, leaving many families ready to buy a home with no clear path to doing so.

clothes and health care and 40 percent less on food than families in affordable units.⁸

We therefore propose policies to:

- Provide access to sustainable homeownership or affordable rental housing for all eligible borrowers by developing a more responsible and sustainable housing-finance system that serves all communities and provides countercyclical capacity, along with striking the right regulatory balance and ensuring that high down payments are not a bar to sustainable homeownership
- Help underwater homeowners deleverage debt, avoid foreclosure, and lower their monthly housing costs by offering better solutions for delinquent homeowners and establishing more refinancing opportunities for current borrowers



The historic crisis in the housing market eviscerated \$7 trillion in home equity and left more than one in four homeowners owing more to the bank than their houses were worth.

At the same time, more than 100 million Americans live in rental housing, and one in four renters pays more than half their monthly income on rent.⁷ High rents depress demand for other goods and services, which also hurts local communities. According to Harvard's Joint Center on Housing Studies, families in unaffordable housing units spend 50 percent less on

Policies to promote sustainable homeownership and affordable rental housing

Develop a more responsible and sustainable housing-finance system

Just about everyone agrees that the current level of government support to the housing market is too high and that private investors should assume more risk in the mortgage market. The question is how best to move in the right direction while still offering broad and consistent access to safe, affordable mortgage credit across all communities.

Housing

Problem: The national housing-finance system that has supported a key area of the U.S. economy since the Great Depression has broken down at huge personal cost to millions of Americans and to the country's broader economy. Private capital has fled the market, with the federal government now backing 90 percent of all home loans.¹ One in four renters pays more than half their monthly income on rent.²

Solution: Build a more responsible and sustainable housing-finance system that serves all communities, offering homeownership opportunities, as well as encouraging development of affordable rental housing.

Key policy ideas:

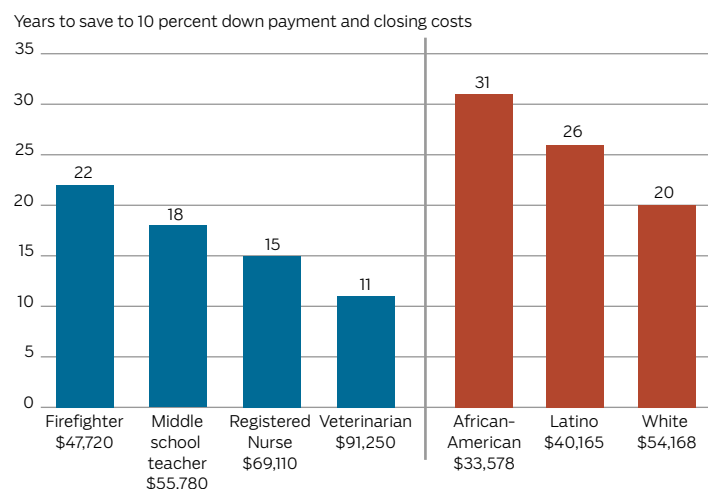
- Replace the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation, also known as Fannie Mae and Freddie Mac, with government-chartered, privately funded entities that guarantee qualifying mortgage-backed securities and are backed by government reinsurance.
- Promote safe and sustainable lending by preventing predatory practices and aligning incentives among borrowers, mortgage originators, and securitizers, rather than by universally requiring a 20 percent down payment.
- Require lenders to forgive the underwater portion of mortgage balances when doing so would return more value to investors than allowing a home to go to foreclosure.

Other policies to strengthen the housing market and overall economy include refinancing underwater homeowners, providing government support for the development of affordable rental housing, and homeownership and rental strategies that can stabilize and revitalize the communities hardest hit by the financial crisis.

Outcomes: A stable and dynamic housing sector will allow access to safe, sustainable homeownership or affordable rental housing for all families. ■

FIGURE 11

The number of years it takes to save 10 percent of down-payment and closing costs



Source: Center for Responsible Lending calculations based on 2010 American Community Survey and Bureau of Labor Statistics Median Income data. Calculations based on a 2010 median priced house (\$158,100), an annual savings rate dedicated for down payment of 2% of income, and closing costs totaling 5% of home purchase price.

Two years ago, a group of housing-finance experts, affordable-housing advocates, and leading academics brought together by the Center for American Progress released a detailed plan for responsibly winding down the mortgage giants Fannie Mae and Freddie Mac and bringing private capital back into mortgages.⁹ Our plan calls for replacing Fannie and Freddie with several government-chartered, privately funded entities that guarantee qualifying mortgage-backed securities. These entities will price accurately for risk, enabling them to create a privately funded loss reserve. If one of the entities fails, the loss reserve will step in to back the securities it has issued. Government funds would only be tapped in the event of a catastrophic market downturn that wiped out all loss reserves, which is now significantly less likely given the

banking and mortgage reforms in the Dodd-Frank Act and related regulations.

Our plan also includes provisions to ensure that mortgage lenders and investors serve the entire mortgage market equally, and it establishes special funds—fully funded by market transactions—to responsibly expand affordable housing and promote access to mortgage credit for underserved populations. By maintaining an explicit and limited government guarantee on certain types of mortgage debt, our proposal preserves the 30-year fixed-rate mortgage, now a pillar of the U.S. mortgage market, and ensures that an appropriately broad range of families have access to home ownership. The plan also provides adequate liquidity for the multifamily market, which is crucial to enabling the creation of affordable rental housing.

Strike the right regulatory balance

As regulatory agencies seek to protect consumers and prevent future housing crises, they face the difficult task of striking the right balance among various considerations to ensure that lenders originate mortgages that are both safe and affordable. Agencies should not water down anti-predatory regulations aimed at ensuring proper underwriting, and they should align market incentives so that mortgage originators and securitizers succeed only if homeowners succeed. At the same time, regulators should not enshrine a requirement of 20 percent down payments, which is out of reach for the majority of American homeowners and prospective homebuyers.



Brandon Joyner, 8, right, bounds ahead of his mother Monica Spann, 37, at their new home in Capitol Heights, Maryland, Jan. 29, 2008.

AP PHOTO/JACQUELYN MARTIN

Additionally, the Consumer Financial Protection Bureau, or CFPB, and other regulators should ensure high-quality mortgage servicing and loss-mitigation options. One of the key reasons that the foreclosure crisis became so severe and has lasted so long was the belated and bungled response by mortgage servicers to the crisis. The CFPB has already issued a first set of rules that will improve servicing and provide homeowners with some ability to enforce the rules privately, but additional safeguards are necessary to ensure that safe, sustainable loan-modification options are available to all homeowners from all servicers.

Ensure that high down payments are not a bar to sustainable homeownership

Regardless of the outcome of the various rulemakings, down-payment requirements are likely to remain high for some time. These requirements will be especially onerous for lower-wealth families that may have the income to support successful homeownership but would have to save for many years for the down payment. Lack of savings for a down payment has long been recognized as a key barrier to homeownership for lower-wealth families.¹⁰



Amanda Hollander, left, and Katy McCormack
at their home in Portland, Maine, Feb. 28, 2013.
AP PHOTO/ELISE AMENDOLA

For this reason, we support efforts to provide down-payment assistance to those families, as long as the families are offered safe mortgage products, prepurchase counseling, and other supports ensuring successful homeownership.

Examples of these efforts include:

- **State housing-finance agency down-payment assistance programs:** These programs assist borrowers with down-payment and closing costs either through grants or loans. One successful model of such a program is Massachusetts'

SecondSoft Program.¹¹ The Center for American Progress has proposed a plan for bonds that can help support state housing-finance agencies so that they can offer programs of this nature.¹²

- **Shared-equity products:** In these programs, the government invests funds to provide lower-income buyers with down-payment assistance in exchange for a share in the appreciation when the home gets sold. Typically the homeowner still builds wealth as home values rise but does not walk away with a windfall. For details on how shared equity programs work, see the 2010 Center

for American Progress report, “A Path to Homeownership.”¹³

- **Matched-savings programs:** These programs encourage potential homeowners to save for a down payment by matching their own savings with private funds, government funding, or tax incentives. In 2007 the Aspen Institute developed a proposal for tax incentives in which a cumulative investment of \$28 billion in matching funds over 10 years would create 4 million new homeowners with incomes below \$50,000 for individuals and \$75,000 for households, and \$457 billion in new mortgages.¹⁴

Policies to help the housing-market recovery

The steep decline in housing prices that both triggered the financial crisis and were exacerbated by it have left more than one in four homeowners owing more to the banks than their homes are worth, which translates to nearly \$700 billion in “negative equity,” or the total amount that these homeowners are underwater.¹⁵ Many of these homeowners are already behind on their monthly payments or in foreclosure.

A housing recovery will eventually help some of these homeowners, but barring an ill-advised effort to reinflate a dangerous housing bubble, it is likely that we will need to

deal with the unique problems of underwater mortgages for some time to reduce the resulting drag on the market.

Deploy a principal-reduction program

Principal reduction—which means lowering the outstanding balance of an underwater loan to reflect current market value as part of a loan modification—can play a major role both in ensuring long-term success of loan modifications and in stabilizing the fundamentals of the nation’s hardest-hit housing markets. While many investors are already forgiving principal balances, Fannie Mae and Freddie Mac are still not permitted to do so by their regulator, the Federal Housing Finance Agency. That agency rejected an offer from the Treasury Department to pay a percentage of the principal forgiveness using Troubled Asset Relief Program, or TARP, dollars already earmarked for foreclosure prevention, although the agency’s own analytics demonstrate that permitting it would save money for Fannie Mae and Freddie Mac.

Allowing Fannie Mae and Freddie Mac to do principal forgiveness is sufficiently important that, if necessary, the Treasury Department should offer to pay the full cost using TARP funds rather than just a percentage.¹⁶ In addition to forgiving principal outright, investors could offer shared-appreciation loan modifications, where they write down some principal in exchange for a portion of the future appreciation on the home later.¹⁷



**Refinancing mortgages
into rates that are now at
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The Center for American Progress also suggests that states follow the lead of the California, Nevada, and Arizona Hardest Hit Fund programs, which use federal TARP dollars to pay the full cost of principal-forgiveness reduction for current and delinquent homeowners with

Fannie and Freddie mortgages.¹⁸ For states without Hardest Hit Funds, such forgiveness could be paid for using funds from the National Mortgage Settlement or related settlements.


Give current borrowers more refinancing opportunities

Refinancing mortgages into rates that are now at historical lows is a great way to enable families to avoid default and put more money into their pockets that can be spent elsewhere in the economy.¹⁹

Families with little or no equity in their homes due to the steep declines in the housing market are, however, often unable to obtain refinancing. Additional steps should be taken to improve the Home Affordable Refinance Program, which helps homeowners whose mortgages are owned by Fannie Mae or Freddie Mac,²⁰ to help families with private mortgages refinance,²¹ and to use Hardest Hit Funds to promote refinancing.²² ■

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SECTION 2 • CHAPTER 7

Ensure capital is available for growth

Specialist Joseph Mastrolia, left, works with traders at his post on the floor of the New York Stock Exchange, May 31, 2013.
AP PHOTO/RICHARD DREW

In a complex global economy, it is more important than ever that our banking and financial system functions efficiently and effectively. America's 300 million engines of growth need strong capital markets to grow businesses and bring their ideas to fruition. Simply put, we all have an interest in strong capital markets.

The U.S. financial sector is the largest in the world, tripling in size relative to national income in the post-World War II period.¹ The 2008 financial crash, however, laid bare weaknesses in the sector that had been building up for years, and the consequences for American workers and their families were severe. The cost of the crisis has been seen in millions of jobs lost and the destruction of \$17 trillion in household wealth.² The average net worth for American households dropped from \$126,400 in 2007 to \$77,300 in 2010³—wiping out almost two decades of gains and dramatically weakening the middle class.

The biggest financial crash since the Great Depression was followed by the most sweep-

ing reforms since the banking acts of the 1930s. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 pledged to protect American taxpayers and end the era of “too big to fail.”⁴

In the wake of the crisis, many economists look at the increased share of the economy that the financial industry comprises as a cause for concern and possibly the product of rent seeking, where market power and the protections and supports of the government have rendered the financial sector more profitable than other sectors.⁵ The concern is that the growth of the financial sector has the effect of diverting investment from nonfinancial sectors, which would make better use of that capi-



The average net worth for American households dropped from \$126,400 in 2007 to \$77,300 in 2010 —wiping out almost two decades of gains and dramatically weakening the middle class.

tal. The counterargument is that the growth of the financial sector reflects a competitive advantage for the United States in finance, and the industry is a source of jobs and profits that ultimately benefit the economy.

To whatever degree the points above on the financial sector are true, one of the impetuses of Dodd-Frank was to reduce the level of support for the industry from government. Ultimately, the government will always have a role to play as lender of last resort and in resolving failed financial institutions, but Dodd-Frank, in essence, strengthens the regulatory structure so that any government support comes with strings attached, conditions that would effectively lessen the value to the industry of the supports it would get.

In 2012 the Center for American Progress published an assessment of Dodd-Frank, titled

“Dodd-Frank Financial Reform After Two Years,”⁶ noting what had been accomplished already and the important work outstanding in implementation. At this point it is premature to predict whether the implementation of Dodd-Frank will have its desired effect. But one thing is certain: It is critical that the Dodd-Frank rule writing be finished quickly so that the law can be allowed to work—from addressing proprietary trading and moving derivatives onto open exchanges to effective compensation reform.

With so much important work still to be done to implement Dodd-Frank, the question we wish to address is, what else can be done to encourage productive investment and improve economic growth?

We propose two ideas for policy solutions:

- Implementing a financial transaction tax, which would discourage high-frequency trading and dampen excessive speculation
- Supporting small-business lending, which fuels a critical part of the economy

Policies to curb problematic high-frequency trading

The majority of stock market trades are now made by high-frequency traders.⁷ All trades in stock markets and other assets are by nature speculative. Whereas some buying and selling represents the investment decisions of those betting on real growth prospects or people needing financial services to hedge risks, significant trading activity is increasingly turning toward computerized high-volume trades with

Capital

Problem: Key reforms passed as a result of the recent financial crisis have yet to be fully implemented, creating direct and indirect risks for American families and future economic growth. Additionally, popular trading strategies conducted without adequate supervision or regulation have the potential to destabilize markets, and difficulty accessing capital serves as a barrier to growth for some small businesses.

Solution: Ensure that the remaining elements of Dodd-Frank are implemented quickly and effectively. Strengthen markets by addressing the problematic aspects of high-frequency trading and supporting small-business lending.

Key policy ideas:

- Institute a small financial transactions tax.
- Support small-business lending via the Community Development Financial Institutions Program, or CDFI Fund, the State Small Business Credit Initiative, the Small Business Lending Fund and the New Markets Tax Credit.

Outcomes: The United States will have stronger, more vibrant capital markets as a result of smartly enforced regulation and support for small business. ■

dubious social value. Such trading based on tiny changes in prices have amplified the market's undulations and put retail investors at significant disadvantage to financial insiders.⁸ They have also been associated with flash crashes, where market prices fall dramatically in the midst of a perfect storm of algorithmic trading.

A second problem with some high-frequency trading occurs when some traders use technological and informational advantages to trade directly in front of a large order. To gain these advantages, some traders pay to locate their computers at the trading venues and pay to get information about orders made by other parties that allows them to trade before that information is available to the broader public—a practice known as front running.

In either case, these activities can divert capital from investment in the real economy and can undermine investors' confidence in our markets. Because these traders rely on making tiny margins on high volumes of trade, even a very small transaction tax would rein in the problematic aspects of the market.

More than 20 countries have some form of financial transaction tax, including many advanced economy countries and those with leading international financial centers, such as the United Kingdom, Switzerland, Hong Kong, and Singapore.⁹ There are also increasingly strong calls for such a tax to raise more revenues and promote more financial stability.¹⁰

As 11 countries in the European Union move forward with a financial transaction tax, the

United States should move forward with its own plan. We propose a tax applied at a very low rate—a 0.117 percent tax on stocks and stock options trading, a 0.002 percent tax for bonds, and a 0.005 for futures, swaps, and other derivatives trading—which would raise an estimated \$50 billion a year in revenues and, critically, would remove a source of instability in the market by eliminating front running that serves no useful economic function.

Policies that support small businesses

Small businesses play a critical role in the U.S. economy. According to the Small Business Administration, or SBA, firms with fewer than 500 employees employ half of all private-sector employees and pay almost half of total U.S. private payroll.¹⁵

Although weak consumer demand following the Great Recession remains the most pressing issue for small-business growth, for small businesses that do want to invest, lack of access to capital can also serve as a barrier to growth.¹⁶ According to a 2012 report by the Small Business Administration, “small firms have been losing ground in the competition with other uses of capital held by depository lending institutions.”¹⁷ This trend has been even more acute for small-business loans of \$100,000 or less.¹⁸

Until small businesses begin investing again in expansion and inventories, a key driver of economic growth will be missing from the U.S. economy. In order to improve small-business

Support for a financial transaction tax

A financial transaction tax has support from leaders in business and in economics.

“The tax costs to traders are basically zero, and the commission costs are half a penny a share or something like that. So we’ve taken the frictional costs out and that helps explain why we’ve had this orgy of speculation. No question about that. So I like the idea of a transaction cost.”

– John Bogle, founder of Vanguard¹¹

“These taxes will rebalance financial markets away from a short-term trading mentality that has contributed to instability in our financial markets. They also have the potential to raise significant revenue.”

– Open letter to the G20 from 52 financial-market professionals¹²

“The economic value of all this trading is dubious at best. In fact, there’s considerable evidence suggesting that too much trading is going on But wouldn’t such a tax hurt economic growth? As I said, the evidence suggests not—if anything, it suggests that to the extent that taxing financial transactions reduces the volume of wheeling and dealing, that would be a good thing.”

– Nobel Prize-winning economist Paul Krugman¹³

“The tax would fall most heavily on short-term holders of securities, such as high-frequency traders, hedge funds, and bank proprietary trading desks. It would fall least on long-term holders such as pension funds, life-insurance companies, and private equity firms. This would likely trigger a shift away from short-term trading in favour of long-term holding that will reduce misalignments in markets and their subsequent abrupt adjustments or crashes.”

– Stephany Griffith-Jones, Financial Markets Program Director at Columbia University, and Avinash Persaud, Chair of Intelligence Capital and member of the U.N. Commission on Financial Reforms¹⁴



In this Aug. 4, 2012 photo, fashion designer and entrepreneur Lynette Tyner works in her home studio in New York. Tyner can count herself among a growing group of minority and immigrant entrepreneurs who are turning to nonprofit micro-financing.

AP PHOTO/BEBETO MATTHEWS

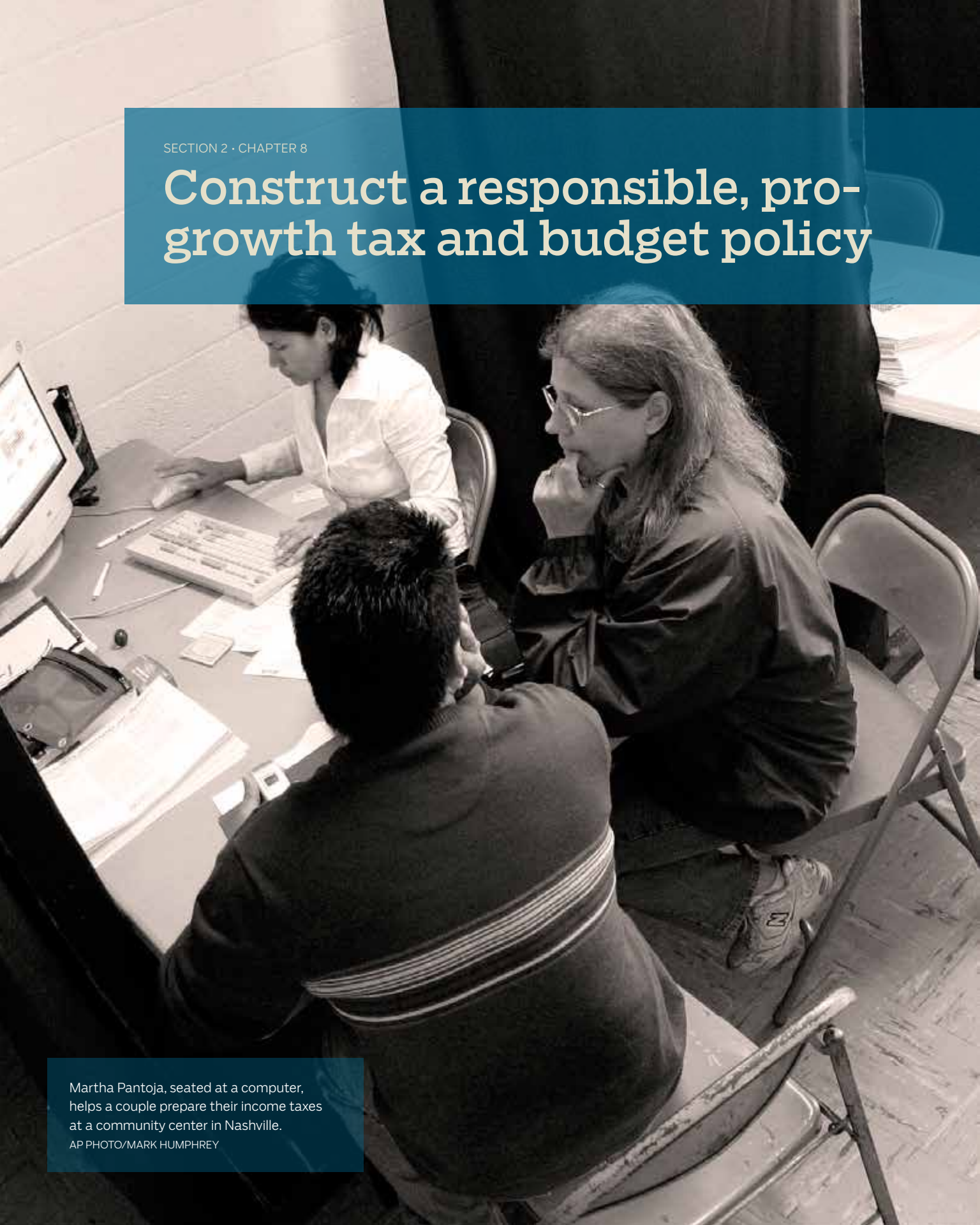
access to capital, we propose bolstering and reauthorizing a number of Treasury Department and SBA programs aimed at freeing up capital targeted to small and medium enterprises.

To support small-business lending, we encourage the following:

- Extending the eligibility window for the SBA 504 program's low-interest refinancing
- Authorizing an additional \$1 billion in funding for the State Small Business Credit Initiative, which supports states' small-business lending programs
- Reauthorizing the Small Business Lending Fund for two years with an additional \$4 billion to provide capital to community banks and community development loan funds to spur small-business lending
- Doubling the funding of the Community Development Financial Institutions Fund to provide investment, support, and training to CDFIs that provide financial services to underserved communities
- Making the new markets tax credit permanent, ensuring it works for entrepreneurs and small-business growth ■

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SECTION 2 • CHAPTER 8

Construct a responsible, pro-growth tax and budget policy

Martha Pantoja, seated at a computer, helps a couple prepare their income taxes at a community center in Nashville.

AP PHOTO/MARK HUMPHREY

The federal budget has a huge impact on the nation's economic health. The federal government's consumption and investment is a direct component of the country's overall economic output. It delivers billions of dollars in subsidies and grants to state governments, which themselves contribute directly to total gross domestic product.¹ A substantial portion of federal spending is simply payments to individuals, who then use that income to consume and invest, further contributing to the economy.

But beyond that, the federal government makes the investments and directs the resources that lay the foundations for the broader economy.

Furthermore, the tax code, which raises the revenue required to pay for government spending, constantly influences economic decision making, encouraging some activities while discouraging others. When the federal government doesn't raise enough in tax revenue to cover all of its spending, it must

borrow and accumulate debt, which affects national savings, interest rates, and the federal government's current and future capacity to consume and invest.

Precisely because of the enormous influence of the federal budget on the broader economy, it is critical that these elements all be properly calibrated. Many of the policy proposals within this report address the direct investment and consumption elements of the federal budget, while some others



It is time to hit the reset button and move beyond a single-minded focus on the deficit to ask bigger questions about what investments we should be making in the future and how we should pay for these investments.

address features of the federal tax code. What remains to be addressed is how to combine the budget commitments we must make to ensure prosperity for all with a tax system that generates adequate revenues to produce a responsible long-term federal budget that reduces the gap between revenues and spending to a manageable level.

The federal budget has dominated the policy and political debate in Washington over the past three years, but the debate has been entirely centered around deficit reduction. It is time to hit the reset button and move beyond a single-minded focus on the deficit to ask bigger questions about what investments we should be making in the future and how we should pay for these investments. The fiscal outlook for both the medium term and the long term has

improved substantially compared to what it was just a few years ago, as Congress has enacted more than \$2.5 trillion in deficit reduction, health care cost growth has slowed dramatically, and we have gained a better understanding of what drives long-term debt projections.²

We have also seen what happens when policymakers allow concerns about the deficit to trump all other economic needs. European experiments with austerity have deepened the global economic crisis and increased human suffering across the continent. In the United States we have managed to avoid the scale of austerity implemented by Greece or even the United Kingdom, but we have also suffered from ill-timed and ill-targeted cut-backs and fiscal contraction.

Putting the federal budget onto a permanently sustainable path is still an important goal—inadequate revenues and ever-increasing debt will make it difficult for the federal government to meet the challenges of the 21st century. But our fiscal debate should not be dominated by discussions of debt and deficit. It should be about ensuring that the federal government is able to marshal its resources effectively to promote future economic growth and shared prosperity.

It is not always the case that a gap between spending and revenue produces negative economic outcomes. In fact, a budget deficit can, in some instances, be a good thing for the economy. A deficit can help smooth out unforeseen fluctuations in the private economy, prop up demand when it is lacking, and

Tax and budget policy

Problem: The federal budget is not serving our nation's needs. We are not raising enough revenue to pay the bills we're incurring, let alone to make the investments we need for the long-term economic well-being of the nation. The tax code has too many breaks that have outlived whatever usefulness they once had, and it has become, in some ways, ill-suited to a 21st century economy. On the spending side, we maintain programs that are not a good use of taxpayer dollars and neglect efficiencies that could save money.

Solution: Reform the individual income tax code to raise more revenue, while simultaneously simplifying and improving the fairness of the code. Focus on reducing the cost of health care by stripping out inefficiencies in federal health care spending. Cut costs by improving government efficiency and modernizing government operations. Reform the corporate income tax. Implement the growth-enhancing recommendations contained in this report.

Key policy ideas:

- Implement comprehensive individual income tax reform.
- Reduce federal health care costs by introducing reforms that will enhance competition,
- Create a framework for the key components of corporate income tax reform.
- increase transparency, improve health care delivery, and cut administrative expenses.

Other policies include improving the government's use of information technology to reduce fraud and improper payments and to close the "tax gap," updating federal excise taxes, and reducing spending in selected other categories.

Outcomes: The federal government will be able to fund necessary investments and operations without taking on an ever-increasing debt load, measured as a share of total economic activity. ■

finance critical public investments even when revenues run short. But a federal budget deficit can also be a drag on the economy, driving up interest rates, piling on debt that must eventually be paid back, crowding out private investments, and forcing painful cuts to public services. In order for the federal budget to lay the foundations for broad economic growth, deficits must be used when they are appropriate and reduced or even eliminated when they are not. In other words, the trick is to reserve the red ink for economic downturns and national emergencies.

Few would dispute that the past several years since the start of the Great Recession qualify as both an economic downturn and a national emergency. That is why the historically large federal budget deficits that we have experienced in recent years were inevitable, necessary, and appropriate. As the economy has improved, the budget deficit has declined substantially.³ In fact, this year's budget deficit is expected to be just less than half the size of the budget deficit only four years ago, and the deficit is projected to decline further over the next few years.⁴

The trouble is that in later years, the budget deficit is projected to creep back up. Under ordinary economic conditions, large sustained deficits carry with them several specific economic hazards.⁵ They can, under some circumstances, adversely affect domestic investment, result in higher interest rates, and even spark higher inflation.

Even if deficits do not directly harm the macroeconomy, they will incontrovertibly

result in an ever-growing share of national income being used to pay off old debt, rather than going toward more productive investments. Deficits higher than a certain level will make the accumulated publicly held debt grow faster than overall economic growth. In other words, the national debt, measured as share of total economic output, will rise every year. Consequently, the costs of paying interest on that debt will rise as well. There is an opportunity cost that goes with paying interest on existing debt. Instead of using scarce resources to improve infrastructure or upgrade our stock of human capital, we will be forced to use more and more of them to simply pay back lenders. Since an increasing share of those lenders are foreign, more and more of future income will be sent overseas, further depriving the nation of critical opportunities.

For these reasons, it's important that the government brings in adequate revenue to make necessary investments and to meet its obligations and the demand for public services. At minimum, a "sustainable" federal budget is one that does not result in an increasing debt-to-GDP ratio. Note that this does not require a fully balanced budget. So long as deficits are small enough to prevent a rise in debt measured as a share of the total economy, we will avoid the risks of growing debt and dramatically improve the fiscal climate.

To that end, we present a plan to:

- Reform the individual income tax
- Reform federal health care programs

- Improve government efficiency to reduce overhead costs
- Implement other policies to reduce the federal budget deficit
- Reform the corporate income tax

Policies to reform the individual income tax⁶

The federal tax code is failing at its most important and basic task: raising adequate revenues to fund the services and operations of government. Over the past four years, the effects of repeated tax cuts and a weak economy combined to produce the lowest levels of federal revenue, measured as a share of the national economy, in nearly six decades. If we keep the tax code the way it is today, federal revenues will stay far below federal spending levels for the next decade and beyond, even with recent modest tax increases and even assuming significant spending cuts. The result will be unsustainable levels of debt and increasing pressure on crucial government investments in future growth.

The tax code needs to be reformed so that it generates higher revenues. According to Congressional Budget Office projections, maintaining today's tax code will result in revenues averaging about 18.5 percent of gross domestic product over the next decade.⁷ From 1998 to 2001—the most recent years in which we had balanced budgets—revenues averaged about 20 percent of GDP. In the intervening years, our population has aged,

Baby Boomers have started to retire, health care costs have risen, and our national security needs have changed dramatically. Clearly, generating additional revenue is a necessary component of any practical plan to address our budget challenges.

In “Reforming Our Tax System, Reducing Our Deficit,”⁸ the Center for American Progress proposed a plan to overhaul the federal income tax code in a way that will raise increased revenues progressively while making the tax system more efficient, simple, fair, and comprehensible. Under our plan, federal revenues will match those revenue levels recommended by the bipartisan Simpson-Bowles plan by the middle to the end of this decade.

The key features of our plan are:

- Maintaining the current top marginal income tax rate
- Increasing the top marginal tax rate on capital gains to 28 percent
- Converting tax deductions to tax credits
- Closing tax loopholes
- Simplifying the tax system by reducing the number of filers who itemize, rendering the alternative minimum tax unnecessary, and implementing other reforms

Our plan keeps the top individual income tax rate at 39.6 percent, the same as it was under President Bill Clinton from 1993 through 2000, but we also address the top tax rates



Boston Police Superintendent William Evans, foreground right, laughs with Boston Police Special Operations Lt. Paul O'Connor, left.
AP PHOTO/ELISE AMENDOLA

for dividends and capital-gains income, which both have been cut substantially in recent years and were only partially addressed in recent tax legislation. Lower tax rates on capital gains and dividend income have not produced their promised economic benefits and have enabled many of the highest-income Americans to pay extremely low overall tax rates—lower than people far below them on the income ladder. Furthermore, these tax breaks for capital income have contributed to the rapid rise in income and wealth inequality the United States has seen over the past several decades. Our plan treats dividends as ordinary income, as they were for the 90 years preceding 2003, and restores the top capital-gains rate to 28 percent—the same

rate that was in effect after President Ronald Reagan signed the 1986 Tax Reform Act and throughout much of the 1990s.

In addition to addressing the capital-income rates, an important part of the new revenue in our plan comes from reducing the value of various tax expenditures. Under the existing tax system, many of these tax expenditures, such as those for mortgage interest, charitable giving, and retirement savings, are upside-down—that is, they provide a bigger benefit to those in higher tax brackets. That is both unfair and inefficient.

Our proposal addresses the upside-down problem, while achieving significant, pro-

gressive revenue increases, by transforming itemized deductions into credits. Most expenses that are currently claimed as itemized deductions would be transformed into nonrefundable tax credits equal to 18 percent of their value. This would provide the same tax benefit to taxpayers in all tax brackets—with middle-income taxpayers benefiting from the change.

The exception in our plan to transform itemized deductions into an 18 percent credit is for charitable contributions. Those contributions will generally be eligible for up to a 28 percent credit. The subsidy for charitable giving will thus be decreased for those in higher tax brackets but not decreased by as much as the other forms of deductions. It should also be noted that a credit higher than 18 percent will be available initially for mortgage-interest expenses for those taxpayers for whom an 18 percent credit represents a reduction in benefit relative to the current mortgage interest deduction. The mortgage interest credit will be gradually phased down to the 18 percent that is available for other itemized expenses.

Our plan also replaces the standard deduction with a large standard credit of \$5,000 for couples and \$2,500 for singles. The standard credit largely serves the same purpose as the existing standard deduction—relieving most taxpayers of the need to track and itemize their expenses for tax purposes. Currently, only about one-third of taxpayers itemize their expenses. Under our plan, about 80 percent would claim the standard credit and only about one-fifth would itemize.

Other tax expenditures are also streamlined under our plan, including those for retirement savings used by high-income taxpayers. Our plan closes several difficult-to-justify loopholes, including the carried-interest loophole that allows investment-fund managers to convert their income into low-taxed capital gains, and the so-called S corporation loophole through which high-income professionals can avoid Medicare taxes.

Our plan also simplifies the process of tax filing by eliminating several complicating features of today's tax code. For one thing, by cutting back on the tax advantages that the alternative minimum tax is meant to address, that complex part of the tax code is rendered unnecessary. Our plan therefore entirely eliminates the alternative minimum tax.

We also eliminate personal and dependent exemptions and the standard deduction and replace them with the larger standard credit and an expanded child credit. This reduces the number of steps required for tax filing and consolidates several different calculations into one simpler mechanism. Our plan also renders unnecessary the phase-out of personal exemptions and the Pease limit on itemized deductions.

Policies to reform federal health care programs⁹

We also favor spending cuts where possible in addition to revenue reform. But these must be carefully targeted, as parts of the federal budget are either already at record low levels

or soon will be. These are levels that will undermine our ability to make critical economic investments such as education funding, transportation infrastructure, and basic scientific research.

In fact, most spending in the federal budget is projected to decline over the next 10 years. There is one major exception to this rule: health care spending. Total federal health care spending amounted to 4.7 percent of GDP in 2012, and the Congressional Budget Office projects that total will rise to 6.1 percent by 2022.¹⁰ By comparison, the CBO expects all other programmatic spending to decline from 16.6 percent of GDP in 2012 to 13.8 percent in 2022.

In “A Systemic Approach to Containing Health Care Spending,” we proposed a range of policies to reform federal health care spending that would generate hundreds of billions of dollars in savings without slashing benefits or merely shifting costs among senior citizens, families, or states.¹¹ Our approach is to lower the overall cost of health care by improving efficiency, eliminating wasteful subsidies, and heightening the incentives for improving the quality of care without increasing costs. Taken together, our reforms will not only reduce federal spending over the medium term but will also bend the cost curve over the long term.

- **Reform the way prices are determined for health care products and some services:** Right now, the government sets these prices for the most part. Instead, Medicare and Medicaid should adopt

market-based prices, allowing manufacturers and suppliers to compete to offer the best prices.

- **Reform the way health care is paid for and delivered:** Right now, Medicare and Medicaid pay a fee for each service for the most part. This creates incentives for doctors to order more and more profitable tests and procedures. Instead, these programs should pay a fixed amount for a bundle of services or for all of a patient’s care.
- **Encourage states to become accountable for controlling health care costs:** Accountable-care states that keep overall health care spending below a global target would be rewarded with bonus payments.
- **Reduce drug costs:** When Medicaid covered drugs for seniors, drug companies provided large discounts, but Medicare does not get the same deal. Medicaid rebates should be extended to brand-name drugs purchased by low-income Medicare beneficiaries.
- **Bring Medicare payments into line with actual costs:** The independent Medicare Payment Advisory Commission, which advises Congress on Medicare policy, has identified numerous ways that health care providers should be more efficient. Targeting inefficiency is much better than resorting to a series of blunt, across-the-board cuts in provider payment rates. Under our plan, for example, hospitals would fare much better, with smaller and better-targeted cuts.

- **Increase premiums for high-income Medicare beneficiaries:** High-income beneficiaries pay higher premiums under current law. But the share of beneficiaries who pay higher premiums should be expanded and the higher premium amounts should be increased by 15 percent.

Policies that improve government efficiency to reduce overhead costs¹²

With the pressing need for public investments, rising health care costs, and an inadequate tax system, the need to avoid compounding the budget challenges with waste or inefficient use of scarce public resources is obvious. Any dollar in savings that we derive from improving the way the government does business is a dollar we do not need to raise in taxes or cut from a productive program or investment. We believe that we can save billions by improving the way government performs routine tasks such as benefit payments and contracting and by making better use of information technologies.

Better use of information technology is a key part of streamlining the federal government and combating waste. The website Recovery.gov, which provides the ability to track funds disbursed under the American Recovery and Reinvestment Act of 2009, shows this potential. Fraud complaints have been filed on less than 2 percent of recovery contracts and grants; typically, complaints are filed on 5 percent to 7 percent of projects. Because of this, costs have also been lower than expected, allowing the administration to fund an addi-

tional 3,000 projects. The Recovery.gov model should be expanded for other purposes.

Information technology can also help close the roughly \$300 billion tax gap, or the amount of federal taxes that go unpaid every year due to noncompliance. The Internal Revenue Service could incorporate nontax databases to identify noncompliant taxpayers, as recommended by the Government Accountability Office and the Treasury Department's inspector general.¹³

Cloud computing provides another way to break down barriers across federal agencies and achieve savings. There are about 1,100 data centers across the federal government, each comprising expensive server units that consume large amounts of electricity. Cloud computing allows separate servers such as these to be networked together to form a shared "cloud." This networking would allow government to reduce the total number of data centers, the amount of electricity, and the number of storage facilities it now requires. The British government predicts it could cut its information-technology, or IT, budget by 20 percent by adopting cloud computing and other related IT improvements. The U.S. government would save \$16 billion a year if it could do the same.¹⁴

There are also opportunities to reduce overhead costs associated with information collection and service delivery. Online forms and other information-gathering tools, such as health care IT, environmental sensors, and satellite technologies, can replace paper reporting and reduce the need for

data entry and person-to-person service.¹⁵ “There are more than 10,000 government forms in 173 different agencies that could be automated to allow citizens and businesses to conduct their business with government online,” according to the IBM Center for the Business of Government.¹⁶

One other area that is ripe for savings is federal procurement. Each year, the federal government spends about \$500 billion buying everything from office supplies to weapons systems. The cost of procuring all those goods and services has skyrocketed since 2000: From 2001 to 2008 total federal procurement costs rose more than 142 percent. Fortunately, a comprehensive and coordinated approach to reducing those costs can yield enormous savings. The Center for American Progress has previously estimated that the government could save upward of \$400 billion from reforms to the way it buys goods and services.¹⁷

Other policies to reduce the federal budget deficit

The policies described above will take us most of the way toward a sustainable federal budget. We also propose several other smaller changes that will help reduce the budget deficit, including:

- **Updating federal excise taxes:** We propose an increase in the cigarette tax in order to both raise revenues and reduce health care costs. We propose an increase in alcohol taxes, to reverse decades of ero-

sion in revenue from that source. Finally, we propose regulating and imposing small fees on internet gambling.

- **Reducing defense spending:** Though defense spending has already been cut somewhat, we believe the Defense Department can certainly be asked to further streamline, reducing waste and inefficiency along the lines previously proposed by the Center for American Progress.¹⁸
- **Reforming other nondiscretionary programs:** Programs such as federal agriculture subsidies are long overdue for reform to bring them in line with current economic and budget realities.¹⁹

The federal budget is one of our most important tools for building an economic environment that allows all 300 million engines of growth to run at full capacity. We need to invest wisely and pay for those investments responsibly.

Right now, the current tax code does not generate the revenue needed to support the investments, protections, and other activities in the budget. Though reducing the federal budget deficit should not be an immediate concern for economic policymakers, after we return to a more normal economic footing, persistent large deficits do present a challenge for sustained and shared growth. Decades of tax cuts have left us with an inadequate and inefficient tax system, even after accounting for recent tax increases, and rising health care costs have been pushing spending up. Our proposals would address these two twin underlying



causes of projected structural deficits. If implemented in full, these policies would combine to reduce the federal debt and put the budget on a sustainable path.

Policies that reform the corporate income tax

Corporate tax reform is an important issue for the federal budget and the economy. We do not offer a comprehensive proposal here, but we do offer some guidance on elements that should be included in tax reform – ideas that are refined further in a Center for American Progress white paper on corporate tax reform.

First, we start with revenue. In our view, corporations should not be exempt from contributing to meet the budget challenges we face. That is, corporate tax reform should produce additional revenue.

Second is the question of the tax rate. Effective U.S. corporate tax rates are about the same as those of other major economies.²⁰ While the nominal U.S. corporate income tax rate is among the highest in the world, American corporations, on average, pay a much lower effective rate than nominal rate because many provisions in the tax code reduce liability. A significant part of what we outline here is designed to scale back those liability-reducing provisions. If significant

base-broadening is achieved, then some rate reduction could be appropriate once the need for additional revenue has been met. In addition, while U.S. corporate taxes are not out of line with our global competitors, some companies that are less well positioned to take advantage of the tax preferences in the code do pay relatively higher taxes, and this raises concerns regarding their competitive posture. The combination of relatively high rates and numerous tax preferences means that the tax code is creating distortions, often unintended and harmful, in the economy.

With these two conditions as a base, we move on to address three areas of the corporate tax system that are in particular need of attention: reducing the tax code's bias toward debt financing over equity financing, leveling the playing field among competing businesses and industries by eliminating inefficient tax breaks, and reforming the taxation of international income.

Reducing the tax bias toward corporate debt

Under the U.S. corporate income tax interest on debt is deductible but dividend payments to shareholders are not. This creates a bias toward debt that can cause a number of problems.

Two policies that could address the problem of the tax system favoring debt over equity are:

- The President's Economic Recovery Advisory Board's August 2010 report on tax-reform options offered a modest illustrative proposal to limit the deduct-

ibility of net interest expense to 90 percent of expense in excess of \$5 million per year. So, for example, if a corporation has \$15 million of net interest expense, it could deduct all of the first \$5 million and then \$9 million of the next \$10 million, for a total deduction of \$14 million.²¹

- An innovative approach was recently enacted in Germany.²² Under Germany's rule, interest is deductible only up to 30 percent of annual earnings before interest, taxes, depreciation, and amortization.²³ The rule applies only when net interest (interest expense minus interest income) is higher than €3 million (about \$4 million), thereby exempting smaller businesses.

Either a stronger form of the advisory board proposal, a provision along the lines of the German approach, or their equivalent, should be adopted.

Leveling the playing field and eliminating tax breaks

There is a wide range of tax provisions that serve little or no continuing purpose and should be eliminated. The Center for American Progress has outlined these in detail in a number of publications, including "Good News on Deficit Reduction."²⁴ Among the provisions that deserve particular scrutiny are:

- Oil and gas tax expenditures
- Timber and agriculture tax subsidies

- Last in, first out, or LIFO, and lower of cost or market rule, or LCM, inventory and accounting rules
- Offshore reinsurance loopholes
- Deferral of capital gains taxes via like-kind exchanges
- Write-offs of “business” meals and entertainment²⁵

Moreover, there is a clear need to re-examine the line between corporate C-corp businesses subject to the corporate income tax and S-corps, partnerships, and other businesses that are not despite many of them being on the same scale as C-corps (Bechtel, for example). Certainly businesses larger than a certain size that are mostly competing against publicly traded corporations that are subject to the corporate income tax should also be subject to the same tax regime as their direct competitors.

Reforming the taxation of international income

The big issues in international taxation are how to encourage job creation in the United States and how to stem the rampant tax avoidance that our current system permits.

The current system creates huge opportunities for tax avoidance by multinational corporations. Moving to a “territorial” system, as many multinationals advocate, would make it worse.

There are two basic features of the U.S. tax code enabling corporations to avoid taxes through international transactions. The first is the ability, on paper, to shift profits to other countries where taxes are lower. This is a big problem. Here’s one example of how it can work: A U.S. company transfers a patent or trademark to a foreign subsidiary, and then the U.S. parent company pays that subsidiary high royalties, which are deductible for the U.S. parent on its U.S. income taxes. Those royalty payments are made out of U.S. income that would otherwise have been subject to U.S. corporate income taxes. Income has thus been shifted and paying U.S. tax on that income has been avoided. In practice, the foreign subsidiary is usually based in a tax-haven country, which applies little or no tax on the incoming royalty income—so total taxes are reduced. There are technically rules against this sort of behavior, but those rules can be successfully circumvented. Consider that American companies reported 43 percent of their overseas profits in the tax-haven countries of Bermuda, Ireland, Luxembourg, the Netherlands, and Switzerland in 2008, even though those countries employed only 4 percent of the companies’ foreign workforces, and the companies made only 7 percent of their foreign investments in those jurisdictions.²⁶

The second underlying feature of the tax code enabling international transactions to reduce tax liability is known as deferral. Deferral allows U.S. corporations to not pay U.S. tax on the income that is earned overseas until it is formally brought into the United States. A great deal of the income shifted to other countries is therefore either taxed



Eric McDaniel, one of dozens of tax season data entry operators working for the Missouri Department of Revenue, enters information from tax returns into the state's system in the Truman State Building in Jefferson City Mar. 30, 2010.

AP PHOTO/JULIE SMITH

later, which companies prefer, or never taxed because it isn't ever technically "repatriated."

There is a simple solution to this problem: End deferral and simply tax the income as soon as it's earned. Then there would be no incentive to shift income to other countries because doing so wouldn't reduce taxes. This solution, however, would result in the U.S. tax code being far out of line with other countries, with possible ramifications for competitiveness and long-term job creation, discussed below. Alternatives short of completely eliminating deferral are also possible such as rules to clamp down on income-shifting or render income ineligible for deferral if it is in a tax-haven country, for example.

The other issue we address here is whether the corporate income tax encourages jobs to move overseas. The current system has that effect, and, again, the culprit is deferral. A company that moves jobs to a country with lower taxes than the United States can benefit from doing so. Technically the U.S. tax—minus a credit for the foreign tax a company has paid—applies, but it is deferred pending repatriation.

There is, however, another side to this story. U.S. multinational corporations argue that the U.S. system of taxing their income wherever it is earned, even with deferral allowing them to delay (sometimes indefinitely) the payment of taxes, puts them at a disadvantage compared to companies from countries with territorial

tax systems that tax only income earned in the home country. They argue, for example, that if a U.S. company is bidding against a Dutch company to buy a South Korean company, the Dutch company will often end up winning because the South Korean company is worth more to the Dutch company: The Dutch company's after-tax rate of return will be higher because the Netherlands does not impose a tax on income earned by Dutch companies overseas. The Dutch company will pay only the South Korean tax on the subsidiaries earnings, whereas the U.S. company will have to pay the higher U.S. tax. The U.S. companies argue that this means fewer home office jobs in the United States and fewer profits being earned by shareholders in the U.S. company—to the nation's detriment.

So, while ending deferral would solve the problem of companies favoring investment in low-tax jurisdictions, U.S. multinational corporations would still be concerned about their competitiveness in foreign countries. Going to a territorial system for the United States would satisfy that concern, but it would exacerbate the incentive to site operations in other countries and make the tax-avoidance problem worse.

The bottom line for corporate income tax reform

Corporate tax reform is complicated and involves many interacting pieces. Clearly there are tax preferences that should be eliminated. Limiting deductions for interest payments on debt is also a needed reform. Doing those things

could allow for some rate reduction once revenue targets have been met. With respect to the way international income is treated, the objectives are to deal with the rampant tax avoidance that the current system allows and encourage job creation in the United States, while addressing those concerns of multinational corporations that are legitimate.

Moving to a territorial system is unacceptable and would exacerbate many of the current problems with the tax system. Eliminating deferral is attractive but in the long run it could have adverse unintended consequences, and it is unrealistic. A more likely and helpful approach would be to put in place a hybrid system that includes a robust minimum tax that would be immediately applied to all income (i.e., no deferral), so that there would be less of an advantage to shifting income to low-tax countries to reduce U.S. tax or to moving jobs overseas. Most countries that ostensibly have territorial systems actually do something similar to this, unlike the United States—although any such measures in a revised U.S. tax system should be more aggressive than what most of these other countries do. The concerns expressed by multinational corporations could be addressed by adjusting the tax rate either overall or with a modestly differentiated rate for repatriated earnings—consistent with an overall increase in revenues.

Finally, the United States should work with our trading partners to address these issues cooperatively. In the end, international cooperation is necessary to truly address all the challenges described here in a fair way that benefits both U.S. and global economic growth. ■

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Conclusion

Mars Science Laboratory Curiosity team members celebrate the landing of Curiosity rover on the surface of Mars at NASA's Jet Propulsion Laboratory in Pasadena, Aug. 5, 2012.

AP PHOTO/DAMIAN DOVARGANES



We cannot stand idly by and expect our dreams to come true under their own power. The future is not a gift: it is an achievement.

Robert F. Kennedy, Seattle World's Fair, 1962¹



Over the past 100 years, the United States became the world's largest economy and its people the world's richest. While it may be tempting to think this success was inevitable, we sell ourselves short when we do not acknowledge that it is the result of the energetic, entrepreneurial, and back-breaking achievements of capable men and women who have worked across a vast democratic expanse.

The next American century will also have to be a series of achievements—not gifts—and our achievements will need to overcome emerging challenges such as increased globalization, climate change, and demographic shifts. But we can still achieve the future that we want if we foster and employ the talents of our capable people.

Growing America's economy means strengthening and growing America's middle class. Economic mobility must be a reality, not just an aspiration, and human capital needs to be cultivated so that we can benefit from the talents and ingenuity of all of our people. That is why we start with the realization that to reach our economic potential, we must activate the 300 million engines of growth in our economy.

But activating the engines alone is not enough. Even cars with superior engines need good roads on which to move forward, free of potholes and with useful and efficient rules that let them run at top speed.

Simply put, for America to lead innovation in the 21st century—as it did in the 20th—we have to make sure that our people are skilled and educated, operating in an economic environment that is conducive to their success and that allows them to compete at home and abroad.

This report lays out policies that can be advanced now. For all of the gridlock in policymaking, many of the policies we should pursue are disarmingly straightforward—

from investing in early childhood to boosting retirement security to repairing our crumbling infrastructure.

Now is the time to talk about these issues, chart a path forward, and act.

Every day, week, and month that we delay represents another lost opportunity to invest for a future return, and each delay exacerbates the inequality that is already proving to be a drain on the middle class and, in turn, on growth.

As progressives, we are optimists. We believe in the spirit of Americans to rise to the challenges we face and to help create a future in which more of our people have a chance to use their talents, and fewer and fewer live in poverty.

Every investment we make as a society must be made with a clear vision of the type of dynamic economy we seek: an innovative and growing economy where, if you work hard, you have a fair shot at attaining the American Dream. That is the challenge—and the enormous opportunity—of activating our 300 million engines of growth. ■

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