### **Drivers of Job Creation**

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Thank you Chairman Merkley and Ranking Member Heller for inviting me here to testify. My name is Jennifer Erickson, and I am the Director of Competitiveness and Economic Growth at the Center for American Progress.

It is difficult to imagine a more important issue for the security of both American families and the American economy than creating and maintaining good, middle-class jobs. With that in mind, my testimony today will focus on three things: an overview of the current jobs picture in the United States, policies that can promote job creation in the short to medium term, and also what we need to do to ensure a vibrant economic ecosystem in the future.

Central to all of this analysis is the understanding that if we are going to have a strong and growing economy, we need a strong and growing middle class. President Barack Obama rightly identified reigniting the engine of growth of the middle class as the defining issue of our time. <sup>1</sup> That is because we know that with a strong and growing middle class, we have a more stable source of

demand, a bigger pipeline of both entrepreneurs and skilled workers, and the critical support needed for public institutions that a vibrant middle class provides.<sup>2</sup>

### Overview of the current jobs picture

Between late 2007 and June 2009, the United States underwent its longest and most severe economic contraction since the Great Depression, the result of a real estate bubble and the ensuing crash that had its roots in lax regulations, opaque financial products, and unsustainable household debt.<sup>3</sup>

The economy saw a rapid increase in unemployment, from 5 percent in December 2007 to a peak of 10 percent as of October 2009.<sup>4</sup> This decline in employment exceeded that of any recession over the past few decades<sup>5</sup> and was the first on record to wipe away all of the previous job gains of the most recent economic expansion.<sup>6</sup>

It has been nearly five years since the official end of the recession,<sup>7</sup> and the economy continues to recover. 2013 was the third straight year in which private-sector employment rose by more than 2 million jobs.<sup>8</sup> And as of last week's jobs numbers, the U.S. economy has seen 50 straight months of private-sector job growth, adding a total of 9.2 million private-sector jobs.<sup>9</sup>

While the signs of improvement are encouraging, there is no doubt that the pace of the recovery in terms of growth and jobs has been modest and underwhelming when we consider the potential labor-force growth during this time. Stubbornly high unemployment and low labor-force participation continue to define today's workforce. As of April 2014, the United States had an unemployment rate of 6.3 percent, down nearly 4 percentage points from the labor market's recession peak. While there has been steady private-sector job growth over the past 50 months, the pace has been too slow to restore us to full employment. The current share of workers either working or

looking for work falls below the rate at the beginning of the recession—66 percent—and is equal to the lowest participation rate since around 1978.<sup>12</sup>

The long-term unemployed have suffered tremendously as we continue to see an abnormally high number of Americans who want to work but are unable to find employment. As of April 2014, there were 3.5 million Americans who have been actively searching for a job for 27 weeks or more. At 35.3 percent, the current rate of long-term unemployment as a share of the unemployed falls below the peak during the recession but is far and away the highest level on record. Among those ages 20 to 24, there is an unemployment rate of 10.6 percent, more than 4 percentage points higher than the national average.

According to Adam Hersh of the Center for American Progress, the economy is currently growing at around 60 percent of the pace set by the prior three U.S. expansions from as far back as 1982. Since the June 2009 trough, "the economy has grown just 11 percent overall." Of the last six recoveries, the most recent recovery ranks behind all but December 2001, with the smallest share of months with job growth above 200,000, or 33 percent. Moreover, at the current average rate of job growth, analysis done by CAP's Michael Madowitz using The Hamilton Project's estimates demonstrates that the U.S. economy will not reach its former level of employment until 2019.

Much of the problem has to do with the fact that our economy is suffering from a large output gap. Through the first quarter of 2014, demand for goods and services has been more than 4 percent less than what the economy can supply. <sup>20</sup> This restrained growth can be largely attributed to both fiscal austerity and stagnant incomes for families across the United States. <sup>21</sup> While businesses continue to see strong earnings and capture a major share of the income gains throughout the recovery, this has not translated into more jobs. <sup>22</sup> This is largely because businesses have less of an incentive to invest when consumer demand is weak. <sup>23</sup>

This need to improve our economic prospects has not been helped by sequestration, debt ceiling debates, and spending cuts on both the federal and state levels. In particular, according to the Council of Economic Advisers, the most recent government shutdown and debt limit brinkmanship had a "substantial negative impact" on the economy, resulting in a "0.25 percentage point reduction in the GDP growth rate in the fourth quarter and a reduction of about 120,000 private-sector jobs in the first two weeks of October." Additionally, not only have these austerity policies resulted in cuts to investments and services critical to economic growth, but they have also led to cutting jobs—including the loss of hundreds of thousands of public-sector jobs since the end of the recession. <sup>25</sup>

In short, while we are slowly recovering from the worst economic crisis since the Great Depression, in February 2014, the Congressional Budget Office estimated that economic growth from the end of 2017 onward will be "well below the average seen over the past several decades" and that the unemployment rate will remain above 6 percent until the end of 2016. <sup>26</sup> Nearly half a decade following the recession, with 10 million workers unemployed and 3.5 million who have been looking for work for six months or more, <sup>27</sup> the message could not be clearer. We need to take steps to accelerate job creation, and we also need to take care that we are creating an economic environment that is producing good, middle-class jobs.

# Policies that can promote job creation in the short to medium term

In 2013, the Center for American Progress published an economic growth strategy, "300 Million Engines of Growth," that was centered on the premise that our economy will do better when all Americans are able to participate in it at the top of their talents. In "300 Million Engines of Growth," we acknowledge the reality that if we are going to grow the largest, most dynamic, complex economy the world has ever seen, we have to do a lot of things right—with the government both investing in human

capital and setting a competitive environment in which our workers and businesses can compete at home and abroad.

Today, I would like to highlight a few policies that would have the benefit of spurring job creation in the shorter term, while at the same contributing to our longer-term competitiveness.

#### Infrastructure

At a time when approximately 800,000 construction workers are out looking for work, <sup>28</sup> and when the American Society of Civil Engineers ranks America's infrastructure with a troubling D+ grade, <sup>29</sup> this is the perfect time for bipartisan consensus on the importance of investing in a new generation of infrastructure—from our roads and bridges, to our railways and ports, to our electric grids and wastewater systems.

Infrastructure investment is a well-known "two-fer," meaning it results in job creation in the short term and greater economic competitiveness over the long term. <sup>30</sup> As of 2008, for every \$1 billion in infrastructure spending in a given state, around 9,000 to 15,000 direct and indirect jobs are supported—making infrastructure one of the single best investments the government can make. <sup>31</sup>

The president's recently released surface transportation reauthorization proposal calls for \$302 billion in expenditures, which would have a powerful effect on both jobs and competitiveness. As valuable as this contribution to the jobs picture would be, the contribution to our nation's productivity for years to come would be enormous as well. After all, the interstate highway system was a massive investment in our nation's infrastructure and boosted U.S. annual productivity growth by double digits for decades. Yet many of these critical assets are rapidly approaching the ends of their useful lives.

America's workers stand at the ready to lay the foundation for the next five decades of prosperity.

#### **Apprenticeships**

The latest unemployment statistics highlight that too many of America's young people are either unemployed or underemployed.<sup>34</sup> Unemployment does not just hurt these would-be workers now; it can also depress their earnings for years into the future due to forgone work experience and missed opportunities to develop skills.<sup>35</sup> The fact that the number of unemployed and underemployed young Americans is greater than the entire population of New York City has extremely damaging implications for our economic prospects as a nation.<sup>36</sup>

One immediate opportunity to address part of this problem is through dramatically expanding apprenticeships, a structured form of paid worker training that combines on-the-job learning and classroom instruction. Apprenticeships have been shown to boost workers' earnings and raise sponsoring companies' productivity levels, which is why many other countries rely on them as a central tool to develop a highly skilled, competitive workforce.<sup>37</sup> But even though, according to the U.S. Department of Labor's Employment and Training Administration, there are currently more than 375,000 registered apprentices in the United States, the training model is largely unfamiliar to Americans and considerably less widely used than in countries such as Germany and the United Kingdom.<sup>38</sup>

Expanding the U.S. apprenticeship system both in number of participants and available occupations would strengthen employment outcomes for young Americans by creating pathways for young workers to good-paying, middle-class jobs. Apprentices get a job today and higher wages for a lifetime. Researchers have found that, including nonwage benefits, workers who complete an apprenticeship make an average of \$300,000 more than comparable job seekers in their lifetimes. Importantly, the wage premium in many cases comes with little or no educational debt.

Given these benefits, we should welcome the president's recent announcement of \$100 million in grants to support new apprenticeships, and Congress should pass the bipartisan Leveraging and

Energizing America's Apprenticeship Programs, or LEAP, Act, which would provide businesses with a tax credit for each apprentice they hire, expanding these highly successful private-sector-led training programs.<sup>41</sup>

# Policies that can promote job creation in the longer term

While investing in infrastructure and apprentices can help create jobs in the near term, there is much more to be done to drive job creation in the longer term.

Investments in the middle class following World War II helped build the most prosperous economy in the world. Congress made those investments in core areas of U.S. competitiveness—our people, our infrastructure, and our innovation.

The G.I. Bill helped almost 8 million American veterans go to college or get training and was seen as so successful that it was repeated for Korean and Vietnam veterans and further expanded after September 11, 2001. 42 From 1944 to 1956, we invested the equivalent of more than \$100 billion in 2011 dollars, and our return on that investment was the engine of middle-class growth that powered the American economy following the Great Depression and World War II. 43

President Dwight D. Eisenhower embarked on one of the most ambitious government spending programs America has ever seen in the form of the interstate highway system. In 2011 dollars, we invested \$468 billion—across multiple administrations headed by both Republicans and Democrats—to connect the country with more than 42,000 center-line miles of road, in what President Eisenhower referred to as a "mighty network" critical to U.S. competitiveness, safety, and defense.<sup>44</sup>

Taking one example of our research and development investment following World War II, in 2011 dollars, we invested \$150 billion in the Apollo space program. At the height of its efforts, it employed 400,000 Americans and worked with 20,000 partnering institutions. This investment led to

massive technological advancement and technology transfer in the private sector, leading to more than 1,500 successful spinoffs in areas from heart monitors to solar panels.<sup>45</sup>

The point of these three examples is that we know what works and leads to big returns on public investment: investments in our people and our innovative environment.

The question now is this: Are we prepared to invest in ourselves once again?

When it comes to human capital, will we invest in our future workers by ensuring all our children have access to high-quality preschool education, where economist James Heckman has shown we can earn a high return on our educational investment?<sup>46</sup> Or—in a clear-eyed realization of the economic and entrepreneurial value of giving legal status to aspiring Americans—will we ensure there is a pathway to citizenship for the 11 million undocumented immigrants currently living in the United States, knowing that the extra jobs and money that their status would create would lead to an average annual increase of 121,000 jobs and a cumulative 10-year boost to GDP of \$832 billion?<sup>47</sup> The Senate has already spoken on this, passing a bipartisan bill that is still waiting for a vote in the House.

And when it comes to improving our economic environment, since we know that advances in science and technology account for roughly half of the growth in the U.S. economy since World War II,<sup>48</sup> are we prepared to boost investment in general science, space, and technology funding, which was reduced in real terms by about 12 percent from 2010 to 2013?<sup>49</sup>

In fact, according to Michael Linden, the period from 2010 to 2013 saw "the largest three-year reduction in federal spending since the demobilization at the end of the Korean War." Since we all have an interest in responsible public finance, we must recognize that responsible public finance includes responsible public investment. Cutting investments at a time when the global economy is getting ever more competitive is short sighted in the extreme and risks the very innovation economy

that our workers and our businesses—aided by smart government investment—have worked so diligently to build.

Additionally, while we need to invest in our human capital and our economic environment, we also must take great care not to repeat the mistakes of the past that will decimate employment. Millions of Americans are still reeling from the after-effects of the financial crisis and Great Recession, including long-term unemployment and lost household wealth. In fact, the Council of Economic Advisers calculated that during this period, Americans lost more than \$13 trillion in wealth. So as a start, we must see through the landmark reforms from the Dodd-Frank Wall Street Reform and Consumer Protection Act to ensure that the era of "too big to fail" has truly passed and empower regulators with the tools they need to do the job required for the American people.

## Conclusion

We know how the economy works: Securing America's middle class is the path to strengthening U.S. economic growth now and for the long term. If we are going to have a vibrant economy producing good-paying jobs, we need that economy to be fueled by a strong and growing middle class that can supply the human capital, entrepreneurship, and stable demand to drive our economy.

Some of the policies discussed today can have an immediate effect in driving job creation, such as investing in infrastructure and expanding apprenticeships. Others, such as investing in our next generation of workers who are just starting their educational journeys and funding research and development, will take decades to bear fruit. But the sooner we acknowledge that smart government policies that support a strong and growing middle class are key to our economic success, the sooner we will see more Americans in good-paying, middle-class jobs.

#### **Endnotes**

- <sup>2</sup> Heather Boushey and Adam Hersh, "Middle Class Series: The American Middle Class, Income Inequality, and the Strength of Our Economy, New Evidence in Economics" (Washington: Center for American Progress, 2013), available at <a href="http://www.americanprogress.org/issues/economy/report/2012/05/17/11628/the-american-middle-class-income-inequality-and-the-strength-of-our-economy/">http://www.americanprogress.org/issues/economy/report/2012/05/17/11628/the-american-middle-class-income-inequality-and-the-strength-of-our-economy/</a>; David Madland, "Growth and the Middle Class, First Principles: Arguing the Economy," *Democracy Journal* (20) (2011), available at <a href="http://www.democracyjournal.org/20/growth-and-the-middle-class.php">http://www.democracyjournal.org/20/growth-and-the-middle-class.php</a>.
- <sup>3</sup> Council of Economic Advisers, 2010 Economic Report of the President (Executive Office of the President, 2010), available at <a href="http://www.whitehouse.gov/sites/default/files/microsites/economic-report-president-chapter-2r2.pdf">http://www.whitehouse.gov/sites/default/files/microsites/economic-report-president-chapter-2r2.pdf</a>; Bob Willis, "U.S. Recession Worst Since Great Depression, Revised Data Show," Bloomberg News, August 1, 2009, available at <a href="http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aNivTjr852Tl">http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aNivTjr852Tl</a>.
- <sup>4</sup> U.S. Bureau of Labor Statistics, "Data, Tables & Calculators by Subject: Labor Force Statistics from the Current Population Survey," available at <a href="http://data.bls.gov/timeseries/LNS14000000">http://data.bls.gov/timeseries/LNS14000000</a> (last accessed May 2014).
- <sup>5</sup> Bureau of Labor Statistics, *The Recession of 2007–2009* (U.S. Department of Labor, 2012), available at <a href="http://www.bls.gov/spotlight/2012/recession/pdf/recession">http://www.bls.gov/spotlight/2012/recession/pdf/recession</a> bls spotlight.pdf.
- <sup>6</sup> Christopher J. Goodman and Steven M. Mance, "Employment loss and the 2007–2009 recession: an overview," *Monthly Labor Review* (2011): 3–12, available at <a href="http://www.bls.gov/opub/mlr/2011/04/art1full.pdf">http://www.bls.gov/opub/mlr/2011/04/art1full.pdf</a>.
- <sup>7</sup> Bureau of Labor Statistics, *The Recession of 2007–2009*.
- <sup>8</sup> Council of Economic Advisers, 2014 Economic Report of the President (Executive Office of the President, 2014), available at <a href="http://www.whitehouse.gov/sites/default/files/docs/full">http://www.whitehouse.gov/sites/default/files/docs/full</a> 2014 economic report of the president.pdf.
- <sup>9</sup> Jason Furman, "The Employment Situation in April," The White House Blog, May 2, 2014, available at <a href="http://www.whitehouse.gov/blog/2014/05/02/employment-situation-april">http://www.whitehouse.gov/blog/2014/05/02/employment-situation-april</a>; Center for Budget and Policy Priorities, "Chart Book: The Legacy of the Great Recession," available at <a href="http://www.cbpp.org/cms/index.cfm?fa=view&id=3252">http://www.cbpp.org/cms/index.cfm?fa=view&id=3252</a> (last accessed May 2014).
- <sup>10</sup> U.S. Bureau of Labor Statistics, "Economic Situation Summary," Press release, May 2, 2009, available at <a href="http://www.bls.gov/news.release/empsit.nr0.htm">http://www.bls.gov/news.release/empsit.nr0.htm</a>; U.S. Bureau of Labor Statistics, "Data, Tables & Calculators by Subject: Labor Force Statistics from the Current Population Survey," available at <a href="http://data.bls.gov/timeseries/LNS14000000">http://data.bls.gov/timeseries/LNS14000000</a> (last accessed May 2014).
- <sup>11</sup> Furman, "The Employment Situation in April"; Center for Budget and Policy Priorities, "Chart Book: The Legacy of the Great Recession."
- <sup>12</sup> U.S. Bureau of Labor Statistics, "Data, Tables & Calculators by Subject: Labor Force Statistics from the Current Population Survey, LNS11300000," available at <a href="http://data.bls.gov/timeseries/LNS11300000">http://data.bls.gov/timeseries/LNS11300000</a> (last accessed May 2014).
- <sup>13</sup> U.S. Bureau of Labor Statistics, "Economic Situation Summary."
- <sup>14</sup> The State of Working America, "The share of the unemployed who have been jobless for six months or more, 1948–2014," available at <a href="http://www.stateofworkingamerica.org/charts/long-term-unemployment/">http://www.stateofworkingamerica.org/charts/long-term-unemployment/</a> (last accessed April 2014).
- <sup>15</sup> U.S. Bureau of Labor Statistics, "Economic Situation Summary."
- <sup>16</sup> Adam Hersh, "Private debt, public penny-pinching holding GDP back," Market Watch, April 30, 2014, available at <a href="http://www.marketwatch.com/story/private-debt-public-penny-pinching-holding-gdp-back-2014-04-30?link=MW">http://www.marketwatch.com/story/private-debt-public-penny-pinching-holding-gdp-back-2014-04-30?link=MW</a> story latest news.
- <sup>17</sup> Ibid.
- <sup>18</sup> CAP analysis of Bureau of Labor Statistics and National Bureau of Economic Research data. See U.S. Bureau of Labor Statistics, "Labor Force Statistics from the Current Population Survey," available at <a href="http://www.bls.gov/cps">http://www.bls.gov/cps</a> (last accessed May 2014); National Bureau of Economic Research, "US Business Cycle Expansion and Contractions," available at <a href="http://www.nber.org/cycles/cyclesmain.html">http://www.nber.org/cycles/cyclesmain.html</a> (last accessed May 2014).
- <sup>19</sup> Michael Madowitz and Matt Markezich, "The State of the U.S. Labor Market: Pre-May 2014 Jobs Release," Center for American Progress, May 1, 2014, available at
- http://www.americanprogress.org/issues/economy/news/2014/05/01/88688/the-state-of-the-u-s-labor-market-2/; The Hamilton Project, "Closing the Jobs Gap," available at <a href="http://www.hamiltonproject.org/jobs\_gap/">http://www.hamiltonproject.org/jobs\_gap/</a> (last accessed April 2014).
- <sup>20</sup> Center for Budget and Policy Priorities, "Chart Book: The Legacy of the Great Recession."
- <sup>21</sup> Hersh, "Private debt, public penny-pinching holding GDP back."
- <sup>22</sup> Matthew Phillips, "Goldman: Corporate Profits Grew Five Times Faster Than Wages in 2013," Bloomberg BusinessWeek, January 24, 2014, available at <a href="http://www.businessweek.com/articles/2014-01-24/goldman-2013-corporate-profits-grew-five-times-faster-than-wages">http://www.businessweek.com/articles/2014-01-24/goldman-2013-corporate-profits-grew-five-times-faster-than-wages</a>; Nelson D. Schwartz, "Recovery in U.S. Is Lifting Profits, but Not Adding Jobs," *The New York Times*,

<sup>&</sup>lt;sup>1</sup> The White House, "Remarks by the President on Economic Mobility," Press release, December 4, 2013, available at <a href="http://www.whitehouse.gov/the-press-office/2013/12/04/remarks-president-economic-mobility">http://www.whitehouse.gov/the-press-office/2013/12/04/remarks-president-economic-mobility</a>.

March 3, 2014, available at <a href="http://www.nytimes.com/2013/03/04/business/economy/corporate-profits-soar-as-worker-income-limps.html?pagewanted=all">http://www.nytimes.com/2013/03/04/business/economy/corporate-profits-soar-as-worker-income-limps.html?pagewanted=all</a>.

- <sup>23</sup> Bruce Bartlett, "It's the Aggregate Demand, Stupid," Economix, August 16, 2011, available at <a href="http://economix.blogs.nytimes.com/2011/08/16/its-the-aggregate-demand-stupid/?pagewanted=all">http://economix.blogs.nytimes.com/2011/08/16/its-the-aggregate-demand-stupid/?pagewanted=all</a>.
- <sup>24</sup> Council of Economic Advisers, *Economic Activity During The Government Shutdown And Debt Limit Brinksmanship*, (Executive Office of the President, 2013), available at

http://www.whitehouse.gov/sites/default/files/docs/weekly indicators report final 0.pdf.

- <sup>25</sup> Michael Linden, "It's Time to Hit the Reset Button on the Fiscal Debate" (Washington: Center for American Progress, 2013), available at <a href="http://www.americanprogress.org/wp-content/uploads/2013/06/FiscalReset.pdf">http://www.americanprogress.org/wp-content/uploads/2013/06/FiscalReset.pdf</a>; U.S. Bureau of Labor Statistics, "Top Picks," available at <a href="http://data.bls.gov/cgi-bin/surveymost?ce">http://data.bls.gov/cgi-bin/surveymost?ce</a> (last accessed May 2014).
- <sup>26</sup> Congressional Budget Office, "The Budget and Economic Outlook: 2014 to 2024" (2014), available at http://www.cbo.gov/publication/45010.
- <sup>27</sup> Hersh, "Private debt, public penny-pinching holding GDP back"; U.S. Bureau of Labor Statistics, "Economic Situation Summary."
- <sup>28</sup> U.S. Bureau of Labor Statistics, "Table A-14. Unemployed persons by industry and class of worker, not seasonally adjusted," Press release, May 2, 2014, available at <a href="http://www.bls.gov/news.release/empsit.t14.htm">http://www.bls.gov/news.release/empsit.t14.htm</a>.
- <sup>29</sup> American Society of Civil Engineers, "2013 Report Card for America's Infrastructure," available at <a href="http://www.infrastructurereportcard.org/a/#e/welcome">http://www.infrastructurereportcard.org/a/#e/welcome</a> (last accessed May 2014).
- <sup>30</sup> President's Council on Jobs and Competitiveness, *Taking Action, Building Confidence: Five Common-Sense Initiatives To Boost Jobs And Competitiveness, Interim Report* (Executive Office of the President, 2011), available at <a href="http://files.jobs-council.com/jobscouncil/files/2011/10/JobsCouncil InterimReport Oct11.pdf">http://files.jobs-council.com/jobscouncil/files/2011/10/JobsCouncil InterimReport Oct11.pdf</a>
- <sup>31</sup> Claudia Copeland, Linda Levine, and William J. Mallett, "The Role of Public Works Infrastructure in Economic Recovery" (Washington: Congressional Research Service, 2011), available at <a href="http://www.fas.org/sgp/crs/misc/R42018.pdf">http://www.fas.org/sgp/crs/misc/R42018.pdf</a>.
- <sup>32</sup> The White House, "Fact Sheet: President Obama Lays Out Vision for 21st Century Transportation Infrastructure," Press release, February 26, 2014, available at <a href="http://www.whitehouse.gov/the-press-office/2014/02/26/fact-sheet-president-obama-lays-out-vision-21st-century-transportation-i">http://www.whitehouse.gov/the-press-office/2014/02/26/fact-sheet-president-obama-lays-out-vision-21st-century-transportation-i</a>.
- <sup>33</sup> Federal Highway Administration, *Productivity and the Highway Network: A Look at the Economic Benefits to Industry from Investment in the Highway Network* (U.S. Department of Transportation, 2012), available at <a href="http://www.fhwa.dot.gov/policy/otps/060320b/index.htm">http://www.fhwa.dot.gov/policy/otps/060320b/index.htm</a>.
- <sup>34</sup> U.S. Bureau of Labor Statistics, "Economic Situation Summary"; Sarah Ayres, "The High Cost of Youth Unemployment" (Washington: Center for American Progress, 2013), available at <a href="http://www.americanprogress.org/wp-content/uploads/2013/04/AyresYouthUnemployment1.pdf">http://www.americanprogress.org/wp-content/uploads/2013/04/AyresYouthUnemployment1.pdf</a>; U.S. Bureau of Labor Statistics, "Employment and Unemployment Among Youth Summary," Press release, August 20, 2013, available at <a href="http://www.bls.gov/news.release/youth.nr0.htm">http://www.bls.gov/news.release/youth.nr0.htm</a>.

  <sup>35</sup> Ayres, "The High Cost of Youth Unemployment."
- <sup>36</sup> Sarah Ayres, "America's Ten Million Unemployed Youth Spell Danger for Future Economic Growth" (Washington: Center for American Progress, 2013), available at
- http://www.americanprogress.org/issues/economy/report/2013/06/05/65373/americas-10-million-unemployed-youth-spell-danger-for-future-economic-growth/.
- <sup>37</sup> Ben Olinsky and Sarah Ayres, "Training for Success: A Policy to Expand Apprenticeships in the United States" (Washington: Center for American Progress, 2013), available at <a href="http://www.americanprogress.org/wp-content/uploads/2013/11/apprenticeship">http://www.americanprogress.org/wp-content/uploads/2013/11/apprenticeship</a> report.pdf; London School of Economics and Political Science and Centre for

Economic Performance, "The State of Apprenticeship in 2010" (2010), available at

http://cep.lse.ac.uk/pubs/download/special/cepsp22.pdf.

- <sup>38</sup> U.S. Employment and Training Administration, "Registered Apprenticeship Data and Statistics," available at <a href="http://www.doleta.gov/OA/data\_statistics.cfm">http://www.doleta.gov/OA/data\_statistics.cfm</a> (last accessed May 2014); Olinsky and Ayres, "Training for Success: A Policy to Expand Apprenticeships in the United States."
- <sup>39</sup> Debbie Reed and others, "An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States" (Oakland, CA: Mathematica Policy Research, 2012), available at
- http://wdr.doleta.gov/research/FullText Documents/ETAOP 2012 10.pdf; Sarah Ayres, "5 Reasons Expanding Apprenticeships Will Benefit Millennials," Center for American Progress, December 2, 2013, available at
- $\underline{http://www.americanprogress.org/issues/economy/news/2013/12/02/79872/5-reasons-expanding-apprenticeships-will-benefit-millennials/.}$
- <sup>40</sup> Ayres, "5 Reasons Expanding Apprenticeships Will Benefit Millennials."
- <sup>41</sup> The White House, "Fact Sheet: American Job Training Investments: Skills and Jobs to Build a Stronger Middle Class," Press release, April 16, 2014, available at <a href="http://www.whitehouse.gov/the-press-office/2014/04/16/fact-sheet-american-job-training-investments-skills-and-jobs-build-stron">http://www.whitehouse.gov/the-press-office/2014/04/16/fact-sheet-american-job-training-investments-skills-and-jobs-build-stron</a>; Nia Hamm, "Bill aims to spur job growth for the unemployed," CNBC, April 15, 2014, available at <a href="http://www.cnbc.com/id/101581979">http://www.cnbc.com/id/101581979</a>.

<sup>42</sup> Jennifer Erickson, "Top 10 U.S. Government Investments in 20th Century American Competitiveness: Why Federal Funding in the 21st Century Is Equally Critical to U.S. Science and Economic Competitiveness" (Washington: Center for American Progress, 2012), available at <a href="http://www.americanprogress.org/issues/economy/report/2012/01/06/10930/top-10-u-s-government-investments-in-20th-century-american-competitiveness/">http://www.americanprogress.org/issues/economy/report/2012/01/06/10930/top-10-u-s-government-investments-in-20th-century-american-competitiveness/</a>.

<sup>43</sup> Ibid.

44 Ibid.

45 Ibid.

<sup>46</sup> James J. Heckman and Dimitriy V. Masterov, "The productivity argument for investing in young children." Working Paper 5 (Committee on Economic Development, 2004); James J. Heckman, "Schools, Skills, And Synapses," *Economic Inquiry* 46 (3) (2008): 289–324; James Heckman, Seong H. Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitz. "The Rate of the Return to the High Scope Perry Preschool Program." *Journal of Public Economics* 94 (2010): p. 114-128..

<sup>47</sup> 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 <a href="http://www.americanprogress.org/wp-content/uploads/2013/03/EconomicEffectsCitizenship-6.pdf">http://www.americanprogress.org/wp-content/uploads/2013/03/EconomicEffectsCitizenship-6.pdf</a>; Jennifer Erickson and Michael Ettlinger, "300 Million Engines of Growth: A Middle-Out Plan for Jobs, Business, and a Growing Economy" (Washington: Center for American Progress, 2013), available at <a href="http://www.americanprogress.org/issues/economy/report/2013/06/13/66204/300-million-engines-of-growth/">http://www.americanprogress.org/issues/economy/report/2013/06/13/66204/300-million-engines-of-growth/</a>.

<sup>48</sup> Michael J. Boskin and Lawrence J. Lau, "Generalized Solow-Neutral Technical Progress and Postwar Economic Growth."

Working Paper 8023 (National Bureau of Economic Research, 2000), available at <a href="http://www.nber.org/papers/w8023">http://www.nber.org/papers/w8023</a>; Robert M. Solow, "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics* 39 (3) (1957): 312–320, available at <a href="http://www9.georgetown.edu/faculty/mh5/class/econ489/Solow-Growth-Accounting.pdf">http://www9.georgetown.edu/faculty/mh5/class/econ489/Solow-Growth-Accounting.pdf</a>.

<sup>49</sup> Office of Management and Budget, "Historical Tables," available at <a href="http://www.whitehouse.gov/omb/budget/Historicals">http://www.whitehouse.gov/omb/budget/Historicals</a> (last accessed May 2014).

<sup>50</sup> Linden, "It's Time to Hit the Reset Button on the Fiscal Debate."

<sup>51</sup> Council of Economic Advisers, *The Economic Impact of the American Recovery and Reinvestment Act Five Years Later* (Executive Office of the President, 2014), available at

http://www.whitehouse.gov/sites/default/files/docs/cea arra report.pdf.