THE HAMILTON PROJECT

JUNE 2014

Policies to Address Poverty in America

Edited by Melissa S. Kearney and Benjamin H. Harris

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MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

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

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WHY POVERTY BELONGS ON THE NATIONAL POLICY AGENDA

Millions of people live in poverty in this country. They suffer not only material deprivation, but also the hardships and diminished life prospects that come with being poor. Childhood poverty often means growing up without the advantages of a stable home, high-quality schools, or consistent nutrition. Adults in poverty are often hampered by inadequate skills and education, leading to limited wages and job opportunities. And the high costs of housing, health care, and other necessities often mean that people must choose between basic needs, sometimes forgoing essentials like meals or medicine. While by some measures the poor suffer less material deprivation than their counterparts of a half century ago—almost all households now have access to basic necessities like electricity and running water, as well as consumer goods like televisions and computers—the social and economic costs of poverty remain as real as ever and threaten to undermine the nation's social fabric and economic future.

Fifteen percent of Americans—30.4 million adults and 16.1 million children—lived in poverty in 2012, according to the official Census poverty count.[1] This share rises to 16.0 percent when adjustments for costs and benefits are accounted for under the more comprehensive Supplemental Poverty Measure (SPM). Yet even these counts, as high as they are, understate our nation's experience with poverty. For every person classified as poor, many more hover just above the threshold. As has been highlighted in earlier Hamilton Project work, 29.6 percent of families live within 150 percent of the poverty line; nearly half live within 250 percent of the threshold (Kearney et al. 2013). Many individuals and families weave in and out of poverty, even if they are not classified as poor under the annual income measure. From 2009 to 2011, about 90 million individuals—31.6 percent of Americans—were episodically poor (poor for two or more consecutive months during a thirty-six-month period) (Edwards 2014).

In the aftermath of the Great Recession, some disadvantaged workers struggle to obtain the necessary training for fruitful employment, while others grapple with long-term unemployment at unprecedented rates. Long-term challenges remain with us: too many of our nation's youth drop out of high school, too many of our children are born into unstable home environments, and too many of our young adults are out of school and out of work. This threatens our nation with the prospect of a permanent class of individuals who are unable to contribute productively to and benefit from a thriving economy.

Furthermore, research demonstrates that poverty leads to substantial and sustained neurobiological stressors that can inhibit intellectual and emotional development and sound decision making. For children in particular, poverty means living with the stress that comes from insufficient nutritional intake, living in the presence of violence in their community or household, and not having a secure place to sleep at night. These challenges make it harder for children to learn and thrive in school, which, in turn, leads to problems that cumulate over childhood and into adulthood. The concern is that children

born into deprivation will live their lives stuck in a perpetual poverty trap.

Improving the economic well-being of less-advantaged individuals has been a central focus of The Hamilton Project for many years, which has resulted in numerous discussion papers, including proposals to expand the wage subsidies for workers,[2] reform and strengthen the food stamp program,[3] provide tax relief for working families,[4] reform unemployment insurance,[5] expand access to higher education,[6] as well as a proposal to develop a better measurement of poverty,[7] among others. This volume builds on this focus and these existing proposals.

Poverty is a complex, multifaceted problem that can be overcome only through a comprehensive set of innovative policies and effective reforms. Tackling poverty requires a national commitment toward building human capital, harnessing the economic power of that investment, and providing a safety net when jobs are scarce or individuals are simply not intellectually or physically capable of economic self-sufficiency. It means a commitment to addressing the causes and consequences of poverty throughout the life course.

In recognition of these challenges, The Hamilton Project has commissioned fourteen innovative, evidence-based antipoverty proposals. These proposals are authored by a diverse set of leading scholars, each tackling a specific aspect of the poverty crisis. The papers are organized into four broad categories: (1) promoting early childhood development, (2) supporting disadvantaged youth, (3) building skills, and (4) improving safety net and work support. The proposals put forward in this volume are forward-looking and, if implemented, would have important beneficial impacts on the future well-being of America's next generation.

WHO IS POOR IN AMERICA?

The face of poverty in America is diverse, and includes individuals of all races and ethnicities, ages, and family types. Poverty is found across all fifty states and in Washington, DC. In 2012, every state had a poverty rate of at least 10 percent, ranging from a high of 24.2 percent in Mississippi to a low of 10.0 percent in New Hampshire (Bishaw 2013). While poverty is present in every major metropolitan area in the country, it also resides in rural counties and suburbs. In 2012, 14.5 percent of Americans living inside metropolitan areas were classified as poor, as were 17.7 percent of Americans living outside metropolitan areas (DeNavas-Walt, Proctor, and Smith 2013).

Some groups of people are more likely than others to experience the hardships of poverty, however. Children are especially at risk, with poverty rates that are nearly twice that for elderly Americans. Though children make up 25.2 percent of Americans, they constitute 32.4 percent of the episodically poor and 42.4 percent of the chronically poor (those who are poor for thirty-six consecutive months) (Edwards 2014).

Poverty is not concentrated among racial and ethnic minorities, but minorities are disproportionately likely to be poor. Whites make up 74.5 percent of the episodically poor and 62.8 percent of the chronically poor; their corresponding population share is 80.1 percent. African Americans comprise 18.1 percent of the episodically poor, 31.0 percent of the chronically poor, and 12.6 percent of the total population (Edwards 2014). Hispanics constitute 17.1 percent of the total population and 25.6 percent of individuals in poverty (DeNavas-Walt, Proctor, and Smith 2013).

Those with steady employment, not surprisingly, are much less likely to be poor, but work is no assurance that individuals can escape poverty. While only 2.9 percent of full-time, year-round workers live in poverty, 7.3 percent of all workers do not earn more than the poverty threshold (DeNavas-Walt, Proctor, and Smith 2013). Those who find stable employment often work for wages too low to enable them to rise above the poverty line. Many other workers struggle to find full-time jobs.

Family structure, along with work status, is also an important determinant of poverty rates. Individuals living in married-couple families make up 64.0 percent of the total population, but account for 47.8 percent of the episodically poor and 25.7 percent of the chronically poor. Though individuals living in female-headed households make up only 14.9 percent of the total population, they constitute 25.0 percent of the episodically poor and 42.8 percent of the chronically poor (Edwards 2014). Among the 7.1 million families with income below the federal poverty level, 69.7 percent are headed by a single parent (60.4 percent are single female parents) and 30.3 percent are headed by a married couple (Kearney et al. 2013).

In summary, poverty affects a diverse population of individuals, with varying geographic, racial, age, employment, and family characteristics. Poverty is not a static condition; many people cycle in and out of poverty. For many Americans, it is a lifelong threat: two-thirds of Americans will live in poverty for at least a year at some point in their lives (Rank and Hirschl 1999). There is no silver bullet policy lever to combat poverty, but there are effective ways to intervene at all points in the life course and hammer away at the root causes of poverty and its consequences of economic disadvantage.

PROMOTING EARLY CHILDHOOD DEVELOPMENT

Achievement gaps between children from low- and high-income families appear early in life and then persist through high school and afterwards. For example, by age four, children in the highest income quintile score, on average, near the 70th

percentile on tests of literacy and mathematics, compared to children in the lowest-income quintile who score near the 30th percentile (Waldfogel and Washbrook 2011). Scholars and policymakers have increasingly come to appreciate the role of noncognitive skills as well, highlighting the importance of socioemotional traits such as self-esteem and self-control that develop early in life (Heckman, Stixrud, and Urzua 2006).

Early childhood interventions can play an important role in addressing poverty in America. These interventions need to be broad in their focus, and need to address issues of early childhood schooling and high-quality child care, as well as addressing family circumstance and parenting practices. The work of Nobel laureate James Heckman and colleagues has emphasized that early childhood interventions can have significant long-term impacts on educational and economic attainment (see, for example, Knudsen et al. 2006). These findings have been highlighted in earlier work by The Hamilton Project.[8] In this volume, Elizabeth U. Cascio and Diane Whitmore Schanzenbach contribute a policy memo offering a thoughtful consideration of early childhood education and proposing a framework for states to improve their educational investment in young children by expanding access to high-quality preschool.

The home environment is also a crucial input into early childhood experiences. On this dimension, too, poor children are increasingly at a disadvantage. Numerous studies have shown that higher-educated, higher-income parents spend more time with their children, and more time in educational activities in particular (Guryan, Hurst, and Kearney 2008; Kalil, Ryan, and Corey 2012). The policy memo by Ariel Kalil in this volume proposes a new federal initiative to study effective early childhood interventions in the home environment. Better understanding of these programs can ultimately lead to smarter, more-innovative, and more-accountable developmental programs for children and families.

In terms of family structure, it is important to acknowledge that poverty rates are five times as high among children living with single mothers compared to children in two-parent households. This has led to concern among scholars about the rise in single motherhood and its associated consequences for poverty. It has also led to concern about the rate at which lower socioeconomic groups are moving away from marriage and the implications that has for the intergenerational transmission of poverty. For instance, only 9 percent of births to college-educated women are outside marriage (virtually unchanged from a generation ago). In sharp contrast, 57 percent of first births to women with high school diplomas or less are nonmarital (Shattuck and Kreider 2013).

Earlier policy efforts focused on marriage promotion yielded disappointing findings. As a result, poverty scholars are turning to an emphasis on delaying pregnancy and preventing unplanned pregnancies, with the goal of increasing the rate at which children are born to mothers and fathers who have planned for those births and are in a better position to care for their children. The policy memo by Isabel Sawhill and Joanna Venator addresses this issue and puts forward a proposal to promote greater knowledge and choices about contraception among women and their health-care providers.

SUPPORTING DISADVANTAGED YOUTH

Disadvantaged youth seemingly face barriers at every turn. They all too often struggle in school, commit crimes and are victims of violent crimes, have few positive adult role models in their lives, and lack sufficient skills—academic and behavioral—to succeed in the workforce.

The rate at which disadvantaged youth drop out of high school is one concrete measure of how our nation's poor youth struggle to move up the economic ladder. According to recent estimates, nearly four in ten eighth-grade students from families in the lowest income quartile did not eventually graduate from high school (Ingels, Owings, and Kaufman 2002). In school districts located in our country's fifty largest cities, only 53 percent of students graduated from high school (Swanson 2009). These dropout rates are particularly worrisome given the limited earnings and job prospects for high school dropouts in today's economy. The consequences of low educational attainment and lack of labor market skills are too severe to ignore; thus, finding effective ways to foster the academic skills and socioemotional development of disadvantaged youth through their teenage years must be a priority in our nation's multipronged attack on poverty.

In their policy memo, Amy Ellen Schwartz and Jacob Leos-Urbel cite an emerging body of research suggesting that, in addition to the immediate benefits of a summer job and the wages associated with that employment, summer youth employment programs can improve educational outcomes, strengthen social and emotional development, and decrease crime rates. Building on evidence that summer employment can be a very positive driver of adolescent development, Schwartz and Leos-Urbel propose a nationwide summer youth employment program, aimed at helping low-income youth to build human capital and so transition to a productive adulthood.

Mentorship, too, can play a critical role in positive youth development. In his memo, Phillip B. Levine notes that upwards of 9 million children have no caring adults in their lives; he cites credible evidence that effective mentoring programs can help propel young people up the economic

ladder (Bruce and Bridgeland 2014; Cavell et al. 2009). He establishes a framework for evaluating mentorship programs, calling for higher levels of private and non-profit-sector investment in youth mentorship.

The policy memo by Bridget Terry Long addresses the issue of underpreparation for college. Long notes that only 32 percent of students leave high school at least minimally prepared for four-year college, and the proportion is much smaller for African American and Hispanic students—20 and 16 percent, respectively (Greene and Foster 2003). Moreover, only 59 percent of low-income students who met a minimum standard of being academically qualified for college completed a bachelor's degree within eight years, in contrast to 89 percent of high-income students (Adelman 2006). This low level of preparation threatens college completion: only 9 percent of students from the bottom income quartile who enter college actually complete a bachelor's degree by age twenty-five (Bailey and Dynarski 2011). Long proposes to reform the remediation system in this country to better support young, underprepared students in their transition to college.

In addition to tackling the three issues highlighted here, strengthening our country's K–12 education system is of utmost importance. Multiple papers previously published by The Hamilton Project have addressed this issue, and so we do not include papers on education reform in this volume.[9]

BUILDING SKILLS

Skill development and job creation are critical components of our nation's fight against poverty. It is increasingly difficult for individuals to be economically secure in today's global economy with limited skills and education. Recognizing the paramount role of adequate skill and job creation in our national economy, The Hamilton Project has devoted considerable attention to these topics in years past, with papers on using data to improve workforce training,[10] creating more-effective education and workforce development systems in the states, [11] and improving worker advancement in the low-wage labor market.[12]

Stagnant wage growth for low-skilled workers is a persistent economic threat. For four decades, high-skilled workers have seen their wages increase while less-skilled workers have seen their economic positions erode. High school graduates and those with less than a high school diploma saw their real wages fall through the late 1970s and 1980s and rebound a bit in the early 1990s, only to remain stagnant since then (Autor, Katz, and Kearney 2008). In contrast, since the mid-1970s, those with the highest levels of education—more than sixteen years—have seen their wages rise steadily. Those with a college degree or some college have seen some improvement, but the increase in their wages has not kept up with those with more-advanced education.

A second, related trend is what labor economists have referred to as a polarization of job opportunities in the United States. As David Autor explained in his earlier Hamilton Project paper, the U.S. labor market has witnessed expanding job opportunities in high-skilled, high-wage occupations on the one end, and low-skilled, low-wage occupations on the other.[13] Employment prospects for middle-skilled workers in white-collar occupations—clerical, administrative, and sales positions—have weakened, as have those for middle-skilled workers in blue-collar occupations—production, craft, and operative positions. These trends have been experienced by other economies around the world, suggesting that there are global economic forces that have led to a restructuring of the labor market.

The magnitude of this challenge and its stark implications for poverty in America can only be addressed with a massive commitment to skill-upgrading. To date, however, our nation's commitment to investment in skills has lagged behind that of other countries. As Sheena McConnell, Irma Perez-Johnson, and Jillian Berk point out in this volume, the United States does not currently invest heavily in vocational training compared with other countries. Whereas the United States spends less than 0.05 percent of its GDP on vocational training, other industrialized nations invest up to ten times as much. In their policy memo, McConnell, Perez-Johnson, and Berk propose strengthening vocational training for disadvantaged adult workers to boost employment and reduce poverty.

As Robert I. Lerman points out in this volume, the United States also lags far behind our competitors in apprenticeship investment. While apprenticeships offer a productivity-enhancing approach to reducing inequality and expanding opportunity, Lerman notes that the numbers in the United States have declined in recent years to levels about one-tenth of those in Australia, Canada, or Great Britain. Lerman puts forth a proposal to better encourage apprenticeship training and put the United States on a par with other countries with regard to training. On a related topic, Harry J. Holzer in his policy memo observes that the courses pursued by many low-income college students do not equip them with the skills demanded by the labor market. Holzer's proposal focuses on educational reform to incentivize public colleges and universities to better tailor their curricula to improve labor market outcomes for graduates. Clearly, there is significant opportunity to improve our system of education and training to better equip America's workforce with the skills that are demanded and rewarded in today's global economy.

IMPROVING SAFETY NET AND WORK SUPPORT

A strong safety net is crucial to fighting poverty in America. Without programs designed to lift the poorest households out of poverty, roughly twice as many Americans would live below the poverty line today. As revealed by the SPM (see footnote 1), including government programs in the calculation of poverty halves the share of Americans classified as poor from 31 percent to 16 percent (Fox et al. 2013). Evidence further suggests that the safety net is becoming even more effective at fighting poverty: in 1967, government benefits cut poverty by only about one-quarter.

The safety net has become especially effective at fighting poverty among the elderly. Programs like Social Security, Medicare, and Supplemental Security Income—making up 36.1 percent of the federal budget in 2012—have helped drive elderly poverty down to less than 10 percent and so promote a dignified and healthy retirement for America's oldest citizens (Danziger and Danziger 2005). In many ways, the social safety net for elderly Americans can be considered a great success.

The two largest safety-net programs today, in terms of expenditure outlays, are the Earned Income Tax Credit (EITC) and the Supplemental Nutritional Assistance Program (SNAP). Poverty scholars generally regard these programs to be effective. SNAP is the quintessential safety-net program and has proven to be responsive to weak economic conditions in exactly the way a true safety-net program should be. When economic conditions weaken, SNAP caseloads rise; when economic conditions improve, SNAP caseloads fall. Furthermore, researchers have documented the long-term health and economic benefits of this food assistance program to low-income children and individuals (Almond, Hoynes, and Schanzenbach 2011; Hoynes, Schanzenbach, and Almond 2012). A recent Hamilton Project discussion paper by Diane Whitmore Schanzenbach proposed reforms to strengthen SNAP to make the nutritional benefits even greater.[14]

The EITC has been shown to encourage work among single mothers and to lead to long-term improvements in the well-being of families and children (Dahl and Lochner 2012; Evans and Garthwaite 2014; Hoynes, Miller, and Simon forthcoming). As noted by Hilary Hoynes in this volume, the EITC also has immediate and significant impacts on poverty, raising 6.5 million Americans out of poverty in 2012 alone (CBPP 2014). Hoynes' policy memo in this volume proposes to build on this success by raising the EITC benefits for one-child families.

Another set of programs and policies aimed at working Americans are not classified as safety-net programs, but are instead considered to be work support for those in the labor force. These programs include unemployment insurance and wage-support policies like the federal minimum wage. Arindrajit Dube proposes a framework for designing effective minimum wage policies at the state and local levels to better compensate workers in high-cost areas in a way that recognizes and minimizes potential negative employment effects.

Katharine G. Abraham and Susan N. Houseman contend that the unemployment insurance program could be even more effective if it facilitated work-sharing arrangements, such that employers would be less inclined to reduce their workforce during cyclical downturns. They find that if U.S. employers had work-sharing usage at European levels, as many as one in eight of the roughly 8 million jobs lost during the Great Recession could have been saved (Abraham and Houseman forthcoming). In their policy memo in this volume, Abraham and Houseman propose reform of the U.S. network of work-sharing programs to reduce unemployment, especially during economic downturns.

In addition to the three policy memos described above, two other papers in this volume discuss proposals for supporting low-income families. Recognizing that child-care costs can discourage work and take up valuable resources for low-income families, James P. Ziliak proposes expanding and reforming the tax credit for child care to make work pay for working parents. Finally, Scott Cody and Andrew Asher propose improving the administration of safety-net programs at all levels of government by harnessing the power of predictive analytics and rapid-cycle evaluation. If adopted, the proposal in their paper would make social safety-net programs more cost-effective, while also guiding program administrators in their quest to better support American families.

CONCLUSION

Poverty remains one of America's most important policy challenges. On any given day, 46.5 million Americans, including 16.1 million children, endure the hardships of poverty. Millions more hover with great vulnerability just above the poverty line. Still more may be able to meet their current basic needs, only to find themselves living in poverty in the future. The persistent threat of poverty represents a failure of our economic system to provide all children with the support they need to acquire human capital and to provide able-bodied working-age Americans sufficient opportunities for stable and well-paid employment.

No single policy will cure poverty, and this volume recognizes the multidimensional nature of the problem. In this collection of fourteen policy memos, national experts put forth individual evidence-based proposals, each designed to address a specific aspect of poverty. Proposals range from aiding the development of the youngest individuals, to

supporting disadvantaged teens, to improving our national system of training and education. Importantly, the various policy memos call on a variety of implementing agencies; this is an acknowledgement of the reality that alleviating poverty requires commitments by governments at all levels, in addition to the private sector and nongovernmental agencies. Poverty is indeed a nationwide problem that requires a nationwide solution.

This volume does not consider the full range of antipoverty policies. Readers may note an absence of policies relating to fighting homelessness or reforming disability insurance programs. There are no policies directly relating to asset accumulation, such as those to support homeownership or to increase savings. Nor do we address the issue of K–12 education—a major concern for those at the lower end of the income distribution. Some of these topics have been addressed by prior Hamilton Project discussion papers; others will be addressed in future Hamilton Project work.

Public policies have a played a significant role in mitigating the devastations of poverty. Fully twice as many Americans would be impoverished if not for public safety-net programs. During the Great Recession countercyclical antipoverty programs like SNAP and unemployment insurance served to support millions of American families in need, and not only eased the pain of the recession, but also contributed to the recovery. Policymakers continue to rely on American innovation to improve these programs—applying technology and knowledge to the administration and evaluation of public programs in an effort to improve their effectiveness and reduce their cost. But there is still much to do.

With commitment, focus, and hard-headed compassion, policymakers and concerned individuals can make a sustained difference and bring down the stubbornly high rates of poverty in the United States. The proposals included in this volume are put forward with the goal of making economic prosperity a more broadly shared promise for all who live in our wealthy nation. In this spirit, we offer fourteen new policy proposals to help address and reduce poverty in America.

Summary of Proposals

Paper title	Proposal description
Section 1. Promoting Early Childhood Development	
Expanding Preschool Access for Disadvantaged Children Elizabeth U. Cascio and Diane Whitmore Schanzenbach	Proposes a framework calling for the establishment of a high-quality program in areas where preschool programs do not exist, improved preschool quality in those states and localities with subpar programs, and expanded access in areas where high-quality programs already exist.
Addressing the Parenting Divide to Promote Early Childhood Development for Disadvantaged Children Ariel Kalil	Proposes a new federal task force supporting the collection of evidence to develop more-effective parenting interventions and to promote improved child development in early years.
Reducing Unintended Pregnancies for Low-Income Women Isabel Sawhill and Joanna Venator	Proposes to combat unintended pregnancies through a social marketing campaign to encourage more young women to use long-acting reversible contraceptives (LARCs).
Section 2. Supporting Disadvantaged Youth	
Designing Effective Mentoring Programs for Disadvantaged Youth Phillip B. Levine	Proposes expanding community-based mentoring programs, such as the Big Brothers Big Sisters program, in accordance with a set of best practices.
Expanding Summer Employment Opportunities for Low-Income Youth Amy Ellen Schwartz and Jacob Leos-Urbel	Proposes distribution of federal grants to states for municipalities to provide summer employment to disadvantaged youth, first through a pilot program and then through a nationwide expansion.
Addressing the Academic Barriers to Higher Education Bridget Terry Long	Proposes improving placement in college remediation classes, providing better college remediation services, and adopting measures to prevent the need for remediation.

Targeted population	Who implements?	Potential outcomes
Disadvantaged preschool-aged children, especially those who currently have limited preschool access	State and local governments	Promote expansion of cost-effective, high-quality public preschool for low-income children to reduce the income-based gap in school readiness and improve school outcomes for disadvantaged preschool children. Costs would depend on the existing preschool options in each state.
Low-income families with young children between the ages of 0 and 5	U.S. Department of Health and Human Services' Administration for Children and Families	Collect evidence on successful parenting interventions for young children through rigorous experiments, and develop new interventions that are lower cost and better matched to families' needs.
Low-income, unmarried women between the ages of 15 and 30	U.S. Department of Health and Human Services' Office of Population Affairs, in conjunction with state governments	Expand awareness so more low-income women use a LARC or another method of contraception, and thereby reduce the number of unintended pregnancies to lower the number of children born into poverty.
Disadvantaged youth who have no or few adult role models in their lives	Nongovernmental organizations—including nonprofits, foundations, charitable organizations, and others—as well as private-sector entities, and the federal government in some circumstances	Improve educational outcomes for disadvantaged youth and raise lifetime earnings by approximately $7,500. Prior program costs have averaged approximately $1,600 per child.
Low-income youth between the ages of 16 and 19 who are enrolled in, or have recently graduated from, high school	U.S. Department of Labor, state and local governments, and community-based organizations	Expand summer job programs for disadvantaged youth to increase school attendance, improve educational outcomes, and reduce violent behavior and crime. Cost would be roughly $2,000 per participant.
Disadvantaged, academically underprepared students in high school and college	School districts, community colleges, university systems, and state and federal governments	Reduce the need for college-level remediation and better match underprepared students with effective resources and supports to equip them with the skills they need to succeed in college and in the workforce. Reforms would likely result in higher educational outlays in the short run, but would lead to cost savings for students, institutions, and taxpayers in the long run.

Summary of Proposals

Paper title	Proposal description
Section 3. Building Skills	
Expanding Apprenticeship Opportunities in the United States Robert I. Lerman	Proposes a series of targeted federal and state-level initiatives to expand access to registered apprenticeship programs by creating marketing initiatives, building on existing youth apprenticeship programs, extending the use of federal subsidies, and designating occupational standards.
Improving Employment Outcomes for Disadvantaged Students Harry J. Holzer	Proposes the creation of financial incentives for public colleges to offer classes in high-return fields and for employers to offer more training to their employees.
Providing Disadvantaged Workers with Skills to Succeed in the Labor Market Sheena McConnell, Irma Perez-Johnson, and Jillian Berk	Proposes increased funding for training programs targeted to low-skill workers through the Workforce Investment Act (WIA) Adult program and a series of reforms to training programming offered by state and local workforce boards.
Section 4. Improving Safety Net and Work Support	
Supporting Low-Income Workers through Refundable Child-Care Credits James P. Ziliak	Proposes converting the federal Child and Dependent Care Credit from a nonrefundable tax credit to a refundable one, capping eligibility at $70,000 and making the credit a progressive function of income, the age of the child, and utilization of licensed care facilities.
Building on the Success of the Earned Income Tax Credit Hilary Hoynes	Proposes expanding the Earned Income Tax Credit (EITC) by raising the benefits for families with one child to be on par with the benefits for families with two children.
Encouraging Work Sharing to Reduce Unemployment Katharine G. Abraham and Susan N. Houseman	Proposes that the federal government subsidize state work-sharing payments during economic downturns, make work sharing a requirement for state unemployment insurance systems, change federal requirements to modify provisions of state work-sharing plans that may discourage employer participation, and provide states with adequate funding to administer work-sharing programs.
Designing Thoughtful Minimum Wage Policy at the State and Local Levels Arindrajit Dube	Proposes that states and localities consider median wages and local costs when setting minimum wages, index the minimum wage for inflation, and engage in regional wage setting.
Smarter, Better, Faster: The Potential for Predictive Analytics and Rapid-Cycle Evaluation to Improve Program Development and Outcomes Scott Cody and Andrew Asher	Proposes that federal, state, and local agencies conduct thorough needs assessments to identify where predictive analytics and rapid-cycle evaluation can improve service delivery.

Targeted population	Who implements?	Potential outcomes
At-risk youth and middle-skill adults in low-wage jobs	U.S. Department of Labor's Office of Apprenticeship, U.S. Department of Commerce, state governments, and Career Academies	Expand apprenticeship opportunities for both youth and adults to improve human capital and raise earnings by an average of nearly $78,000 over two and a half years after leaving the program. Costs would vary, but successful programs have been implemented at $5,500 per apprentice.
Disadvantaged youth who possess at least some level of basic academic preparation for higher education	Public colleges and university systems, state governments, and the federal government	Incent colleges to reform their curricula to generate better labor market outcomes, with wage gains of up to 30%, for disadvantaged students. Estimates suggest that $2 billion in expenditures could fund occupational training for up to 2 million individuals.
Low-skilled adult workers with limited workforce experience	Federal government through congressional legislation, and state and local workforce boards	Improve labor market outcomes—including earnings increases of between $300 and $900 per quarter—for inexperienced, low-skilled adult workers. Increasing WIA funding to generate these benefits would require direct outlays from the federal government.
Low- and middle-income working families with less than $70,000 in income and with children ages 12 and under	Federal government through congressional legislation	Increase tax-based subsidies for center-based, quality child care for low-income families to increase their labor force participation, disposable income, and usage of higher-quality child care. Cost would depend on a host of factors, but the proposal could be revenue-neutral or better.
Low-income families with one child who qualify for the EITC	Federal government through congressional legislation	Strengthen work incentives for low-income one-child families. Raise after-tax income by about $1,000 for one-child EITC beneficiaries, leading to improved health and children's cognitive skills, and raising 410,000 people—including 131,000 children—out of poverty. Annual cost would be roughly $9 billion before accounting for extra tax revenue from higher levels of work.
American workers who would otherwise become unemployed during a cyclical economic downturn	Federal government through congressional legislation and U.S. Department of Labor, and state governments	Increase employers' usage of work sharing rather than layoffs during cyclical downturns, which could have saved as many as 1 in 8 of the jobs that were lost during the Great Recession. Work sharing may impose costs by reducing the pace of structural adjustment during economic downturns, but if the program is well designed, this effect should not be substantial relative to the policy's benefits.
Low-wage workers	State and local governments	Raise the earnings of low-wage workers with minimal negative impacts on employment.
Agencies at all levels of government that run programs targeting individuals living in poverty	Agencies that administer social service programs across all levels of government	Provide more effective services for individuals living in poverty by targeting services appropriately and by identifying effective program improvements. Initial investments in analytical capabilities may be offset by long-term savings.

Section 1.
Promoting Early Childhood Development

Proposal 1: Expanding Preschool Access for Disadvantaged Children

Elizabeth U. Cascio
Dartmouth College

Diane Whitmore Schanzenbach
Northwestern University

Introduction

Poverty has little association with the cognitive abilities of nine-month-old children (Fryer and Levitt 2013).[1] By the start of kindergarten, however, not only do poor children perform significantly worse on tests of cognitive ability than children from higher-income families, but teachers also report that these children have much more difficulty paying attention and exhibit more behavioral problems (Duncan and Magnuson 2011).[2] The poverty gap in school readiness appears to be growing as income inequality widens (Reardon 2011).

THE POLICY LANDSCAPE

One popular proposal to narrow this gap is to expand formal educational opportunities to poor children under the age of five. Stark gaps in preschool participation by family socioeconomic status mirror the achievement gaps described above. The most recent data available show that only about 50 percent of four-year-old children in families in the lowest income quintile are enrolled in preschool. Among families in the top income quintile, on the other hand, the preschool enrollment rate of four-year-olds is considerably higher, at 76 percent. Nearly all (88 percent) of preschool participants in the lowest-income families are enrolled in public programs.[3]

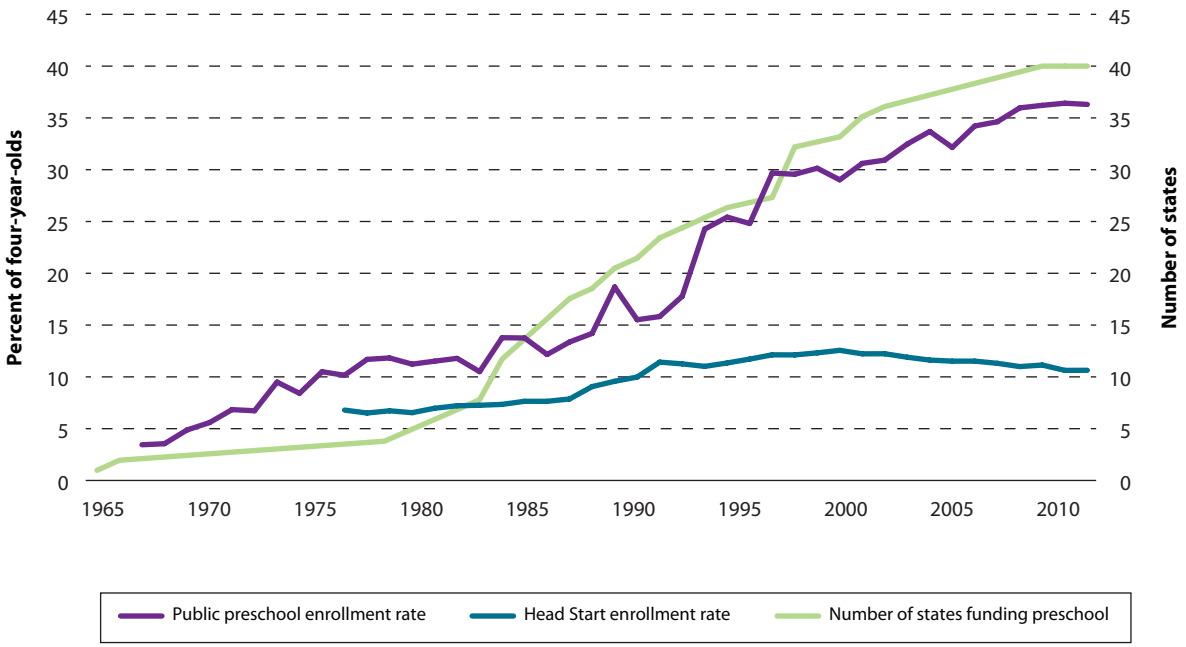
Poor children can currently attend preschool for free through two programs: the federally funded Head Start program, which targets children in families with incomes less than 130 percent of the federal poverty level; and state-funded public programs, which may also serve middle-class children. As shown in figure 1-1, only about 10 percent of four-year-old children nationwide participate in Head Start, a rate that has stayed roughly constant for the past twenty years. Essentially all the growth in public preschool enrollment over time has come from the expansion of state-funded programs, which grew from four states in 1980 to forty states today.

Even so, many state programs have weak standards, as shown in figure 1-2. During the 2011–12 school year, only 9 percent of all four-year-olds nationwide—roughly 31 percent of those enrolled in state-funded preschools—were enrolled in programs that met at least eight common quality benchmarks related to curriculum, teacher education, class size, and support services.[4] The average Head Start program meets only five of these benchmarks (Espinosa 2002).

In this context, President Obama proposed to expand access to preschool education while simultaneously leveling up preschool quality nationwide (Office of the Press Secretary 2013). The White House proposal would provide block grants to states to offer free preschool education to four-year-old children from low- and moderate-income families, provided that these preschool programs score highly on the quality standards checklist presented on the vertical axis in figure 1-2.[5] State and local governments are not waiting for federal action. Most notably, New York City mayor Bill DeBlasio campaigned on the promise of funding universal pre-kindergarten (pre-K), and in March 2014 New York governor Andrew Cuomo and the state legislature agreed to a five-year, $1.5 billion plan to offer high-quality full-day pre-K—not just in New York City, but across the state.

FIGURE 1-1.

Percent of Four-Year-Olds Enrolled in Public Preschool Programs and Number of States Funding Preschool Programs, 1965–2011



Sources: Barnett et al. 2012; The Inter-university Consortium for Political and Social Research (ICPSR) n.d.; Martin et al. 2013; National Bureau of Economic Research (NBER) n.d.; Office of Head Start (OHS) various years; National Center for Health Statistics (NCHS) 2005; authors' calculations.

Note: Data on the public preschool enrollment rate come from the Current Population Survey, October supplement. For 1968–1992, data are derived from ICPSR (n.d.). For 1993–2011, data are derived from NBER (n.d.). The Head Start enrollment rate is the Head Start enrollment of four-year-olds (calculated as total national Head Start enrollment multiplied by the share of enrollment comprising four-year-olds) in a given year divided by the number of children born in the United States four years prior. Data on Head Start enrollment come from the OHS (various years). Data on the number of children born for 1990–2007 (corresponding to the number of children age four for 1994-2011) come from Martin and colleagues (2013). Data on the number of children born for 1974–1989 (corresponding to the number of children age four for 1978-1993) come from NCHS (2005). Data on the number of states funding preschool come from Barnett and colleagues (2012).

Evidence on the impacts of early education is broadly supportive of policy efforts in early education. The research on early education has shown it improves participants' outcomes across a variety of dimensions: higher school attendance rates, fewer failing grades, less grade retention, a higher likelihood of graduating from high school, and less involvement in criminal activity. Improvements in these areas account for many of the economic benefits of preschool programs. However, important questions remain regarding access—the benefits versus the costs of expanding public preschool options beyond lower-income children—and exactly how quality would be best defined from a policy perspective. This policy memo is directed primarily toward state and local policymakers who want to strengthen the public preschool options in their area while considering budgetary trade-offs.

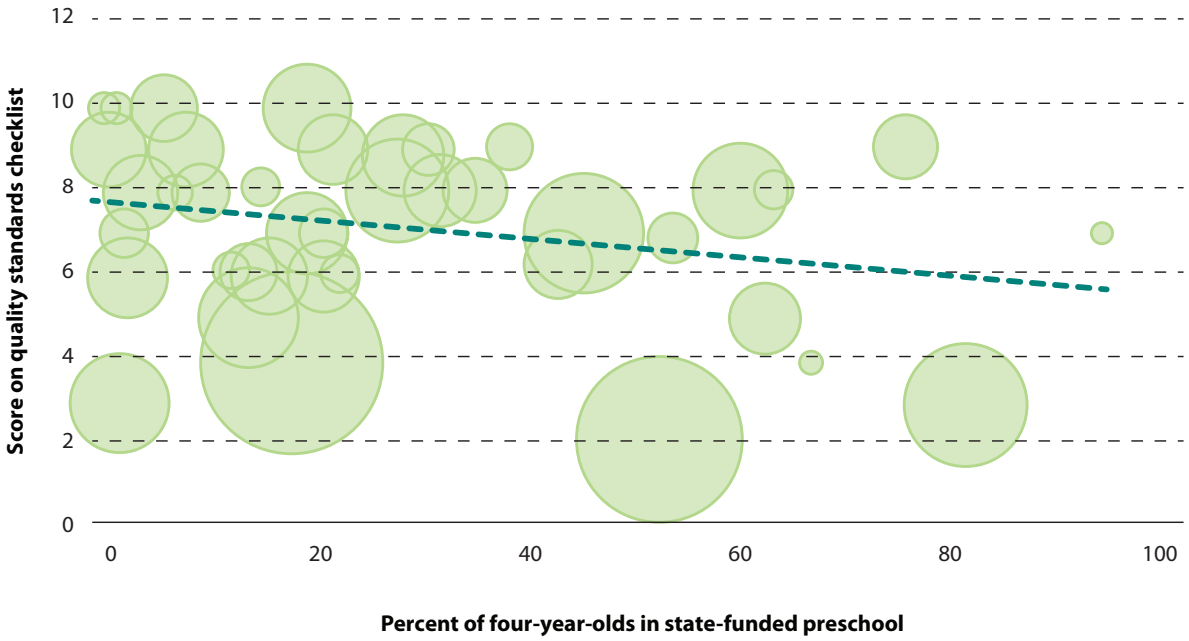
The Challenge

Given that there are several ways to expand preschool access, the policy challenge is to design an expansion program that is cost-effective. Cost-effectiveness requires that policymakers consider the likely benefits of a particular intervention in a given setting.

A useful organizing framework for the policy evidence is to consider the quality of a possible preschool intervention against the quality of the environment in which a child would otherwise be placed. A preschool program with a developmentally appropriate curriculum, nurturing student–teacher interactions, and parental support might be beneficial in preparing disadvantaged children for school, but less beneficial for children from an already otherwise enriched environment. Even a lower-quality preschool program can have an impact on children from the most disadvantaged backgrounds.

FIGURE 1-2.

Relationship between Quality and Access in State-Funded Preschool Programs, 2011–12 School Year



Source: Barnett et al. 2012.

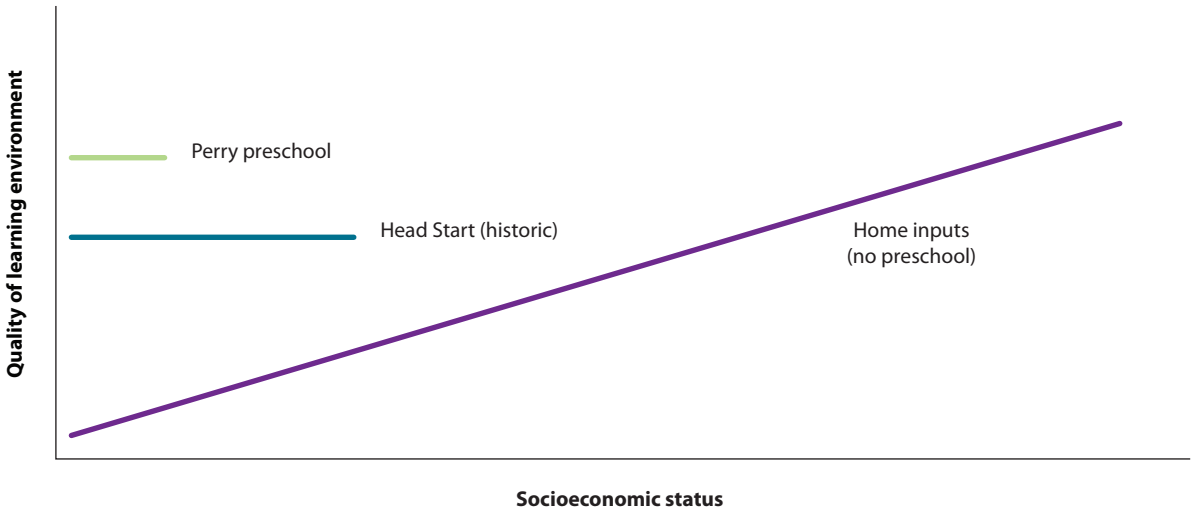
Note: Bubble size represents the number of children born in the state four years prior. The dashed line represents the regression fit, weighting by this figure; the unweighted fit is substantively similar. The quality standards checklist gives equal weight to each of ten factors: (1) program has comprehensive early learning standards; (2) teachers are required to have a bachelor's degree; (3) teachers are required to have specialized training in preschool; (4) assistant teachers are required to have a Child Development Associates (CDA) degree (or equivalent); (5) teachers are required to attend at least fifteen hours per year of in-service; (6) the maximum class size is twenty students; (7) staff to child ratios are 1:10 or better; (8) program offers vision, hearing, health, and one support service; (9) program offers at least one meal; (10) program offers site visits.

This organizing framework is illustrated graphically in figure 1-3. On the horizontal axis is an index measure of a child's socioeconomic status, which can be thought of as a combination of family income, educational attainment of the adults in the home, and so on. On the vertical axis is the quality of the child's learning environment. Considering home inputs alone, as shown by the purple line, there is a positive relationship between the child's socioeconomic status and the quality of the child's learning environment.[6]

One line of evidence on the longer-run impacts of preschool participation derives from programs of the first variety—programs that are very high quality and serve very disadvantaged populations. Arguably the most famous of these is the Perry Preschool program, drawn in light green in figure 1-3. Perry Preschool was a two-year intervention in the early 1960s involving half-day school attendance and weekly home visits for extremely disadvantaged three- and four-year-old African American children living in Ypsilanti, Michigan. Perry (along with other high-quality, targeted preschool interventions, such as the Abecedarian and Nurse-Family Partnership) provides excellent evidence because it was a randomized controlled experiment that collected follow-up data on participants for decades. Early findings from Perry showed initial increases in IQ scores for the treatment group, although these gains faded to zero by the time participants reached age ten (Gramlich 1986; Schweinhart et al. 2005). Despite no difference in measured IQ by late childhood, the Perry treatment students performed statistically significantly better in school: they were absent fewer days, were less likely to have been assigned to special education, had fewer failing grades and higher high school grade point averages, were more likely to graduate from high school, and generally reported more-positive attitudes toward schooling. These improvements persisted into adulthood, when the treatment group was statistically significantly more likely to be employed and less likely either to have been arrested or to have received transfer payments such as cash welfare or Supplemental

FIGURE 1-3.

Framework for Considering the Impact of Preschool, Historic Context



Nutrition Assistance Program benefits (formerly known as the Food Stamp Program).[7]

Considering the improvements in long-term outcomes from a monetary standpoint, every $1.00 spent on the program translated into $8.00 worth of benefits (Heckman et al. 2010). The high rate of return to Perry Preschool may represent an upper bound on the return to preschool investment today, because (as illustrated in figure 1-3) it represented such a large increase in the quality of the participants' learning environments.

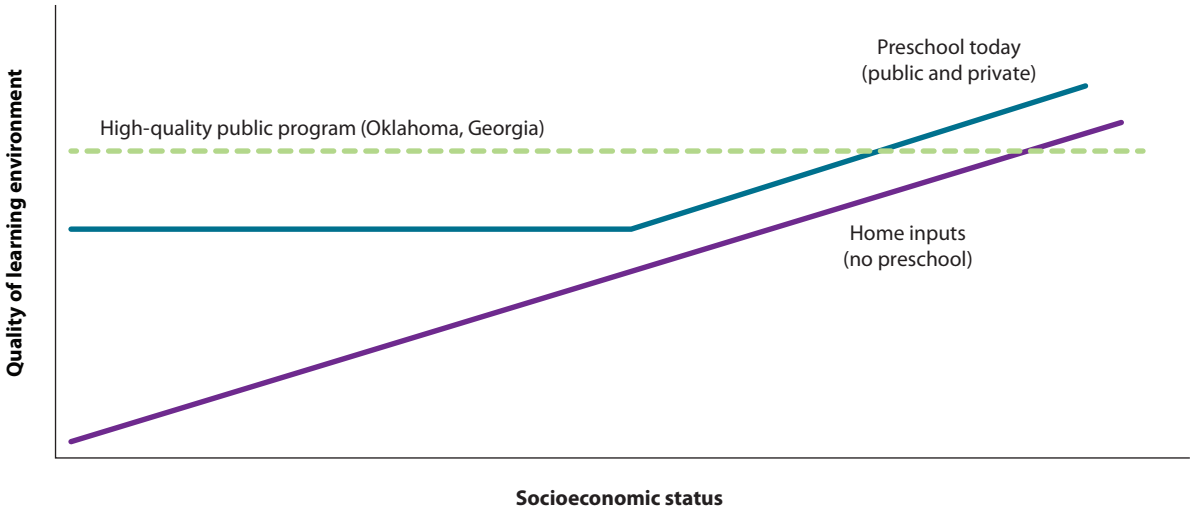
Another line of evidence derives from Head Start, the long-standing federal preschool program. Head Start is considered to be lower quality than Perry Preschool, and although it is targeted to low-income children, it serves a large number of children who are not subject to such extreme levels of disadvantage. As represented by the blue line in figure 1-3, the long-term Head Start evidence spans cohorts of preschool-age children between 1968 and 1990, a period of expansion in other preschool opportunities for low-income children (see figure 1-1). Although experimental evidence is not available from this period, there are several careful quasi-experimental studies that demonstrate impressive impacts of Head Start on both short- and long-term outcomes. For example, Head Start has been shown to have a substantial positive effect on vocabulary test scores during elementary school and to cause a child to be less likely to repeat a grade (Currie and Thomas 1995; Deming 2009). While test score gains fade to a fraction of their initial levels by ages eleven to fourteen, there is evidence that some Head Start participants are less likely to have ever been charged with a crime or to be a teenage parent, and are more likely to complete high school and attend college (Deming 2009; Garces, Thomas, and Currie 2002).[8]

One criticism of Head Start is that it is low quality on average, and exhibits variable quality across locations. While it is considered lower quality than the Perry program, figure 1-3 illustrates that Head Start is nonetheless a higher-quality environment than what the participant would experience in the absence of the program, either at home or in the type of child care that is typically available to low-income parents (Currie 2001). Since Head Start represents a less dramatic increase in the quality of a child's environment than Perry Preschool, its long-term impacts are more muted but still positive.

Figure 1-1 shows that more children across the income distribution are attending preschool today than ever before. However, preschool quality varies across socioeconomic status, as illustrated in the conceptual diagram in figure 1-4. Against the backdrop of increasing preschool enrollment, the first randomized evaluation of Head Start was conducted in 2002; the results sharply differ from the earlier quasi-experimental research. While four-year-old Head Start participants in the Head Start Impact Study saw faster improvements in language and literacy skills over the course of their Head Start year, these relative gains were gone by the end of kindergarten; by the end of third grade, there remained only suggestive evidence of a positive impact of Head Start on reading scores. Furthermore, in no follow-up year did the Impact Study treatment students outperform the control students in math skills, grade retention, or teacher reports of student behavior (Puma et al.

FIGURE 1-4.

Framework for Considering the Impact of Preschool, Current Policy Context



2012). While it is possible that the prior nonexperimental Head Start research yielded upward-biased estimates, it may also be the case that the continued growth in state-funded programs and in maternal employment (and use of other nonparental child care) has diminished Head Start's potential impact. In other words, Head Start may not represent the same increase in the quality of a child's environment today as it did in the past when there were fewer preschool alternatives. Indeed, the majority (roughly 60 percent) of children in the Head Start Impact Study control group attended some other formal education or child-care setting (Puma et al. 2012).[9]

A recent experimental evaluation of the state-funded pre-K program in Tennessee—where preschool or center-based child-care participation rates at age four in the control group were lower (27 percent) and program quality was higher—has yielded results that are slightly more positive.[10] The Tennessee program, which was primarily targeted toward youth from low-income households, yielded higher scores for participants on tests of literacy, language, and math at the end of the pre-K year; participants were rated by their kindergarten teachers as being more ready for school (Lipsey et al. 2013a). While the difference in measured cognitive abilities of the treatment and control groups disappeared by the end of kindergarten, former pre-K participants were much less likely to have been retained in kindergarten and had slightly stronger school attendance records subsequent to the pre-K year (Lipsey et al. 2013b).

As was the case with Head Start, the only evidence on longer-term outcomes of state-funded preschool programs is nonexperimental. Much of this research has to date focused on programs in two states—Georgia and Oklahoma—that meet essentially all of the same standards as the Tennessee program but serve much higher shares of the four-year-old population (see box 1-1).

The introduction of a high-quality, universal preschool program is illustrated in figure 1-4 by the light green dashed line. In this framework, enrolling in the high-quality public preschool improves the quality of the learning environment experienced by low–socioeconomic status children, albeit by less than the full distance from no preschool, because many of these children would be enrolled in some preschool program even in the absence of the new, high-quality option. Yet for higher–socioeconomic status children the improvement in learning environment represented by the introduction of high-quality preschool is smaller, and in some cases may even be negative. [11]

The empirical results of the high-quality programs in Oklahoma and Georgia line up well with the conceptual framework illustrated in figure 1-4. By comparing children just old enough to enter preschool to those who just miss the entry age cutoff (a regression discontinuity approach), studies have found that the Oklahoma preschool program raises short-term test scores (Gormley and Gayer 2005; Wong et al. 2008).[12] Where reported, effect sizes for disadvantaged students (minorities and low-income children) are in the range of those found in the Tennessee study (Gormley and Gayer 2005). Subsequent analyses find that the positive impacts of the Georgia and Oklahoma preschool programs on disadvantaged children are still measurable when the students reach fourth and eighth grades (Cascio and Schanzenbach 2013; Fitzpatrick 2008). Students in Georgia and

Oklahoma who are more advantaged, however, do not display sustained test score improvements from access to high-quality, universal preschool.

The lack of test score impacts for more-advantaged students in Georgia and Oklahoma, and the similarity of initial impacts in these states and in Tennessee, suggest that a universal, high-quality program may yield no academic gains above and beyond a targeted one, though it comes at an additional cost.[13] Consequently, one might wonder what the optimal mix should be between quality and access. For example, could some of the gains from high-quality targeted programs, like that in Tennessee, be achieved for disadvantaged students at a similar cost in higher-access, lower-quality programs, such as through positive spillovers from the presence of higher-income children?

Unfortunately, though quality and access matter considerably for the cost of operating a pre-K program, we have limited policy evidence to address questions about their impacts on potential benefits. For example, there is limited evidence of short-term benefits from higher-access, lower-quality programs. Likewise, while the regression discontinuity design has now been applied in multiple states to estimate the short-term cognitive impacts of preschool, and effect sizes do not appear to be strongly related to quality (see Wong et al. 2008), state-specific estimates are somewhat uncertain, and states differ along other dimensions—most importantly in terms of how nonparticipants spent the year in the absence of preschool.

BOX 1-1.

Case Study on Universal Pre-Kindergarten in Georgia and in Oklahoma

Georgia was the first state to offer free pre-K for all four-year-olds. Georgia's program, which began in fall 1995, is funded by state lottery proceeds and serves the four-year-old population through a combination of half-day and full-day programs operated out of both public schools and private centers. In fall 1998 Oklahoma became the second state to offer universal public pre-K. Oklahoma's pre-K program differs from Georgia's in several respects: it is funded through not just state, but also local and federal tax revenues; it operates almost exclusively out of public schools; and it serves a higher share of the four-year-old population (74 percent to Georgia's 59 percent, according to the most recent estimates). These differences aside, both programs meet most common quality benchmarks, scoring high (8 or 9) on the National Institute for Early Education Research scale (figure 1-3).

There is a growing body of evidence on the impacts of these programs on children's readiness for kindergarten. When tested at age five, children who attended Oklahoma pre-K for a full academic year outperformed their counterparts who just missed being able to attend the program given their birthdays (Gormley and Gayer 2005; Wong et al. 2008). Comparable estimates do not yet exist for Georgia, but Fitzpatrick (2008) found that cohorts of children eligible to attend Georgia's pre-K program (those aged four in fall 1995 and later) performed better on tests in fourth grade than did ineligible cohorts, both in absolute terms and relative to cohorts of children aged four before and after fall 1995 in other states. However, the positive impacts of the Georgia program on fourth-grade test scores were confined to disadvantaged children. Using a similar approach to estimate the test score impacts of both the Georgia and Oklahoma programs, Cascio and Schanzenbach (2013) similarly find a positive impact on fourth-grade scores for children from lower-income families. They also find a positive impact on eighth-grade test scores for lower-income children, but it is smaller than the impact on fourth-grade scores.

The apparent successes of the Georgia and Oklahoma programs in improving children's school readiness have fueled recent calls for government-funded preschool expansion. However, we think that research findings do not necessarily support universal programs in all scenarios. The impacts on test scores are largest for economically disadvantaged children, particularly in later grades. This pattern of findings is sensible given that children from higher-income families will have more and better options for school enrollment at age four (figure 1-4). Indeed, evidence suggests that for every ten children from higher-income families who enrolled in the Georgia or Oklahoma programs, four or five would otherwise have been enrolled in a private preschool program. There is little research evidence to suggest that children from higher-income families or the families themselves benefit in any way beyond saving on child-care expenses (Cascio and Schanzenbach 2013). While worthy, the goal of reducing the child-care costs for middle-class families could potentially be achieved in a lower-cost way. Thus, given the policy evidence, only if state or local budget conditions permit would we recommend consideration of a widely accessible program, and even then we urge policymakers to learn as much as possible about the alternatives to the proposed program for any newly targeted children.

THE ROLE OF SUBSTITUTION

It is challenging to design a state preschool program—even one targeted toward low-income children—that does not induce a lot of switching from another preschool to the public program. The largest impact per unit cost comes from moving low-income children from attending no preschool to attending some preschool. Many low-income children would otherwise attend another program such as Head Start or center-based care; the additional educational impact of attending a high-quality state preschool program will be more muted for these children.

As a high-quality program becomes less targeted toward low-income children and enrolls more middle-income children, the share of new enrollees who otherwise would have attended preschool grows. The additional educational impact of switching from a high-quality, private preschool to a high-quality, public preschool is likely to be close to zero. The number of switchers and the cost of the program can be limited somewhat by charging tuition to higher-income families who enroll in the program.

ENSURING HIGH QUALITY

While "high quality" is a concept easily understood in theory, it is more difficult to measure and enforce in practice. One way to judge a state's overall preschool quality is to use the criteria established by the National Institute for Early Education Research (NIEER); NIEER measures how many of ten benchmarks regarding the level of inputs are met by a state's preschool policy. (This index is represented on the vertical axis of figure 1-2.) There are drawbacks to this approach because these benchmarks are only rough proxies for the classroom practices that are thought to make a high-quality program. For example, a state's policy meets two benchmarks if it has a class-size cap of twenty and a maximum student–teacher ratio of 10:1. The state policy meets three more benchmarks based on the training level of teachers: one if the head teacher is required to hold a bachelor's degree, a second if the teacher is required to have specialized pre-K training, and a third if assistant teachers are required to hold at least an Associate degree in child development. While on average these characteristics may be positively associated with higher-quality programs, they are not necessarily the causal pathway to a high-quality classroom experience.

For example, it may not actually improve preschool classrooms to replace teachers who have no bachelor's degrees but years of experience with teachers who have bachelor's degrees but no experience. Thus, changing a policy to meet the NIEER benchmark may not actually result in an improved classroom experience for preschool children. In a similar spirit, many states have adopted Quality Rating and Improvement Systems that rates individual programs within a state along a variety of dimensions, most of them having to do with input measures. While such measures are only rough proxies for the classroom environment, they do provide important information to families deciding among various preschool options.

A 2013 review of the evidence by a panel of experts for the Society for Research in Child Development concluded that the most important aspects of quality in preschool education are stimulating and supportive interactions between teachers and students, and effective use of a developmentally focused, intensive curriculum (Yoshikawa et al. 2013). There are promising methods to identify the programs and classrooms that perform well on these measures, such as classroom observations using the Classroom Assessment Scoring System (CLASS), which measures the degree to which teachers interact with their students in a manner that stimulates learning in an emotionally supportive environment. Recent work by Sabol and colleagues (2013) has shown that preschool classroom observations of the interactions between teachers and students using CLASS are more predictive of test-score gains than are other inputs measures such as teacher education or class size. A drawback of this approach is that it is relatively costly to implement.

A New Approach

Since the impact of preschool expansions hinges on both the level of quality of the preschool program and on how much preschool improves the quality the child's experience relative to what the child would be doing otherwise, policymakers must carefully consider the existing context in order to design and implement an effective preschool program.

NO PROGRAM: START A HIGH-QUALITY, TARGETED PROGRAM

In states where there is currently no public preschool, the evidence suggests a targeted high-quality program may yield a strong return. Therefore, a better investment may be in a smaller, higher-quality program rather than in a larger, low-quality program, especially if there are substantial numbers of low-income children who are not currently enrolled in a preschool program. If substantial numbers of children are already enrolled in Head Start, switching into a higher-quality state program may still improve children's educational outcomes. Though we expect these gains to be lower for Head Start children than for children who would not otherwise have attended any preschool, there is evidence that Head Start has shifted its emphasis toward children ages three and under as state-funded preschool programs have expanded (Bassok 2012). Some children newly enrolled in state programs may

then be attending Head Start at age three instead of age four, and thus be receiving two years of government-funded early education instead of just one. For states with strong Head Start programs, it would be useful to work closely with the existing Head Start program to ensure the highest possible return on the overall public investment.

EXISTING LOWER-QUALITY PROGRAM: IMPROVE QUALITY

In states with programs that score poorly on quality measures—such as California, Florida, Ohio, and Texas—the best plan may be to increase the quality of the program before expanding access to more students. Adopting state standards in line with the NIEER quality benchmarks may be a first step to increasing quality. For example, requiring head teachers to have a bachelor's degree, providing health screening and referrals, introducing site visits to monitor quality, and requiring a student-teacher ratio of 10:1 or higher are all markers of quality used by NIEER. It is important to note that these quality benchmarks are only rough proxies for the learning environment experienced by the child. As a result, meeting more of the NIEER quality benchmarks may not substantially improve a child's classroom experience. In other words, meeting the benchmarks might be necessary—but perhaps not sufficient—to achieve a high-quality program. Another promising approach would be to ensure that preschools have implemented a developmentally focused, intensive curriculum with integrated, in-classroom professional development as recommended in the Society for Research in Child Development report (Yoshikawa et al. 2013).

EXISTING HIGHER-QUALITY PROGRAM: EXPAND ACCESS

In states with existing high-quality programs that reach only a small share of four-year-olds, efforts should focus on expanding access to the programs. It is important to understand that while the state's cost of expanding access is the same for all children, the potential educational impacts of the expansion will depend on what the newly enrolled children would have been doing otherwise. To the extent that new enrollees are moving from lower-quality Head Start programs, day care, or no preschool, the impacts would be expected to be larger. However, we would expect the education impacts on new enrollees switching from high-quality private preschools to be more muted. Some of this substitution (and cost) could be offset by charging tuition to higher-income families. Nonetheless, there are documented benefits of program expansion even when a high fraction of children switch from private to public preschool. For example, public preschool expansions decrease families' out-of-pocket spending on child care.

WINNERS AND LOSERS

As described above, the largest gains will be expected when low-income children are moved from no preschool to a high-quality preschool. From an academic perspective, the gains will be expected to be smaller (or even zero) for higher-income children who switch into a public program from a comparable private preschool program. Nonetheless, for reasons that include the importance of peer interaction and political popularity, the best policy may be a universal program.

The social benefits to enhancing public preschool options may far outweigh the costs of investing in both the expansion costs and quality improvements. For example, beyond any academic benefits the available evidence suggests that high-quality preschool can have longer-term benefits for society through reductions in crime, teenage pregnancy, and dependence on public assistance. Narrowing the early educational gap between low-income and higher-income children is an important step toward reducing income inequality over time.

Questions and Concerns

Should we take money away from Head Start to invest in state preschool instead?

The existing evidence on preschool is all drawn relative to a baseline with the existing Head Start program. We don't know whether the impacts would be similar if resources were shifted from Head Start to state programs. State expansions of preschool programs would be better combined with a national effort to improve the effectiveness of Head Start. Gordon and Mead (2014) outline policies to improve Head Start.

What are the benefits of expanding the program to three-year-olds?

There are several reasons to think that expanding a preschool program to the most disadvantaged three-year-olds would have a larger impact on learning than expanding a preschool program to the more advantaged four-year-olds for the same price. For example, the strong results found in the Perry Preschool program described in the text were from a two-year intervention starting at age three. The Head Start Impact Study finds positive short-term impacts on achievement levels of three-year-olds; similar to the impact findings for four-year-olds, however, the impacts are substantially diminished by third grade.

Do we get a large gain from expanding from a half-day to a full-day program?

There is limited evidence on the impact of moving from a half- to a full-day preschool program. There appears to be a persistent, positive impact of full-day preschool; because evidence of that impact is largely drawn from an intervention that also increased the length of the school year, it needs to be interpreted with some caution (Robin, Frede, and Barnett 2006). There is also evidence from the Head Start Impact Study that full-day programs have a larger impact on cognitive skills than half-day programs (Walters 2014). Experts in this area caution that the impact does not come from additional time alone, but stress the importance of ensuring that the curriculum and instruction is aligned to make the most of the extra time.

Besides academic achievement, what other areas are affected by preschool programs?

There are a variety of outcomes that have been shown to be positively impacted by preschool. Children have had better school outcomes across a variety of dimensions: higher attendance rates, fewer failing grades, less grade retention, a higher likelihood of graduating from high school, and less involvement in criminal activity. Improvements in these areas account for many of the economic benefits of preschool programs.

Do we expect a large impact on mothers' employment?

Another benefit to free preschool that is often mentioned is that it may enable more mothers to become employed by reducing the opportunity cost to working. Nonetheless, the best estimates are that this impact will be relatively small. For example, if free preschool reduces the cost of child care by around $5,000 per year, and if a mother with a high school diploma or less would earn about $25,000 per year, then preschool reduces the cost of working by about 20 percent. Based on labor supply estimates, this would imply a relatively modest 0.8 to 1.6 percentage-point increase in labor supply.

Conclusion

By the time they reach kindergarten, disadvantaged children already show an achievement gap relative to their higher-income peers. In an attempt to level the playing field for low-income youth, some have called on policymakers to invest in early childhood education by expanding high-quality preschool access to a greater number of American families. Indeed, research has shown that expanding access to high-quality preschool programs can be a cost-effective way to narrow the achievement gap and help low-income children build skills. However, the impact of the program depends critically on a child's education in the absence of the intervention. Children with ample developmental and educational support—such as those enrolled in private preschool programs—will benefit far less from expanded access to preschool relative to those without access to high-quality preschool.

In this policy memo we provide guidelines for policymakers seeking to maximize the impact of investment in early childhood education. Our framework calls for the establishment of a high-quality program in areas where programs do not exist, improved preschool quality in those states and localities with subpar programs, and expanded access in areas where high-quality programs already exist. The available evidence suggests that expansion of early education programs along these lines will lead to improved educational outcomes for disadvantaged children, in addition to a host of other social benefits such as lower crime, reduced teenage pregnancy, and a lessened reliance on the social safety net.

Proposal 2: Addressing the Parenting Divide to Promote Early Childhood Development for Disadvantaged Children

Ariel Kalil
University of Chicago

Introduction

Growing income inequality over the past three decades has created a social divide with stagnated incomes for families at the bottom of the distribution and sharply increased earnings for those at the top (Atkinson, Piketty, and Saez 2011). As the economic destinies of affluent and poor American families have diverged, so too has the educational performance of the children in these families (Reardon 2011). Socioeconomic gaps in children's cognition and behavior open up early in life and remain largely constant through the school years (Duncan and Magnuson 2011). However, rising inequality in income is not the sole cause of the divergence in children's achievement and behavior (Duncan et al. 2013). Parents do more than spend money on children's development—they also promote child development by spending time with their children in cognitively enriching activities and by providing emotional support and consistent discipline. The "parenting divide" between economically advantaged and disadvantaged children is large and appears to be growing over time along these dimensions (Altintas 2012; Hurst 2010; Reeves and Howard 2013).

Consider the parenting time divide between economically advantaged and disadvantaged households. National time diaries show that mothers with a college education or greater spend roughly 4.5 more hours each week directly interacting with their children than do mothers with a high school diploma or less (Guryan, Hurst, and Kearney 2008). This relationship is especially noteworthy because higher-educated parents also spend more time working outside the home. Kalil, Ryan, and Corey (2012) further show that highly educated parents not only spend more time with their children than do less-educated parents, but that they spend that time differently. Specifically, highly educated mothers shift the composition of their time as their child grows in ways that adapt to different developmental stages. When children are in preschool, for example, college-educated mothers focus their time on reading and problem solving. This is precisely when time spent in learning activities best prepares children for school entry. During the middle school years, college-educated parents shift their attention to the management of their children's lives outside the home—precisely the ages when parental management is a key, developmentally appropriate input. Non-college-educated parents do not match their time investments to children's developmental stages in this fashion. Indeed, based on mothers' patterns of time use across a variety of activities, researchers now posit that highly educated parents, more so than less-educated parents, view time with their children as an investment behavior with which to increase their children's future human capital (Guryan, Hurst, and Kearney 2008). As highly educated parents increasingly adopt these patterns of investing in their children, the destinies of the children of college-educated parents may diverge even farther from those of their less-advantaged peers.

The disparities in parental time investment are important because time with children is shown to have direct and causal effects on children's cognitive test scores (Villena-Rodán and Ríos-Aguilar 2011). Price (2010) finds that an additional year of daily mother–child reading increases children's reading test scores in the early school grades by 41 percent of a standard

deviation from average. By comparison, the Perry Preschool program, which is widely upheld as a model, has effect sizes on arithmetic achievement at age fourteen equal to 34 percent of a standard deviation, but at a cost of $20,500 (in 2013 dollars) for each participant (Schweinhart et al. 2005).

To bridge the parenting divide and improve the life chances of economically disadvantaged young children, I propose that the Administration for Children and Families (ACF) at the Department of Health and Human Services be tasked with building the knowledge base to create an Early Years Family Policy to promote more-effective parenting and child development in low-income families, especially for children from birth to age five.

This policy memo outlines action steps that the ACF can take to develop an evidence and innovation agenda to support parents in helping their children reach their full potential. In particular, I argue for three major evidence-based innovations: (a) increasing participation in existing programs so that they can achieve their intended goals, (b) modifying or adapting existing programs to test new approaches that might be more cost-effective and/or cost less, and (c) developing new interventions that are lower cost and better matched to families' needs. For all three innovations, I advocate building on new knowledge from the field of behavioral science, given its potential for helping identify ways of changing behavior that are more cost-effective. These efforts have the potential to deliver smarter, more-innovative, and more-accountable programs for children and families. This commitment necessarily demands experimentation and testing with an eye toward developing new Early Years Family Policy interventions that can be offered cost-effectively and at scale.

The Challenge

CURRENT POLICY APPROACHES AND LIMITATIONS

At present, social policy for fostering the skills of young children largely focuses on education intervention by improving young children's access to preschool programs and increasing the quality of their primary and secondary schools. Model early childhood intervention programs and other school-based efforts can narrow the gap between low-income children and their middle-class counterparts (Chetty et al. 2011; Currie 2001; Deming 2009). However, even though such interventions have demonstrated long-term success (albeit for the relatively few children who have participated in them), family background remains an important correlate of children's educational achievement and attainment (Bailey and Dynarski 2011; Belley and Lochner 2007; Reardon 2011).

Parents are children's first teachers and, to equalize the playing field, governments need to invest in parents so that they can better invest in their children. Gaps in children's skills could be narrowed if less-advantaged parents adopted the parenting practices of their more-advantaged peers, and many parenting interventions aim to do just that. Unfortunately, large-scale parenting interventions in the United States yield modest results at best and do not often change children's cognitive or behavioral skills in the long run (Furstenberg 2011). An evidence and innovation agenda that helps policymakers identify and invest in what works is crucial for supporting parents' engagement with their children.

One leading family intervention for low-income children—the Nurse-Family Partnership program—is being targeted for substantial expansion by the federal government. The program provides weekly in-home visits by trained nurses to low-income, first-time mothers, starting before the child is born and continuing through the child's second birthday. One mission of the program is to improve children's health and development by helping young, economically disadvantaged mothers provide more-competent care. Some experimental evaluations of the program show that it reduces child maltreatment. In one study, mothers who received nurse visits during their pregnancy and the child's infancy had only 0.29 substantiated reports of child abuse and neglect at some point before the child's fifteenth birthday. Mothers who did not receive nurse visits, in contrast, had on average 0.54 such reports (Olds et al. 1997). These results are noteworthy because child maltreatment is costly not only for the individuals affected, but also for society (Zaveri, Burwick, and Maher 2014). The program also yields long-run benefits for some children. By age nineteen, females in the treatment group had fewer arrests and convictions; a subset of these young women had fewer children and less Medicaid use than their control group counterparts (Eckenrode et al. 2010). Despite the notable impacts, there were no overall long-term treatment effects on high school graduation; economic productivity; number of sexual partners, use of birth control, and teen pregnancy or childbearing; and use of welfare, Supplemental Nutrition Assistance Program (SNAP), or Medicaid. Furthermore, there were no long-run impacts of the program on males (Eckenrode et al. 2010).

In short, this touted program appears to have made only modest improvements in parenting and the home environment. When the children were about preschool age, the experimental evaluation revealed no overall treatment differences in the HOME Inventory score (a measure of the cognitive stimulation and emotional support provided to the child in the home). Even among the small subsample of highly disadvantaged mothers, the impacts on parenting were

modest and for the most part not statistically significant (Olds, Henderson, and Kitzman 1994). Results from other large-scale randomized trials evaluating the impact of early intervention programs designed to promote positive parenting and more-enriched home environments (e.g., Parents as Teachers) have also shown few statistically significant effects for low-income families (Wagner, Spiker, and Linn 2002). Yet the average cost to serve a family for forty-five weeks in a home-visiting program is about $6,500; the Nurse-Family Partnership program is on average even more expensive and can cost up to almost $14,000 for each parent participant (Zaveri, Burwick, and Maher 2014).

Unfortunately, many large-scale parenting interventions have limited impacts, in part because of high rates of attrition, low take-up, and lack of engagement. In some home-visiting programs, more than half of enrolled families drop out early, with attrition rates generally ranging from 35 percent to 50 percent (Wagner, Spiker, and Linn 2002). Early Head Start, another major early childhood intervention program, also lacks strong participation (Love et al. 2005). Designed to provide child care from birth through age three, Early Head Start delivers home visits, parenting education, and family support. An experimental evaluation of the program showed that almost half of the families left the program before their child was thirty months old, and more than one-third dropped out before they had been enrolled for eighteen of the thirty-six months. Only 16 percent of the sample participated for the full duration of the program. Assessments of Early Head Start's qualitative dimensions were no better: program administrators rated only 37 percent of families in the full sample as consistently "highly engaged," rated 32 percent as "inconsistently engaged," and rated 25 percent as "engaged at a low level" or "not at all" (ACF 2002). These problems stand in the way of long-term behavior changes for low-income parents and their children.

It should be noted that it is custom for most large-scale impact evaluations to measure effects on all children who were offered a space to participate in the program (known as an "intent-to-treat" measure). When intent-to-treat results are converted to effects for children who actually participated (known as "treatment-on-the-treated"), early childhood intervention programs appear to have larger effects. For example, Ludwig and Phillips (2008) find that the benefits to Head Start are substantially higher when the intent-to-treat results are converted to treatment-on-the-treated results. Little is known about the effects for participants in a program like Early Head Start who completed at least, say, half of the program. This underscores an emphasis going forward on increasing take-up rates and engagement.

OBSTACLES TO PROGRAM PARTICIPATION: INSIGHTS FROM BEHAVIORAL SCIENCE

Perspectives from behavioral economics show that basic human psychology often puts up roadblocks on the path between expressed intentions and actual behavior (Fudenberg and Levine 2006; Laibson 1997; Thaler 1991). Optimal behavior requires self-control. When surveyed about weight loss or low savings rates, for example, many individuals report that they would like to lose weight or save more but lack the willpower to do so (Thaler and Benartzi 2004). Parenting offers many examples of often difficult and sometimes even unpleasant demands whose rewards are uncertain and for which the payoff may not be enjoyed until many years later.

It is also difficult to change habits that have been developed and reinforced over time: parenting behaviors are correlated across generations and shaped by the beliefs and preferences of influential relatives and neighbors in our social networks (Duncan et al. 2005). Successful parenting programs will require unlearning a set of parenting practices and beliefs that may be deeply rooted in one's family origin, culture, and community (Wagner, Spiker, and Linn 2002). Rowe (2008), for example, reports evidence that low-income parents, compared to their higher-income counterparts, respond less often to their young children's utterances, based in part on their beliefs that adults cannot "make" babies talk.

Parents tend to want what is best for their children, but many parents are not getting the most out of the programs they are participating in, either because they are not participating fully in the programs or because the programs are not giving parents the tools they need for optimal parent–child interactions. Programs should help interested parents make decisions that are aligned with their professed intentions and goals. This would involve the redesign of programs and services to help parents get the most out of what these programs are offering.

The challenge is to figure out how to make use of these insights effectively to improve programs and policies. Fortunately, there is compelling experimental evidence on this point from interventions designed to promote health and financial behavior. In these arenas, programs designed on principles from behavioral science have proven effective for weight loss, smoking cessation, financial savings, and health behavior, among other outcomes (for examples see Ashraf, Karlan, and Yin 2006; Charness and Gneezy 2005; Kamenica 2012; Milkman et al. 2011; and Stockwell et al. 2012). Elements common to many of these interventions include commitment devices, which work by formalizing a pledge to do something or achieve an objective; incentives, which work by offering financial or nonfinancial rewards or recognition for changing behavior; and planning prompts,

which provide reminders designed to overcome problems of forgetfulness and procrastination. Many of the ideas in the behavioral economics toolkit are low cost, light touch, and highly scalable. To date, however, these insights have had little impact on the way we design parenting interventions.

Cognitive behavioral science offers a complementary perspective on parent engagement by highlighting the problem of cognitive scarcity among low-income parents stemming from their past and current exposure to toxic stress (Mani et al. 2013). One potentially important source of income-based differences in parenting is the repercussions of the daily stressors of low-income parents' lives that place cognitive and emotional demands on parents' attention and self-control. These financial strains leave little room to follow through on decisions that can affect their children's future (Mani et al. 2013; Mullainathan and Shafir 2013; Shah, Mullainathan, and Shafir 2012). Accordingly, the possibilities for purposeful, goal-directed parenting are greatly diminished.

Some promising new approaches are focused on parents' executive function skills, key components of which include impulse control, working memory, and mental flexibility. Experiences of trauma and stress make focus, memory, and mindful attention and decision-making difficult (Shonkoff 2012). Although experimental evidence is currently lacking, some promising programs for low-income parents are using coaching, multimedia, and computer games that have been specifically designed to create ways for adults to improve memory, focus, attention, impulse control, organization, problem-solving, and multitasking skills (Babcock 2014). Mindfulness meditation training, mind–body exercises (e.g., relaxation breathing practice), and brain games are tools that may increase the quality of parent–child interactions, and likely better mental health and health outcomes to boot (Davidson et al. 2003).

A New Approach

This policy memo proposes that policymakers become better informed on effective interventions that can motivate and support parents to do the things that parent–child programs are intended to encourage. Although the lack of participation and engagement has long vexed researchers and program administrators, the standard model for parenting interventions has changed little over time. To achieve success and scale-up, and to be cost-effective, we need to make progress on two related fronts. First, we need to better understand parental motivation to participate in programs. Attrition and engagement require explicit empirical attention; programs should be designed in a way that can model these processes. Although conventional wisdom attributes lack of participation and engagement to parents' stress and complicated lives, as Wagner, Spiker, and Linn (2002) argue, there are few empirical data to support these assumptions.

We should find a way to deliver parenting programs effectively despite parents' challenging life circumstances. If not, we will continue to produce apologetic reports documenting disappointingly weak effects and will eventually lose the political and public will to spend taxpayer dollars on such efforts.

On the second front, we need to design and experiment with new strategies for making parenting programs more efficient and more effective, drawing on new insights from behavioral science. Specifically, we need to draw on insights that lead to promising new avenues to improve take-up, retention, engagement, and impact of early childhood, parenting, and related public health interventions.

The main barrier to scaling-up parenting interventions nationwide is the currently limited understanding of the key ingredients of successful programs. Public support for government-funded home visiting programs is weak (The Pew Charitable Trusts 2014), and efforts in this arena are hampered by the idea that family policy is an intrusion in the private sphere of family life. We do not debate, however, that children should have regular vision and hearing screenings throughout their school years. But unlike receiving a regular schedule of such screenings, we have no consensus about what families should be required to do to help children achieve their full potential. Moreover, whereas hearing screenings are considered the best way to identify hearing deficiencies in order to prevent or minimize effects on educational progress, we do not have a screening to identify risk factors or effective parenting behavior to prevent children from, say, dropping out of high school.

EARLY YEARS FAMILY POLICY AGENDA

I propose that the President of the United States task an agency, most likely the ACF at the Department of Health and Human Services, with filling knowledge gaps that impede the development of an Early Years Family Policy agenda.

An Early Years Family Policy agenda at the ACF should be consistent with the evidence and innovation agenda proposed last year by the Office of Management and Budget (OMB) in the Executive Office of the President (OMB 2013). The chief component of this effort is strengthening agencies' abilities to continually improve program performance by applying existing evidence about what works, generating new knowledge, and using experimentation and innovation to test new approaches to program delivery.

DESIGN AND EVALUATION OF EVIDENCE-BASED PROGRAMS

Specifically, the ACF should design and evaluate rigorous experiments, using randomized control trials where possible, to test the efficacy of new interventions and design refinements to existing interventions. Given the evidence outlined in this paper, research findings from the social and behavioral sciences can be harnessed to implement low-cost approaches to improving program results. The goal should be to develop new interventions (or adaptations to existing interventions) that use the cutting-edge tools of behavioral economics and new insights from neuroscience that guide current thinking about executive function and mindfulness.

The centerpiece of this proposal is a new research competition sponsored by the ACF at a level of $10 million annually for five years. With these funds, the ACF will hold peer-reviewed competitions to select grantees who are willing to embed innovative randomized control trials into existing programs. This approach avoids reinventing the wheel, and focuses instead on innovations in program design and delivery that increase parental engagement and impact. In addition, I propose that $1 million of the competition funds each year be targeted to developing new interventions that are lower cost and better matched to families' needs. Priority for these funds each year should be targeted to grantees proposing the use of affordable technology as a tool to promote parental engagement and participation in programs. (I expand on this idea below.)

To facilitate the efforts of this new evidence and innovation agenda, and for relatively minimal cost, agencies can form partnerships with academic experts, including using externally funded Intergovernmental Personnel Act assignments, to receive conceptual advice on cutting-edge research findings that should inform how policies are designed, and to receive technical support on designing, evaluating, and iterating experimental field studies.

Upon the successful completion of these activities, the ACF can make recommendations for expanding efforts with a proven track record, identify gaps in knowledge, and design a roadmap to achieve new knowledge. These efforts not only would elevate attention to parenting and the home environment, but also would create a plan for coordination with efforts to expand preschool opportunities for low-income children. Following this plan of action will help to ensure that children arrive at preschool as prepared for learning as possible, and will increase the chance that the quality of parenting and the home environment are sufficiently strong to prevent fade-out of high-quality preschool experiences.

I next offer some examples—also summarized in table 2-1—of the kinds of research trials and evaluations of new approaches to changing parent behavior that the ACF should help fund, design, and evaluate.

Home-visiting programs

An experiment that my colleagues at the University of Chicago and I are currently designing will test a behaviorally informed intervention intended to increase the frequency with which low-income parents engage in educational play with their children. This study will randomly assign about 500 parents of preschool-age children to a treatment and control condition. The treatment combines information about the importance of educational playtime, a commitment to spend the time, recognition for spending the time, and planning prompts. Parents in the treatment and control group will be given electronic tablets to take home for six weeks; these tablets will be preloaded with educational apps and games, and will record the amount of time parents spend using them with their preschool-age children. The experiment will test whether the suite of behaviorally informed nudges and incentives significantly increases the time parents in the treatment group spend with their children. This is the first study of its kind that we know of, and thus there is great scope for funding similar types of studies with different parents or caregivers in the low-income population.

A second example highlights innovations in home visiting with a program being developed and evaluated by Bierman and colleagues (2013). This study is testing the REDI Parenting program, a home-visiting program designed to complement the Head Start classroom program by enhancing the school readiness of economically disadvantaged preschoolers. Each month parents receive a REDI activity club box at the home visit, containing learning materials for them to use, books for them to read, and games for them to play with their children. The books have explicit questions embedded to support parents' interactive book reading; this element of the intervention draws from behavioral insights. That is, the program removes the seemingly trivial barriers to engaging parents in this type of parent–child interaction by devising questions and prompting children to respond. Evidence suggests that providing this home-visiting intervention has led to sustained effects through third grade. In contrast, impacts faded out for children who participated in the classroom without the home-based intervention.

Technology-based initiatives

The ACF should also prioritize the design and evaluation of new strategies that make use of affordable technology as a tool to promote parental engagement and participation in programs. Advances in technology not only could address

TABLE 2-1.

Summary of New Parenting Interventions

Program	Type of program	Intervention	Sample description	Results
Educational Play Intervention, University of Chicago, ongoing	Behaviorally informed intervention	Provides electronic tablets loaded with educational apps and games that record amount of time parents spend using them with pre–K children	500 parents of preschool-age children	To be determined
Head Start REDI Program, The Pennsylvania State University, 2003	Home-visiting program designed to complement Head Start	Provides twice-monthly home visits in pre–K and kindergarten	356 four-year-old children in 44 Head Start classrooms	Sustained impacts on vocabulary, literacy skills, and social behaviors through third grade
InfantNet, Lane County Oregon, 2006–2008	Web-based parenting intervention and remote coaching program	Provides mothers of infants with computer, webcam, Internet connection, and technical/training support for six months	40 infants and their mothers with income at or below 185 percent of U.S. Poverty Income Guidelines	Positive impacts on parental mental health and children's social behavior; parents used over 90 percent of material
Momba, Yale University, Connecticut, ongoing	Interactive web-based smartphone application	Provides low-income mothers with access to social network of pregnant and new mothers	First-time, low-income mothers	To be determined

Sources: Baggett et al. 2010; Bierman et al. 2013; Seger 2012.

barriers to effectiveness, but also could open up new avenues for programs to make an impact. Given the ever-decreasing costs of hardware and the low marginal costs of software, using technology to improve on existing approaches, as well as to develop new approaches, is a promising strategy from a cost–benefit perspective. One example of such an approach might be an interactive parenting coaching program that mimics home-visiting programs. To envision the potential merits of such a novel approach, consider the idea that many parenting interventions rely on a model where one delivery method fits all, and that these interventions require a serious commitment of time. A technology-based approach in which educational materials were preloaded on a digital device or were downloadable from the Internet could reduce a program's dependence on home visits. Parents would not have to depend on face-to-face meetings to stay current with the program and, provided they have access to the Internet, could make use of social media platforms to develop partnerships with other parents. Such an approach, which is both lighter-touch and lower-cost than the traditional in-person service delivery model, may be suitable for many families.

Prototypes of such programs have begun to emerge from the research world. For example, Baggett and colleagues (2010) created InfantNet—a Web-based parenting intervention and remote coaching program for low-income single mothers of infants—which was originally designed to provide parent support services to families in rural areas. The program provided mothers of infants with a computer, webcam, Internet connection, and technical training/support for six months. In a pilot sample of forty caregivers, mothers completed eleven online sessions that included modeling videotapes, computerized videotaping of actual parent–infant interactions, and weekly phone calls with a coach who monitored the parents' use of the materials and reviewed the parent–infant interaction video in consultation with the parent. The results suggested that parents used more than 90 percent of the materials and found them useful and easy to

understand. The intervention also had a positive impact on parental mental health and children's social behavior.

As another relevant example, researchers at the Yale Child Study Center are in the process of creating an interactive Web-based smartphone application modeled after successful social networking tools. The app will create a virtual network of first-time low-income mothers to connect them to one another, mental health services, and parenting support; it will also incorporate rewards for participation (Seger 2012).

These nascent efforts are incorporating insights from behavioral science and advances in technology (and sometimes both). They have shown promising results, albeit almost exclusively at the pilot or proof-of-concept stage, and merit more testing and investment.

COSTS AND BENEFITS

Researchers have estimated that some parent-training programs delivered by home visitors return $1.80 for every $1.00 invested, especially for the highest-risk families (Aos et al. 2004). They are nevertheless costly. It seems reasonable to expect at least that great of a return on investment if existing programs can be made more efficient and cost-effective, or if new programs can be designed with the same goal. To support this effort, the ACF should prioritize high-quality, low-cost evaluations and rapid, iterative experimentation. Such approaches can follow the lead of those in the private sector that use frequent, low-cost experimentation to test strategies to improve results and return on investment.

To put the proposed $10 million in annual research and development spending in context, it is useful to compare it to the commitment President Obama has made to expand home visitation to additional low-income children. Specifically, the Affordable Care Act of 2010 included $1.5 billion over five years for states to operate the Maternal, Infant, and Early Childhood Home Visiting program. The administration's proposed fiscal year 2014 budget adds $6 million to the $400 million allocation for that program. It also proposes that Congress ensure the continuation of the program beyond 2014 by investing $15 billion in funding for the program from 2015 through 2025.

The Department of Health and Human Services is spending additional funds on a five-year national evaluation of the Maternal, Infant, and Early Childhood Home Visiting program, as mandated by the Affordable Care Act (Michalopolous et al. 2013). The national evaluation study is a large-scale (with a sample size of 5,000), in-depth, expensive, multiyear effort. It will yield results on the short-term impact on family outcomes of four different types of existing home-visiting programs, including Early Head Start–Home Visiting, and the Nurse-Family Partnership. However, for the reasons I have outlined in this proposal, it seems wise in an era of scarce government resources to devote some funding to develop and evaluate new approaches that are potentially more cost-effective to improve parenting and promote child development, rather than focusing evaluation and knowledge-building efforts exclusively on status quo approaches.

Questions and Concerns

What programs besides home-visiting programs would benefit from behavioral insights and technology?

The emphasis in this proposal has been on changing parenting behavior, and this naturally lends itself to a discussion of home-visiting programs. The insights from innovative approaches to research and evaluation can be applied to any program that interacts with parents. For instance, key goals of the Head Start preschool program are to engage parents in the classroom and to conduct outreach to improve parental support of children's learning at home. These parent-directed efforts could be enhanced with new knowledge from the R&D efforts proposed here. New knowledge from behaviorally informed or technology-enhanced efforts could also be applied in child welfare programs, Head Start, Early Head Start, and early intervention.

Would the behavioral insight-informed approaches for parents also enlighten the work of other early childhood care providers?

The emphasis in this proposal has been on parents, and I have argued that this approach is necessary to improve the life chances of low-income children. But this proposal may not be sufficient. Young children are exposed to multiple types of nonparental caregivers and teachers. There is every reason to think that behavioral insight–informed approaches could yield important positive benefits for other early childhood caregivers. For instance, teachers in early childhood education programs serving low-income children often suffer from stress and job burnout, in part due to the challenges of dealing with the stress and trauma experienced by the children under their care. Tools that make the job of these caregivers easier, whether based on technology or a mindfulness intervention, and that help teachers focus, problem-solve, and multitask, hold great potential for improving caregivers' efforts and interactions with young children. For example, Landry and colleagues (2009) show how technology and its capability for providing immediate personalized feedback significantly improves teachers' ability to plan their behavior and makes their interactions with preschool children more efficient and effective.

"Light-touch, low-cost" sounds good in theory, but how are your innovative programs going to serve families where parents suffer from serious mental health problems or are otherwise in extremely stressful circumstances?

Some parents will always need intensive services and will require an ongoing personal relationship with a home visitor or social worker. However, there is another group that does not need or desire such an intense relationship. The problem right now is that we don't have a very good estimate of how large either of these two groups is or what their preferences are for the different ways in which they could interact with programs. Moreover, most existing programs take a one-size-fits-all approach, which is likely inefficient for both groups of parents. Innovation in program design and delivery is likely to yield benefits to a broad share of the targeted parent population.

In absence of a federally funded intervention, is there anything that community groups can do to bridge the parenting divide?

Yes. Research that builds more-useful evidence can and should occur at multiple levels—from federal down to local efforts. Local programs are often more nimble and flexible and thus could potentially more easily move toward the behavioral science–informed experimentation approach I have outlined here. Owing to this flexibility, community organizations may also be well positioned to adopt a framework of continuous quality improvement. In addition, experimentation at the local level is critical for understanding how program innovations interact with local contexts, specific populations, and different types of practitioners.

Conclusion

In sum, the United States has made little progress toward narrowing the achievement gap between advantaged and disadvantaged children. Parenting interventions have had limited success, in large part because participation retention and/or the quality of engagement in such programs is low. I propose the development of an evidence and innovation agenda to support parents to meet their goals of helping children reach their full potential. New knowledge from the field of behavioral science has great potential for helping identify ways of changing behavior that are more cost-effective. The challenge is to figure out how to make use of these insights effectively to improve programs and policies for low-income parents and children. The ACF should devote substantial additional resources to creating and promoting an Early Years Family Policy agenda focused on new and improved ways to support parenting and child development in low-income families with young children. Such an agenda has the potential to deliver smarter, more-innovative, and more-accountable programs for children and families. This commitment necessarily demands experimentation and testing with an eye toward developing new interventions that can be offered cost-effectively and at scale.

Proposal 3: Reducing Unintended Pregnancies for Low-Income Women

Isabel Sawhill
The Brookings Institution

Joanna Venator
The Brookings Institution

Introduction

Children born to young, unmarried mothers in the United States face an elevated risk of poverty. More than half of births last year to women under the age of thirty were outside of marriage. In 2012, single mothers headed nearly 25 percent of families, compared to 13 percent in 1970 (U.S. Census Bureau 2012). In that same year, 47 percent of children living in single-mother families lived below the federal poverty level, more than four times the 11 percent poverty rate for children living with their married parents (U.S. Census Bureau 2013). Children of single mothers fare less well in school and in life than children of married parents (see McLanahan and Sandefur 1994; Waldfogel, Craigie, and Brooks-Gunn 2010). For these reasons, addressing the situation into which children are born needs to be a key component in our nation's fight against poverty.

Most single mothers claim that their pregnancy was unwanted or mistimed. Because births to unmarried mothers are largely unintended births, we believe that the most realistic approach to slowing the growth of single-parent families is to help women delay childbearing until both parents are ready to raise a child and prepared to make a long-term commitment to the other parent. Doing so will improve child well-being and reduce child poverty rates.

To that end, we propose a social marketing campaign designed to improve knowledge and attitudes about ways to prevent unintended pregnancies so that women can make better-informed decisions. Specifically, we propose that the U.S. Department of Health and Human Services' Office of Population Affairs (OPA) use Title X monies to fund states for the purpose of launching a social marketing campaign to educate women about the safety, effectiveness, and convenience of long-acting reversible contraceptives, or LARCs. These state-run campaigns would target the population of women most vulnerable to births outside of marriage: low-income women between the ages of fifteen and thirty.

The Challenge

THE GROWTH OF SINGLE-PARENT FAMILIES

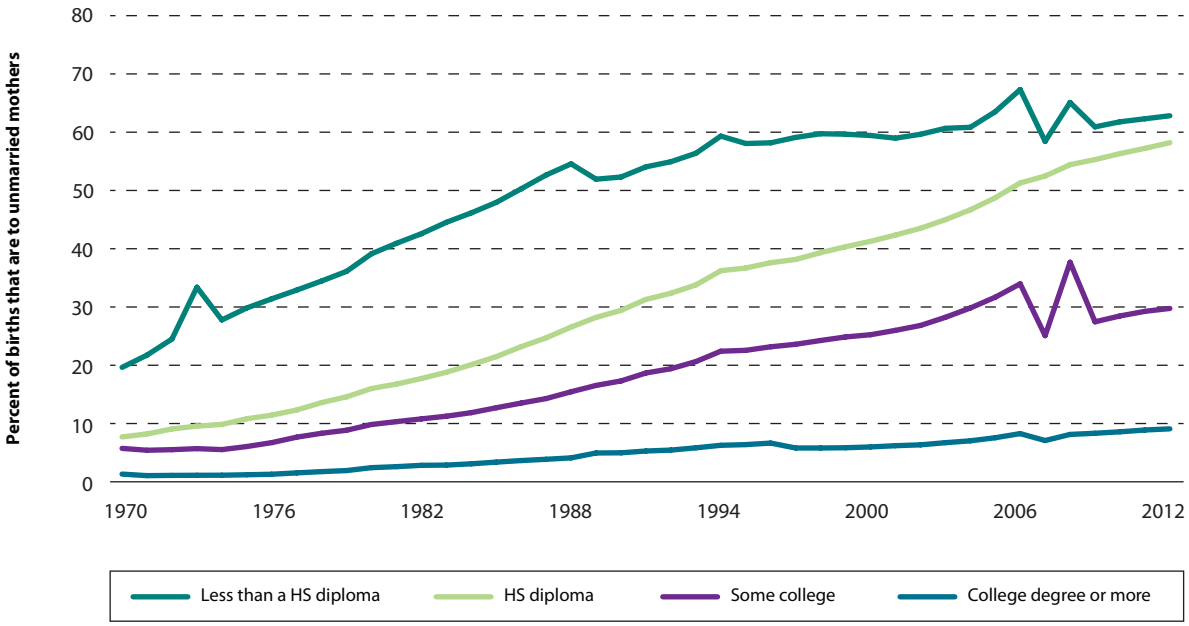
Since about 1980, the growth of single-parent families has been driven almost entirely by an increase in childbearing outside of marriage, often the result of people sliding into relationships and having an unplanned baby.[1] As seen in figure 3-1, this growth has been concentrated among less-educated women.

The result is a growing class divide in family-formation patterns. Combined with growing gaps in income and in education, this widening divide in family structure threatens social mobility (Sawhill 2012; Sawhill and Venator 2014).

Pregnancies and births to unmarried women are largely unplanned. Approximately half of all pregnancies in the United States are reported by the mother as unintended, and that number increases to 70 percent among single women under thirty (Zolna and Lindberg 2012).[2] Unintended pregnancy rates are highest for women that are the least economically advantaged, as seen in figure 3-2. In particular, unintended

FIGURE 3-1.

Percent of Births to Unmarried Mothers by Education, 1970–2012



Sources: Centers for Disease Control and Prevention 2014; authors' calculations.

pregnancy rates for poor women (women with incomes at or below 100 percent of the federal poverty level) and low-income women (women with incomes between 100 percent and 199 percent of the federal poverty level) are more than triple the rate for women with incomes at or above 200 percent of the federal poverty level.

DELAYING CHILDBIRTH AS AN ANTIPOVERTY STRATEGY

Delaying births is no guarantee that poverty will be reduced. As noted above, most of the increase in unwed childbearing is occurring among less-educated women. Given their disadvantages, they might be poor regardless of whether or not they postponed childbearing.[3] For this reason, it is important to combine our proposal with measures to improve the educational and labor-market opportunities of less-advantaged women. But we believe that delaying pregnancy is a crucial step toward improvements in child well-being and in lowered child poverty rates.

Children born to young, unmarried mothers are more likely to fare worse on many dimensions, including school achievement, social and emotional development, health, and success in the labor market. These children are at greater risk of parental abuse and neglect (especially from live-in boyfriends who are not the children's biological fathers), are more likely to become teen parents, and are less likely to graduate from high school or college (McLanahan and Sandefur 1994; Waldfogel, Craigie, and Brooks-Gunn 2010).

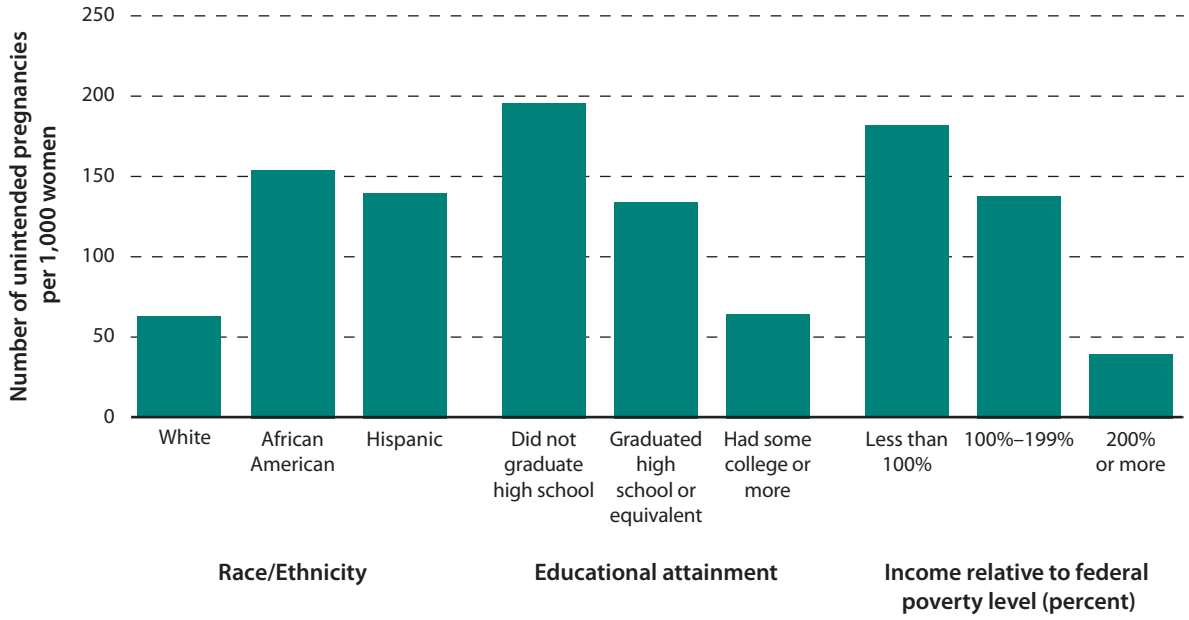
Because unintended births are concentrated among low-income unmarried women, reducing the number of these pregnancies would decrease the number of children born to poor single mothers. A recent paper, based on a simulation with a variety of data sources, suggests that eliminating all unwanted (but not mistimed) births would lower the share of children born into poverty by 2 percentage points and increase the percentage of children born to college-educated mothers by 4 percentage points (Karpilow et al. 2013).

A New Approach

If a large proportion of less-advantaged young adults are having children as the result of unplanned pregnancies, then one way to reduce child poverty is to prevent unintended pregnancies and births. Encouraging more young women to use effective forms of birth control, especially LARCs, can help accomplish that goal. The first step in this process is to increase awareness among young women about the availability, convenience, safety, and effectiveness of these contraceptive devices through a social marketing campaign.

FIGURE 3-2.

Unintended Pregnancy Rates among Unmarried Women in their Twenties



Source: Zolna and Lindberg 2012.

To be effective, this initiative must be combined with efforts to ensure that health providers are well-informed and prepared to provide LARCs, and that there are fewer barriers to affordable health care. More community health centers and the expansion of Medicaid to all states as called for in the Affordable Care Act would help to ensure that providers could accommodate the demands of a social marketing campaign. The Affordable Care Act—with its contraceptive mandate, subsidized premiums, Medicaid expansion, and investment in community health centers—has the potential to transform the health-care landscape. However, there will likely be some groups left uncovered and gaps in coverage for others, especially in states that have so far rejected the Medicaid expansion. In the meantime, our proposal deals with a problem that will exist regardless of any successful expansion of health-insurance coverage.

THE EFFECTIVENESS OF LARCS

The class of contraceptive devices referred to as LARCs includes implants and intrauterine devices (IUDs).[4] These have very low failure rates (<1 percent), far lower than the two most commonly used forms of contraception: condoms (18 percent) and the Pill (9 percent). According to a study in the St. Louis area that gave women free contraception and counseling on the efficacy of different contraceptive methods, women who used the Pill, a transdermal ring, or a hormonal patch were twenty times more likely to get pregnant than were women who used a LARC (Secura et al. 2010). A LARC is roughly forty times more effective than a condom. The greater effectiveness of LARCs compared to condoms or the Pill has less to do with their ability to prevent a pregnancy—assuming full compliance with a method—and much more to do with the fact that they change the default from being protected only when the method is used consistently and correctly, to always being protected, regardless of what the user does. They are also easy to use and reversible. Once a woman and her partner decide that they want a baby, they can choose to remove the device with a quick return to the clinic.

THE ROLE OF SOCIAL MARKETING CAMPAIGNS

Health behaviors—particularly risky ones like smoking, unhealthy eating, or unprotected sex—are influenced by social norms and individual motivation. Social marketing campaigns identify these norms and the behaviors that need to be changed, and create messages tailored to reach those people engaging in risky behaviors. An effective, well-communicated message can influence behavior in a positive way.

Campaigns focused on health behavior have proved effective in the past. For example, the American Legacy Foundation's Truth campaign, aimed at reducing smoking among teens, has been credited with changing attitudes about tobacco and

BOX 3-1.

Prevention First Colorado

Colorado implemented the Prevention First Colorado campaign in the Denver area in 2009. The first part of the campaign involved placing health educators in a few clinics in Denver who are responsible for contraceptive education, counseling, and patient follow-up. Doctors in these clinics typically have limited time to spend with patients so these educators allow for more one-on-one time for patients and more-extensive follow-up to reduce the number of patients who use birth control inconsistently. Health educators also automatically sign up patients who are starting a new contraceptive method for a three-month follow-up appointment in order to help them maintain consistency in use. The second part of the campaign is a public education effort, which uses direct mail, bus ads, posters, Web sites, print ads, brochures, and community presentations about the benefits and availability of contraception. The Prevention First Colorado campaign specifically focuses on encouraging the use of the LARCs and uses messages like, "Life is full of surprises, pregnancy shouldn't be one of them" to encourage young women to go to clinics run by Women's Health. As this campaign is still under way, evaluations of the effectiveness of the campaign are not yet available.

reducing the number of teens who smoke by 22 percent over three years (Farrelly et al. 2005). Campaigns about sexual behaviors have been less common and, until recently, have typically focused on condom use and HIV awareness. On average, these campaigns increased positive sexual behaviors among the target population (e.g., men using a condom) by as much as 6 percentage points (Evans, Silber-Ashley, and Gard 2007; Sawhill, Thomas, and Monea 2010). While 6 percent may sound small, given the broad reach of such campaigns, their cost-effectiveness is high. One approach of social marketing campaigns is to embed messages in popular television shows. An analysis of MTV's 16 and Pregnant suggests that the message broadcast by the show (that is, the difficult reality of becoming a teen mother) led to roughly a 6 percent reduction in teen births between June 2009 and the end of 2010 (Kearney and Levine 2014).

A social marketing campaign targeting unintended pregnancy would aim to produce continuous protection against pregnancy (through LARCs) since the main cause of unintended pregnancies, almost as important as nonuse, is inconsistent use. More than half (52 percent) of unintended pregnancies are due to nonuse of contraception, 43 percent are due to inconsistent or incorrect use, and only 5 percent are due to method failure (Gold et al. 2009).

Within the goal of encouraging more-consistent use of contraception, the campaign would be designed around four objectives, drawing in part on lessons learned from past or ongoing campaigns in Colorado and Iowa with similar goals (see boxes 3-1 and 3-2).

The first objective is to educate young women about the risks of pregnancy and to motivate them to protect against an unplanned pregnancy. The most commonly cited reason for not using contraception given by women in a government survey was, "I didn't think I could get pregnant" (Mosher and Jones 2010). Other evidence suggests that many young people who have had unprotected sex and not gotten pregnant infer (incorrectly) that they cannot or will not get pregnant from subsequent sexual encounters (Frohwirth, Moore, and Maniaci 2013). Focus group research in Colorado further suggests that many women are in denial about the risks of pregnancy (Prevention First Colorado 2009).

The second objective is to educate young women on contraceptive options and dispel myths surrounding contraception, especially with regard to LARCs. Despite their effectiveness, only about 9 percent of women on contraception use IUDs (Finer, Jerman, and Kavanaugh 2012). Among sexually active women aged twenty to twenty-four, about 3 percent use IUDs as their primary form of contraception, 27 percent use the Pill, 7 percent use another hormonal method (e.g., patch, injectable, or contraceptive ring), and 15 percent rely on condoms; 42 percent of sexually active women in this age group report using no contraception (Jones, Mosher, and Daniels 2012).

Young women also seem to lack knowledge about the range of birth control options available to them. One-fourth of young adults have never heard of IUDs and more than half have never heard of the implant (Kaye, Suellentrop, and Sloup 2009). Even when LARCs are readily available, women do not always take advantage of them because of spurious concerns about side effects spread through word of mouth. For example, a third of young adults still mistakenly believe that IUDs often cause infections, partially because of the continued fallout from Dalkon Shield's faulty design in the 1970s (ibid.).

BOX 3-2.

Avoid the Stork

The Avoid the Stork campaign in Iowa, launched in early 2010, targeted women ages eighteen to thirty through television ads, billboards, print and Web ads, college events, and giveaway promotions. The campaign used humor and created a brand around the concept of avoiding unintended pregnancy: the mascot was a large, awkward stork who would interrupt a person's life to represent the consequences of a pregnancy. Development of the campaign took approximately a year, including time to pilot test the ads among a subsample of college students. By the end of the campaign in 2011, over 70 percent of surveyed women reported having seen or heard of the campaign; Iowa has seen a 4 percentage point decline in unintended pregnancies between 2009 and 2011. (This box is based on Pederson 2012.)[5]

However, the latest research suggests that LARCs are safe for women of all ages, including adolescents and both pre- and post-childbearing women (Espey and Ogburn 2011; Peterson and Curtis 2005; Tolaymat and Kaunitz 2007). Some women experience negative side effects, such as perforation and infection; the likelihood of those two issues arising from an IUD today, however, is less than 0.1 percent (Hubacher et al. 2001; Stoddard, McNicholas, and Peipert 2011). Implants have similarly been found to be efficacious and safe (Darney et al. 2009). Changing the message about contraception to encompass more than just condom use or the Pill is important, and campaigns in Colorado and Iowa have already started to enlighten young women through social marketing and educational counseling.

The third objective is to convince women that LARCs are not just safe and effective, but also a low-maintenance and hassle-free form of contraception, well-suited to women with busy lives. The primary problem for some women is not access to contraception, but rather their ability to use it consistently—to always use a condom in the heat of the moment, to remember to take a Pill, or to get their prescription refilled so that there are no gaps in protection. When asked why they were not using contraception, many women who had an unintended pregnancy reply, "I simply wasn't thinking" (Edin et al. 2007). Focus group research in Colorado showed that many women often simply forget to take the Pill (Prevention First Colorado 2009). A social marketing campaign needs to persuade women that LARCs are the "no worry" and "no hassle" way to ensure that they are effectively protected against an unplanned pregnancy.

It should be noted that these campaigns would not be advocating that women use LARCs as their sole method of birth control. Rather, the campaigns would emphasize LARCs' efficacy in reducing pregnancy while also counselling that they do not protect against sexually transmitted diseases (STDs). One of the benefits of the campaign model we are proposing is that it encourages women to go to clinics to talk to trained professionals about birth control. These trained professionals would advise women on all aspects of sexual health, including the importance of continued use of condoms and regular STD testing.

A fourth objective of the campaign is to make sure that once a woman is motivated to use a LARC, she will be able to easily find a clinic or health-care provider who has a supply of LARCs on hand and whose staff is trained to provide the appropriate counseling and care. Unfortunately, many physicians are not up-to-date or trained in how to provide LARCs to their patients (Dehlendrof et al. 2010; Harper et al. 2008; Madden et al. 2010). Both the Colorado and Iowa campaigns provided training to all clinic staff, and not just to physicians. The University of California, San Francisco Bixby Center for Global Reproductive Health is conducting a major study (2014) testing the effects of improved training for family-planning clinicians on access to and use of LARCs. Their randomized trial has been underway since 2008 and the results are not yet available, but concern about provider knowledge and training is widespread among those in the field. Although the focus here is on the social marketing campaign, we strongly recommend that any campaign be combined with efforts to make sure that providers are well-prepared when clients show up. Expanding on this effort in detail is outside the scope of the current proposal.

IMPLEMENTATION DETAILS

For states looking to follow the models set by Iowa and Colorado, the first step would be to secure funding for a social marketing campaign. Both of these programs were created through a private–public partnership, but past campaigns (such as the Don't Kid Yourself campaign in the 1990s; see box 3-3) have been federally funded under Title X (Weinreich 1999). We propose that the OPA set aside $100 million per year ($500 million over five years) under Title X specifically for states that intend to create social marketing campaigns to combat unintended pregnancy. Public–private partnerships would be encouraged as well. The deputy assistant secretary

BOX 3-3.

Don't Kid Yourself

In 1996, six states (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming) implemented Don't Kid Yourself, a campaign with the goal of reducing unintended pregnancy among low-income women between the ages of eighteen and twenty-four. They used radio ads, newspaper ads, posters, and drink coasters in bars, clubs, and coffee shops to spread messages encouraging the use of birth control and providing information about how to get birth control at family-planning clinics. Their pilot program in two cities was a success, but when they expanded regionally to fifty-five cities in all six states, there was a much lower exposure rate—only 15 percent of the target population reported being exposed to the campaign. However, the message was somewhat successful among those it reached. Three-fourths of those exposed initiated conversations with significant others about birth control due to the campaign, and more than 55 percent of those exposed reported calling a family planning clinic for more information. (This box is based on Weinreich 1999.)

for Population Affairs would award funds on a competitive basis, with eligibility criteria adapted from current Title X guidelines. These criteria include the size and needs of the community, the number of low-income women served by a grant, the capacity of the applicant to carry out their proposal given community resources and staffing, adequacy of the applicant's implementation plan given past research, and the relative availability of nonfederal resources within the community to be served. Some degree of market segmentation might be allowed, involving different target groups and different messages, depending on what more-detailed research showed about the needs in a particular state or area of the country. However, the OPA would provide a template based on its research and the advice of a major marketing firm on the best messages to use. This template could serve as the default in each case, but states could request deviation from the plan based on their specific needs.

During the first year of this initiative, the OPA would issue requests for campaign proposals from state governments. States applying for grants would be encouraged to consult widely with various stakeholders in the state and to evaluate the specific needs of their state or region through surveys and focus groups among the target population. For example, Colorado conducted four focus groups and forty individual, private interviews with low-income women between the ages of eighteen and twenty-four to better understand the perceived barriers to consistent contraceptive use among that specific population. Iowa conducted three statewide surveys, multiple focus groups, and in-depth interviews around the state to understand how people viewed the issues surrounding contraception. Focus groups not only would help explore barriers to contraceptive use, but also would help to evaluate the ways in which the target population gets information. For example, Iowa targeted community colleges because they were able to draw large concentrations of twenty-somethings to events. Colorado used coasters in bars. Both campaigns also used television ads, billboards, print ads, and mailings.

We propose that the federal government work with a private consulting firm or nongovernmental organization to develop the default brand and message for the campaign; we believe that providing this information to all grant applicants would be helpful in avoiding reinvention of the wheel each time. Iowa's Avoid the Stork campaign worked with Worldwide Social Marketing to develop three different concepts that were then tested with a subsample of their target demographic. They eventually settled on a humorous brand with a memorable mascot, but other campaigns, such as Don't Kid Yourself and Prevention First Colorado, used a more straightforward message about the consequences of a surprise pregnancy.

Clear metrics of success should be established in evaluating the campaign; one such requirement for funding would be the willingness to submit to an independent evaluation of the campaign's success. Many past campaigns have focused on exposure to the ads, and not on changes in attitudes toward LARCs or changes in behavior, such as the number of unintended pregnancies or births averted. Some campaigns, such as the multistate intervention Don't Kid Yourself in the 1990s, had very poor exposure rates; however, Don't Kid Yourself had positive effects on behavior among the 15 percent of the population that it reached. Important metrics to evaluate are exposure to the campaign, the number of women who switched contraception methods as a result of exposure to the campaign, the number of women who contacted clinics advertised through the campaign, attitudes toward LARCs, the number of pregnancies, the number of unintended pregnancies and/or pregnancies that occurred among unmarried couples, the number of users of specific contraception methods, and the number of abortions before, during, and after the campaign. Future campaigns can learn from past campaigns' successes and failures only if the

evidence clearly relays who the campaigns reach and how they affect those they reach. These metrics should be collected on a state-by-state basis at the six-month, one-year, three-year, and five-year marks to capture both short- and long-term effects of the campaign and any differences based on implementation across states.

COSTS AND BENEFITS

Compared to other antipoverty programs, social marketing campaigns are very cost-effective. In fact, most evidence suggests that they save money. Consider a $100 million annual investment that reaches one-fourth of unmarried women between ages fifteen and thirty in this country. Assume that 5 percent of these women shift to a LARC each year as a result of the campaign, half of them from using a condom and half from using no contraception. The resulting reduction in unintended pregnancy each year would be about 160,000 averted pregnancies. Of the 40 percent (or 67,000) of unintended pregnancies carried to term, about half of these births (approximately 34,000) are to women living below the poverty line. Monea and Thomas (2010) estimate a total taxpayer savings of $24,000 for each averted birth to a poor or low-income woman. Of the 34,000 averted births in this scenario, about 10,500 would not occur at all, resulting in savings of $253 million per year; the remaining births would be delayed on average by two years, resulting in additional savings of $280 million per year.[6] This means that the savings to taxpayers would be over $500 million per year, yielding a cost–benefit ratio of about five to one. If we loosen our assumptions to include all births to women eligible for Medicaid-covered pregnancy costs (i.e., women below 200 percent of the federal poverty level) rather than just births to poor women (i.e., women below 100 percent of the federal poverty level), the cost–benefit ratio increases to eight to one.

Previous studies of costs and benefits have shown a similar benefit-to-cost ratio for taxpayers. For example, Thomas (2012) finds that a social marketing campaign costing $100 million per year will result in approximately a 4 percent reduction in unintended pregnancies, roughly a 2 percent reduction in the number of children born into poverty, and savings of $431 million to taxpayers per year. The taxpayer-savings figure includes not only reduced Medicaid payouts for prenatal and pregnancy care, but also an estimate of the cost to taxpayers of publicly subsidized benefits (e.g., through the Temporary Assistance for Needy Families and the Earned Income Tax Credit) for the children until the age of five (Monea and Thomas 2011).

These calculations count only the public benefits of reducing unintended pregnancies. There would be additional benefits for a mother of delaying a birth until she is ready, such as being able to stay in school or finding a stable partner before having children (Lichter and Graefe 2001; Ng and Kaye 2012). Furthermore, the benefits to the children of being born to older parents in more-stable relationships are large.

Questions and Concerns

Do social marketing campaigns really work?

Some do and some do not. It is important that any campaign be well-funded and well-designed to achieve a set of specific objectives. In addition, there needs to be local buy-in, which is why we recommend that states must make an active decision to apply for grants and that the OPA evaluate applications based, in part, on whether the state has sought and obtained local buy-in. In addition, the campaign will not be effective unless funding for all forms of FDA-approved contraception is available following the implementation of the Affordable Care Act in the states, and unless providers are trained to provide all forms of contraception. With these caveats, as noted in the text, campaigns can change the behavior of perhaps 5 percent of the target population and avert a large number of births to poor women.

Won't these women be disadvantaged and their babies poor no matter when they give birth?

By permitting women to complete more education, to gain more work experience, and to form a stable two-parent family, the odds that any child will be born into poverty are reduced. Moreover, women who defer childbearing until they want to be parents are likely to access more prenatal care, to be better parents, and to create better life prospects for the child.

Do these women who say they are having unintended pregnancies really mean it?

Unintendedness is a continuum. There is no bright line between a birth that is planned and one that is unplanned. Some women (and their partners) are clearly ambivalent or simply do not plan at all. That said, the only hard data we have suggest that rates of unintended pregnancy are very high, especially among poor women. A large number will abort the pregnancy. On the other hand, the fact that so many say the pregnancy was unintended—and that mothers say this even after they have bonded with their newborn infant—tends to bias answers to this question downward, not upward.

Is it politically realistic for the government to fund a social marketing campaign in such a contentious arena?

Contraception is a politically contentious issue. Prior efforts to increase access to contraception have been met, at times, with

substantial political opposition; in some cases this opposition has successfully derailed public programs. Still, many programs have been implemented despite this opposition. In particular, we note the success in implementing social market campaigns in Iowa and Colorado—two states that fall in the middle of the political spectrum. Thus, while we acknowledge that political sentiment is a formidable obstacle to universal take-up of social marketing campaigns aimed at contraception use, the successes in Iowa and Colorado suggest that this barrier will not prove insurmountable in a wide swath of states.

Conclusion

Children born to young, unmarried parents are much more likely to grow up in poverty than are those born to older and/or married parents. Many of these children are born to women who did not intend to get pregnant, and who state that the pregnancy was either unwanted or mistimed. Reducing the number of children born to these mothers would significantly reduce the number of children born into poverty. Creating greater awareness of the risks of pregnancy and how to reduce that risk will help women match their childbearing behaviors to their intentions and make it easier for women to delay pregnancy until they can give their child a stronger start in life. All the evidence suggests that this proposal to launch social marketing campaigns would reduce unintended pregnancies and births, reduce child poverty, and save the government money in the process. Family planning by itself will not eliminate child poverty, but it is an important step in the process.

Section 2.
Supporting Disadvantaged Youth

Proposal 4: Designing Effective Mentoring Programs for Disadvantaged Youth

Phillip B. Levine
Wellesley College

Introduction

The need for mentoring programs is indisputable. Over 30 percent of children live in households headed by a single parent (or no parent), a rate that has doubled over the past forty-five years (see figure 4-1). Six in ten African American children live in households of this type, which actually reflects a slight decline in recent years; this rate has been as high as two-thirds. Estimates indicate that upwards of 9 million children have no caring adults in their lives (Bruce and Bridgeland 2014; Cavell et al. 2009). This policy memo reviews the evidence of success from past and current mentoring programs and proposes ways to move forward that could truly make a difference in the lives of young people by providing them with opportunities that could propel them forward in life.[1]

Although there are 5,000 mentoring programs in this country providing services to 3 million young people (Dubois et al. 2011)—with Big Brothers Big Sisters alone serving almost 200,000 children (Big Brothers Big Sisters of America 2012)—many youth remain unserved. Before we propose expanding mentoring programs to more youth, it is critical that we identify existing programs and the components of those programs that work best. This paper will do that, and then, based on the best available evidence, will argue that community-based mentoring programs in the vein of the traditional Big Brothers Big Sisters model are most effective. I contend that community-based programs should receive additional support of nongovernmental organizations (NGOs)—including nonprofits, foundations, and charitable organizations—as well as private-sector entities. Moreover, I propose that these programs be implemented in accordance with a set of best practices and be rigorously evaluated in order to determine the key components for program success with the goal of designing the best possible interventions for improving the life outcomes of disadvantaged youth.

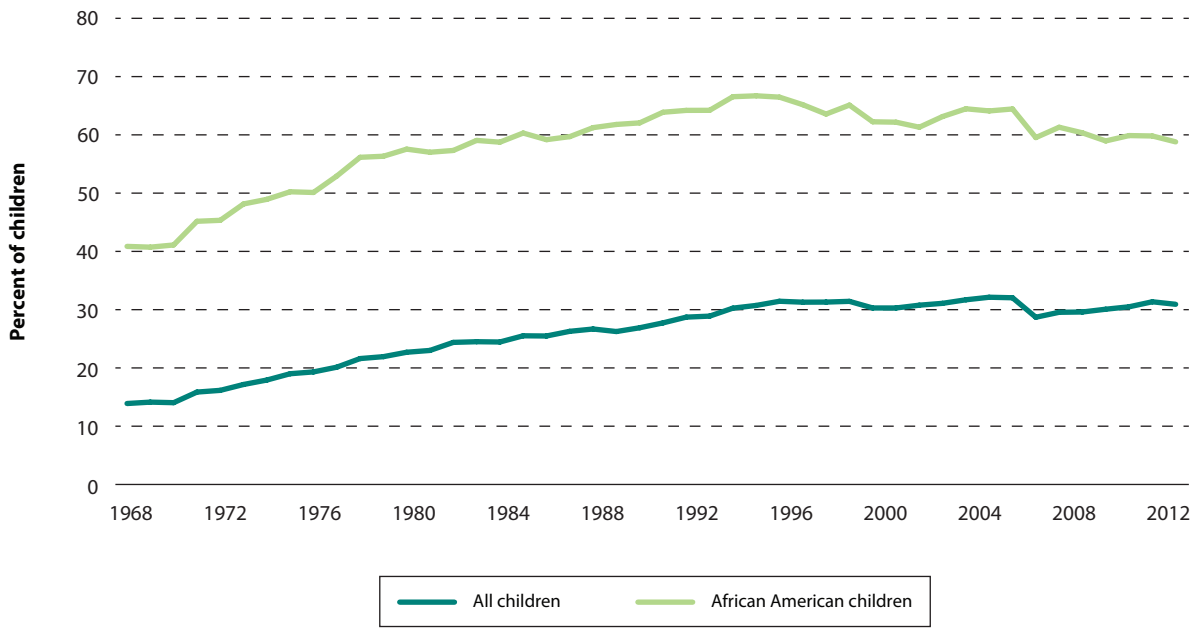
The Challenge

A wide variety of programs aim to pair disadvantaged youth with role models in one-on-one relationships in hopes of providing these youth with advice and guidance that they may not otherwise have. As noted at the outset, there is an immense need for mentors in this country given the number of children who lack proper adult guidance (about 9 million), but determining how to establish an effective mentoring program is not entirely straightforward. A major obstacle to moving forward is sorting through the breadth of research on past and existing programs. This proposal does so and addresses this central question: What can we learn about existing mentoring programs to help design or modify them so that they alleviate poverty among young people?

First, the specific focus of individual programs is important to consider in evaluating past research. Mentoring programs come in many forms, some of which may satisfy a variety of different goals but do not address poverty reduction specifically. For instance, some programs assign mentors to victims of child abuse, where the goal of the program is to limit the emotional damage done to the child. This may indirectly enable the child to be more successful in the labor

FIGURE 4-1.

Percent of Children Living in Households Headed by a Single Parent or No Parent, 1968–2013



Sources: U.S. Census Bureau 2013; author's calculations.

market, but that is not its specific focus. Other examples of programs in this category include those that are directed at teen-pregnancy prevention, improvement of health status, or reduction of recidivism among criminals. They may be successful in their own dimensions and should be supported accordingly, but my focus here is primarily on direct attempts to improve economic well-being as at least one of the main goals of the program.

Second, my focus on alleviating poverty is a major filter in evaluating past evidence. The most direct way to improve labor market success for a participant is to improve her educational outcomes. Several mentoring programs have that as an explicit goal, perhaps among many goals; these are the programs I consider. For instance, we have direct evidence that children who get better grades, score higher on standardized tests, and are more likely to complete high school also do better in the labor market. This policy memo concentrates on those measures that can be directly translated into subsequent labor market success.

Third, I do not consider training and career development programs that include mentoring as just a minor aspect, such as Career Academies and Job Corps. The key component of programs like these is vocational training. Mentoring services are included, but they are far from the focus of the programs. Robert Lerman's proposal in this series discusses these types of programs in greater detail.

One final restriction that I impose in examining previous research is to focus on those evaluations that are conducted within an experimental context. It is common in the literature to find examples of program evaluations that rely on what are often labeled quasi-experiments. Typically, in these examples, treatment and control groups are identified. The treatment group represents those members who voluntarily participated in the program, however, and the control group is created as a set of other individuals who have similar demographic characteristics (e.g., age, race, family income). Selection bias is an obvious concern in these evaluations: those who are more motivated to succeed volunteer to participate, and this differential level of motivation is not necessarily matched in the control group. These studies have an obvious bias in the direction of finding a positive effect of the program—a conclusion that may or may not be warranted. For this reason, I exclude these studies from my review.

The extensive resources provided by Child Trends, which catalogs a large array of interventions with a multitude of program goals, are beneficial to this review (Child Trends 2014). All of these interventions have been evaluated using true experimental designs. In the Child Trends database,

twenty-four interventions include some form of mentoring component, but most do not satisfy the four conditions identified earlier.[2]

Various types of programs include a substantive mentoring component with a key focus on improving educational outcomes and subsequent labor market success. They can be categorized in a number of dimensions, distinguishing between those that are publicly or privately funded, those that are school-based versus community-based, those that offer a comprehensive set of services that include mentoring, and those that largely or exclusively focus on mentoring alone.

The distinction between publicly and privately funded programs is obvious. School-based programs are those in which the mentor typically meets with the mentee after school; an important element of the meeting is frequently helping with school work. Because of the central nature of the school environment, these programs tend to meet less over the course of a typical week and for fewer weeks per year dependent on the school calendar and, particularly, with gaps during school vacations and over the summer. Community-based programs include longer meetings (perhaps on weekends) throughout the year and do not focus explicitly on academic support.

Programs that offer more-comprehensive services along with mentoring can include aspects like financial incentives, community service requirements, supplemental education, and the like. Given that mentoring is a sufficiently important component of these programs, I include these programs in this review.

In sum, my criteria narrow the focus to programs (1) that are primarily targeted at improving economic outcomes, (2) that include mentoring as a substantial component of the intervention, (3) that measure educational outcomes, and (4) that have been evaluated using an experimental design. Evaluations are available for five past interventions that satisfy these criteria. The features of these five programs are summarized below and in table 4-1.

Two of these evaluations were conducted by Big Brothers Big Sisters, which is the largest and best-known mentoring agency in the country. It is a nonprofit organization that has been matching volunteer mentors to disadvantaged youth for over a century. More recently, it has conducted two evaluations of the programs that it runs. The first evaluation focused on its community-based mentoring programs, which follow its original model (Tierney, Grossman, and Resch 1995). In this evaluation, treatment group members were matched to mentors who were members of the community, and the pair met a few times a month for an average of four hours per meeting over the course of at least one year. The youth were between ten and fourteen years old, largely economically disadvantaged, and almost exclusively living in single-parent households. The results indicate that the youth who received the mentoring treatment skipped school less often and felt more confident in their ability to complete schoolwork. Their grades also went up by 0.08 GPA points (on a 4-point scale).[3]

The second evaluation run by Big Brothers Big Sisters addressed a school-based model of mentoring. In this program, treatment-group youth, who were in Grades 4–9, were matched with volunteer mentors, and the pair met over the course of one school year, typically for one hour per week. Most of these meetings ended when the school year came to a close. Academic support was often included in these meetings, but this was not the exclusive focus. Two-thirds of the students were receiving free or reduced-price lunch (indicating they lived in lower-income households) and around half lived in single-parent households. The results of this intervention were mixed. Some academic outcomes did improve, including the number of assignments completed and teacher ratings of overall academic performance. The impact on grades, however, was half the size of that in the community-based program (0.04 GPA points) and was not statistically significant.

Two other school-based mentoring programs have been evaluated using an experimental design: the Student Mentoring Program (SMP; Bernstein et al. 2009), funded by the No Child Left Behind Act, and the Study of Mentoring in the Learning Environment (SMILE; Karcher 2008). The design of both programs included meetings between students and mentors for one hour per week over the course of the school year. In practice, fewer meetings actually took place. SMP duration averaged about one meeting per week over five or six months; SMILE duration averaged only eight meetings over three months. In both programs meetings included discussions of academic activities, but were not limited to such discussions. In SMP, most of the student participants were receiving free or reduced-price lunch, almost half were living in single-parent households, and the majority were deemed academically at-risk. Most students in SMILE had family incomes under $20,000. The results from both programs were discouraging; the interventions led to no significant improvement in any academic outcome. In attempting to reconcile the results from the three student-based mentoring programs, Wheeler, Keller, and DuBois (2010) contend that the limited impact of SMP and SMILE relative to that of Big Brothers Big Sisters (which was not overwhelming in the first place) may be attributable to the fact that 17 percent of assigned student–mentor pairs never actually met in SMP and relatively few student–mentor meetings took place in SMILE.

TABLE 4-1.

Overview of Mentoring Programs Reviewed

Program	Type of program and funding	Frequency and duration of meetings	Composition of sample	Sample size	Impact on academic outcomes	Cost per participant per year (in 2013 dollars)
Big Brothers Big Sisters Community-Based Mentoring	Community-based mentoring (privately funded)	Two to four times per month for at least one year; typical meeting lasted four hours	Ages 10 to 14; 60% boys; from single-parent, low-income households; with some history of violence or substance abuse	959	Significant effects on several measures, including a 0.08 increase in grade point average (GPA)	$1,530
Big Brothers Big Sisters School-Based Mentoring	School-based mentoring (privately funded)	One-hour weekly meetings for one academic year (under six months in practice)	Grades 4–9; 69% free or reduced-price lunch; close to 50/50 gender ratio; around half in single-parent households	1,139	Significant effects on several measures, such as absenteeism and assignments completed, but no significant effects on GPA	$1,177
Department of Education Student Mentoring Program (SMP)	School-based mentoring (publicly funded)	One-hour weekly meetings for one academic year (under six months in practice)	Grades 4–8; 85% free or reduced-price lunch; 44% in single-parent households; 60% at academic risk	2,573	No observable impact	$1,522
Quantum Opportunities Program (QOP)	Comprehensive program including substantive mentoring component (privately funded)	Goal was 750 hours/year, but actual average was 177 hours/year	At-risk students entering Grade 9	1,069	No observable impact	$35,730
Study of Mentoring in the Learning Environment (SMILE)	School-based mentoring (privately funded)	One-hour weekly meetings for one academic year (under six months in practice)	Mainly Latino students between ten and eighteen years of age; most with annual family income under $20,000	516	No observable impact	No data available

Sources: Bernstein et al. 2009; Karcher 2008; Herrera et al. 2007; Schirm, Stuart, and McKie 2006; Tierney, Grossman, and Resch 1995; author's calculations.

Finally, the Quantum Opportunities Project provided more-extensive services than the other programs, including homework help, tutoring, life and family skills counseling (including counseling on alcohol and drug abuse, sex, and family planning), and a significant community service requirement, along with a substantive mentoring component (Hahn, Leavitt, and Aaron 1994; Schirm, Stuart, and McKie 2006). In addition, students received financial incentives to encourage them to stay in the program. This program focused on at-risk students entering ninth grade. Of the five interventions reviewed here, the Quantum Opportunities Project is clearly the most extensive, both in terms of services provided, program length, and cost. An initial pilot of the intervention showed positive results, including a 21 percent increase in high school graduation rates. The success of the pilot led to a larger-scale evaluation, but the results could not be replicated, particularly in terms of educational attainment. The follow-up study was unable to find any effect in that dimension.[4]

All of this evidence suggests that a traditional mentoring program of the community-based type, such as Big Brothers Big Sisters, is the approach most likely to be successful in improving subsequent labor market earnings among disadvantaged youth. School-based approaches have yielded mixed results, at best. Several potential explanations could explain this finding. First, their organization around the school imposes administrative hurdles that may lead to fewer and shorter meetings between mentors and mentees. Second, the emphasis on schoolwork, even if it is not exclusive, may hinder the true benefit of a mentoring intervention, which is providing an adult voice of reason to adolescents who may be lacking one. Conventional community-based approaches also dominate a comprehensive approach that offers a number of services, including a substantive mentoring component. Perhaps it is no surprise based on the longevity of the program that Big Brothers Big Sisters is the type of intervention that provides the clearest benefits to its participants.

A New Approach

I propose that NGOs and private-sector entities consider expanding mentoring programs of the community-based form. Having access to an adult, trusted voice of reason would likely be helpful to disadvantaged youth seeking to climb the economic ladder. Based on my discussion below regarding the public and private returns to mentoring programs, I make the case that NGOs and private-sector groups should promote these types of programs.

Beyond the general support for community-based mentoring programs, I propose that these groups implement community-based mentorship programs with a set of best practices in mind; it is useful to consider the components of those programs that would generate the greatest gains for program participants. One reason that community-based programs may have been more successful than school-based programs is the nature and the extent of interaction between the mentor and mentee. These programs had more contact hours (typically three or four meetings per month lasting, on average, four hours per meeting) over a longer period of time (about a year) than school-based programs. This aspect likely contributed to its success. School-based programs also focus directly, although not exclusively, on academic support; community-based programs do not. Apparently, providing life guidance may be more important than providing academic guidance.

One other aspect of program implementation that would likely be desirable is the demographic match between the mentor and mentee. Evidence from educational research and evaluations of job-placement programs suggests that having mentors that are of the same race and perhaps of the same gender as the mentee is an important element of a successful program (see Behncke, Frölich, and Lechner 2010; Dee 2004, 2005). Interestingly, Big Brothers Big Sisters does not mandate matches by race, although it does by gender.

In terms of other program components, we do not have the luxury of additional experimental evidence to provide strong recommendations regarding the specific content that should be included in model mentoring programs. What we do have, however, is the approach that Big Brothers Big Sisters used in its community-based programs that have been successfully evaluated with positive results. Tierney, Grossman, and Resch (1995) document these program elements. I propose that NGOs and private-sector entities consider the following factors when promoting mentorship programs:

1. These programs should undertake thorough screening of potential mentors. Tierney, Grossman, and Resch (1995) report that Big Brothers Big Sisters uses background checks to screen out those determined to "pose a safety risk, are unlikely to honor their time commitment or are unlikely to form positive relationships with the youth." Only around one-third of their volunteers met that test. Big Brothers Big Sisters rejected those whom it deemed inappropriate and those who did not complete the necessary steps of the screening process.

2. Mentorship programs should undergo a thorough screening of potential mentees. Those adolescents who participate must be interviewed along with their (single) parent, pass a home assessment, receive parental permission, and have a "minimal level of social skills" (Tierney, Grossman, and Resch 1995).

3. Extensive training of mentors is recommended, although it is not mandatory. The training should address youth development, communication skills, and suggestions about how to interact with a mentee, among other priorities.

4. As mentioned earlier, matches between the mentor and the mentee should be made based on preferences and expediency. Gender, geographic proximity, and availability are common match factors, along with the interests of both the mentor and mentee.

5. Finally, mentorship programs should include an element of supervision of the mentor–mentee relationship. Case managers should routinely check in with the mentor and the mentee in order to verify that the match has been successful.

These five program components have not been separately evaluated with a rigorous methodology designed to determine their role in the success of the program. Nevertheless, they do provide a starting point; their combination has been found to be effective in Big Brothers Big Sisters community-based mentoring programs. NGOs and private-sector entities should ideally combine and implement these elements in mentorship programs for disadvantaged youth.

Finally, given that these program components have not been thoroughly evaluated, NGOs and private-sector entities interested in mentoring programs should support the most rigorous possible experimental evaluation. For instance, evaluations should attempt to answer questions such as the following: Is the estimated impact reproducible in other settings? What screens should be used in the selection of mentors? How often and for how long should mentors and mentees meet? What types of activities provide the greatest benefit to the mentee? We cannot answer these questions based on the available evidence, but it would be valuable to have these answers, among many others, to be able to identify the key components for program success and help design the best possible intervention. Evaluation of implemented programs would therefore be a critical aspect of continuing and expanding these types of programs.

COSTS AND BENEFITS

Just because community-based mentoring programs appear to be the best approach to implement, it would be premature to judge these programs to be "worth it." I argue that these programs are worth expanding from the perspective of an NGO or private-sector group looking to improve outcomes for at-risk youth, but whether it is worth it for the government to financially support these programs is a higher hurdle that mentoring programs would be less likely to overcome.

A critical component of this analysis is the distinction between returns to the program that are received by the participant (private returns) and those that are received by society more broadly (social returns). If the private returns of a program are greater than its costs, then the program is worth it in the sense that investing one dollar in the program is better than simply transferring one dollar to the participant. An NGO or private-sector entity that intends to help disadvantaged youth would be better off investing in the program than simply giving away the money. If the social returns are greater than one dollar, then the program is worth it to taxpayers because they actually profit from making the transfer; the program yields benefits to them that are greater than the investment. In this case, the public sector should be willing to invest in the program.

Discussions about the value of supporting a public program frequently focus on the social benefits. Programs that assist underprivileged populations satisfy this condition by increasing tax revenue, reducing expenditures for social programs, and reducing crime. A perfect example is the Perry Preschool program, which Elizabeth Cascio and Diane Schanzenbach discuss in their proposal in this series.

Generating social benefits that are greater than the program's cost, though, is very hard to do. Even when we can increase the earnings of disadvantaged individuals, it is hard to increase them enough to put them into the range of incomes where tax receipts would be substantial. Typically, when we are able to provide strong evidence of generating social benefits in excess of program costs, the key component is a reduction in crime and incarceration. This was true in the Perry Preschool program. Those outcomes are so costly to society that relatively modest effects can provide tremendous public savings.

It is difficult to determine whether traditional mentoring programs reduce crime and incarceration. The outcomes most closely approximating criminal activity in the Big Brothers Big Sisters evaluation are "number of times stole something" and "number of times damaged property" (Tierney, Grossman, and Resch 1995). The treatment group was not statistically significantly less likely to engage in either of these behaviors (although the point estimates were negative). The outcome "number of times hit someone" did drop significantly, but its relationship to crime is less clear. We do see that drug and alcohol use declined for participants in traditional mentoring programs, and it is possible that this would translate into reduced criminal activity subsequently, but that is a rather substantial leap. In the end, it is possible that Big Brothers Big Sisters could pass a societal benefit–cost test, perhaps even convincingly, but it is not clear that it could do so based on the available evidence.

This does not mean that it is not beneficial for the government to invest in mentoring programs, but rather that the investment would need to be supported by another form of return. In particular, society may receive value simply by helping the poor improve their outcomes from a purely altruistic perspective. It makes us happier if individuals who are having difficulty getting by have an easier time of it. Of course, providing a value to altruism to incorporate into a formal benefit–cost comparison is a difficult proposition. That determination would have to result from the political process.

For the private sector, however, altruism is the goal. The goal of the private sector is to spend its money wisely in a way that yields the greatest impact. Again, that sector can always just transfer money to targeted populations directly, so a program is only desirable if the private benefit the program generates in the form of higher incomes for its participants is greater than the dollar cost of providing these programs. To satisfy this criterion means comparing private benefits to the cost of implementation. This is the form of benefit–cost analysis I conduct here.

The good news for mentoring programs is that they easily satisfy this test. Levine and Zimmerman (2010) provide details of the approach that lead to this conclusion, but I summarize it here. The general idea is to obtain program effects in terms of some form of educational outcome and then use a conversion factor that translates that educational outcome into higher subsequent wages. In this case, we know from the Big Brothers Big Sisters community-based evaluation that program participants experienced a 0.08 point improvement in their GPAs. Levine and Zimmerman (2010) then used data from the 1979 National Longitudinal Survey of Youth to generate a conversion factor between GPA and wages. This wage effect is presumed to be constant over the remainder of the individual's life; the analysis then calculates the present discounted value of this higher-earnings stream throughout the individual's life. The results of this analysis indicate that Big Brothers Big Sisters generates about a $7,500 expected benefit relative to the program cost of about $1,600 (where all values are measured in 2013 dollars). Benefits exceed costs by a ratio of almost 5:1.[5] From this perspective, mentoring programs are a great investment.

Mentoring programs thus appear to generate private returns that are considerably in excess of their costs, but it is less clear that they will generate a positive benefit–cost ratio when the focus is on social returns. The focus on altruism in justifying the intervention is better suited for those NGOs and private-sector entities that are trying to accomplish exactly that goal. On the whole, I am in full support of these groups moving full-speed ahead in implementing community-based mentoring programs with a set of best practices in mind. Should altruism become a recognized goal of public policy, governmental support of these programs would be desirable as well.

Questions and Concerns

Have the previously conducted evaluations provided enough guidance to inform the design and implementation of new programs?

The simple answer to this question is that it is rare to have enough evidence to be certain of all the best elements that should be incorporated into new programs. In this case, we have evaluations that enable us to rule out certain types of programs (like those that are school-based), and one evaluation that provides strong support for advancing community-based programs. That evaluation was extensive, but there are always limitations in going forward with new programs based on the results of a single experiment. Clearly, additional experimentation should be conducted to fill some of the holes in our knowledge.

This may be an example where the best is the enemy of the good. By the standards of program evaluation, the Big Brothers Big Sisters community-based program is an effective one and it should be emulated. Certainly, future experimentation should continue to address these lingering questions and help inform subsequent program design, but based on what we know now, the Big Brothers Big Sisters community-based program model is an approach that is worthy of expansion.

Is it possible to expand the scale of community-based mentoring programs like Big Brothers Big Sisters to address the size of the adolescent population in need of those services?

The estimates I provided above suggest that millions of adolescents could benefit from mentoring programs. Existing programs like Big Brothers Big Sisters do serve about 200,000 individuals now, though, suggesting that it is possible to run programs like this on a large scale. It is prudent to be realistic on the ability of programs like this to satisfy existing need, however. The logistical difficulties associated with managing such a large number of mentoring relationships, let alone the recruiting and training of so many mentors, are substantial. Moreover, at approximately $1,500 per mentor, supporting just 1 million mentors would cost $1.5 billion, and the need is considerably greater than that. Despite my earlier claim that mentoring is an intervention that is better suited for NGOs and private-sector entities, the extent of the need may be beyond these groups' means. Yet that does not lessen the importance of the policy proposal I am making here. It is better to make a

sizeable dent in an important social problem than to ignore it because it cannot be solved completely.

Are there any circumstances under which the federal government should intervene to provide mentoring services?

The purpose of this proposal is not to rule out federal intervention to help address the lack of adult, caring relationships in the lives of many of America's youth. The argument I am making is that the hurdle is higher for justifying a role for public-sector intervention. Since it is unlikely that mentoring programs can effectively demonstrate social benefits beyond program costs, justification for supporting them is largely based on altruism. At least some component of the private sector has that as an explicit goal, making it a more-natural fit for that sector to tackle this issue. Some government programs provide benefits for largely altruistic reasons, though; the Low Income Home Energy Assistance Program is an example. If mentoring programs could satisfy the altruistic goals of the public sector, then there is no reason (outside budgetary constraints) why it could not support them.

Conclusion

Well-designed mentoring programs could go a long way toward giving better opportunities to the more than 9 million children growing up in America who have no caring adults in their lives. Valiant attempts have been made to alleviate the difficulties associated with this caring gap in the lives of disadvantaged youth. In fact, five thousand mentoring programs currently provide services to 3 million young people; Big Brothers Big Sisters alone serves almost 200,000 children. Yet many disadvantaged youth still remain without a mentor.

Evaluating mentoring requires combing through extensive research on the programs and components already in play. This policy memo tackles that task. After a careful review of the best available evidence, I maintain that community-based mentoring programs in the vein of the traditional Big Brothers Big Sisters model are effective and should receive further support of NGOs and private-sector groups, with a set of best practices in mind as well as with rigorous evaluation to determine the important components for effective mentoring.

A key consideration is whether government provision of mentorship programs is justified—in other words, whether the social returns of the program (e.g., in terms of crime reduction and increased tax revenue) exceed its costs. I find that public spending on mentorship is not justified on these grounds, and that mentorship programs should instead be provided by NGOs and private-sector entities looking to improve outcomes for at-risk youth. Indeed, altruism is a part of the mission for these groups, and the benefit of providing mentorship to disadvantaged youth outweighs the costs.

Proposal 5: Expanding Summer Employment Opportunities for Low-Income Youth

Amy Ellen Schwartz
New York University

Jacob Leos-Urbel
Claremont Graduate University

Introduction

Youth employment rates have decreased dramatically over the past decade as the economy has faltered and the youth population has grown, as shown in figure 5-1 (Bureau of Labor Statistics n.d.). Unemployment rates among youth are especially acute during the summer, as more teens temporarily enter the labor force (Morisi 2010; Sum et al. 2008). In response to this problem, the American Recovery and Reinvestment Act of 2009 (ARRA) provided summer jobs for low-income youth with the goal of improving workforce readiness, although this increase in the availability of summer jobs was temporary (Bellotti et al. 2010). This policy memo offers a proposal to strengthen and expand work-related summer activities with the goal of fostering the skill development, education, and economic success of low-income youth.

Summer jobs should be part of a broader strategy for poverty alleviation, with the potential to benefit disadvantaged youth in multiple ways. In addition to providing work experience and an immediate income transfer to low-income youth, an emerging body of research also suggests that summer youth employment programs (SYEPs) can improve educational outcomes and social and emotional development, and decrease negative behaviors (including criminal behaviors), at least in the short term (Heller 2014; Leos-Urbel forthcoming; Sum, Trubskyy, and McHugh 2013; Walker and Viella-Velez 1992). A number of states and localities offer SYEPs on varying scales, although the availability of jobs fluctuates year to year.

We propose that the federal government make grants to state and local governments to work with local community-based organizations (CBOs) on the expansion of summer job programs. Targeting low-income youth ages sixteen to nineteen (enrolled in or graduated from high school), these expanded programs would provide employment and training to young people who currently face many barriers to entering the workforce.

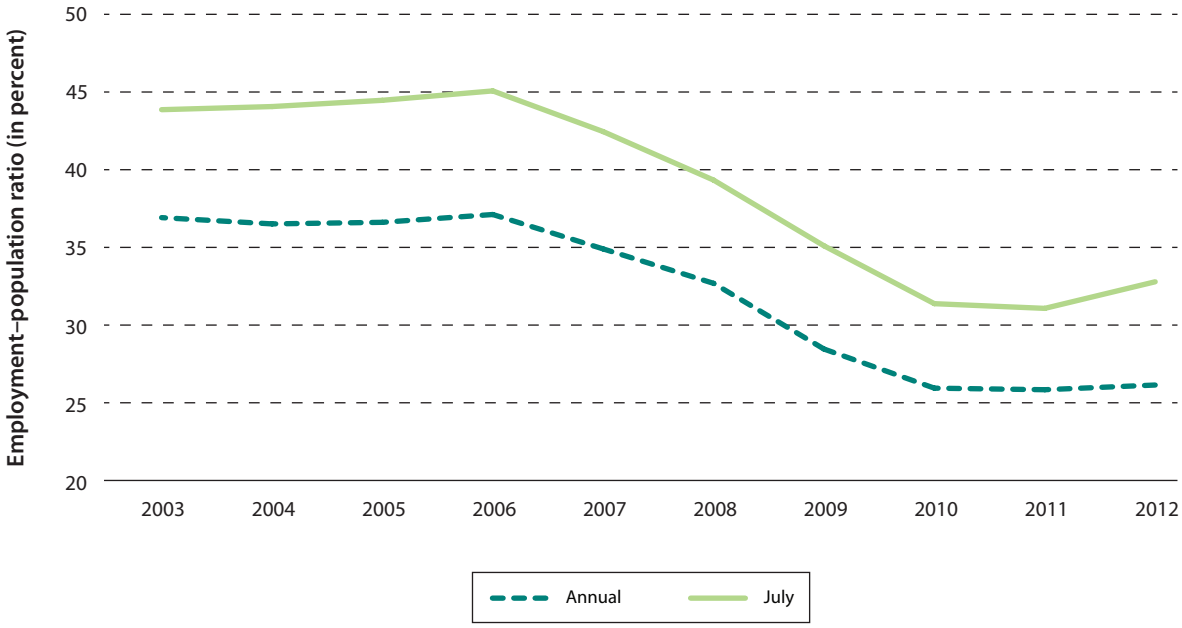
EVIDENCE OF EFFECTIVENESS

Emerging evidence indicates that summer jobs can do more than put a low-income youth to work. Using a rigorous lottery design, Leos-Urbel (forthcoming) finds that getting a job during the summer of 2007 through the SYEP in New York City (NYC) led to increases in school attendance in the following school year of roughly 1 percent overall and 3 percent for students who may be at greater educational risk. These effects are of a similar magnitude to some rigorously evaluated interventions that are explicitly designed to increase school attendance (Dee 2011; Riccio et al. 2010). A follow-up study by Schwartz et al. (in progress) examining the impact of the NYC program from 2006–2009 also finds small increases in school performance.

An earlier rigorous random-assignment evaluation of intensive summer jobs programs that included an academic component found that the programs increased reading and math scores in the short term (Walker and Viella-Velez 1992).[1] Notably, the evaluation found no long-term academic or employment

FIGURE 5-1.

Employment-Population Ratio, Youth Ages 16 to 19, 2003–2012



Source: Bureau of Labor Statistics various years.

Note: Employment–population ratio is the ratio of employed youth to all youth in the civilian noninstitutional population.

differences, which has led some to conclude that summer jobs are not a good strategy for reducing poverty.[2] Another experimental evaluation found that a summer jobs program in Philadelphia increased the likelihood of youth getting a job, but did not change intermediate academic or employment outcomes (McClanahan, Sipe, and Smith 2004). This proposal builds on the lessons of these earlier programs but takes some different approaches, as we describe below.

Recent research also suggests that summer jobs can help reduce violent behavior and crime. Preliminary results from an experimental evaluation of One Summer Plus—which combined summer jobs with a cognitive behavioral therapy–based program aimed at reducing youth violence—indicate that the program led to a large decrease in violent-crime arrests (Heller 2014).[3] A study of a summer jobs program in Boston finds that, compared to a comparison group of eligible youth from the program waiting list, program participants were significantly more likely to reduce risky and violent behaviors, including the use of drugs and alcohol, physical fighting, damaging property, and threatening someone with a weapon (Sum, Trubskyy, and McHugh 2013).[4] The program also created much-needed jobs for program participants, as just 27 percent of youth in the comparison group were able to find a summer job. Finally, an experimental evaluation of the After School Matters—an after-school apprenticeship program for high school students during the school year in Chicago—found improvements in behavior and social and emotional development, although it found no effect on academic outcomes (Hirsch et al. 2011). Importantly, 91 percent of students in the comparison group in Chicago were involved in some other after-school activity (most common) or paid work, indicating that the availability of other opportunities (i.e., the counterfactual of what they would have done without the program) may differ considerably during the school year, and suggesting that the summer may be an especially promising time for such interventions.

The Challenge

High youth unemployment rates and a shrinking supply of traditional summer job opportunities for youth can have serious implications for their financial well-being and ultimate labor market success (Rees 1986). Employment during high school is linked to higher incomes as they become adults (Painter 2010; Ruhm 1995). Furthermore, from an equity perspective, the availability of work opportunities for youth often varies by race and socioeconomic status (Morisi 2010). For instance, Entwisle, Alexander, and Olson (2000) find that white youth are more likely to work, though African American youth apply for jobs more often than whites. Also, in contrast

to many publicly funded out-of-school programs that struggle to recruit and retain high school students, jobs programs for youth often face demand that far exceeds supply.

Public policies to support summer jobs are not new, though the availability of jobs fluctuates. At the federal level, ARRA provided a temporary influx of funding for summer jobs for low-income youth that has since dried up (Bellotti et al. 2010). In particular, it provided $1.2 billion for employment and training for disadvantaged youth ages fourteen to twenty-four, and employed 345,000 youth in the summer of 2009.[5] These jobs were in high demand, as indicated by an evaluation of the program's implementation, which found that the number of applications received exceeded the number of job slots available at nineteen of the twenty job sites (ibid.). The U.S. Department of Labor, lacking funds to pay for summer jobs, coordinated the Summer Jobs+ program in the summer of 2012; this program sought pledges from companies and nonprofit organizations to provide summer work experiences for youth nationwide. The current iteration of this program is called Youth Jobs+.

Many cities and states also offer summer jobs programs. The largest is NYC's SYEP, which operated with a budget of $45.6 million in federal, state, local, and private funds in 2013. That same year, the program received more than 135,000 applications and served almost 36,000 participants, down from more than 52,000 participants in 2009 when ARRA funds were available. In 2013 in Washington, DC, 14,000 youth participated in the summer jobs program, which was administered by the city's Department of Employment Services. (See table 5-A1 in appendix 5-A for information on other SYEP programs in select cities across the country.)

Despite these efforts, both the fluctuating availability of jobs and funding constraints have limited the number of disadvantaged youth who are able to participate in summer employment programs, presenting an opportunity within public policy to meet this important need.

A New Approach

We propose expanding summer jobs programs for low-income youth—ages sixteen to nineteen, in both urban and rural communities, and who are enrolled in or have graduated from high school—through a program that will pay participants the federal minimum wage for working twenty-five hours per week for six weeks. (These eligibility parameters were chosen in an effort to keep down program costs by targeting the youth most likely to see the largest gains from a summer work program.) In addition, the jobs program will contain an education and training component, and a request-for-proposal process to encourage states and localities to innovate in providing training and services to youth, and to build on best practices.

Our central proposal calls for extending the program nationwide. We recognize, however, that such a rapid expansion may face severe budget and administrative constraints. An alternative to an immediate nationwide scale-up of the program is to implement a multiyear pilot program, along the guidelines presented below, to a select diverse group of cities and localities. Program outcomes would be subject to comprehensive review and evaluation, and initial funding for the pilot program would be set at one-tenth of the cost of the full-scale implementation. If the multiyear program is found to be effective at improving educational and labor market outcomes for the targeted population, the pilot program would be expanded with the goal of reaching all disadvantaged youth across the country.

We model our proposal on NYC's SYEP—the largest program of its type in the United States—and we also borrow from and integrate best practices from programs in other localities. Based on the lessons learned from the summer jobs created through ARRA and from the NYC program, we anticipate high demand and propose allocating slots through a random lottery system. This has the dual benefits of allocating positions fairly, and of allowing for rigorous evaluation of program effectiveness by randomly creating treatment and control groups of lottery winners and losers, respectively.

JOB PLACEMENTS

We propose that the federal government, through the U.S. Department of Labor, make grants to states to regulate and coordinate these jobs programs, which will then be administered by city and county governments.[6] This grant-based program, in turn, will develop a request-for-proposal process to identify qualified CBOs that will administer the program locally. In the case of NYC, the city's Department of Youth and Community Development administers the SYEP, and contracts with CBOs throughout the city to place and supervise youth in summer jobs and to provide training. Appropriate agencies could include city or county agencies responsible for youth development, workforce development, and/or education. Local agencies then contract with CBOs, which place youth in summer jobs supervise and monitor these placements, and provide the program's education and training component. The most successful job training programs include experienced staff and close connections between the program training and work (Greenberg, Michalopoulus, and Robins 2003; Stanley, Katz, and Krueger 1998). CBOs should be selected through a competitive process to ensure they have the experience and qualifications to provide disadvantaged youth with effective

training and mentoring. Additionally, providers should have knowledge of the local labor market to ensure that the training is relevant and necessary for participants' success. Funds should be allocated in proportion to the number of students ages sixteen to nineteen in each state, in school or just graduated, and living in poverty. Ideally, contracts with CBOs will be fixed term and will be re-competed on a regular basis with specific performance evaluation criteria required for renewal to ensure the most qualified organizations operate the program.

TRAINING

The proposed training component provides an important opportunity for innovation and collaboration between multiple youth-serving agencies and organizations to address issues specific to their target population and to the job skills important in the local labor market.

To capitalize on existing expertise, the training component could be connected to the local high school curriculum, focusing on college and career readiness training aligned to state or Common Core standards. For example, NYC's Career and Technical Education (CTE) Summer Scholars program matches students with part-time summer internships and engages students in a classroom experience to build workforce readiness skills. The program includes two full days per week of classroom training focused on career readiness skills and matches students with paid internships that are purposefully aligned to the content of their CTE track, such as information technology or media (Weinstein and Leardo 2013).

MONITORING PROGRAM QUALITY

Metrics for assessing program quality for selection of CBOs to be providers and for contract renewals may include attendance and hours worked, program completion or attrition, participant and supervisor evaluations, and feedback from placement sites. These metrics are directly related to the core elements of the program and are relatively easy to measure in a standardized way across program sites, requiring a minimal administrative burden. In addition to providing guidelines and incentives for program providers, the program should offer rewards to students for successful program completion (e.g., high attendance and positive supervisor feedback).[7]

TARGET POPULATION AND PROJECTED TAKE UP

As mentioned above, the proposal targets youth ages sixteen to nineteen who are enrolled in or have recently graduated from high school, which we believe to be a population likely to benefit from the program. However, our proposal would not provide training and support of the intensity and duration required to put out-of-school youth on a path to educational and career success. In fact, one explanation for the perceived lack of success in previous programs such as the Job Training Partnership Act (JTPA) is that the participants did not enter the program with a baseline level of skill necessary to benefit from the work and training experience (Foster 1995). Additionally, JTPA training focused on remedial education rather than workforce-related training, a feature that more-successful youth employment programs tend to provide (Greenberg, Michalopoulus, and Robins 2003).

In order to avoid any stigma associated with participation and to minimize the administrative burden, our proposal does not include an income requirement. Requiring documentation of income can serve as a substantial barrier to program enrollment and can distract from the implementation and monitoring of program quality (Curnan and Hahn 2010). That said, localities should be encouraged to target communities with low-income populations; it is likely that take-up will be higher among low-income populations. As an example, although NYC's SYEP is open to all city youth, approximately 90 percent of applicants are eligible for free or reduced-price lunch, which implies very low household income.

To estimate the size of the target population, we begin with the fact that there are roughly 17 million youth ages sixteen to nineteen in the United States, of whom approximately 75 percent are ages sixteen to eighteen (Bureau of Labor Statistics 2013). To calculate the number of low-income youth, we assume that the number of youth ages sixteen to nineteen living close to or below the poverty level is the same as the ratio of households with five-year-olds to seventeen-year-olds living at or below 185 percent of the poverty level, which is approximately 30 percent. This implies a target population of 5 million low-income youth ages sixteen to nineteen, and 3.75 million low-income youth ages sixteen to eighteen. Both the sixteen-to-nineteen and the sixteen-to-eighteen age ranges are appropriate for SYEP, as one would target high school students and recent graduates, and the other would target only high school students.

The evidence from NYC's SYEP offers some insight into how many youth would be interested. Approximately 80,000 low-income youth applied for a position for the summer of 2009, which is around 40 percent of the roughly 200,000 low-income youth ages sixteen to nineteen estimated to be living in NYC (estimate based on data from U.S. Census Bureau 2000). Funding constraints meant that only half of applicants were offered positions and, importantly, approximately three out of four of those accepted the offer and participated.

Combining these figures yields an estimated take-up rate among the overall eligible population of 30 percent as a benchmark, which is likely a high estimate due to the relative scarcity of private sector jobs in the weak economy. Taken

together, this suggests that if universally implemented, 1.50 million youth ages sixteen to nineteen would be interested in participating in SYEP; again, it would be roughly three-fourths of that if the program was limited to students ages sixteen to eighteen.

PROJECTED EXPENDITURES

If implementing a multiyear pilot program, we propose dedicating $300 million annually for five years, at a total cost of $1.50 billion. As seen in table 5-1, we estimate that the total costs of expanding this nationwide to low-income youth ages sixteen to eighteen would be about $2.25 billion (assuming 1.50 million participants, as calculated above, at a cost of $2,000 per participant); if the program were offered to youth ages sixteen to nineteen, the estimated costs increase to about $3 billion. Importantly, the budget of our proposed program is not a social cost. About half of the estimated program budget is the wage paid directly to the youth. From a societal perspective, this is a transfer of funds to low-income youth, rather than a change in economy-wide resources.

Table 5-1 breaks down the direct cost of the program, which is determined by the wage paid, number of hours and weeks of the program, number of participants, and educational and administrative costs. We estimate each of these factors drawing from the features and experiences of existing programs: national data on the size and composition of the youth population, data from the largest summer jobs program (NYC's SYEP), and the administration of other social programs.

We propose that the national SYEP pay an hourly wage of $7.25 for jobs that last twenty-five hours per week for six weeks during the summer. These program parameters generally mirror features common to existing programs. While some programs offer higher wages, most SYEPs pay the federal minimum wage (currently $7.25 per hour). Similarly, twenty-five hours per week is in the middle of the range of hours offered, which typically ranges from twenty to thirty hours a week (see table 5-A1 in appendix 5-A). There is also variation in program duration across the country from five to eight weeks during the summer, but six weeks is the most common. While administrative overhead costs will vary with program features, we use the 15 percent overhead rate that the California Department of Education allows for public after-school programs.[8] We also include $650 per participant for an educational component.[9]

POTENTIAL OUTCOMES

Summer jobs programs introduce participating youth to the workforce, and these early work experiences have the potential to foster noncognitive skills, which prepare youth to enter the labor force (Heckman 1998; Lillydhal 1990; Mortimer 2003). Summer represents an especially efficient area for intervention, as it is a time when many youth lack opportunities for other formal activities. The loss by students over the summer of some of the skills learned during the school year is well-documented in earlier and later grades (Castleman, Arnold, and Wartman 2012; Entwisle, Alexander, and Olson 2000).

The benefits from this federal investment go beyond providing summer employment. Research suggests that SYEPs can also have small positive effects on school attendance and academic outcomes (Leos-Urbel forthcoming; Walker and Viella-Velez 1992). In a preliminary investigation of the short-run impacts of summer jobs programs, Leos-Urbel (forthcoming) finds that these programs produce small increases in attendance in the following school year. Increases are larger for students at greater educational risk, namely those ages sixteen and older with low baseline school attendance. For this group, participation in a summer jobs program also increases the likelihood of attempting and passing statewide high school math and English exams. In current work exploring the impact of these programs on student academic outcomes over more years, preliminary findings suggest small positive effects of the program on the number of exams students take; although impacts on scores are generally insignificant, there is a small positive effect on passing key high school exams. Furthermore, another study finds that the impacts increase with the number of years a student participates in the jobs program—with impacts being larger for second-time participants and largest for those participating for the third time or beyond (Schwartz et al. in progress). Positive effects, even small effects, are encouraging; as we have seen, numerous previous efforts have failed to produce returns.[10]

Moreover, these small increases may translate into meaningful gains in lifetime earnings. Rose (2005) finds that students who made test score gains in high school were more likely to be employed and have larger earnings seven years after high school compared to students whose test scores improved very little. Specifically, a one-point increase in a student's test score gain from grade 8 to grade 12 predicted an increase of 0.62 percent in earnings. Similarly, work by Deming and colleagues (2013) examines the impact of increased student performance on high-stakes exams, postsecondary attainment, and subsequent earnings. The authors find that students in high schools that raised test scores in response to accountability pressure were more likely to attend and graduate from a four-year university and had higher earnings at age twenty-five. Impacts were strongest for students with the lowest baseline achievement. Specifically, increased test score performance led to 1 percent higher labor market earnings at age twenty-five. Given the approximate average earnings of $30,000 at this age, this effect would translate to $300 per participant.

TABLE 5-1.

Program Budget

Estimated costs	Ages 16 to 19	Ages 16 to 18
Target population		
Total low-income population in United States (in millions)	5	3.75
Take-up rate	30%	30%
Estimated participants (in millions)	1.50	1.13
Average cost		
Participant compensation		
Wage	$7.25 per hour	$7.25 per hour
Hours per week	25	25
Duration (in weeks)	6	6
Total	$1,088	$1,088
Average other costs		
Educational cost per participant	$650	$650
Administrative overhead	15%	15%
Cost per participant	$1,998	$1,998
Total cost		
Total annual cost of SYEP (in millions)	$2,997	$2,248

Sources: New York University Institute for Education and Social Policy 2014; authors' calculations.

Recent research also suggests that summer jobs programs can reduce crime and violent behavior among individuals (Heller 2014; Sum, Trubskyy, and McHugh 2013). Heller (2014) examines the impact of a program that provided youth from low-income, high-crime high schools in Chicago with a part-time summer job and cognitive behavioral therapy. The study provides credible, experimental evidence of a significant link between crime and summer jobs, thus providing a social benefit that substantially exceeds program costs.[11]

Finally, paying low-income youth for work reduces poverty. By offering low-income youth an opportunity to earn wages, this program would immediately increase the economic resources available to participants and their families. This increased income would bring households on the poverty margin above the poverty level and would ease the depth of poverty for all others. In addition, expanding youth employment can assist nonprofit organizations in providing services to low-income neighborhoods and communities. For example, in NYC's SYEP, the most common job placements are in summer camps and day-care centers.

COSTS AND BENEFITS

Expanding summer jobs for low-income youth would yield benefits in many dimensions, including to the individual participant and to society. Benefits to the individual participants include income received, workforce readiness, reduction in risky behavior and crime, increase of earnings over the long run, and improvements in educational outcomes. For example, as noted above, these programs have been shown to increase attendance among students in the school year following the summer intervention, especially among those students with poor attendance records.

Social benefits include the services provided by participants, such as service as a camp counselor, and improvements in communities, such as reductions in crime. As noted above, prior research suggests a link between participation

in summer jobs programs and lower crime rates. The high social cost of each individual committed—numbering in the thousands for even low-level nonviolent crimes—suggests that even relatively small reductions in burglary or vandalism could provide sufficient benefits to offset the costs of the SYEP program.

The costs of the program are measured by program outlays. As noted above, we estimate the cost of a pilot program to be $300 million annually, with the cost rising to between $2.2 billion and $3.0 billion annually if implemented nationwide. Since a large portion of the program outlays are devoted to wages paid to participants, much of these outlays can be classified as transfers of income rather than changes in economy-wide resources.

Ultimately, we find that the summer youth program will have a series of relatively modest, but important, impacts on participants and society. Although the effect on any one of these dimensions may be small, taken together they suggest benefits that outweigh the relatively modest costs.

Questions and Concerns

How is this different from past youth employment programs that were considered by some to be a failure?

Our proposal differs from prior federal programs in a few key features. First, we propose to serve youth who are enrolled in or have just graduated from high school, a population of students whom we believe are most likely able to take advantage of the program. We recognize that this limits the potential of the program to help all disadvantaged youth. This population is in contrast to those served by JTPA, for example, which targeted out-of-school youth, a population who likely have lower skills and require support that is more intensive. Second, our program requires a regular workforce training component closely aligned to the local employment context that is provided by qualified CBOs with expertise either connecting individuals to the local job market or providing local youth with support services and mentoring. The JTPA education component for youth, in contrast, focused on remedial education.[12]

Why does this proposal make sense given the lack of evidence on long-term effects of summer jobs programs on education or employment outcomes?

Much of the available research on youth employment focuses either on effects of employment year round or on hard-to-reach populations, such as out-of-school youth or those involved in the juvenile justice system (see, for example, Bloom et al. 1997; Farkas, Smith, and Stromsdorfter 1983; Orr et al. 1996). In contrast, the specific evidence on summer-only programs that target in-school youth suggests that youth summer employment programs hold promise for improving youth outcomes, particularly educational outcomes, social and emotional developmental outcomes, and reduced negative behaviors (Heller 2014; Leos-Urbel forthcoming; Schwartz et al. in progress; Walker and Viella-Velez 1992).

What are reasonable expectations for the effects of a program for youth of this duration, intensity, and cost?

We expect small effects across a range of critical dimensions, including small increases (1 percent to 2 percent) in attendance, educational attainment, and graduation. We also expect slightly larger effects on crime and risky behaviors, particularly during the summer when students are employed.

Conclusion

While there is a broad consensus that education can provide a path out of poverty for low-income youth, out-of-school time—including both summer and after-school activities—can also enrich youth development. Recognizing this, middle-class families routinely invest in travel, camps, internships, and summer jobs, providing their children with experiential learning and work experience while minimizing the amount of unsupervised idle time and the potential opportunities to engage in risky behavior. We believe summer jobs can provide some of the same benefits to low-income youth: increasing their engagement in school, providing job experience, and reducing participation in risky activities across a broad range.

To be clear, our proposed SYEP is a very modest intervention. It would be naive to imagine that this sort of low-cost intervention will dramatically improve outcomes. Instead, we hope summer employment will lay a foundation on which future success can be built.

While investment in early childhood education has captured the imagination of policymakers and the public alike, such interventions will not address the inequality in opportunities and life-chances of today's youth for whom completing school; avoiding crime, pregnancy, and drug use; and other negative behaviors are critical steps on the path to future success. Summer jobs may be an effective tool in the effort to reduce inequality at the beginning of adulthood and may level the playing field for low-income youth.

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Appendix 5-A.

TABLE 5-A1.

Summer Youth Employment Programs, Select Cities

Program name	Location	Description
Midwest		
Youth Opportunities Unlimited (Y.O.U.)	Cleveland, OH	Y.O.U. helps match thousands of teenagers from Cuyahoga County to meaningful summer work experiences.
One Summer Chicago (OSC) 2013	Chicago, IL	OSC connects young people to summer jobs, internships and training programs that are offered throughout the city. Through OSC, young adults have the opportunity to learn job skills, develop their résumés and explore career interests.
Workforce Development Board (WDB)–Summer Youth Employment Program (SYEP)	Detroit, MI	The WDB-SYEP is introducing a program that will allow local businesses to contribute to summer work experiences for Detroit youth.
Step Up	Minneapolis, MN	The program primarily serves youth from lower-income families, or youth with significant barriers to finding a job.
Northeast		
Boston Summer Jobs	Boston, MA	This program provides youth with training related to job readiness and career exploration and job opportunities during the summer at a variety of private, community, faith-based and government organizations.
WorkReady Summer Youth Employment	Philadelphia, PA	Summer employment models offer educationally-enriched work opportunities to in-school and out-of-school youth that foster the acquisition of the twenty-first century skills through work-based learning.
Summer Youth Employment Program	New York City, NY	The program provides New York City youth with paid summer employment and provides workshops on job readiness, career exploration, financial literacy and opportunities to continue education and social growth.
Mayor's Summer Youth Employment Program	Norwalk, CT	The program prepares youth for jobs via pre-employment workshops and matches them with employment opportunities where they can explore a profession, learn a skill, learn to navigate in a business environment, contribute to the community, and earn money.
Rensselaer County Summer Youth Employment Program	Rensselaer County, NY	The program provides income-eligible youth with a unique opportunity to gain meaningful job skills during the summer months through employment.
RochesterWorks! Summer of Opportunity Program	Rochester, NY	RochesterWorks! is an employment and training program for youth who are still in high school. The program is designed to provide training and employment opportunities to youth while making a direct connection to success in school.

Source: New York University Institute for Education and Social Policy 2014.

Note: Information downloaded from various Internet sites.

Ages	Program features			Youth served	Education component
	Hourly wage	Hours per week	Duration (in weeks)		
14–18	$7.95	25	6	4,600 in 2008	Y
14–24	—	—	6	17,000 job opportunities in 2013	Y
14–21	$7.50	30	6	—	Y
14–21	$7.25	—	6	1,280 in 2009	Y
16–24	$8.00–$12.00	25–35	7	10,000+ in 2009	Y
14–21	$7.25	20	6	5,144 positions in 2012	Y
14–24	$7.25	20–25	6	35,957 in 2013	Y
14–18	$8.70	25	6	—	Y
14–19	$7.25	20	5	—	Y
14–20	$7.25	—	6–8	845 in 2013	Y

TABLE 5-A1. CONTINUED FROM PREVIOUS SPREAD.

Summer Youth Employment Programs, Select Cities

Program name	Location	Description
South		
Youth Employment Program	Denver, CO	This program provides career advising, mentorship, job readiness, financial literacy and life skills training and work experience programs to allow students to explore long-term career interests.
Workforce Partnership Summer Youth Employment Program (SYEP)	Kansas	Funded through American Recovery and Reinvestment Act of 2009, SYEP is specifically intended for low-income youth with barriers to employment. The central objective is to introduce and reinforce the demands and rewards of holding a job.
Summer Youth Employment Program	Virginia Beach, VA	The program provides jobs and workplace readiness skills to young people who often lack the skills required to obtain employment and succeed in the workplace.
Summer Youth Employment Program	Washington, DC	This program is a locally funded initiative sponsored by the Department of Employment Services (DOES) that provides District youth with enriching and constructive summer work experiences through subsidized placements in the private and government sectors.
Summer Youth Employment Program	Wilmington, DE	The Summer Youth Employment Program provides students with a summer work experience with the purpose of fostering job-related and personal skills and habits important for success in future careers.
West		
Hire L.A.	Los Angeles, CA	Hire L.A. is designed to emphasize real-world expectations, increase awareness of services offered by local community-based organizations, and provide opportunities for college, career, and financial literacy training.
Summer Youth Employment Program	San Francisco, CA	This program provides low-income youth with hands-on work experience, job readiness training and ongoing support through partnerships with local community-based organizations.
Seattle Youth Employment Program	Seattle, WA	During the summer, the program provides exposure to the world of work. Internships take place in a range of sectors such as health care, education, recreation, skilled trades, social services, and technology.

Source: New York University Institute for Education and Social Policy 2014.

Note: Information downloaded from various Internet sites.

Ages	Program features			Youth served	Education component
	Hourly wage	Hours per week	Duration (in weeks)		
14–21	$8.00 an hour for up to 160 hours			—	Y
16–24	$7.25 (in 2009)	20-30	6–8	515 in 2009	Y
16–21	$7.25	35	7	—	Y
14–21	$7.25	25	6	14,000+ in 2012	Y
14–20	$7.25	25	5	150 in 2012	Y
14–21	—	—	6	—	Y
16–21	—	—	—	—	Y
15–17	—	—	7	—	Y

Appendix 5-B.

Previous Youth Employment Programs

Youth Incentive Entitlement Pilot Projects (YIEPP)

- Youth sixteen to nineteen, low-income, who have not yet completed high school. (Open to all teenagers in targeted communities.)
- Funded by the Comprehensive Employment and Training Act (CETA).
- 1978–81.
- Program components included employment, but no training or job search assistance.
- Served approximately 82,000 youth over the course of the program, 1978-1981.

The YIEPP provided low-income youth age sixteen to nineteen who had had not yet graduated from high school with part-time jobs during the school year and full-time jobs during the summer in exchange for meeting academic and job-related performance standards. Specifically, to be eligible participants were required to be enrolled in high school or in a GED program. This federal program was established through the CETA, preceded JTPA, and operated from 1978 to 1981. Students participated for an average of fifty-six weeks in the program.

A matched-comparison study found that the program increased employment in the short term and decreased the unemployment gap between white and African American youth, and increased school enrollment rates.

The study also found that students were more likely to employed six months after the program ended (Farkas, Smith, and Stromsdorfer 1983). However, the study found no impacts on school outcomes such as high school graduation (Gueron 1984).

Summer Youth Employment Training Program (SYETP)

- Youth ages fourteen to twenty-one who are economically disadvantaged and of school.
- Funded by the JTPA, which repealed CETA.
- 1982–97.
- Program components included employment. Training in the form of remedial education was added after 1986.
- Served approximately 500,000 to 700,000 youth annually.

The JTPA of 1982 provided federal funds to establish programs to prepare economically disadvantaged youth and unskilled adults for employment, including funds to establish the Summer Youth Employment Training Program (SYETP). This program, operated by the U.S. Department of Labor and coordinated and regulated by states and administered by city and county governments, served youth ages fourteen to twenty-one, and was initially designed to provide short-term financial assistance in exchange for work. Youth worked in a variety of public, nonprofit, and private sector jobs and were paid the minimum wage. In later years (after 1986), the program also included an educational component for students who were identified as needing education remediation (Doolittle et al. 1993). Although little evidence is available regarding the effectiveness of SYETP, some research suggests that the program provided jobs that would otherwise not have been available to youth (Stanley, Katz, and Krueger 1998).

In addition to summer employment, approximately one-third of the population served under JTPA was economically disadvantaged out-of-school youth enrolled in year-round programs. Participants enrolled in programs for fifteen months on average, but the length of the program varied by local site. Evidence from a randomized experimental study found no effect of the program on the youth's earnings thirty months after participants were assigned to the program Impacts also did not differ based on the type of training or job search assistance youth applicants received. The program did, however, have small positive impacts on educational attainment—obtaining a high school diploma thirty months after program assignment—for youth dropouts, particularly female youth (Bloom et al. 1997; Orr et al. 1996). An important caveat to this study is that the comparison group received non-JTPA educational services, so that the estimated impacts are not compared to receiving no program services at all.

Proposal 6: Addressing the Academic Barriers to Higher Education

Bridget Terry Long
Harvard Graduate School of Education

Introduction

A postsecondary education confers numerous benefits both to the individual and to society, including higher earnings, lower rates of unemployment and government dependency, an increased tax base, and greater civic engagement. Access to higher education remains a challenge for many families, however. In 2010, approximately 82 percent of students from high-income families attended college in comparison to only 52 percent of students from low-income families (National Bureau of Economic Research n.d.).[1] There are also large differences in rates of college completion by income: among students who met a minimum standard of being academically qualified for college, 89 percent of high-income students completed a bachelor's degree within eight years, whereas only 59 percent of low-income students did so (Adelman 2006).

There are many barriers to college access and success. One major barrier is affordability, as college prices and student debt levels have risen to alarming heights. For many students, however, academic preparation may be an equally formidable barrier to postsecondary education. This is not due to college selectivity—about 80 percent of four-year colleges and nearly all two-year colleges have little to no admissions requirements. Instead, students are required to pass academic placement tests and demonstrate sufficient readiness for postsecondary study. Those who do not pass are placed into remedial or developmental courses.

Estimates suggest that more than one-third of all first-year students take some form of remedial coursework in either English or mathematics, but this figure can be as high as 60 or 70 percent of students at some institutions (Bettinger, Boatman, and Long 2013; Complete College America 2012; National Center for Education Statistics [NCES] 2003).[2] Students placed into remedial or developmental programs are most often held back from taking college-level courses, and as a result, remediation has effectively become the gateway (or barricade) to postsecondary-level training.[3]

While the aim of remedial and developmental courses is to provide academically underprepared students with the skills they need to succeed in college and in the labor market, being placed into the courses also has important implications for a student's higher-education prospects. Students are forced to pay college-level prices for high school–level courses; there are also large government subsidies at stake given federal funding and state appropriations that subsidize college costs and operating budgets. Time spent in remediation can also delay completion of a postsecondary degree. Credits earned from remedial courses often do not count toward a student's degree. Thus, it takes students longer to complete their studies, and this increases the chances that a disruption will derail them from progressing. The extended time needed to obtain a degree could also affect a student's financial aid, as a student's eligibility for aid may expire; students who need to complete significant remediation could run out of financial support before being able to finish.

Unfortunately, research suggests that remediation programs do not do a good job of improving students' outcomes. When comparing similar students in and out of remediation, some

researchers have found small positive effects, but most of the research suggests no long-term effects—or even negative effects—from being placed into a remedial or developmental course (Bettinger and Long 2009; Boatman and Long 2010; Calcagno and Long 2008; Martorell and McFarlin 2011). While there are still unanswered questions about how the effects differ by type of student, most researchers, practitioners, and policymakers have concluded that the current remedies we have to address the fact that so many students are academically underprepared for college are not sufficient, and may in fact involve serious costs for students, institutions, and taxpayers.

There is ongoing debate about the best way to address students' academic needs. Many states are confronting questions about who should deliver remediation and how it should be offered. Some are considering ways to limit the courses, shift their locations, or pass on the costs of the courses to students or school districts. While states lament the need for remediation and debate how to manage it, however, most of the current policy efforts do not focus on how to improve programs or help students avoid remediation altogether.

This policy memo offers three key recommendations for better addressing the academic preparation problem with the hope of improving rates of college success. The recommendations focus on actions that could be taken by states, university systems, and school districts. The federal government could also play an important role by creating incentives for states and institutions to address these issues or by supporting a central organization with the purpose of providing guidance on best practices to states and institutions. This proposal's recommendations are as follows:

1. **Improve placement in college remediation classes.** Improving how students' academic preparation levels are assessed is the first step in better tailoring supports for their needs. Better assessment is also necessary to reduce the number of students who are incorrectly placed into remediation due an opaque process or bad testing day.

2. **Provide better college remediation services.** By using technology, support services, and innovative pedagogies, remediation programs could do a much better and faster job in helping to prepare students for future success with college-level material. Several states are already experimenting with promising practices, including combining basic-skill attainment with college-level coursework, and using learning technology to better target students' needs.

3. **Adopt measures to prevent the need for remediation.** Several states are encouraging students to take college readiness assessments in high school so that they can use this early information to make better course selections and avoid remediation altogether. Working to better align curricula and strengthen links between K–12 and higher education could also improve the likelihood that students are academically prepared for college.

The Challenge

BACKGROUND: POSTSECONDARY REMEDIATION IN THE UNITED STATES

Multiple studies point to the fact that high school graduates are often not academically prepared for college. Some estimates suggest that only about one-quarter of high school graduates complete a rigorous academic curriculum (NCES 2010).[4] While academic preparation is a problem for many students, it is a problem that especially affects low-income and minority students. According to Greene and Foster (2003), only 32 percent of students leave high school at least minimally prepared for college, and the proportion is much smaller for African-American and Hispanic students (20 and 16 percent, respectively).[5] Low levels of academic preparation are the result of poor course selection, lack of academic rigor, and a limited supply of advanced courses at some schools. In addition, the lack of alignment between the K–12 and postsecondary education systems frequently results in confusing messages about how and what students should do to enter and succeed in college (Venezia, Kirst, and Antonio 2003).

Although many underprepared high school students will fail to continue their educations, the large proportion of those who enter higher education will be placed into remediation. A substantial number of adult students, including recent immigrants and workers displaced by structural shifts in the labor market, also enroll in remedial and developmental courses. Traditionally, the purpose of remedial or developmental education has been to address whatever was missed in high school (Education Commission of the States 2012). Nonselective public institutions provide the bulk of remediation, with rates being highest at two-year colleges (Bettinger and Long 2009).

The need for remediation is established based on an exam or assessment taken when the student first arrives on campus. Colleges then assign students to a specific course level based on their scores on the placement test as well as, possibly, high school courses and grades. Placement into mathematics remediation is more common than placement into English (i.e., reading and/or writing) remediation, but participation in English remediation may be a more serious concern as some evidence suggests that reading and writing deficiencies have more-negative effects on a student's college success (Bailey, Jeong, and Cho 2010; Bettinger and Long 2009; McCabe 2001).

The vast majority of institutions require students to complete their remedial courses before they are allowed to enroll in college-level courses (NCES 2003). For students in need of multiple remedial courses, this could mean more than a year of coursework before progressing to actual college-level material. Although remedial courses are offered for credit and count toward a student's overall GPA, remedial courses rarely count toward graduation requirements (Bettinger and Long 2007).

As such, remediation becomes a costly investment incurred by students, institutions, and the government. Although estimates vary depending on the source, they all suggest that remediation is expensive in multiple ways and for multiple stakeholders. Alliance for Excellent Education (2006) estimated that the cost of the delivery of remediation nationwide totaled $1.4 billion in the form of direct costs to students and institutions. Further costs would result from the lost earning potential of those remedial students who drop out of college without completing a degree. Another study estimated the annual cost of remediation to be between $1.9 and $2.3 billion at community colleges and another $500 million at four-year colleges (Strong American Schools 2008), while yet another study estimates that states and students spent more than $3 billion on remedial courses in 2011 (Complete College America 2012). The most recent estimate suggests that the national direct cost of remediation is actually as high as $7 billion annually (Scott-Clayton, Crosta, and Belfield 2012). This estimate does not account for the opportunity cost of time for students enrolled.[6]

EVIDENCE OF THE PROBLEM AND THE CURRENT POLICY DEBATES

Most current models of remediation are not working well: students placed into remediation are far less likely to persist and graduate from college. Fewer than 50 percent of students referred to remediation actually complete the entire sequence. This percentage is even lower for men, older students, African-American students, part-time students, and students in vocational programs. The students assigned to the lowest levels of math remediation are the least likely to advance into college-level courses, with only 10 percent of this group ever completing a college-level math course (Bailey, Jeong, and Cho 2010).

While disconcerting, these statistics on completion tell only part of the story. Longer-term educational outcomes, such as total credit accumulation and degree completion, are also much lower for students placed into remediation (Adelman 2006; Bailey 2009; Bettinger and Long 2005; Complete College America 2012). This fact alone is not evidence that remedial programs do not work, however. Since students who are placed in remedial courses have lower levels of preparation than those who are not placed into remediation, one would expect remedial students to be less likely to persist and complete a degree even in the absence of a remediation program. The key to understanding whether remedial programs work is to compare students with similar preparation levels.

The results are mixed when new data sources that compare similar students are used to study the effects of remediation on student outcomes. For example, Bettinger and Long (2009) examine the effects of remediation in Ohio and conclude that remedial students at Ohio colleges were more likely to persist in college and complete a bachelor's degree than students with similar test scores and backgrounds who were not required to take the courses. In contrast, focusing on Florida, Calcagno and Long (2008) suggest that remediation might promote early persistence in college, but it does not necessarily help community college students make long-term progress toward a degree. In Texas, Martorell and McFarlin (2011) find that remediation programs had little effect on persistence, degree completion, or a range of other educational outcomes. They also find no effect on labor-market earnings. It is important to note that much of this research focuses on students just on the margin of needing remedial courses (i.e., students who either need one remedial course or go directly into college-level work). Far less is known about the effectiveness of remediation in helping students with greater academic needs, though there is some suggestive evidence that more-intensive remediation can have positive effects (Boatman and Long 2010).

Even with an incomplete and mixed understanding of whether remediation works or how to improve it, this is a critical time in terms of remediation policy. In several states, including Indiana, South Carolina, and Tennessee, four-year institutions are prohibited from offering remedial education and are expected to make arrangements with community colleges to handle the remediation of students accepted for admission (Long and Boatman 2013). The shifting of remediation to only community colleges could have important repercussions on student success because community colleges receive far less in funding, and transfer rates to four-year institutions are low due to numerous structural and financial barriers (Long and Kurlaender 2009). In addition, there has been a general increase in admissions standards at many institutions to screen out less-prepared students. In some cases, academic deficiencies are so severe that colleges choose to expel new students rather than remediate them.[7]

Other states and institutions are considering how to control the costs of remediation. Some limit the percent of students who need remedial courses that can be accepted by an institution, while others limit the amount of time students

have to complete remediation or the number of times they can repeat a remedial course. For example, students who do not meet the minimum standards for college-level work within the University of Georgia system are placed into Learning Support classes. Students may only take one Learning Support class in English language arts and have only two attempts to pass the course. In terms of math, students can take up to two Learning Support classes and must pass these courses within three attempts, with no appeals (Georgia Board of Regents 2010). In 2012, at least seven states restricted or eliminated state funding for remedial courses at some of their four-year colleges, thereby forcing these institutions to fund remedial courses strictly through the use of tuition and fees (Smith 2012).

The policy decisions of where to allow remediation and whether to limit it in some way have huge implications for access to college-level training and for whether attending college is truly an avenue out of poverty. If the goal is to improve educational attainment and skill levels, as well as reduce government dependency, then states and institutions should carefully consider how to govern and provide remediation (Long 2012). As described below, better placement policies, improved services, and initiatives to reduce the need for remediation would significantly help address this major barrier to postsecondary education.

A New Approach

Given that remediation often acts as a major barrier—instead of as a gateway—to postsecondary education for many students, this memo offers three key recommendations for improving remediation services, and thus rates of college completion. States, university systems, school districts, and even the federal government could take up and encourage any or all of the following steps for improving the remediation system and for ultimately removing its need altogether.

IMPROVE PLACEMENT IN COLLEGE REMEDIATION CLASSES

Improving how students' academic preparation levels are assessed is the first step in better tailoring remediation supports for their needs. Rather than a single remediation placement exam, one alternative for determining a student's college readiness is to use multiple measures, including information about a student's high school GPA, courses taken, and/or years since high school graduation.

Currently, there is wide variation in what colleges use to assess students and what thresholds they use to determine who should be in remediation. Most colleges and universities use some kind of standardized placement exam to assign students to remedial or developmental courses (Hughes and Scott-Clayton 2010).[8] Typically, administrators make these designations based on hard cutoffs—students scoring below a given threshold are assigned to a remedial course. In fact, Parsad, Lewis, and Greene (2003) found that the two-year colleges where remediation is particularly concentrated almost exclusively use brief, standardized tests administered to new students just prior to registration to determine who should be placed into remediation. The strong reliance on a single exam is fraught with problems, however, and high-stakes placement exams are poor predictors of college readiness (Complete College America 2012). Moreover, misplacing students who do not actually need remediation into these courses can have a discouraging effect on college enrollment and persistence (Scott-Clayton and Rodriguez 2012).

There is increasing attention to the fact that the diagnostic value of remediation placement exams may be limited. Examining multiple contexts, researchers have found repeatedly that placement tests do not yield strong predictions of how students will perform in college. For example, Scott-Clayton (2012) examines data on over 42,000 first-time students at a large, urban, community college system to determine the predictive validity of one of the most commonly used remediation assessments. Her analysis suggests that one-quarter to one-third of students assigned to remedial classes based on test scores alone could have passed college-level classes with a grade of B or better.[9] Looking at two large community college systems, Scott-Clayton, Crosta, and Belfield (2012) find that approximately one in four and one in three test takers in math and English, respectively, are severely misassigned under current test-based policies. They conclude that more students are incorrectly assigned into remediation than are incorrectly passed on to college-level coursework.

There is, however, an easy way to improve student placement: in addition to test scores, institutions could use information about a student's high school GPA, courses taken, and years since high school graduation. Scott-Clayton (2012) argues that incorporating these multiple measures could reduce what she defines as "severe misplacements" by 15 percent. This could have the added effect of reducing the remediation rate by 8 to 12 percentage points while still maintaining or increasing success rates in college-level courses.

Focusing on a different set of colleges, Scott-Clayton, Crosta, and Belfield (2012) come to a similar conclusion: using information from a student's high school transcript, either instead of or in addition to placement-test scores, would substantially reduce the number of students placed into courses incorrectly. Most importantly they conclude, "If institutions

took account of students' high school performance, they could remediate substantially fewer students without lowering success rates in college-level courses."

Findings like this have increasingly led states and university systems to reevaluate their placement policies. Given the importance of high school preparation in predicting college success, it is not entirely surprising that taking into account information about high school course-taking and performance would improve placement decisions, and the potential benefits are large. The surprising fact is that high school grades and coursework are not already widely utilized as screening tools for many institutions (Belfield and Crosta 2012; Scott-Clayton 2012). This is a completely feasible policy, however, as demonstrated by the fact that some schools and systems already engage in the practice. The costs, beyond some additional staff attention, are predicted to be small, especially in comparison to the potential cost savings of avoiding unnecessary classes.

In addition to better placement, there are also calls to do a better job diagnosing students' specific needs to better match them with appropriate resources. The major remediation placement exams contain multiple parts that could be used to pinpoint the exact needs of students. Using the full value of these assessments to get a better sense of a student's specific weaknesses could result in improved matching of students with effective resources and supports, along the lines of those described in the second recommendation.

PROVIDE BETTER COLLEGE REMEDIATION SERVICES

The second key step is for states and institutions to collaborate on systems that provide better remediation services and supports. Currently, the primary effect of remediation appears to be diversionary: students simply take remedial courses instead of college-level courses, but the research suggests the remedial courses are doing little to improve student skills on average (Scott-Clayton and Rodriguez 2012). Given the growing number of students in need of remediation and the small, mixed results about whether students achieve academic success from these courses, an increasing number of institutions are beginning to rethink the ways that they offer and teach their remedial and developmental courses. I propose promoting the use of innovative pedagogies, technology, and support services to better equip students academically. Such methods could also help to streamline the pathway through remediation to increase the proportion of students who complete remedial courses and progress to higher-level academic work (Edgecombe 2011; Zachry and Schneider 2011).

Redesigning developmental courses could take a number of forms. Some states and institutions have focused on interventions that accelerate progress through remedial courses by mainstreaming students into college-level courses while also providing additional supports, such as tutoring, advising, or targeted sections outside of class. Other programs combine basic-skill courses with college-level coursework in a coordinated fashion. Still other programs have focused on using technology and/or targeted teaching modules to reduce the content students are required to complete. Such programs allow for more customization and personalization based on diagnostic assessments. Table 6-1 summarizes some of the major state and system efforts.

For example, the Community College of Baltimore County has the Accelerated Learning Program, which places students who placed into upper-level English developmental courses into the first college-level composition course instead. It then requires the student to co-enroll in a support section taught by the same instructor. Cho and colleagues (2012) find that the program significantly increased the rate of completion in the first and the second college-level composition classes within three years. Such programs do not appear to reduce the percent of students who pass their college-level courses. Edgecombe and colleagues (2012) find that students at another school who elected to use an accelerated pathway into college-level work had passage rates at or above students who first took developmental education courses.

Complete College America (2012) has also concluded that this is a promising approach; they suggest that students with few academic deficiencies should be placed in college-level courses with corequisite built-in supports such as just-in-time tutoring and required self-paced computer labs. In addition to the Community College of Baltimore County, other institutions that have initiated similar programs include the University of Maryland at College Park, Austin Peay State University in Tennessee, and Texas State University–San Marcos.

A program that combines basic-skills attainment with college-level coursework is the state of Washington's Integrated Basic Education and Skills Training (I-BEST) program. In the I-BEST program, remedial instructors and college-level faculty jointly teach courses that combine basic-skills attainment with college-level material. Using this approach, the students gain their basic skills through job training. Evaluations of the I-BEST program show higher rates of credit accumulation among recipients over time, as well as higher rates of persistence to the second year (Jenkins, Zeidenberg, and Kienzl 2009).

The Accelerated Study in Associate Programs (ASAP) at the City University of New York (CUNY) is another example

TABLE 6-1.

Possible Approaches to Redesigning Remediation

Definition	Examples	Effects
Mainstreaming		
Place students into college-level courses and provide additional supports (e.g., tutoring, special sections, and advising).	Accelerated Learning Program, Community College of Baltimore County (Maryland): This program allows students to take the first college-level composition course and co-enroll in a support session.	Participation in the program increased the completion rate of college-level composition classes within three years.
	Austin Peay State University (Tennessee): This program offers enhanced sections of two core college-level courses and linked them to Structured Learning Assistance workshops.	Students exposed to redesigned developmental courses had more positive outcomes than similar students not in remediation or in traditional remediation.
Linked remedial and college-level courses		
Combine remedial courses with college-level coursework in a coordinated fashion.	Integrated Basic Education and Skills Training Program (I-BEST) (State of Washington): Remedial instructors and college-level faculty jointly teach courses that combine basic-skills attainment with college-level material.	Recipients had higher rates of credit accumulation and higher rates of persistence to the second year.
	Accelerated Study in Associate Programs (ASAP), City University of New York (New York): ASAP links developmental courses with other college-level courses and provides supplemental supports to the classes; it requires students to attend full-time.	ASAP students were 66 percent more likely to complete an Associate degree.
	Learning Communities, Kingsborough Community College (New York): This program organizes students into cohorts that take paired remedial and college-level courses.	Students in the learning community moved more quickly through their developmental requirements, enrolled in and passed more courses, and earned more credits in their first semester.
Technology-enhanced learning and modularization		
Use assessments to determine students' specific needs and have targeted, short modules designed to address those needs.	Emporium Models: In this program, students move at their own pace through online tutorials with support from teaching assistants.	Descriptive trends suggest students are more likely to complete developmental and college-level courses.

Sources: Boatman 2012; Cho et al. 2012; Jenkins, Zeidenberg, and Kienzl 2009; Scrivener and Weiss 2013; Sommo et al. 2012; Twigg 2011.

of a promising program that links developmental courses with other college-level courses and provides supplemental supports to those classes. In their evaluation of the effects of ASAP on student outcomes, Scrivener and Weiss (2013) describe the program as requiring students to attend college full-time and providing them with a rich array of supports for three years, including tuition waivers, free use of textbooks, block-scheduled classes, enhanced advising, career services, and free subway cards for transportation. Their evaluation found that after two years, ASAP increased

the proportion of developmental education students who completed an Associate degree by 5.7 percentage points, an increase of 66 percent.

Other redesign efforts focus on changing the traditional structure of a remediation course, which is typically a fifteen-week, semester-long lecture or seminar format in which a student takes one remedial course in a given subject before moving on to the next course in the sequence. Institutions are experimenting with incorporating learning technology such as self-directed learning labs and online-learning models, and with using high-tech classrooms (Epper and Baker 2009). These newer models of remediation attempt to better target students' academic needs and help them to move more quickly through their remedial courses.

Emporium models are an increasingly popular strategy that aims to help students complete their remediation faster. With this approach, students typically attend class in a computer lab and move at their own pace through online tutorials. Students not requiring much help might move through the material in a few weeks, while other students could take multiple semesters. Students have access to teaching assistants to help them as they complete the modules, and professors track their progress (Boatman 2014). Descriptive trends suggest students are more likely to complete developmental and college-level courses using this approach, and that they do so at a lower cost (Twigg 2011), but more research is needed.

Texas is currently engaged in such an effort. The Texas Higher Education Coordinating Board is working with the College Board to develop a diagnostic testing system that informs students not only of their placement, but also of what specifically they do not understand about the material. As profiled by Boatman (2014), students who receive the diagnostic will be required to take only the modules addressing their specific academic needs.

Many of the examples noted above demonstrate what could be done at the institutional level to redesign remediation programs, yet several reform efforts involve state policies and higher-education systems. For example, in 2007–8, the Tennessee Board of Regents implemented a redesign of remediation that initially involved six campuses. While the details of each institution's redesign effort differed, they focused on using learning technology, both in and out of the classroom, to enable students to work at their own pace and focus their attention specifically on the particular skills in which they were deficient. Boatman (2012) concludes that students exposed to these redesigned developmental mathematics courses had more positive outcomes than similar students from both nonredesign institutions and from prior cohorts at the same institutions.

Overall, these cases demonstrate that redesigning remediation programs can take many different forms. The costs of these innovations and redesigns are currently being documented, and they will depend on several factors, including the number of students served as well as the costs of instruction and supplemental supports. It will also be important to distinguish between the initial costs entailed to establish a new program, which might include investments in technology, and the long-run costs of having a new program. However, these costs must be compared to the benefits gained and to the current level of expenditure.

ADOPT MEASURES TO PREVENT THE NEED FOR REMEDIATION

The final recommendation is for high schools, higher-education institutions, and states to adopt measures with the aim of preventing the need for remediation altogether. Indeed, the need for remediation in college is closely tied to a student's high school curriculum. A study by the Ohio Board of Regents (2002) finds that students who had completed an academic core curriculum in high school were half as likely to need remediation in college compared to students without this core, and other research also emphasizes the importance of academic preparation in high school for success in college. Numerous studies link the courses students take in high school to their performance in higher education (Attewell and Domina 2008; Long, Conger, and Iatarola 2012). For example, Adelman (1999) tracked a cohort of students and found that their academic backgrounds, as measured by their high school curriculum, academic intensity, class rank, and GPA, were the most critical factors in determining college enrollment and success. In a later update, Adelman (2006) finds that students differ significantly in the types of courses they take by background. He concludes that a high school curriculum is becoming even more compelling in terms of its role in degree completion.

Completion of a high school core curriculum does not ensure that a student will avoid remediation in college, however. Upon enrolling in college, students are often surprised to learn they need to take such courses. Many students and families believe that meeting high school graduation requirements will adequately prepare them for college. But to avoid remedial college coursework, students often need to take a more-rigorous and more-demanding secondary school curriculum than that required by the district or state. Poor alignment between the K–12 and postsecondary education systems results in confusion about how and what students should do to be able to enter and succeed in college (Venezia, Kirst, and Antonio 2003).

The use of college placement exams as early diagnostic tools in high school is one promising policy aimed at better connecting student high school preparation with the requirements of postsecondary courses. For example, several states administer to younger students the same remediation placement test that is ordinarily given to college freshmen. Most often this testing is done in tenth or eleventh grade. Such tests are designed to improve college-preparatory information for high school students and to encourage those who fall short to take additional coursework in their senior year. With assistance from teachers, counselors, and parents, students can then determine what courses to take while they are still in high school in order to avoid college remediation.

Several states have experimented with early-testing policies, including California, Kentucky, North Carolina, Ohio, and Oklahoma.[10] As shown by their examples, state-level early placement testing policies can take a variety of forms. The tests used range from standardized tests, (e.g., ACT's Plan) to exams closely resembling those that colleges give to entering freshmen (e.g., Computerized Adaptive Placement Assessment and Support Systems [COMPASS] and ACCUPLACER). The timing also varies among existing programs: some policies target high school juniors, while others test high school sophomores or even eighth graders (Long and Riley 2007).

The design and structure of a program, as well as the policies developed beyond the test to support the program's intentions of giving early diagnostic information, are key dimensions that could affect whether the policy has its intended impact. For instance, a program that is not mandatory and requires a high school or teacher to opt into the program to participate may not reach many of the students who would benefit. Moreover, research suggests that taking a test and receiving a score report falls short of providing many students with a clear signal. Students must be supported after the test with counseling to encourage additional course enrollments. It may even be necessary to develop new courses and pathways to fill gaps.

The experience of California with its Early Assessment Program (EAP) is informative for other states and higher-education systems. The California EAP aims to provide high school juniors with information about their academic readiness for coursework at California State University campuses. After the test in eleventh grade, interventions are developed for the student to pursue during twelfth grade. The EAP also includes professional development for teachers. An evaluation of the program found that participation in the EAP reduced a student's probability of needing remediation in college by 6.2 percentage points in English and 4.3 percentage points in math (Howell, Kurlaender, and Grodsky 2010). The authors conclude that EAP increased students' academic preparation in high school but did not discourage poorly prepared students from applying to college. This research suggests the promise of early assessment programs in reducing the need for remediation.

Another state involved in a large-scale early testing initiative is Tennessee. In 2013, more than one hundred high schools in the state offered the Seamless Alignment and Integrated Learning Support program. This program identifies high school juniors who are on track to need college remediation, and allows them, while they are still in high school, to complete the same remedial math course they would eventually have needed to take in college (Boatman 2014).

The summer before college matriculation is another important time when students could try to address their academic needs and avoid remediation. Summer bridge programs can take many forms, from trying to enhance study skills to giving students the opportunity to begin their coursework. The California State University system has the Early Start policy, which requires incoming first-time freshmen who are not college-ready to begin their remediation during the summer before enrolling (Reed 2010). Similarly, the CUNY Start program has students spend the semester before beginning college taking a developmental course. Logue and Mogulescy (2013) finds that the program has been successful in helping students avoid remedial courses once enrolled in comparison to a similar group of students who did not enroll in the program.

Other institutions have targeted students during the summer before registration with tips and resources to help them prepare for the remediation placement exam. For example, Santa Monica College offers an online orientation to its placement test, which explains the content and format of the test and offers tips on how to best prepare. In a similar fashion, the Community College of Denver published a workbook for students to review the material on the ACCUPLACER placement exam and offered free tutoring sessions for interested students. Still another example is Guilford Technical Community College in North Carolina, which created an online course designed to prepare students to take or retake the COMPASS placement test (Quint et al. 2013).

Finally, additional ways to improve prevention include strengthening the links between K–12 and higher education. This could be done by better aligning curricula and including higher-education representatives in conversations about K–12 assessments. For instance, bringing together high school English teachers with college English professors would foster smoother transitions for students. Links between the systems could also be built into K–12 accountability systems and report

cards. As many districts have already started to do, college enrollment rates of recent graduates could be publicized. Taking this a step farther, statistics on the placement of recent high school graduates into college remediation would be a useful way to judge secondary-school rigor and success in preparing students for college-level material.

COSTS AND BENEFITS

Strengthened remedial education has the potential to improve the effectiveness of education spending. At the high school level, improved diagnostic tests can allow schools to tailor educational curricula before students even attend college, significantly reducing the need for college-level remediation. For example, as noted above, California's EAP reduced a student's probability of needing remediation into 6.2 percentage points in English and 4.3 percentage points in math. In addition, improved placement into college-level remedial courses can save both student and college spending on remediation. Academic evidence suggests that a large share—between one-quarter and one-third—of remedial students are misassigned to remedial courses; assigning these students to more-appropriate courses will lower educational costs and allow students to complete courses that better improve their abilities and knowledge.

Better administration of remedial courses can have important impacts on educational and labor-market outcomes. Interventions aimed at improving supports for students in remedial courses—such as the state of Washington's I-BEST program or CUNY's ASAP program—can lead to improved college persistence and higher graduation rates. These outcomes are particularly promising for low-income and minority students who exhibit low rates of college completion. Higher rates of college completion can then translate into improved labor-market outcomes, namely higher rates of employment and elevated earnings.

Depending on the nature of the intervention, better remedial education may temporarily raise spending in the implementation phase. However, even though redesigned courses and improved remedial supports will incur initial outlays, the short-term costs of starting a new program should be measured against long-term cost savings. For example, programs that reduce the need for remedial education can lead to lower overall spending over time. In addition, programs that require an initial capital investment—such as technology-based programs that require new computers and programming—will incur costs early in the development process, but these costs are expected to decline over time.

In sum, improved remediation may lead to slightly higher educational outlays in the short run, but will likely lead to cost savings for students, institutions, and taxpayers in the long run. When considering the social benefits of college education, the rewards to improved remediation seem likely to be worth the initial investment.

Questions and Concerns

Is remediation worthwhile at all? If remediation is so expensive, should we just get rid of it?

To eliminate remediation would be counterproductive to the goal of increasing degree attainment. As noted by Cloud (2002), doing so would "effectively end the American experiment with mass postsecondary education." The low levels of academic preparation inherited by higher-education systems are certainly a challenge, but solutions need to be found to address the problem if the country is going to succeed in increasing educational attainment and reducing government dependency, especially among low-income individuals who might otherwise be in poverty and lack the skills necessary for advancement. Moreover, research in recent years highlights promising practices that would improve student preparation and outcomes, as well as reduce unnecessary costs.

Why not just focus efforts on improving the K–12 education system?

Improving the K–12 system would have benefits, but the problems facing high schools are numerous: insufficient academic rigor, a lack of alignment with postsecondary institutions, and a limited supply of advanced courses at some schools. Even if these problems were solved, the country would still have to contend with addressing the needs of older, nontraditional students, who make up approximately 40 percent of college students today. Moreover, students sometimes make poor choices about their courses, and while improving early information about college preparedness levels would help (as recommended above), some students will not decide that they need a college education until after high school. Therefore, colleges and universities need to improve their efforts to address the needs of these students. With remediation rates being as high as 70 percent at some colleges, focusing on K–12 alone will not solve the problem.

Conclusion

Remediation plays an increasingly important role in the lives of students and the colleges and universities they attend. Traditional remedial courses are costly in terms of time and resources, however, and fail to improve the chances that students will be successful in college and graduate with

a credential. As a result, remediation is a major barrier to postsecondary-level training for many students, and currently the system is not designed to help students get over that hurdle. While some states debate how to manage or limit remediation, most of the current policy efforts do not focus on how to improve programs or help students avoid remediation altogether. Improving the placement process, redesigning the courses and supports, and adopting policies to help students avoid remediation, however, are three meaningful ways to improve student outcomes and increase their educational attainment. Improving placement policies by incorporating high school course-taking and performance information would reduce the chance that students are assigned to remediation incorrectly and would help schools to better target services. In addition, redesigning remediation programs with innovative pedagogies and support services in order to streamline the pathway through remediation and enhance student progress would reduce the time needed to complete the courses and improve rates of success. Finally, we could reduce the need for remediation by better aligning curricula and having high school students take college readiness assessments earlier so that they can make better decisions about the courses they take before entering college.

Reforming remediation and better supporting the students who need it will be essential if the country is to improve educational attainment levels. Currently, 40 percent of first-year students are placed into remediation, and most do not complete the courses or persist until they earn a credential. As the national nonprofit Complete College America highlights in its 2012 report, "Remediation: Higher Education's Bridge to Nowhere," the "broken remedial bridge is travelled by some 1.7 million beginning students each year, most of whom will not reach their destination—graduation." Now is the time for the federal government, states, colleges, and high schools to consider the growing number of promising practices and additional supports that could improve students' chances for educational success.

Section 3.
Building Skills

Proposal 7: Expanding Apprenticeship Opportunities in the United States

Robert I. Lerman
American University and Urban Institute

Introduction

Reducing inequality and expanding opportunity are central challenges increasingly acknowledged by leaders across the political spectrum. Policymakers generally agree that one key solution is to prepare young people and adults with the skills to earn a good income. Unlike other advanced countries, however, reform proposals in the United States have typically included little or nothing about apprenticeship—a highly cost-effective mechanism for developing workplace skills and for reducing youth unemployment. However, interest in apprenticeship models is building in the United States, partly because of the recent successes of Britain and South Carolina in stimulating major expansions of apprenticeship training. A robust apprenticeship system is especially attractive because of its potential to reduce youth unemployment, improve the transition from school to career, upgrade skills, raise wages of young adults, strengthen a young worker's identity, increase U.S. productivity, achieve positive returns for employers and workers, and use limited federal resources more effectively.

Apprenticeship prepares workers to master occupational skills and achieve career success. Under apprenticeship programs, individuals undertake productive work for their employer, earn a salary, receive training primarily through supervised work-based learning, and take academic instruction that is related to the apprenticeship occupation. The programs generally last from two to four years. Apprenticeship helps workers to master not only relevant occupational skills, but also other work-related skills, including communication, problem solving, allocation of resources, and dealing with supervisors and a diverse set of coworkers. The course work is generally equivalent to at least one year of community college. Completing apprenticeship training yields a recognized and valued credential attesting to mastery of skill required in the relevant occupation. Unlike the normal part-time jobs held by high school and college students, apprenticeship integrates what young people learn on the job and in the classroom. Box 7-1 describes a successful youth apprenticeship program in Georgia.

In some ways, apprenticeship offers an alternative to the "academic-only" college focus of U.S. policymakers. Increasingly, placing all of our career-preparation eggs in one basket is leaving young adults, especially minority young men, well behind. Among young adults ages twenty-five to thirty-four in 2013, 49 percent of all women and 37 percent of African American women had earned at least an Associate degree; for men, the comparable figures were 40 percent and 28 percent, respectively.[1] Furthermore, in 2011–12, nearly two African American women earned a bachelor's degree for every African American male who earned one (National Center for Education Statistics 2013). Despite the well-documented high average returns to college, variations in interests, capacities, and learning styles suggest many young people would benefit far more from alternative pathways to rewarding careers than they do from academic-only pathways.

Apprenticeship can narrow the postsecondary achievement gaps in both gender and race. Having learning take place mostly on the job, making the tasks and classroom work highly relevant to their careers, and providing participants with wages

BOX 7-1.

The Georgia Youth Apprenticeship Program

In 1992, the Georgia General Assembly passed a law directing the Departments of Education, Labor, and Technical Adult Education to develop and implement youth apprenticeship programs by 1996. Today, the program operates successfully with more than 7,000 participants.

During their freshman and sophomore years of high school, students learn about the possibility of joining the apprenticeship program as juniors and seniors. Students can then apply to participate in a structured program of at least 2,000 hours of work-based training and 144 hours of related coursework. Apprentices complete not only their high school diploma, but also a postsecondary certificate or degree, and certification of industry-recognized competencies applicable to employment in a high-skill occupation. The fields vary widely from energy to information technology, manufacturing, and transportation and logistics. Mentorship is a key part of the program, as are employer evaluations of the student's job performance and the building of professional portfolios. As of 2009, more than 7,000 students in Georgia were participating in a youth apprenticeship.

High schools are responsible for recruiting and counseling students, supporting career-focused learning, and assisting in identifying industry partners. Postsecondary schools participate in developing curriculum and dual credit arrangements. Businesses offer apprenticeship positions, provide each apprentice with a worksite supervisor, and ensure that apprentices gain experience and expertise in all the designated skill areas. The worksite supervisors must participate in mentor orientation and training so that they can guide students through all the skill areas and serve as coaches and role models. Parents must agree to and sign an educational training agreement and provide transportation to the student. Finally, apprentices must maintain high levels of attendance and satisfactory progress in classes (both academic and career-oriented) and in the development of occupational skills at the worksite.

Employers report high levels of satisfaction with the apprentices and the apprenticeship program. Over 95 percent say the program has been highly beneficial to the company and that they would recommend the program to other companies. Participating companies also report good quality student performance in problem-solving and communication skills. There has been no rigorous evaluation of the impact of apprenticeship participation on students in Georgia, but participation has been growing among both companies and students.

while they learn are especially beneficial to men, particularly minority men. Apprenticeship can give minorities increased confidence that their personal efforts and investment in skill development will pay off, giving graduates a genuine sense of occupational identity and occupational pride.

Additionally, apprenticeship is a useful tool for enhancing youth development. Young people work with natural adult mentors who offer guidance but allow youth to make their own mistakes (Halpern 2009). Youth see themselves judged by the established standards of a discipline, including deadlines and the genuine constraints and unexpected difficulties that arise in the profession. Supervisors provide the close monitoring and frequent feedback that helps apprentices keep their focus on performing well at the work site and in the classroom.

Furthermore, apprenticeship is distinctive in enhancing both the worker supply side and the employer demand side of the labor market. On the supply side, the financial gains to apprenticeship are strikingly high. U.S. studies indicate that apprentices do not have to sacrifice earnings during their education and training and that their long-term earnings benefits exceed the gains they would have accumulated after graduating from community college (Hollenbeck 2008). The latest reports from the state of Washington show that the gains in earnings from various education and training programs far surpass the gains from all other alternatives (Workforce Training and Education Coordinating Board 2014). A broad study of apprenticeship in ten states also documents large and statistically significant earnings gains from participating in apprenticeship programs (Reed et al. 2012).

On the demand side, employers can feel comfortable upgrading their jobs knowing that their apprenticeship programs will ensure an adequate supply of well-trained workers. High levels of apprenticeship activity in Australia, Canada, and Britain demonstrate that even companies in labor markets with few restrictions on hiring, firing, and wages are willing

to invest in apprenticeship training. While no rigorous evidence is available about apprenticeship's costs and benefits to U.S. employers, research in other countries indicates that employers gain financially from their apprenticeship investments (Lerman 2014).

In general, firms reap several advantages from their apprenticeship investments. They save significant sums in recruitment and training costs, in reduced errors in placing employees, in excessive costs when the demand for skilled workers cannot be quickly filled, and in all employees being well versed with company procedures. One benefit to firms that is rarely captured in studies is the positive impact of apprenticeship on innovation. Well-trained workers are more likely to understand the complexities of a firm's production processes and therefore to identify and implement technological improvements, especially incremental innovations to improve existing products and processes. A study of German establishments documents this connection and finds a clear relationship between the extent of in-company training and subsequent innovation (Bauernschuster, Falck, and Heblich 2009). In the United States, evidence from surveys of more than 900 employers indicates that the overwhelming majority of them believe their programs are valuable and involve net gains (Lerman, Eyster, and Chambers 2009). Nearly all sponsors reported that apprenticeship programs help them meet their skill demands—87 percent reported that they would strongly recommend registered apprenticeship programs, and another 11 percent recommended apprenticeship programs with some reservations. Other benefits of apprenticeship include reliably documenting appropriate skills, raising worker productivity, increasing worker morale, and reducing safety problems.

While apprenticeship offers a productivity-enhancing approach to reducing inequality and expanding opportunity, activity in the United States has declined in recent years to levels about one-tenth of those in Australia, Canada, and Britain. Some believe the problems include inadequate information and familiarity with apprenticeship, an inadequate infrastructure, and expectations that sufficient skills will emerge from community college programs. Others see the main problem as an unwillingness of U.S. companies to invest, no matter how favorable government subsidies and marketing policies are. In considering these explanations, we should remember that even in countries with robust apprenticeship systems, only a minority of firms actually hires apprentices. Since the number of apprenticeship applicants already far exceeds the number of apprenticeship slots, the main problem today is to increase the number of apprenticeship openings that employers offer. Counseling young people about potential apprenticeship opportunities is a sensible complementary strategy to working with the companies, but encouraging interest in apprenticeship could be counterproductive without a major increase in apprenticeship slots.

Developing a more robust support system for apprenticeship programs requires action at various levels of government. This proposal consists of a series of targeted initiatives that rely on both state and federal support. At the state level, governments could develop marketing campaigns to persuade employers to create apprenticeship programs, and to build on existing youth apprenticeship programs. At the federal level, the government could provide federal subsidies to encourage take-up of existing vouchers for apprenticeship programs; designate occupational standards for apprenticeship through a joint Office of Apprenticeship (OA)–Department of Commerce (Commerce) team; and develop an infrastructure of information, peer support, and research within the Departments of Commerce and Labor.

The Challenge

Today apprentices make up only 0.2 percent of the U.S. labor force, far less than in Canada (2.2 percent), Britain (2.7 percent), and Australia and Germany (3.7 percent). In addition, government spending on apprenticeship programs is tiny compared with spending by other countries and spending on less-effective career and community college systems that provide education and training for specific occupations. While total annual government funding for apprenticeship in the United States is only about $100 to $400 per apprentice, federal, state, and local annual government spending per participant for two-year public colleges is approximately $11,400 (Cellini 2012). Not only are government outlays sharply higher, but the cost differentials are even greater after accounting for the higher earnings (and associated taxes) of apprentices compared to college students. Given these data, at least some of the low apprenticeship penetration can be attributed to a lack of public effort in promoting and supporting apprenticeship and to heavy subsidies for alternatives to apprenticeship.

However, the historical reasons for apprenticeship's low penetration in the United States are less important than the potential for future expansion.[2] Recent experiences in Britain and in selected areas of the United States suggest grounds for optimism, but the barriers to expansion are significant.

One significant barrier is limited information about apprenticeship. Because few employers offer apprenticeship programs, most employers are unlikely to hear about apprenticeship from other employers or from workers in other firms. Compounding the problem is both the difficulty of finding information about the content of existing programs and the fact that developing apprenticeship programs is

complicated for most employers, often requiring technical assistance that is minimal in most of the country. The experiences in Britain and South Carolina (discussed below) demonstrate that effective marketing is critically important for expanding the number of firms offering apprenticeship programs.

A second barrier is employer misperceptions that apprenticeship will bring in unions. There is no evidence that adopting an apprenticeship program will increase the likelihood of unionization, but reports about such close links persist. A third barrier is the asymmetric treatment of government postsecondary funding, with college courses receiving financial support and courses related to apprenticeship programs receiving little financial support. Policies to reduce the government spending differentials between college subsidies and apprenticeship subsidies can help overcome this barrier.

Another significant complication to developing more apprenticeship opportunities is that U.S. apprenticeship programs are categorized in three different ways: registered apprenticeship with the Department of Labor's OA, unregistered apprenticeship, and youth apprenticeship. Official data generally fail to track unregistered apprenticeship; evidence suggests their numbers exceed those of registered apprenticeship.[3] Small youth apprenticeship programs operate in a few states. Furthermore, tiny budgets and an excessive focus on apprenticeship in the field of construction have hampered expansion of the registered apprenticeship system. The federal government spends less than $30 million annually to supervise, market, regulate, and publicize the system. Many states have only one person working under the OA. In sharp contrast, Britain spends about £1 billion (or about $1.7 billion) annually on apprenticeship, which would amount to nearly $8.5 billion in the United States after adjusting for population.

Unlike programs in Austria, Germany, and Switzerland, the apprenticeship system in the United States is almost entirely divorced from high schools and serves very few workers under the age of twenty-five. Only a few states, notably Georgia and Wisconsin, now operate youth apprenticeship programs that provide opportunities to youth ages sixteen to nineteen. State funding pays for coordinators in local school systems and sometimes for required courses not offered in high schools. In Georgia, 143 out of 195 school systems currently participate in the apprenticeship program, serving a total of 6,776 students. These apprentices engage in at least 2,000 hours of work-based learning, as well as 144 hours of related classroom instruction. The Wisconsin program includes one-year to two-year options for nearly 2,000 high school juniors and seniors, requiring from 450 to 900 hours in work-based learning and two to four related occupational courses. The program draws on industry skill standards and awards completers with a Certificate of Occupational Proficiency in the relevant field. Some students also receive technical college academic credit. In Georgia, the industry sectors offering apprenticeship range from business, marketing, and information management to health and human services and technology and engineering. The Wisconsin youth appenticeship programs are in food and natural resources, architecture and construction, finance, health sciences, tourism, information technology, distribution and logistics, and manufacturing.

A New Approach

Recent proposals by the administration and some members of Congress suggest apprenticeship expansion would require substantial government funding. To support apprenticeship, President Obama included $500 million per year for four years in his fiscal year 2015 budget. Senators Tim Scott (R-SC) and Corey Booker (D-NJ) have proposed providing tax credits to employers hiring apprentices. Though these steps are necessary, they may not be sufficient.

Building a robust apprenticeship system in the United States, even with new resources, will require branding at the state and/or federal levels and marketing at both the general level and the firm level. I suggest five strategies: two could be accomplished at the state level, and three would be the responsibility of the federal government.

THE STATE ROLE

Develop high-level and firm-based marketing initiatives

Britain's success in expanding apprenticeship positions from about 150,000 in 2007 to over 850,000 in 2013 offers one example for how to create successful national and decentralized marketing initiatives. Alongside various national efforts, including the National Apprenticeship Service and Sector Skills Councils, the British government provided incentives to local training organizations to persuade employers to create apprenticeship programs. A similar model could be developed in the United States. State governments could build a state marketing campaign together with incentives and technical support to community colleges and other training organizations to market apprenticeship at the individual firm level. However, simply marketing to firms through existing federal and state agencies may not work if the staff lacks the marketing dynamism, sales talent, and passion for expanding apprenticeship. Pay for performance is recommended: technical education and training organizations would earn revenue only for additional apprenticeship programs that each college or organization developed with employers.

Each apprenticeship slot stimulated by the college/training organization would increase the work-based component of the individual's education and training and would reduce the classroom-based component. Assume the work-based component amounts to 75 percent of the apprentice's learning program and the school-based courses are only 25 percent of the normal student course load: by allowing training providers to keep more than 25 percent of the standard full-time-equivalent (FTE) cost provided by federal, state, and local governments in return for providing the classroom component of apprenticeship, the community colleges and other training organizations would have a strong incentive to develop units to stimulate apprenticeship. State and local governments could provide matching grants to fund units within technical training organizations to serve as marketing arms for apprenticeship. The marketing effort should encourage government employers as well as private employers to offer more apprenticeship opportunities.

South Carolina's successful example involved collaboration between the technical college system—a special unit devoted to marketing apprenticeship programs—and a federal representative from the OA. With a state budget for Apprenticeship Carolina of $1 million per year, as well as tax credits to employers of $1,000 per year per apprentice, the program managed to stimulate a six-fold increase in registered apprenticeship programs and a five-fold increase in apprentices. Especially striking is that these successes—including 4,000 added apprenticeship opportunities—took place as the economy entered a deep recession and lost millions of jobs. The costs per apprentice totaled only about $1,250 each calendar year, including the costs of the tax credit.

Build on youth apprenticeship programs

State government spending on youth apprenticeship programs amounts to about $3 million in Georgia and $2 million in Wisconsin. Although these programs reach only a modest share of young people, the United States could make a good start on building apprenticeship programs if the numbers in Georgia could be replicated throughout the country. The focus would be on students who perform better in work-based settings than in purely school-based ones and who are less likely than the average student to attend a four-year college or complete a bachelor's degree. To create about 250,000 quality jobs and learning opportunities, the gross costs of such an initiative would be only about $105 million—about $450 per calendar year—or about 4 percent of current school outlays per student-year. Moreover, some of these costs would be offset by reductions in teaching expenses, as more students would spend more time in work-based learning and less time in high school courses. In all likelihood, the modest investment would pay off handsomely in the form of increased earnings and associated tax revenues, as well as reduced spending on educational and other expenditures.

A good place to start is with Career Academies, schools within high schools that have an industry or occupational focus. Over 7,000 Career Academies operate in the United States; these programs already include classroom-related instruction and sometimes work with employers to develop internships in fields ranging from health and finance, to travel and construction. Because a serious apprenticeship involves learning skills at the workplace at the employer's expense, the Academies would be able to reduce the costs of teachers relative to a full-time student. If, for example, a student spends two days per week in a paid apprenticeship, the school should be able to save at least 15 percent of its costs for that student. Applying these funds to marketing, counseling, and oversight for youth apprenticeship should allow the Academy or other school to stimulate employers to provide apprenticeship slots. Success in reaching employers will require a talented, business-friendly staff that is well trained in business issues and apprenticeship initiatives.

To implement this component, state governments should fund marketing and technical support to Career Academies to set up cooperative apprenticeship programs with employers, using either state or federal dollars. The first step should be planning grants for interested and capable Career Academies to determine who can best market to and provide technical assistance to the Academies. Next, state governments should sponsor performance-based funding to units in the Academies so they receive funds for each additional apprenticeship. Private foundations should offer resources for demonstration and experimentation in creating apprenticeship opportunities within high school programs, especially Career Academies.

THE FEDERAL ROLE

Extend use of current postsecondary and training subsidies to apprenticeship

Several postsecondary programs could be set up to subsidize at least the classroom portion of apprenticeship. Already, localities can use training vouchers from the Workforce Investment Act for apprenticeship programs. To encourage greater use of vouchers for apprenticeship, the federal government could provide one to two more vouchers to Workforce Investment Boards for each training voucher used in an apprenticeship program. Another step is to encourage the use of Trade Adjustment Act training subsidies to companies sponsoring apprenticeship, just as training providers receive subsidies for Act-eligible workers enrolled in full-time training. In addition, policies could allow partial payment of the Act's extended unemployment insurance to continue for employed individuals in registered apprenticeship programs.

Allowing the use of Pell Grants to pay at least for the classroom portion of a registered apprenticeship program makes perfect sense as well. Currently, a large chunk of Pell Grants pays for occupationally oriented programs at community colleges and for-profit career colleges. The returns on such investments are far lower than the returns on apprenticeship. The Department of Education can authorize experiments under the federal student aid programs (Olinsky and Ayres 2013), allowing Pell Grants for some students learning high-demand jobs as part of a certificate program. Extending the initiative to support related instruction (normally formal courses) in an apprenticeship could increase apprenticeship slots and reduce the amount that the federal government would have to spend to support these individuals in full-time schooling.

The GI Bill already provides housing benefits and subsidizes wages for veterans in apprenticeship programs. However, funding for colleges and university expenses is far higher than for apprenticeship. Offering half of the GI Bill college benefits to employers hiring veterans into an apprenticeship program could be accomplished by amending the law. Unless the liberalized uses of Pell Grants and GI Bill benefits are linked with an extensive marketing campaign, however, the take-up by employers is likely to be limited.

Designate best practice occupational standards for apprenticeships

To simplify the development of apprenticeship for potential employers, a joint OA–Commerce team should designate one or two examples of good practice with regard to specific areas of expertise learned at work sites and with regard to subjects learned through classroom components. The OA–Commerce team should select occupational standards in consultation with selected employers who hire workers in the occupation. Once selected, the standards should be published and made readily accessible. Employers who comply with these established standards should have a quick and easy path to the registration of the program. In addition, workforce professionals trying to market apprenticeship will have a model that they can sell and that employers can adopt, either as-is or after making modest adjustments. Occupational standards used in other countries can serve as starting points for the OA–Commerce team and for industry groups involved in setting standards and in illustrating curricula.

Develop a solid infrastructure of information, peer support, and research

The federal government should sponsor the development of an information clearinghouse, a peer support network, and a research program on apprenticeship. The information clearinghouse should document the occupations that currently use apprenticeship in the United States and in other countries, along with the list of occupation skills that the apprentices master. The clearinghouse should include the curricula for classroom instruction, the skills that apprentices should learn and ultimately master in the workplace, and up-to-date information on available apprenticeship slots and on applicants looking for apprenticeship opportunities. The development of the information hub should involve agencies within Commerce as well as in the OA.

The research program should cover topics especially relevant to employers, such as the return to apprenticeship from the employer's perspective and the net cost of sponsoring an apprentice after taking into account the apprentice's contribution to production. Other research should examine best practices for marketing apprenticeship programs, incorporating classroom and work-based learning by sector, and counseling potential apprentices.

COSTS AND BENEFITS

The proposals in this paper would involve only a modest amount of new funding, though some shift in the allocation of funds for the education and training marketplace would be necessary. To date, apprenticeship programs have not proven to be very expensive for the government; the majority of costs stem from the federal and state costs of administering apprenticeship programs, tuition paid by participants, instruction costs related to the academic portions of the programs, and those borne directly by taxpayers through higher spending or forgone tax revenue (Reed et al. 2012; Workforce Training and Education Coordinating Board 2014).

A recent study of apprentices in the state of Washington gives an indication of the potential costs and benefits associated with an apprenticeship program (Workforce Training and Education Coordinating Board 2014). The average cost per participant borne by the individual and government was about $5,500. In contrast, the per-participant cost associated with participation in a community college professional or technical program are about $16,000 per year.

The potential benefits, as indicated by this study, are stunning: apprentices raised their earnings relative to a comparison group by an average of nearly $78,000 over two and a half years after leaving the program. In comparison, participants in community college professional or technical programs netted only about $15,000 in increased earnings. Projecting earnings effects through age sixty-five, these relative earnings for apprentices amount to roughly $440,000 at a cost of $5,500; the comparison figures for participants in community college professional or technical programs are $175,000 at a cost of about $20,000 (Workforce Training and Education Coordinating Board 2014). A separate study conducted

by Deborah Reed and colleagues (2012) of ten other states found earnings gains associated with apprenticeship training amounting to $6,000–$6,500 per year per participant. In addition to these quantitative benefits, apprenticeship—in particular registered apprenticeship—also results in numerous social benefits, including added productivity of workers, reduced use of government safety-net programs by participants, and a stronger local economy.

Two studies of the earnings gains of apprentices and government costs in the United States find that the social benefits outweigh the social and government costs by ratios of 20:1 to 30:1 (Reed et al. 2012; Workforce Training and Education Coordinating Board 2014), although the extent to which these benefits are due to government investment as compared to employer investment is indeterminate. Investing in extensive marketing aimed at increasing apprenticeship with appropriate incentives for performance will add only modestly to government costs while yielding substantial gains for workers and the public.

Given the high share of apprenticeship programs undertaken through joint union-employer agreements, some share of the earnings gains associated with apprenticeship may actually result from the role of unions in bargaining for higher wages. Still, workers must have raised their productivity enough through their apprenticeship in order for employers to afford to pay union wages. On the cost side, construction unions and both union and non-union employers certainly invest large sums in training apprentices. Manufacturing companies that train apprentices do so as well. This stimulus to private investments is one of the reasons apprenticeship increases earnings at a modest cost to the government.

Questions and Concerns

Will enough employers offer apprenticeship positions?

Stimulating a sufficient increase in apprenticeship slots is the most important challenge. Although it is easy to cite examples of employer reluctance to train, the evidence from South Carolina and Britain suggests that a sustained, business-oriented marketing effort can persuade a large number of employers to participate in apprenticeship training. Both programs were able to more than quadruple apprenticeship offers over about five to six years. Today, U.S. employers are far less likely to offer apprenticeship programs than are their counterparts in many other advanced economies. One reason is that federal and state governments have not provided adequate resources to encourage and help employers adopt apprenticeship programs. New policies may or may not succeed in generating significant growth in apprentices, but we are highly unlikely to achieve growth without trying something along the lines of the proposals in this paper.

Will enough workers apply for the additional apprenticeship slots?

Compared to expanding the demand for apprentices, increasing supply by attracting sufficient applicants for apprenticeship is likely to be relatively easy. Although representative data on the number of applicants per apprenticeship slot do not exist, many examples indicate that the number of applicants is far higher than the number of apprenticeship openings. Take the case of the Apprenticeship School, a program linked to the shipbuilding tasks of a company in Newport News, Virginia.[4] In 2013, the school had over 6,000 applicants for about 240 positions. Most craft apprenticeship programs in the building trades have far more applicants than apprentice slots. The case of Britain offers additional evidence: the massive increase in intermediate or advanced apprenticeship positions between 2007 and 2013 was matched by a sufficient increase in applicants. Nonetheless, providing counseling and information to prospective apprentices will still be a sensible investment, especially after an expansion in apprenticeship slots, because a good matching process is critical for the effectiveness of the program for workers and firms.

What role does public perception play in the expansion of apprenticeship opportunities?

Public perception and awareness of apprenticeship could play a major role in its expansion in the United States. In the United Kingdom, for example, a large shift in public perception occurred over the past few decades, leading to a series of pro-apprenticeship campaigns that coincided with a rapid increase in apprenticeship. In the year following the implementation of a marketing campaign in London, the number of apprentices in the city more than doubled from 20,350 to 41,400 (Evans and Bosch 2012). Furthermore, a £25 million public apprenticeship fund introduced in 2010, which included a marketing component, coincided with a near doubling of apprenticeship starts in England—from 279,700 to 520,600—between the 2009–10 and 2011–12 academic years (Skills Funding Agency 2014).

Importantly, too, is the culture surrounding both the teaching and learning aspect of apprenticeship. In the United States, registered apprenticeship in the building trades industry have been present for more than 100 years and are an integral part of the training for construction-related occupations. Many workers in these industries are accustomed to their role as mentor and teacher. As apprenticeship becomes more common in other industries, the apprenticeship model—which relies heavily on the participation of existing workers—

may become a familiar and welcome of aspect of employment in other industries.

Will apprenticeship programs accept disadvantaged workers?

Apprenticeship can play a role in helping the disadvantaged, but not all will benefit. As noted above, apprenticeship promotes youth development and provides a pathway to rewarding careers that is less reliant on classroom instruction. This approach is particularly relevant to the learning processes of men, especially minority men. In many cases, employer requirements will limit the opportunity of the most educationally disadvantaged from entering various professions. Of course, exclusions of this type occur even without an apprenticeship. Still, apprenticeship is attractive even to disadvantaged workers because they provide clear incentives for low-performing students to work hard to attain adequate skills to qualify for apprenticeship that leads to career jobs that pay well. Finally, there is a distribution of apprenticeship occupations; some occupations might not require advanced education yet still involve apprenticeship that leads to attractive careers.

Conclusion

Expanding apprenticeship is a potential game-changer for improving the lives of millions of Americans and for increasing the efficiency of government dollars spent on developing the workforce. Instead of spending over $11,000 per year on students in community college career programs, why not shift resources toward apprenticeship programs, which are far more cost-effective? Apprenticeship programs yield far higher and more-immediate impacts on earnings than community or career college programs, yet cost the student and the government far less than college programs. Community college graduation rates, especially for low-income students, are dismally low. Even after graduating, they often have trouble finding a relevant job. For students in postsecondary education, forgone earnings are one of the highest costs. In contrast, participants in apprenticeship programs rarely lose earnings and often earn more than if they had not entered an apprenticeship. Furthermore, apprentices are already connected with an employer and can demonstrate the relevant credentials and work experience demanded by other employers. Finally, there are net gains flowing to employers from apprenticeship programs.

The key question is not whether the shift in emphasis from community and/or career colleges toward apprenticeship is desirable, but whether it is feasible. Although some argue that the free U.S. labor market and the weak apprenticeship tradition pose insurmountable barriers to scaling-up apprenticeship, the dramatic increases in apprenticeship in Britain offer strong evidence that building a robust apprenticeship program in the United States is feasible.

The first step is persuading policymakers and employers about the desirability and feasibility of apprenticeship. Once that intellectual hurdle is overcome, the next step is establishing leadership at the policy and program levels and effective implementation of the new approach. Institutional change of this magnitude is difficult and will take time, but will be worthwhile in terms of increased earnings, enhanced occupation identity, increased job satisfaction, and expansion of the middle class.

Proposal 8: Improving Employment Outcomes for Disadvantaged Students

Harry J. Holzer
Georgetown University and
American Institutes for Research

Introduction

Improving the skills and earnings potential of poor youth and adults should remain a top priority for state and federal policymakers. Poorer people lag behind their more affluent peers in both postsecondary educational attainment and earnings, and raising both would contribute strongly to reducing poverty among current and future generations. Tapping the full potential of public colleges to provide a leg up to those who need the educational push could go a long way toward alleviating poverty.

Students from all family backgrounds already face strong financial incentives to pursue postsecondary education. In response to the higher earnings of college graduates relative to those without college, U.S. enrollment rates have risen dramatically in the past decade, especially during the Great Recession, and degree attainment has increased somewhat at both two- and four-year colleges (Greenstone and Looney 2011; National Student Research Clearinghouse 2011). We have also greatly increased the nation's investment in Pell Grants and other forms of assistance to improve college access for the poor (Holzer and Dunlop 2013).

But the dropout rate among low-income youth and adults in college remains extremely high; even among those who complete certificates or degrees, many choose fields of study that are not well compensated in the labor market (Bound, Lovenheim, and Turner 2009; Robst 2007). These outcomes hurt the poor, and weaken the impacts of large national investments in higher education. Low-income students would clearly benefit from having more postsecondary education or training options that they can successfully complete, and that are more closely linked to the needs of employers in high-demand fields that pay well.

Colleges can expand course offerings in high-demand fields of study, but there are other approaches as well to better align educational skills with the current labor market. One such approach is sectoral training, in which education providers work with employers to educate and train directly for the job requirements of high-demand sectors. This approach appears to have large impacts on earnings in rigorous evaluations. Career pathways are also being developed for these sectors that combine classroom education and work experience in a series of steps that ultimately lead to these jobs. And other models of work-based learning, such as apprenticeships or incumbent worker training, can accomplish many of the same goals.

Many states and localities are trying to build education and training programs in both four-year and community colleges, especially in high-demand fields, and bring them to scale. A report by the National Governors Association (2013) finds that at least twenty-five states are now building partnerships between key employers or industry associations and community colleges for sectoral training and career pathway development, and are trying to integrate these programs with their broader economic development goals.[1]

Anecdotes abound about partnerships and programs developed in specific industries at the state level. But we have few data so far indicating the scale and outcomes achieved, much less data

on the impacts on the education or employment outcomes of the disadvantaged students engaged in these efforts. When considering future investments, maintaining both the quality achieved in the smaller evaluated programs and a focus on the poor remain important, so as not to simply provide windfalls to employers at taxpayer expense.

To improve earnings prospects for recent graduates and to encourage two- and four-year colleges to be responsive to labor market demand, I propose that state legislatures implement financial incentives for colleges to steer students toward high-wage occupations and to industries with especially high labor needs. In addition, while this proposal primarily calls for state-level reforms, I also note opportunities for the federal government to support states in this initiative.

My proposal calls on states to partially base college funding on graduates' reported wages five years following graduation and, where appropriate, on the colleges' provision of courses that are especially important to the local economy. These incentives may also be accompanied by technical assistance for states and colleges, plus supports for students. I also propose that states experiment with generating financial incentives for employers to engage more with colleges in sectoral efforts, and propose that employers expand their own efforts to train and hire more workers.

The Challenge

It is widely known that the earnings of less-educated workers—i.e., those with high school or less education—have greatly lagged behind those of more-educated workers in the past few decades. We also know that poorer people tend, on average, to have low levels of education and achievement (Greenstone et al. 2013). And their children's education and achievement lags behind as well, with the gaps apparently growing wider over time (Bailey and Dynarski 2011; Reardon 2011).

While postsecondary enrollments have risen across the entire income spectrum, it is also evident from data sources that dropout rates are very high among low-income students, especially at community colleges and non-elite four-year colleges. For instance, calculations from the National Educational Longitudinal Survey (NELS) data show that students from disadvantaged socioeconomic backgrounds struggle to complete higher education: only about 30 percent of the students from the lowest quartile of families by socioeconomic status who enroll in four-year colleges complete their bachelor of arts degrees within about six years, less than half of the completion rate of the overall student population (Holzer and Dunlop 2013). This cohort's associate of arts (AA) degree completion rates at community colleges are likewise very low: less than 25 percent of young students at community colleges, and even fewer among older ones, complete an AA degree. These rates are low among poor and nonpoor students alike, but many more poor students attend these colleges (Holzer and Dunlop 2013).

While there are various factors behind these high dropout rates, one important factor may be the perceived imbalance between the costs of attending college—including the opportunity cost of forgone employment—relative to the perceived benefits. Low-income students might not enroll in or complete degree programs in these highly compensated fields if they lack the information about which fields are well compensated or about which fields are in high demand among those that they could actually complete successfully (Jacobson and Mokher 2009; Scott-Clayton 2011).

By most accounts, community colleges vary enormously in their quality and commitment to responding to labor demand. Some are torn between their more traditional academic missions of being feeder programs to four-year colleges and their newer vocational missions. In addition, as public institutions that are mostly paid (through state subsidies or private tuition payments) for student "seat time" rather than education or employment outcomes, they have little incentive to respond to labor market need. In at least some fields of study (e.g., nursing, health technology, and advanced manufacturing), the costs of equipment and instructors are relatively high, deterring community colleges from building adequate instructional capacity in these areas. And the instructors they hire may have little incentive to keep up effectively with newer developments in dynamic fields such as information technology. Accordingly, students report difficulty enrolling in classes they need for their majors in such fields. And the high-skill requirements in some of these areas—such as the math requirements for machinists in manufacturing—also preclude efforts to expand participation, especially among disadvantaged students.

This challenge has not been resolved by the recent expansion in for-profit educational institutions.[2] While for-profits are sometimes described as institutions that serve disadvantaged students and rapidly respond to changing labor market demands (Deming, Goldin, and Katz 2013), these institutions have thus far been largely unsuccessful at appreciably improving postgraduation earnings for low-income students and filling gaps in training and education left by public-sector colleges. Evidence suggests that students who attend for-profit colleges are likely to experience lower earnings, higher unemployment, and higher student debt burdens than they would if they attended public institutions (Deming, Goldin, and Katz 2013). In addition, for-profits operate with

a motivation for generating profits, not for maximizing the social benefits of education and meeting local labor demand. While they appear to generate some benefits, for-profit institutions are, at best, a highly imperfect way to accomplish the policy goals of these proposals.

Instead, a more prudent approach is to create financial incentives similar to those that motivate for-profit colleges to supply high-demand classes in public institutions. This would likely avoid at least some of the negative outcomes associated with for-profit institutions as suppliers of education to the disadvantaged but would still target class offerings toward those in high-return fields. As it stands, public institutions already rely on public funds and make course offering decisions based in part on the set of incentives that results from the structure of those subsidies. The prudent path would be to structure these subsidies in a way that will likely result in colleges offering the classes that students demand and that will generate the highest level of social and economic benefits.

Indeed, several states have already instituted incentives for colleges that are tied to performance. According to the National Conference of State Legislatures (2014), at least twenty-five states have embraced some form of performance-based subsidies for their public colleges, and another five are planning to implement such policies. Table 8-1 summarizes some recent information from the National Conference of State Legislatures on what some states are doing in this area. It shows that most of these states reward colleges for successful course completion, credits earned, and ultimately credentials earned (or successful transfers to four-year colleges). And at least some of the states additionally reward schools for successful outcomes achieved among their low-income or minority populations, which would be an important consideration for antipoverty policy.

But, to date, such policies focus only on student academic outcomes at the colleges and universities, rather than those that occur afterwards in the labor market. Basing subsidies at least partly on job market outcomes will make public colleges more responsive to labor demand, especially by building higher instructional capacity and hiring high-quality instructors in high-demand fields. And, as noted below, it might also be helpful to encourage more employers to participate in such partnerships with colleges, or to directly train, or at least hire, more workers who are somewhere on their career pathways.

A New Approach

My proposal calls on states to encourage public colleges to be more responsive to students' prospects and the job market. One way to accomplish this is by making their public subsidies at least partially dependent on student performance in the job market. In addition, states can incent colleges to offer courses and majors that would better align unmet labor demand with labor supply in local markets. This strategy will reward colleges for focusing more on the labor market outcomes of their students, leading to higher earnings for graduates and stronger local economies. While these proposals are not specifically targeted to low-income individuals, a large segment of the program beneficiaries will be in the lower part of the income distribution, making these policies an effective antipoverty initiative.

State governments can incent public colleges to improve graduates' outcomes through a primary mechanism that partially ties funding to postgraduation reported earnings. Specifically, the earnings of students over the subsequent five-year period beyond graduation would form the basis to reward states. Extra subsidies could be granted, for example, to colleges whose students subsequently earn above the median level for those with such a credential in that state; those whose students have relatively low earnings would get lower subsidies. Rewarding the earnings of minority or low-income students would be critically important as well, since these are the students whose employment in high-demand fields most lags behind. Allowances would be made for graduates who transferred to four-year universities or who sought further education.

In local labor markets that demonstrate a major imbalance between labor demand and labor supply, colleges might also be rewarded for putting students in high-demand occupations and industries within that locality or state. For example, such occupations or industries might include nursing, health technology, or advanced manufacturing. In general, this mechanism is inferior to tying colleges' funding to wages, which represent the market valuation for various types of work. However, in local markets that seem to experience labor shortages—such as being unable to fill nursing slots or to find qualified special-education teachers—there is an argument for using public funds to incent specialized training.[3]

States could also implement concurrent reforms that help colleges better target their curriculum. For example, states could provide technical assistance to their public colleges as they implement reforms that better align courses to the labor market. Networks of states that are developing sectoral programs and career pathways on a larger scale are working with supporting organizations to provide guidance on how to best implement these changes (Choitz 2013).

In addition, a set of supports for students—such as career and labor market counseling—would likely raise completion rates and the earnings of program graduates. Simplifying

TABLE 8-1.

Some States Using Performance-Based Higher Education Subsidies

State	Funding amount	Metrics measuring performance	Type of institution	Administrative body
Arizona	For FY 2013 and FY 2014, $5 million per year was allocated based on performance.	Metrics are based on degrees awarded, completed student credit hours, and external research and public service dollars brought into the university system.	In place at four-year institutions	Arizona Board of Regents
Colorado	Beginning in 2016-17 and for each year that state funding is at or above $706 million, 25% of the amount over $650 million will be appropriated based on each institution's performance.	Metrics are based on attainment, student success, diversity in enrollment, reducing attainment gaps among students from underserved communities, and financial stewardship. Institutions then design separate sets of common and institution-specific metrics.	In transition	Each institution's governing board negotiates a contract with the department of higher education
Georgia	Beginning in FY 2017, all new money appropriated will be allocated based on institutional performance.	Metrics are based on student progression, degrees conferred, success of low-income and adult learners, and institution-specific success on strategic initiatives.	In transition	Higher Education Funding Commission
Illinois	Funding amount is less than 1% of base funding.	For four-year universities, metrics are based on bachelor's, master's, doctoral, and professional degrees, undergraduates per 100 FTE, research and public service expenditures, graduation rate, and cost of attendance. For two-year universities, metrics are based on degree completion, completion rates for "at risk" students, transfers to four-year institutions, remedial and adult education, momentum points, and diversity.	In place at two- and four-year institutions	Illinois Board of Higher Education's Higher Education Performance Funding Steering Committee
Kansas	New state higher education funds are allocated based on performance incentives.	Metrics are specific to each institution, but must be selected from a proscribed list of performance indicators.	In place at two- and four-year institutions	Kansas State Board of Regents, contingent upon each institution meeting its individualized Performance Agreement
Maine	Performance funding will start as 5% of base funding in FY 2014, and increase by 5% increments each subsequent year until it reaches 30%.	Metrics are based on degrees awarded, prevalence of STEM and priority fields, number and dollar value of research grants and contracts received, and degrees awarded per $100,000 of net tuition and fee revenues.	In place at four-year institutions	University of Maine System Board of Trustees
Michigan	For FY 2014, $21.9 million in new appropriations for universities and $5.8 million for community colleges was allocated based on performance metrics.	Metrics are based on completions in critical skill areas, research and development expenditures, graduation rates, institutional support as a percent of core expenditures, with mandatory requirements of limiting resident tuition increases to 3.75% per year, participation in at least three reverse transfer programs with community colleges, maintaining a dual enrollment credit policy, and participation in the Michigan Transfer Network. Separate allocation criteria exist for community colleges.	In place at two- and four-year institutions	Performance funding is included in the annual higher education appropriations

State	Funding amount	Metrics measuring performance	Type of institution	Administrative body
Mississippi	After a base amount is set aside for operational support, 90% is allocated based on completion targets and 10% is allocated based on progress toward established priorities.	The Board of Trustees sets priorities based on a range of specified metrics relevant to attainment, intermediate educational outcomes, research, and productivity.	In place at four-year institutions	Mississippi Public Universities Board of Trustees
Montana	5% of base funding will be at stake during the FY 2015 trial phase. The amount of performance funding for long-term priorities has not yet been determined.	Metrics are currently being developed, but are expected to vary based on the mission of each institution and include measures of completion and retention.	In transition	Montana University System Performance Funding Steering Committee
New Mexico	Performance-based funding is set to increase, but is currently 5% of instruction and general formula funding to colleges and universities.	Metrics are based on number of certificates and degrees awarded in both general and priority areas, degrees earned by at-risk students, grant/contract funding, and momentum points.	In place at two- and four-year institutions	Performance funding is included in the annual higher education appropriations
North Dakota	Nearly all base funding is calculated by the number of credit hours completed.	The funding formula is based on the number of credit-hours completed by students. A completed credit-hour is one for which a student met all institutional requirements and obtained a passing grade.	In place at two- and four-year institutions	The state board of education, based on per-credit dollar amounts specified in legislation
Oklahoma	Performance funding only applies to new appropriations.	Metrics are based on first-year retention, first-year retention for Pell recipients, student completion of twenty-four credits in their first academic year, cohort graduation rates anywhere in the system, degrees granted, and program accreditation.	In place at two- and four-year institutions	Oklahoma State Regents for Higher Education
South Dakota	Nearly all base funding is calculated by the number of credit hours completed.	Metrics are based on funds appropriated according to degrees awarded, STEM degrees awarded, and growth in research expenditures.	In transition	Council on Higher Education Policy Goals, Performance, and Accountability
Texas	Funding amount is 10% of formula-based state higher education funding.	10% of the formula funding is allocated based on developmental education completion rates, number of students who complete first college level course in mathematics, reading intensive and writing intensive courses, interim student attainment, and number of degrees and certificates awarded, with additional points awarded for degrees in STEM or allied health fields.	In place at two-year institutions	Higher Education Coordinating Board
Virginia	50% of funding is expected to be allocated based on performance and incentive funding.	Metrics are based on number of degrees awarded and number of additional degrees awarded each year with emphasis on STEM attainment, degrees earned within 100% of time-to-degree, and degrees awarded to students from under-represented populations.	In transition	State Council of Higher Education

Source: National Conference of State Legislatures 2014.

Note: FY = fiscal year; FTE = full-time equivalent; STEM = science, technology, engineering, and mathematics.

financial aid, and conditioning it on maintaining some adequate level of academic performance, tends to have positive effects on student outcomes. Accelerating remediation efforts, and combining them with labor market information and other kinds of supports, would likely help as well (Bettinger, Boatman, and Long 2013).

While simply creating rewards to institutions and employers based on outcomes might be sufficient, the federal or state governments might also help by paying for some of these supports directly, or by helping to make them more easily available. For instance, high-quality career counseling might be more available to students at community colleges if the Job Centers (formerly known as One-Stop offices) funded by the U.S. Department of Labor were increasingly colocated with college campuses or if Job Centers increased the number of staff available to counsel students.[4]

IMPLEMENTATION OF THE PROPOSAL

This proposal would be implemented by state legislatures in their ongoing budget processes. States would explicitly tie a specified share of two- and four-year college funding to the reported earnings of graduates in the five years following their graduation. In states with specialized labor force needs, state legislatures could also introduce additional funding criteria based on labor force outcomes in designated industries or occupations. Since many states are already tying subsidies to academic outcomes of students, this proposal would call for approximately half of all incentive payments to be based on the subsequent labor market outcomes of students, while the other half might continue to be based on academic outcomes.

The share of funding explicitly tied to employment (as well as academic) outcomes will vary by state. Existing state structures have varied considerably in this respect: Tennessee, for instance, is already transitioning to making student performance the entire basis of its higher education subsidies, while Texas bases just 10 percent of its funding on various educational measures. As recommended by the National Conference of State Legislatures, states may benefit from gradual implementation of their performance-based subsidies, with small but steady increases over time in the percentages of funding based on performance, as Maine is doing. States might also decide to implement these approaches to all new or additional funding above some base level, which Georgia, Mississippi, and Oklahoma appear to be doing.

Quality assurances should also be considered. For instance, it is crucial that the states, their local workforce boards, and their colleges carefully monitor the progress associated with these additional investments, by measuring the numbers of students that participate in these programs, as well as their educational and earnings outcomes. As noted below, states are increasingly generating the data needed to observe these outcomes; to measure the full scale of programs effects, however, data on student participation in occupational programs must also be included (Choitz 2013).

More broadly, the use of state labor market data to monitor employment growth across sectors (as well as job vacancy data to indicate where firms are having difficulty filling available jobs) might enable colleges to better target sectors in which demand remains somewhat unmet, and where investments in training would be most useful. Keeping track also of the full range of credentials achieved by workers, including those provided and recognized by employers and others, is important so that the supply of skills can be measured as well as the demand. Finally, states should also evaluate these programs regularly to see whether their impacts justify ongoing expenditures.

Although most of these subsidies to public colleges and participating employers will be financed by states, the federal government could help as well. For instance, the Obama administration plans to implement the last round of competitive grants in 2014 in its Trade Adjustment Assistance Community College to Career program, worth $500 million. It has already given out $1.5 billion in three previous rounds, with the funding going almost exclusively to individual community colleges or consortia of colleges in each state. There are plans to partner with specific high-demand and high-wage industries. In the last round, the administration will hopefully reward states directly that institute some of the performance measures described above, or offset some of the state financial supports for participating employers. In addition, the administration could use its Workforce Innovation Funds in the Department of Labor to encourage such state activities, or some of the new grants proposed in its FY 2015 budget (Office of Management and Budget 2014). It might also consider using some of these funds to offset additional expenses incurred by the states (or their colleges) in developing the new data systems and analysis that would be needed to implement these proposals, to prevent them from viewing these changes as something like an "unfunded mandate."

EXPERIMENTING WITH INCENTIVES FOR EMPLOYERS

Another challenge that might limit the effectiveness of education or training aimed at high-demand sectors is the reluctance of employers to participate in partnerships with colleges and to hire their trainees, or to directly train more workers themselves.

Employer decisions on whether to train workers involve a set of considerations. As Gary Becker (1996) pointed out, employers have little incentive to invest in general training for workers who might leave at any time. If they question the quality of the workers' basic skills, and their ability to handle technical material, they have even more reason to avoid such investments. Some employers provide such training mostly to their professional and managerial employees (Lerman, McKernan, and Riegg 2004). Many training models, such as apprenticeships and internships and other models of work-based learning, require less-educated workers to largely pay for general training out of their own wages.[5]

To incent more private sector employers to engage in sectoral partnerships and provide employment and/or training to workers, states could offer tax credits or subsidies per employee hired or trained in this fashion. Though the evidence to date on tax credits for employers who hire or train workers is somewhat weak, experimentation by states could add to the available pool of knowledge about what works (or does not work) in this area.[6]

How might such tax credits or subsidies be structured? Activities that cost employers more, such as direct provision of training to new hires (or incumbent workers), might require relatively higher subsidies, while simply hiring those trained by a local community college or other providers might require lower subsidies. Those who implement apprenticeship programs, or other models of work-based learning, might need some encouragement if some of the costs cannot be passed on to the worker or if administrative hurdles are posed. By limiting the subsidies to students with only a high school diploma or GED at the outset, states could more effectively target their lower-income populations with these policies without stigmatizing them as efforts for the poor only.

It is still unclear how large tax credits or subsidies should be to successfully encourage employer participation. But Hollenbeck (2008) reports that spending under $1,000 per worker in participating firms was sufficient to generate more incumbent worker training in Massachusetts. Holzer and Lerman (forthcoming) also report that South Carolina now offers employers $1,000 per apprentice, though we need more evidence on its impacts. Total costs can be further reduced, for example, by limiting such tax credits to employees with less than bachelor degrees in entry-level nonmanagerial jobs.

EVIDENCE OF EFFECTIVENESS

There is no doubt that improving the extent to which low-income students gain high-education credentials will raise their earnings. Rigorous evidence exists on the kinds of education and workforce development programs that have high completion rates and large impacts on the earnings of adults and youth who complete them, such as the sectoral programs mentioned above, where education providers work closely with employers to train workers for existing jobs.

Maguire et al. (2010) provide evidence from a randomized control trial study of three such programs: Jewish Vocational Services in Boston, which trains disadvantaged workers for careers in health care; Per Scholas in New York, which focuses heavily on IT services; and the Wisconsin Regional Training Partnership, which prepares trainees for jobs in construction, manufacturing, and other industries. In addition, Roder and Elliott (2012) used randomized control trial evidence to evaluate Year Up, a program that trains youth for jobs in IT and related industries.

All of these programs, which take roughly six months to complete, generated large impacts on earnings (of roughly $4,000 per year, or about 30 percent higher than earnings of the control groups) within two years of random assignment. Though some important questions remain about whether the impacts fade out over time (especially when workers change jobs and move across sectors as well as firms), and exactly who is served by these programs (some require at least a high school diploma or a GED), these impacts compare very favorably with other education or training programs (Holzer 2013). And, though the training providers in these programs were generally not community colleges, other well-known sectoral efforts (like Quest in San Antonio) rely more heavily on colleges to provide training.

Other evidence also shows large impacts on earnings from other approaches, including work-based learning (from apprenticeship or incumbent worker training). Some of this evidence is based on careful matching studies, rather than on randomized control trials, so they should be viewed as suggestive rather than conclusive, but they are encouraging nonetheless (Hollenbeck 2008, 2012; Reed et al. 2012). Even remediation programs in community colleges appear to be more successful when they integrate labor market information or skills training directly into the remedial classes, as has been done in the LaGuardia Community College's GED Bridge program in New York and the Integrated Basic Education and Skills Training program in Washington state (Martin and Broadus 2013; Zeidenberg, Cho, and Jenkins 2010).

COSTS AND BENEFITS

Perhaps the most obvious private benefits for students who experience a better targeted public college curriculum are higher earnings and improved employment prospects. Jacobson, LaLonde, and Sullivan (2005) find that one year of technically oriented community college education raises

earnings by 14 percent for men and 29 percent for women—at least for a sample of displaced workers. Similar impacts have been found for sectoral workplace training programs. As noted above, experimental studies of the impact of training programs showed wage increases of approximately 30 percent.

In addition, a host of social benefits can be attributed to improved college education and employee training. Higher earnings can move families out of poverty and reduce reliance on social safety net programs. Greater economic success among a local economy's residents also stimulates economic activity and generates tax revenue. And, if the incentives are successful at inducing relatively greater labor market rewards among disadvantaged or minority populations, the states might value this outcome on equity grounds even though the rewards accrue mostly to private individuals. Finally, if public colleges tailor their curriculum to meet critical local labor market shortages—such as those for nurses—consumers of the targeted industry will benefit as well.

Better-tailoring public college curriculum potentially carries very little, or even zero, costs to states and higher education institutions. At least in theory it is possible that the incentives in state subsidies could be implemented with no net increase in costs to the colleges or the state by simply restructuring existing subsidies. But if teaching in the high-demand fields is also costlier to the colleges, due to higher teacher or equipment costs, then the average cost of instruction per credit hour to colleges will rise, which they might view as an unfunded mandate.

If so, how might states and their colleges respond to such higher costs? First, they could keep total costs constant by cutting expenditures on other services (in noninstructional costs), though this might be costly to college outcomes in other ways (Webber and Ehrenberg 2010). Second, they could reduce their instructional offerings and capacity in low-reward (in terms of the labor market) academic fields. Average student completion rates and labor market rewards to students may rise as a result of these changes even if the colleges offer fewer total credit hours of instruction per term to students enrolled there and fewer such enrollments over time. Third, to avoid these options, states may opt to modestly raise tuition costs, perhaps partially offsetting the burden that higher costs may impose on students by higher needs-based scholarship assistance. As noted earlier, the federal government might also provide some financial assistance to states making this transition to help them offset the higher costs they would likely incur.

Subsidies for workplace training could also be limited to modest sums. For instance, Hollenbeck (2008) reported that the sum of expenditures by all states providing incumbent worker training was under $1 billion per year before the Great Recession, and this sum financed incumbent worker training of 1.3 million workers nationally, though it is not clear how much of this training represents net impacts of the expenditures. An estimated expenditure of $2 billion a year nationally by federal and state governments could therefore be associated with the occupational training for as many as 2 million students or new workers in the short-run.

Questions and Concerns

Would colleges and universities have the administrative capacity and data to measure the subsequent labor market performance of their students?

This proposal would create very serious data needs for colleges in each state. But many states are now developing administrative data systems that link education and earnings records (Zinn and Van Kluenen 2014), so the data by which states could measure these earnings outcomes for graduates (as well as nongraduates) of each college are potentially available.[7] Technical assistance from federal and state governments would help colleges follow their student earnings would be crucial here. The federal government might also incent local states in a region to merge their data systems, so that students who move out of state can be tracked as well.[8] In many cases, the state and local workforce boards will have experience using the local earnings data, and can also help local colleges develop an infrastructure for routinely measuring the earnings of their graduates as well as their academic outcomes.

Won't colleges have strong incentives to game the system in various ways, to improve their measured performance along the requisite dimensions?

Poorly designed performance measures for public programs can potentially generate unintended consequences.[9] States do not want to encourage colleges to improve their outcomes through "cream-skimming" from their applicant pool, by raising entrance requirements, nor do they want to improve completion rates by lowering the bar for graduation. Specific rules prohibiting such practices plus careful monitoring to enforce them would be necessary to ensure that such manipulation is not used to improve the outcomes that generate rewards.

If states train too specifically for occupations or industries in high demand, what happens to students if they ultimately leave those fields, or when labor demand shifts over time to other sectors?

There is always some tension between providing workers with the specific skills they need for getting jobs in the targeted sector, and the more general skills they will need in the job

market, especially if/when they leave the jobs they obtain with these skills and even cross into other sectors. To maintain longer-term earnings improvements, especially in dynamic labor markets where high-demand sectors today can become low-demand sectors tomorrow, workers must have at least some skills that are clearly general and portable. Certain approaches, like stackable credentials in the career pathways framework, explicitly aim to achieve this result.[10] The colleges must also be encouraged to be nimble, and to adjust their offerings over time to labor market changes.

Won't the workers who are trained in high-demand fields just displace other workers, who would otherwise have obtained the same jobs?

Economists have worried for some time that their estimates of training impacts for individuals might overstate the aggregate impact due to such displacement (Heckman, LaLonde, and Smith 1999). But evidence from simulations performed by Davidson and Woodbury (1990), in a paper estimating the size of displacements created by incentive bonuses for unemployment insurance recipients to accept employment earlier, find displacement effects that are relatively small. In the short run, with wages fixed, displacement could mean that jobs are rationed away from other workers toward those receiving a particular treatment. But in the longer run there is less cause for concern, as employers will presumably create more jobs in response to an outward shift in the supply of workers with the requisite skills (though perhaps along with some reduction in wages).

Conclusion

State and—and in some instances federal—policymakers should focus on improving the skills and earnings potential of poor youth and adults as an important multigenerational antipoverty initiative. The earnings of less-educated workers have greatly lagged behind those of more-educated workers in the past few decades. Although postsecondary education enrollment is up among all income levels, dropout rates are very high among low-income students, especially at community colleges and nonelite four-year colleges. Educational institutions should be incentivized to better guide students into the workforce and to concentrate the school curriculum on the skills valued or unmet in the local labor market.

Specifically, I propose that states partially base public college funding on graduates' reported earnings five years following graduation and, where appropriate, on the colleges' provision of courses that are especially important to the local economy. Rigorous research and evaluation of training programs have demonstrated that sectoral programs, with associated career pathways, can have the largest positive impacts on the subsequent earnings of disadvantaged workers. I propose to create incentives for more colleges to participate in these programs, along with technical assistance to help them do so. States might also experiment with incentives to encourage employers to participate in partnerships with community colleges or to directly hire and train more workers on their own.

Significant private and social benefits would accrue with carrying out the provisions of this proposal. Most notably, the nation would realize increased productivity, higher earnings, and better opportunity to find gainful employment. The higher earnings can move families out of poverty, reduce reliance on social safety programs, and raise local economies. On the revenue side, better-tailoring public college curriculum potentially carries very little, or even zero, costs.

Finally, the best preparation for low-income students in the long run will give them not only the specific skills they need for jobs in the targeted sectors, but also some general skills that are valued across firms and sectors. Developing curricula and pathways that maintain this balance should be a high priority as well.

Proposal 9: Providing Disadvantaged Workers with Skills to Succeed in the Labor Market

Sheena McConnell
Mathematica Policy Research

Irma Perez-Johnson
Mathematica Policy Research

Jillian Berk
Mathematica Policy Research

Introduction

Millions of Americans cannot obtain jobs that pay enough to lift them out of poverty. For many, the principal barrier to obtaining these good jobs is their lack of specialized occupational skills increasingly sought by employers. Research has shown that vocational training can be effective in boosting the earnings of disadvantaged adult workers. This proposal argues that, by helping workers acquire the skills that employers demand, vocational training could be wielded as an effective antipoverty tool.

The 1998 Workforce Investment Act (WIA) Adult program is one of the most important sources of government-funded vocational training for disadvantaged workers—workers with both low levels of education and low levels of skills. Accessed through the American Job Center network, this program provides vocational training funds for adults aged eighteen or older who are determined to need, and be suitable for, vocational training, with priority of service given to low-income workers. Eligible workers are provided a voucher, known as an individual training account, that they can use to purchase training at any program as long as it is on a state-approved list of programs that includes courses at both community colleges and private training providers. The WIA Adult program, currently funded at about $800 million, serves more than one million workers annually. Funding for the WIA Adult program and other sources of vocational training has been declining over the past several decades. WIA was scheduled for congressional reauthorization in 2003, but more than ten years have passed without new legislation. In May 2014, policymakers announced that they reached a bipartisan deal to reauthorize WIA through new legislation, the Workforce Innovation and Opportunity Act.

This paper outlines why Congress should increase funding for vocational training for disadvantaged adult workers.[1] Specifically, we argue that Congress should increase funding for the WIA Adult program. Decades of research on the effectiveness of vocational training of the type provided by the WIA Adult program, as well as an evaluation of the WIA Adult program itself, suggest that the program can be effective in increasing the employment and earnings of disadvantaged workers.

We also argue, however, that Congress, and the state and local workforce investment boards that administer the WIA Adult program, should explore ways to improve the vocational training that is available to adult disadvantaged workers. In particular, policymakers should focus on addressing two concerns about training programs: (1) too many people who start training programs do not complete them, and (2) too many people do not find a job in the occupation for which they are trained. We recommend experimentation with four evidence-

based approaches to address these concerns: (1) providing more guidance to workers so they make appropriate decisions about training, (2) investing in more services to support the workers while they are enrolled in a training program, (3) developing training programs that provide the skills demanded by employers, and (4) developing training programs that are more suited to the needs of disadvantaged adult trainees. In the absence of federal action on reauthorization to fund this experimentation, we encourage state and local workforce boards that oversee the American Job Centers to take advantage of grant opportunities to test the proposed strategies aimed at improving outcomes for trainees.

The Challenge

Low-skilled workers are much more likely to be unemployed and living in poverty than are more-skilled workers. In 2013 the unemployment rate was 11.4 percent among people twenty-five and older without a high school diploma, compared with 5.4 percent among those with an associate's degree (U.S. Bureau of Labor Statistics 2014). Similarly, in 2013 the median weekly earnings of people twenty-five and older with an associate's degree was more than 60 percent higher than those without a high school diploma ($777 compared with $472). Poverty rates are highest among people who are unemployed, do not work full time, or have low wages (Meyer and Wallace 2009).

The supply of skilled workers is not keeping up with the demand for them (Goldin and Katz 2012). Employers report shortages of workers with occupation-specific skills (Holzer et al. 2011). A recent survey of 2,000 U.S. companies found that 30 percent had been unable to fill skilled job positions for more than six months (Manyika et al. 2012).

Many low-income workers would not be able to access vocational training without assistance from government programs. Although the vast majority of vocational training in the United States is provided by employers (Mikelson and Nightingale 2004), employers are less likely to provide training for their lower-skilled positions, which tend to have higher rates of turnover (Lane 2000). Hypothetically, workers could pay for their own training, but many unemployed and low-skill workers do not have the financial resources or the ability to borrow to pay for training.

The United States does not currently invest heavily in vocational training compared with other countries, and funding for vocational training has declined over the past decades. Whereas the United States spends less than 0.05 percent of its gross domestic product on vocational training, other industrialized nations invest up to ten times as much (figure 9-1). Since 1985 the amount budgeted for key U.S. Department of Labor training programs has declined by about 20 percent in real terms.[2]

Even among supporters of vocational training, there is legitimate concern that many people who start programs do not complete them. Within three years of enrollment in a community college, fewer than half of all enrollees have attained an associate's degree or vocational certificate, transferred to a four-year institution, or remain in college (Horn and Weko 2009). Only about 55 percent of the people who begin two-year colleges obtain either an associate's degree or a certificate (Holzer and Dunlap 2013). Analysis of data on training vouchers provided by the WIA Adult and Dislocated Worker programs found that only 64 percent of workers who enrolled in training programs at community colleges completed a training program within three years (Perez-Johnson, Moore, and Santillano 2011). Although the rate of completion for those enrolled in training at a private training provider was higher, about 15 percent of trainees still did not complete a training program within three years.

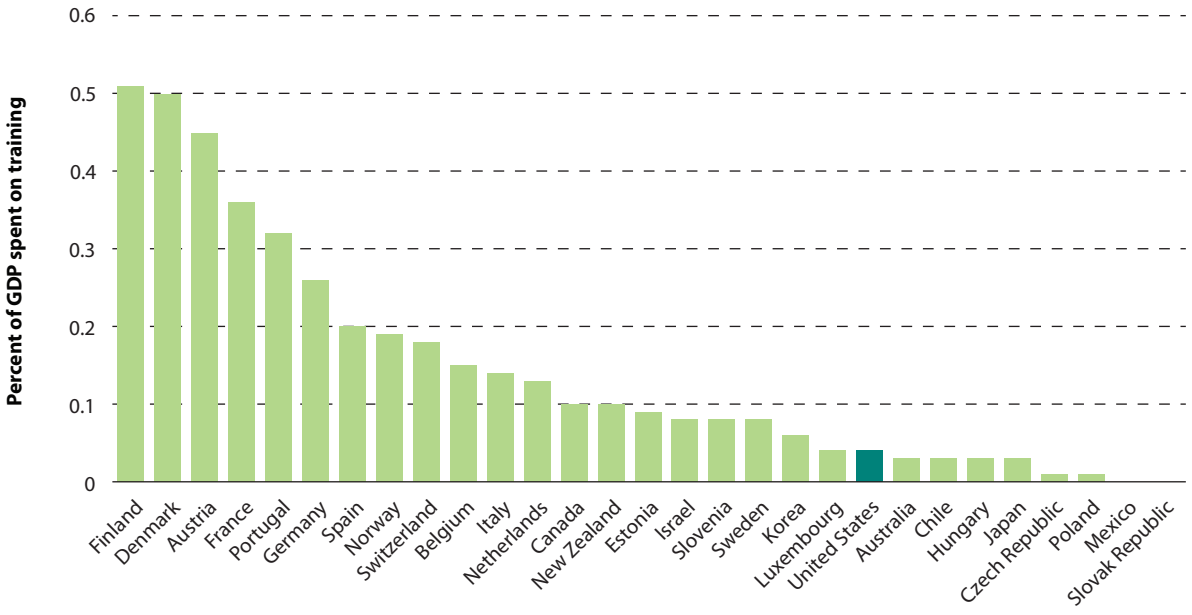
A second concern is that too many workers who complete training cannot subsequently find a job to use the acquired skills. A study of training vouchers provided through the WIA Adult and Dislocated Worker programs reported that only about 40 percent of the participants found employment in the occupation for which they received training (Perez-Johnson, Moore, and Santillano 2011). Similarly, a study of the Trade Adjustment Assistance program found that only 37 percent of people who participated in training funded by that program held a job in the occupation for which they were trained in the fourth year after they were initially laid off (Schochet et al. 2012). These statistics suggest that there is often a missing link between employers and training programs.

A New Approach

We propose five evidence-based recommendations to improve publicly funded vocational training. The first recommendation requires congressional support for additional funding for the WIA Adult program. While the other four recommendations could be congressionally mandated when WIA is reauthorized, they could also be implemented by the state or local workforce investment boards that administer the WIA Adult program even without reauthorization. Funding for these recommendations can be obtained from federal grants. For example, in 2012 the U.S. Department of Labor issued $147 million in grants from the Workforce Innovation Fund to states or local workforce investment boards to demonstrate and evaluate innovative,

FIGURE 9-1.

Labor Market Training Expenditures as a Percent of GDP in OECD Countries, 2011



Source: OECD 2013.

Note: Data were not available for Greece, Ireland, and the United Kingdom. Training expenditures for Mexico and the Slovak Republic are less than 0.005 percent of GDP. The OECD defines labor market training as "measures undertaken for reasons of labor market policy, including both course costs and subsistence allowances to trainees, when such are paid. Subsidies to employers for enterprise training are also included, but not employer's own expenses" (OECD 2008).

evidence-based approaches to improve the workforce system. Another $60 million for these grants is proposed in the president's fiscal year 2015 budget. The Long-Term Unemployed Ready to Work Partnerships to be awarded this summer, or the Trade Adjustment Assistance Community College and Career Training grants—both funded by the U.S. Department of Labor—could also be used.

RECOMMENDATION #1: CONGRESS SHOULD INCREASE FUNDING FOR THE WIA ADULT PROGRAM

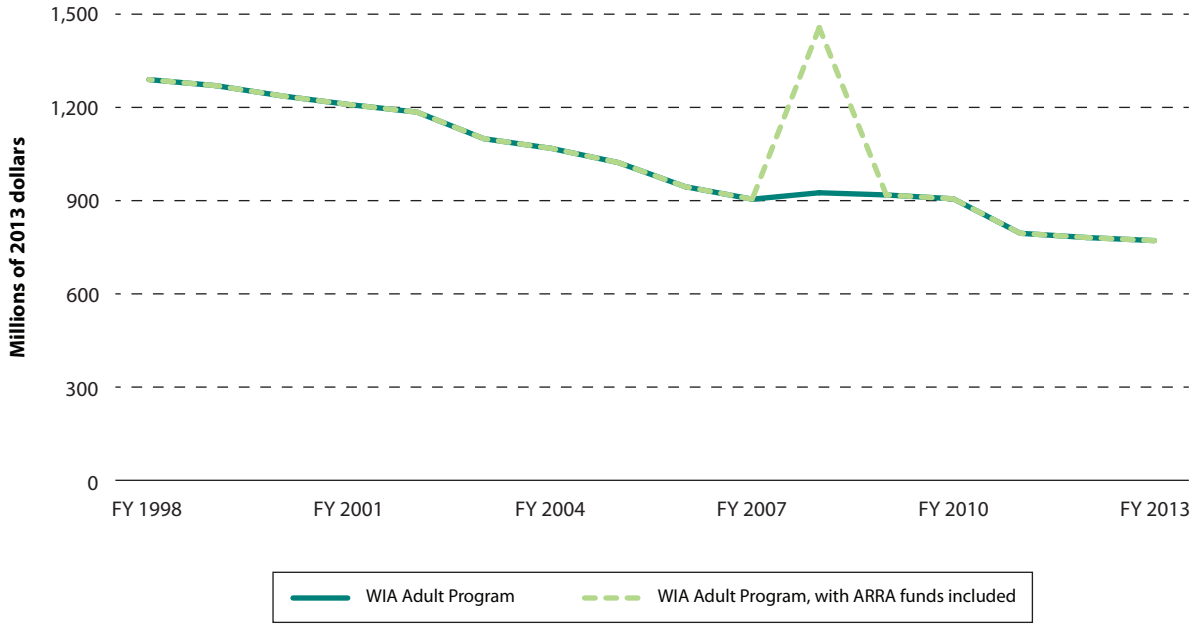
Multiple rigorous evaluations conducted over the past decades in Europe and the United States suggest that access to vocational training increases the employment and earnings of low-skilled adults (Bloom et al. 1993; Card, Kluve, and Weber 2010; Heinrich et al. 2013; Hollenbeck 2009). Low-skilled adults who receive training through these programs typically enroll in relatively short-term, inexpensive training programs. A typical program funded by the WIA Adult program lasts less than a year and costs between $3,000 and $6,000. While in training, participants earn less than they would if they were not in training; after they complete training, however, they earn more than they would if they had not participated in the training, and the gains are sustained over time (U.S. Government Accountability Office [GAO] 1996). One review of the evidence suggests that low-skilled workers can increase their earnings by between about $300 and $900 per quarter (Heinrich 2013). These gains are large and sustained enough that they are likely to cover the cost of the programs.

Even with the evidence of the effectiveness of training for disadvantaged workers, the budget for the WIA Adult program has declined markedly over the past decades. Between fiscal years 1998 and 2013, the budget for the WIA Adult program declined by 41 percent in real terms (figure 9-2). Anecdotally, many local workforce investment administrators report not providing training for eligible workers because their training funds run out.

We recommend that Congress reverse this decline in funding for vocational training and, more specifically, that it funnel the increased funding to the WIA Adult program. We recommend expansion of the WIA Adult program rather than other sources of training funding for three main reasons. First, that program has been shown, at least by a nonexperimental study, to increase the earnings

FIGURE 9-2.

Total Funding for the WIA Adult Program, Fiscal Years 1998–2013



Source: U.S. Department of Labor 2014.

of its participants (Heinrich et al. 2013).[3] In contrast, studies of training for other populations have been less encouraging. For instance, a study of the WIA Dislocated Worker program, a program that is structured identically to the WIA Adult program but serves dislocated workers who have been laid off and are typically more skilled and experienced than the WIA Adult program participants, was found to be ineffective at increasing earnings (Heinrich et al. 2013). Other studies of training programs for dislocated workers have found either no evidence of positive impacts on earnings (Schochet et al. 2012) or impacts that are smaller than that for disadvantaged workers (Hollenbeck 2009). Second, because the WIA Adult program is offered through American Job Centers, workers can access other employment services and supports such as labor market information, job listings, and other services at the same time that they are being trained. Third, funding an established program rather than setting up a new program will avoid concerns voiced by the GAO and others about fragmenting employment and training services (GAO 2011).

RECOMMENDATION #2: THE WORKFORCE BOARDS SHOULD EXPERIMENT WITH PROVIDING STRUCTURED, DIRECTIVE GUIDANCE TO WORKERS WHO REQUEST TRAINING

When contemplating training, workers need to make complex decisions. They need to decide whether to undertake training, and, if so, what courses to take, and through which training provider. They may need to find child care or support for themselves and their families while they are in training. Workers may not have the information or analytical ability to make good decisions, which could result in incomplete training or in the acquisition of skills that are not in demand by employers.

A study of different approaches to providing training vouchers to trainees in the WIA Adult and Dislocated Worker programs found that WIA Adult program participants benefit from counseling (Perez-Johnson, Moore, and Santillano 2011). Those participants in the WIA Adult program who expressed interest in training and were required to discuss their training decision with an employment counselor earned on average $474 (about 8 percent) more per quarter six to eight years later as compared to program participants who were not required to discuss their training decision, but who were offered the same amount of training funds. The study also suggests that

BOX 9-1.

Example of a Tool to Assist in Occupation Selection: My Next Move

Accessed online at http://www.mynextmove.org/, this assessment tool enables job seekers to explore the requirements of and their suitability for different occupations. The interest assessment, accessed by clicking on "Tell us what you would like to do," requires the job seeker to rate sixty work activities based on her interest in performing the task. The tool then categorizes the interests into six career types: realistic, investigative, artistic, social, enterprising, and conventional. The job seeker is then asked to indicate her job zone, or the level of experience and education she either has or is willing to pursue. The tool then compiles a list of potential occupations for the job seeker to explore given her interests and the results of the Job Zones activity. For each occupation, the tool provides its education and training requirements, and the typical personality traits, skills, and abilities of people in the occupation. The tool also notes if the occupations are high-demand and high-growth, green, or part of a registered apprenticeship program. (This box is based on Laird and Holcomb 2011.)

such counseling should be mandated. When meeting with a counselor was not required to receive the voucher, only 4 percent of workers chose to do so.

We recommend that WIA Adult program participants be provided structured and directive counseling. By structured, we mean that counselors consistently cover the same set of topics with program participants. By directive, we mean that counselors guide program participants to a training option and have the authority to refuse funding for training decisions that they view as unwise. Currently, while most WIA training programs require workers to discuss their training choices with an American Job Center employment counselor before their funding is approved, typically this counseling is neither structured nor directive (D'Amico et al. 2004).

We propose that employment counselors consistently discuss with program participants the factors that influence the benefits and costs of training and the likelihood that the worker will complete the training. Counselors should also be empowered to not fund training that they deem unlikely to lead to success in the labor market. During their meetings with workers who request training, counselors will need to consistently conduct assessments to collect information about workers' interests, basic skills, aptitudes, and transferrable skills. They should discuss barriers to employment, the type of training they seek, the providers they are considering, the number of additional years they expect to work, their training costs and budget, and their need for and potential sources of income support while participating in training. Information on possible earnings trajectories after participating in training should be discussed as well as the likelihood of obtaining a job with the training.

To facilitate this counseling, the programs should provide tools to help counselors and workers examine the anticipated benefits and costs of training. A complete suite of worksheets and counseling tools was developed (drawing from exemplars used in a wide range of programs) for a U.S. Department of Labor–sponsored study; that study is publicly available (Perez-Johnson, Moore, and Santillano 2011). Box 9-1 provides an example of an assessment tool that workers could use to explore occupations. Structured tools could help guide workers through the processes of program research, comparing program and provider options, estimating a training budget, and projecting income and expenses while participating in training. One tool could be similar to the training report card proposed in a prior Hamilton Project brief (Jacobson and LaLonde 2013). In addition to the factors in this report card, counselors should also help workers consider the amount they expect to earn once they complete training, what they could earn if they took a job instead of attending training, and the number of additional years they expect to work. This would help workers examine their expected returns to training.

To implement this recommendation, even without federal action, local workforce investment boards will need to invest in more counseling staff and in additional training and oversight of the staff, as well as in collecting and refining the tools. The study of individual training accounts found that, on average, counselors spent about seventy-five minutes with each program participant on her training decision when counseling was required but unstructured (Perez-Johnson, Moore, and Santillano 2011). We expect that more-structured counseling would require an additional thirty minutes per trainee. To minimize staff burden, some of the proposed activities could be delivered within group workshops.

To guide workers, counselors need accurate and timely information to understand the skills demanded by employers and the potential returns to different training paths. Two new data sources—Real Time Labor Market Information and linked administrative data—offer promising opportunities to enhance counselors' understanding of local labor markets and increase their confidence in offering workers directive

counseling. Real Time Labor Market Information uses information in online job postings to make inferences about labor market conditions. Providers of Real Time Labor Market Information use a daily Web crawler to scrape job postings from the Internet and aggregate this information to capture trends in employer demand, emerging occupations, and skill requirements (Vollman 2011). Real-time data provide a snapshot of the market and can reveal the extent of demand for a particular credential or the emergence of a new occupation. Counselors can use real-time data to understand their local labor markets and guide workers accordingly. Linked administrative data increasingly allows states and local areas to track the outcomes of workers who enroll in different training programs (Jacobson and LaLonde 2013). Federal grant funding awarded under the State Longitudinal Data System grants and the Workforce Data Quality Initiative grants have allowed states to make infrastructure investments to improve linkages between the workforce system, community colleges, and administrative earnings records. States need to take the next step to analyze these data and provide counselors and workers with information on the distribution of educational and employment outcomes for workers who enrolled in similar training programs.

RECOMMENDATION #3: WORKFORCE BOARDS SHOULD EXPERIMENT WITH PROVIDING MORE SUPPORTIVE SERVICES

An important barrier to low-income workers completing training is lack of financial assistance to cover child care, transportation, and basic needs (Goldrick-Rab and Sorenson 2010). Although the WIA Adult program and other programs at the American Job Centers can provide funds for supportive services, many trainees do not receive this help. We estimate that, of those who obtained training in the WIA Adult and Dislocated Worker programs, fewer than 40 percent received any support to pay for child care, transportation, tools, or uniforms (Perez-Johnson, Moore, and Santillano 2011).

The WIA Adult program could increase the value of its training vouchers, or individual training accounts, and allow the program participant to use the voucher to also cover supportive services to ease their participation in training. For example, in The Thumb Area Michigan Works! program, staff members determined all the programs for which a worker was eligible and consolidated the individual's funding into one Tool Chest voucher (U.S. Department of Labor 2002). The individual could use this voucher for education, training, or any other services that were consistent with the funding sources and approved by a staff member at the American Job Center. The consolidation relieved the worker from applying to multiple programs and allowed use of the voucher for a wider range of purposes and at a wider set of vendors. This approach is promising, and we recommend that it be rigorously evaluated.

RECOMMENDATION #4: WORKFORCE BOARDS SHOULD EXPLORE DEVELOPING TRAINING PROGRAMS IN PARTNERSHIPS WITH EMPLOYERS

One of the most promising new vocational training programs for low-skill adults strengthens this link between training and employers' needs (Maguire et al. 2010; Richburg-Hayes 2008; Woolsey and Groves 2010). Sector-based programs focus on a particular industry (such as health care, manufacturing, or information technology) and engage with employers in that sector. Using both labor market statistics and information collected directly from employers, the programs identify the skills that employers need. Training providers and employers work collaboratively to develop training curricula tailored to specific job opportunities; training providers carefully screen applicants to ensure that matches with the targeted occupation are appropriate. When trainees complete the program, they receive a credential that employers recognize. In addition, the programs develop strong relationships with employers to help quickly match workers who complete their training with available job vacancies.

Evaluations of sector-based programs have yielded promising results. A study of three relatively mature, sector-based programs estimated that participants earned about $4,500 (18 percent) more over the two years after they had enrolled in the study than similar workers who did not participate in the program (Maguire et al. 2010). Importantly, significant earnings gains were estimated for program participants with diverse characteristics—including men, women, African Americans, Latinos, immigrants, people who were formerly incarcerated, welfare recipients, and young adults. This suggests that sectoral programs could be an appealing training option for a wide range of low-skilled workers and could be accessed by WIA Adult program participants using the individual training account vouchers in the same way that they access other training programs. Box 9-2 describes one of the sector-based programs found to be successful.

Sector-based training programs require significant up-front investment to develop and refine. Individual training providers and employers may be unlikely to make the investment, especially with uncertainty about whether public funding would be available to pay for the training. The state and local workforce boards should be willing to invest in developing the necessary partnerships between employers and training providers and to assist in designing the programs. They could involve intermediaries to develop the partnerships. One sector-based program found to be effective was developed by the Wisconsin Regional Training Partnership, a nonprofit

BOX 9-2.

Example of a Successful Sector-Based Program: Medical Office Occupations at Jewish Vocational Services–Boston

Jewish Vocational Services (JVS)-Boston is a community-based nonprofit organization that provides vocational training to disadvantaged youth and adults. Having previously received grants to create incumbent training for health-care providers and administered an American Job Center in Boston, it has a long history of working with employers. It employed a full-time employer-relations staff member to identify employers' needs and assist with placement of trainees. Employers served on committees to advise on the content of the programs and the eligibility requirements. JVS's medical office training program was included in the Maguire and colleagues (2010) study. To be eligible for the program, workers needed to have a high school diploma or GED, possess the ability to read at the sixth-grade level or higher, and show during an interview that they have the interest and ability to succeed in the training. The training program lasted twenty to twenty-two weeks and took twenty to twenty-five hours per week. In addition to vocational skills, the program provided job readiness training, case management, postemployment services, and a four- to six-week internship. The program was found to increase trainees' earnings by 21 percent over the two years after enrollment. (This box is based on Maguire et al. 2010.)

organization (Maguire et al. 2010). The U.S. Department of Labor has announced the availability of $150 million in grants under its Long-term Unemployed H-1B Ready to Work Partnerships grant program to fund the development of partnerships between employers, nonprofit organizations, and workforce investment boards to develop innovative sectoral training programs for the long-term unemployed. Grants that could be released under the U.S. Department of Labor's Workforce Innovation Fund could also be used for this purpose.

RECOMMENDATION #5: WORKFORCE BOARDS SHOULD EXPLORE PARTNERING WITH TRAINING PROVIDERS TO DEVELOP TRAINING PROGRAMS MORE SUITED TO THE NEEDS OF ADULT TRAINEES

Some of the factors that make participating in training difficult for adult disadvantaged workers may be ameliorated by three types of changes in the structure of training programs: (1) providing a flexible schedule for course offerings, (2) providing basic skills training at the same time as vocational skills, and (3) providing training in more discreet, stackable modules.

Providing courses more frequently and in the evenings as well as during the day would make it easier for workers to work or care for dependents while in training. Waiting for the beginning of a semester at a community college can significantly increase the length of time before training can begin and hence the cost of participating in training in terms of forgone earnings. Online training courses can also accommodate the need for more flexibility.

Lack of math and reading skills is often a barrier to accessing and completing training programs. Typically, the WIA Adult program requires workers to take basic education courses before they begin a vocational training program. An alternative approach that has been found to be promising is to integrate the teaching of basic and vocational skills into the same course. This provides a context for learning the basic skills and reduces the length of time taken to acquire the vocational skills. Washington state has implemented an Integrated Basic Education and Skills Training program for some occupations throughout its community and technical colleges. A study of that program found that it increased the probability the trainee earned a certificate or degree and improved other educational outcomes, but did not increase earnings (Zeidenberg, Cho, and Jenkins 2010). The findings were positive enough for this program model to have been replicated in other community colleges, and it merits further study.

As much as possible, training should be divided into multiple discrete courses that build on each other. For example, a two-year course that serves as a means to an occupational credential is better provided as a series of four separate sequential courses, each one providing an interim credential and building on the skills taught in the prior course. This approach avoids trainees participating in programs that teach skills that they already possess or do not need. It also provides more flexibility in when the courses are taken and provides some interim credentials to workers who may not be able to complete the full sequence of courses. Many of the career pathways programs identify sequences of courses to generate credentials that will lead to sufficient skills for an occupation. For example, a program could provide a series of instruction modules that prepare students for certification in progressively higher-paying health-care occupations—certified nursing assistant, patient care technician, and licensed practical nurse (Fein 2012).

While these approaches seem promising, we do not yet have rigorous evidence of their effectiveness. The Departments of Labor and Education have allocated $2 billion in grant funds to community colleges through the Trade Adjustment Assistance Community College and Career Training grant program to facilitate open or rolling enrollment and to structure training programs to facilitate training while working. Many community colleges are conducting evaluations of their reform efforts; hopefully, these evaluations will provide strong evidence on approaches that could be adopted more broadly.

COSTS AND BENEFITS

The main benefit of our proposal to increase public investments in vocational training is an expansion in the number of low-income individuals who participate in training and experience earnings gains once they finish training. The size of the benefits from increased earnings depends on the persistence of the earnings increase. While research evidence is not conclusive on how long the increased earnings from training persist, a study of multiple programs in the United States and Europe found that the impacts of vocational training on earnings over two to three years are on average larger than the impacts over one year (Card, Kluve, and Weber 2010), suggesting the benefits from training last for several years at least. In addition to the benefit of increased earnings for the trainees, the government also benefits from the increased tax payments and reduced use of public assistance (such as Temporary Assistance for Needy Families [TANF], Supplemental Nutrition Assistance Program [SNAP, formerly Food Stamps], and unemployment insurance [UI]) that accompany trainees' increased earnings. The main cost of vocational training is the amount the government pays for the training program. The opportunity cost of the time spent in training—that is, if the trainees were not in the program, they may be working and earning money—should also be considered as a cost, however.

On average, training is likely to be a sound investment for low-income disadvantaged workers. As discussed above, evidence suggests that earnings may increase by between $300 and $900 per quarter from participation in the WIA Adult program. Assuming earnings increased by $600 per quarter (the middle of the range suggested by research), that the forgone earnings are small (which is likely for low-skilled adults), and that the impacts on earnings persist for about three years, the benefits from training programs that cost less than $5,000 (which many do) would likely exceed their cost.

While training is cost-effective for the average disadvantaged worker, it may not be for all disadvantaged workers. This is because the expected benefits of training compared to its costs—the return on investment—can vary depending on the experiences, skills, and other characteristics of the workers. Workers with many barriers to employment are at high risk of not completing the training and of not being able to find and retain a job after training. Resources for those workers may be better spent on addressing their employment barriers directly and providing job readiness training and assistance with job search, retention, and advancement. For other workers with more skills, the increased earnings from participating in training may not offset the cost of the earnings forgone while participating in training. In this case, training would not be cost-effective even for the trainees. Our recommendation is that employment counselors in the WIA Adult program assess the suitability of training and provide training only to workers for whom the expected benefits exceed the costs.

The other recommendations in this memo—providing guidance on the type of training, providing more supportive services, partnering with employers, and developing training more-suited to the needs of adult workers—still need to be evaluated. These evaluations should examine not only whether the interventions are effective in increasing retention in programs and the earnings of trainees, but also whether the total benefits—in terms of increased earnings, reduced use of public assistance, and increased taxes—exceed the total costs of these programs.

Questions and Concerns

Are you suggesting that funding for disadvantaged workers be increased at the expense of dislocated workers?

While studies of the effectiveness of training for low-skilled, inexperienced workers consistently show that it is effective, studies of the effectiveness of training programs for dislocated workers are less encouraging. Some dislocated workers can obtain earnings gains from participating in training that are large enough to offset the cost of that training, but the evidence suggests that, on average, this is not the case. A recent evaluation of the Trade Adjustment Assistance program also finds that even when dislocated workers are offered longer-term training programs, on average, workers would have been better off finding a job rather than investing in training (Schochet et al. 2012). Synthesizing the evidence from several multistate, matched comparison-group studies, Hollenbeck (2009) concludes that the return to WIA-funded training is lower for dislocated workers than it is for other training recipients. A study of older dislocated workers in the Washington state found that attending community college increased earnings, but that the return was lower for these workers than was the return for younger workers (Jacobson LaLonde, and Sullivan 2005). Given limited training funds, it

is better that they be targeted to those workers for whom the return is greatest.

Policymakers, however, should not ignore dislocated workers who, even though they typically have more resources than disadvantaged workers, are still at risk of sliding into poverty because of their longer unemployment spells and inability to secure jobs that pay as much as they had earned before. Training may still be appropriate for some dislocated workers, especially for younger dislocated workers who have a longer time to reap the benefits from training. Programs, however, should be more selective about which dislocated workers are encouraged to pursue training. Findings from previous evaluations also suggest that there are other program refinements—including providing career assessments and minimizing time to enter training—that merit testing (Berk 2012). For those dislocated workers who are unlikely to benefit from training, alternatives to training should be developed and rigorously evaluated.

What do you recommend for vocational training programs for youth?

The evidence on training for disadvantaged youth suggests that to be effective, the programs need to be intensive. The most disadvantaged youth face myriad challenges other than lack of occupational skills, such as low literacy, the need to learn English as a second language, involvement in the criminal justice system, or substance abuse; some also face the challenges of pregnancy or parenting. Successful training programs for youth need to address these challenges. We have robust evidence that Job Corps, the largest federally funded program for youth, is effective (Schochet, Burghardt, and McConnell 2008). In contrast to participants in Job Corps, youth who participated in the Job Training Partnership Act of 1982 programs, which were found to be ineffective, typically attended the program part time and for only three to four months (Kemple, Doolittle, and Wallace 1993). Effective programs are likely to be expensive—it costs an average of $16,500 for a youth to attend Job Corps.

Notably, the residential component of youth programs like Job Corps is likely to be important for two reasons. First, it removes youth from the environment in which they were not succeeding. When asked about the benefits of moving away from home to a center, Job Corps participants talked about the negative influences of their peers in their home neighborhoods and their relief from family obligations (Johnson et al. 1999). Second, a residential program provides more time to address youth's challenges—Job Corps provides structure and supervision for most of the youth's day. Moreover, maintaining regular attendance is easier in residential programs—there is no commute and there are fewer distractions. While the residential component of a program may be important, not all youth can or want to move away from home. Findings from an ongoing study of YouthBuild, a nonresidential program with many of the elements of Job Corps, will provide more evidence on this issue.

Conclusion

This paper has suggested policy changes to increase and improve publicly funded vocational training. Yet many questions remain about effective vocational training strategies. How can we increase the likelihood that a trainee completes the training program? How can we ensure that trainees find jobs in the occupations to which they have been trained? How can we identify who will benefit from training and who will not? To address these questions, we need to embark on a policy agenda that involves an ongoing cycle of developing new programs that are informed by the lessons already learned, evaluating these new programs, changing them in response to the findings, and then testing again. Only then will we be able to identify a full suite of training programs that can significantly reduce the number of vulnerable American workers who, because they lack the necessary skills, fall into long-term poverty.

Section 4.
Improving Safety Net and Work Support

Proposal 10: Supporting Low-Income Workers through Refundable Child-Care Credits

James P. Ziliak
University of Kentucky

Introduction

Economic self-sufficiency through labor market work for low-income families, especially those headed by a single mother, formed a fundamental tenet of both the 1993 expansion in the Earned Income Tax Credit (EITC) and the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (aka welfare reform). While both reforms have been credited with expanding employment of single mothers in the years immediately following implementation (Grogger 2003; Meyer and Rosenbaum 2001), employment rates of mothers with dependent children have been on a steady decline over the past decade, leaving many families unable to make ends meet (Blank and Kovak 2008; Bollinger, Gonzalez, and Ziliak 2009; Fox et al. 2013).

A key financial challenge facing these families is finding affordable child care. In 2012 the average annual cost for full-day, center-based care of an infant ranged from $4,850 in Mississippi to $16,450 in Massachusetts; for care of a four-year-old, the cross-state range was $4,300 to $12,350 (Child Care Aware of America 2013). As a fraction of average annual earnings among single mothers with children under the age of five, child-care costs amount to over one-fourth of earnings in Mississippi and over one-third of earnings in Massachusetts.[1] Evidence suggests that children do better in model, center-based care than in informal, home-based care on a host of cognitive and noncognitive measures (Bernal and Keane 2011; Blau and Currie 2006; Morris et al. 2009), and that women respond to reductions in effective child-care prices by increasing their participation in the labor force (Baum 2002; Berger and Black 1992; Kimmel 1995; Tekin 2007).

This policy memo introduces a way to restructure an existing federal child-care tax credit to better incentivize work and improve the financial and child well-being for low-income families. Specifically, I propose converting the Child and Dependent Care Credit (CDCC) from a nonrefundable credit—a credit that cannot exceed the income taxes owed by a family—to a refundable credit—one that can result in a net gain after taxes—that is targeted to low- and middle-income families. Because current law does not limit eligibility for the CDCC based on income, the majority of tax expenditures are spent on those families with annual incomes between $100,000 and $200,000 (Maag 2013). I propose capping eligibility at $70,000 and making the credit a progressive function of income, the age of the child (ages zero to four versus five to twelve), and utilization of certified, licensed care facilities. These reforms, to be implemented at the federal level, will make labor market work more attractive to low-income families by providing much-needed financial relief from the high cost of child care. In addition, by reducing the out-of-pocket cost of care for low-income workers, the reformed credit will enable more families to place children in formal instead of informal care settings.

The Challenge

The fact that mothers are deterred from working in the labor market because of costly child-care options runs counter to

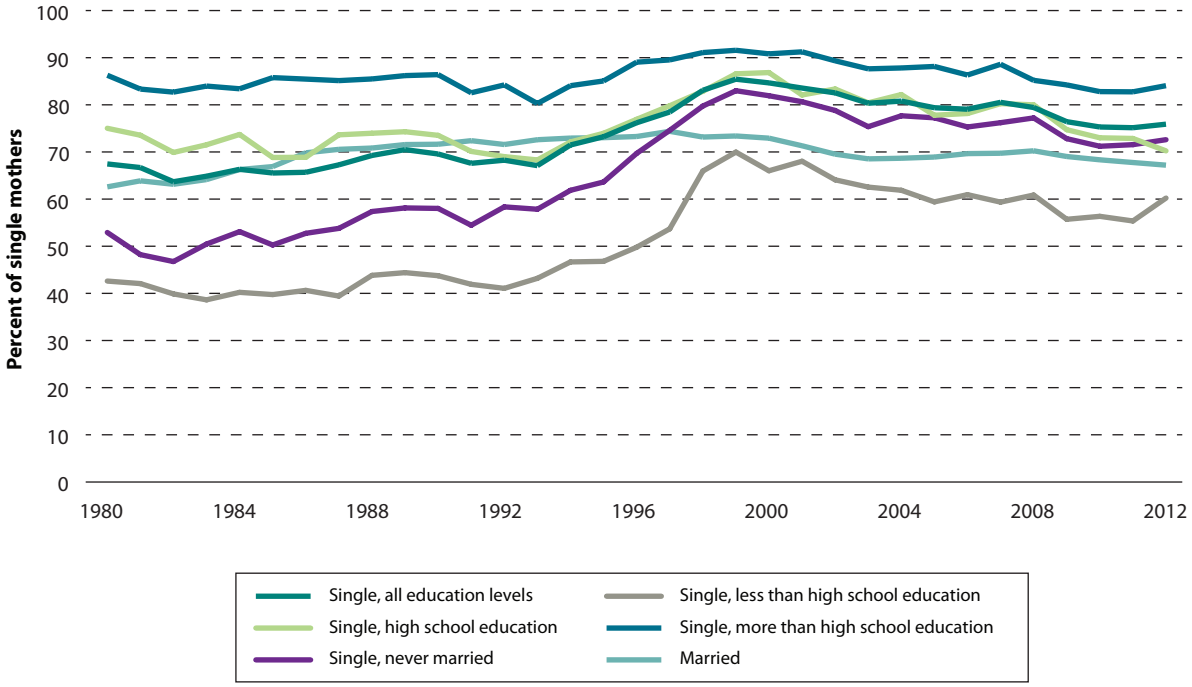
the national goal of economic self-sufficiency. To fix ideas on the evolution of employment in recent decades, figure 10-1 depicts employment rates of single and married mothers (by the education level of single mothers) with dependent children under the age of thirteen. This age range of children is selected because the presence of children under the age of thirteen is a requirement for two of the three major federal child-care assistance programs.[2] The data are drawn from the 1981–2013 Annual Social and Economic Supplement of the Current Population Survey, and employment refers to any reported paid work in the prior year. The huge surge in employment rates in the 1990s—which occurred coincident with the expansion of the EITC, the strong economy, and welfare reform—is most evident among single mothers with a high school education or less, and among those never married (of any education level). What is also striking in figure 10-1 is the secular decline in employment after 1999 and the relative absence of a cyclical effect even in the face of the Great Recession of 2007–2009. Employment rates in 2012 are about 10 percentage points lower than in 1999 for each group of single mothers, and about 7 percentage points lower for married mothers. In results not depicted, employment trends of mothers living in families with incomes below twice the poverty level are quite similar. However, in a remarkable turn, the level of employment of poor and near-poor married women was lower in 2012 than it was in 1980.

Figure 10-2 presents a more disaggregated look at the employment status of single mothers with children under the age of thirteen by examining part-time and full-time work. The figure shows that, starting in the late 1980s, a plurality of single mothers were employed year-round and full-time, rising to 52 percent in 2000, but then falling steadily to 42 percent by 2012. In the past decade, the decline in full-time work (both full-year and part-year) has been mostly filled by an increase in the share not in the labor force (NILF), and to a lesser extent by an increase in full-year, part-time work. Since 2000 there has also been an increase in the fraction of married mothers with children under the age of thirteen not in the labor force; this mostly coincides with a decline in the fraction of married mothers working part-year, including those working both full-time and part-time.

The past decade has witnessed a significant shift away from employment among mothers, whether single or married, that was particularly pronounced among the less skilled and those with family incomes below twice the poverty level. While a

FIGURE 10-1.

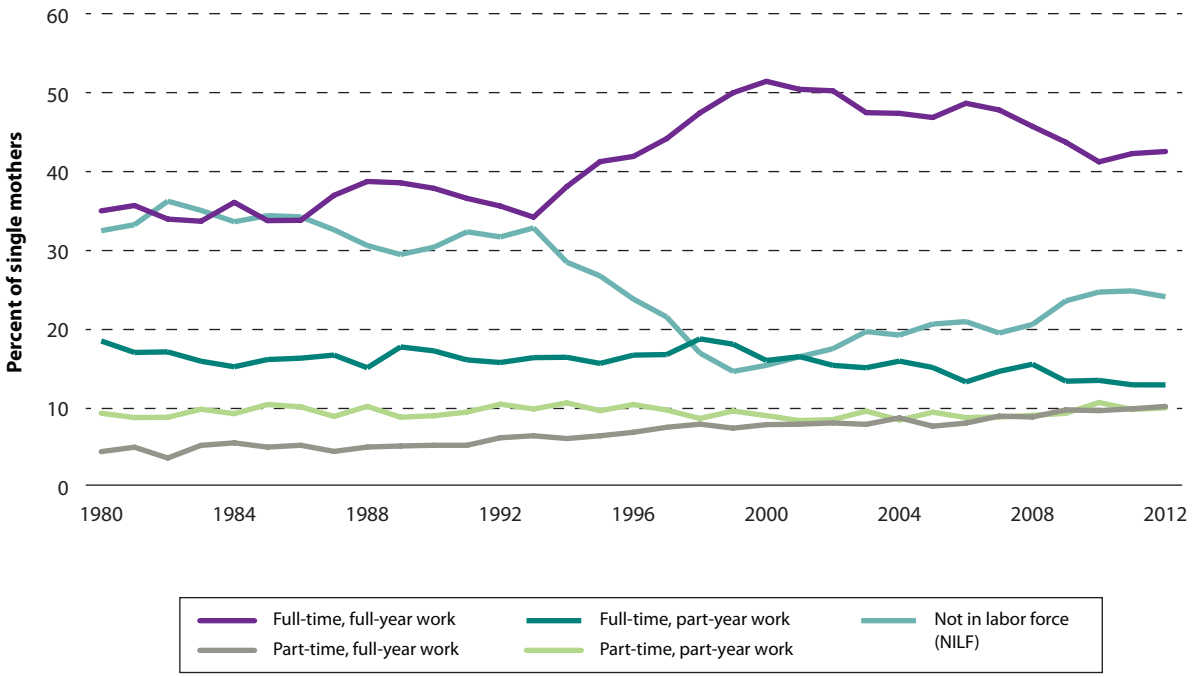
Employment Rate of Women with Children under Age 13, by Marital Status and Education



Sources: U.S. Census Bureau various years; author's calculations.
Note: Data are derived from the 1981–2013 Current Population Survey Annual Social and Economic Supplement.

FIGURE 10-2.

Employment Status of Single Mothers with Children under Age 13



Sources: U.S. Census Bureau various years; author's calculations.
Note: Data are derived from the 1981–2013 Current Population Survey Annual Social and Economic Supplement.

full analysis of the reasons behind the decline in employment is beyond the scope of this paper, the high cost of child care, combined with stagnant real wages and other factors, might be a contributing factor. Table 10-1 presents median out-of-pocket child-care costs, the interquartile range of costs (75th percentile less 25th percentile), median family earnings, and median family income for working mothers pooled across the 2012 and 2013 waves of the Current Population Survey.[3] The table shows that even though the median out-of-pocket costs for child care among married mothers is about 80 percent higher than for single mothers, family earnings (mother plus spouse) of working married women are four times higher; as a fraction of earnings, the burden on single mothers is substantially higher at roughly 16 percent and 11 percent for those with children under age five and under age thirteen, respectively.

Figure 10-3 highlights the cross-state variation in the ratio of median out-of-pocket child-care costs to median earnings of single mothers with children under age five. The figure makes clear that the burden of child care is quite high in some states. At the median, child-care costs range from 6 percent of earnings in Alaska to 28 percent in Delaware, with twelve states clocking ratios of child care to earnings in excess of 20 percent. Note that these estimates are for any out-of-pocket child-care expenses and that if we were to limit the sample to only center-based child care, these ratios would be significantly higher.

A New Approach

A restructured Child and Dependent Care Credit (CDCC) could encourage greater economic self-sufficiency and improve the economic well-being of low-income families. The federal government currently provides direct assistance for child-care expenses through a nonrefundable tax credit (CDCC), block grants to states (Child Care and Development Block Grant [CCDBG], and Temporary Assistance to Needy Families [TANF]), and flexible spending accounts. Indirect support for child-related expenses is provided through the nonrefundable Child Tax Credit (CTC), and the partially refundable Additional Child Tax Credit (ACTC).[4] After briefly summarizing current programs, I offer a new approach for funding child care that could boost employment and subsidize families to secure quality center-based care.

TABLE 10-1.

Out-of-Pocket Child-Care Costs, Earnings, and Income of Families with Working Mothers

	Single, child under age 5	Single, child under age 13	Married, child under age 5	Married, child under age 13
Median out-of-pocket child-care costs	$3,000	$2,600	$5,400	$4,680
Median family earnings	$19,200	$23,088	$82,500	$83,880
Median family income	$22,000	$26,445	$85,276	$87,000
Median out-of-pocket child-care costs as percent of median family earnings	15.6%	11.3%	6.5%	5.6%
Interquartile range of out-of-pocket child-care costs	$4,400	$3,800	$7,300	$6,500

Sources: U.S. Census Bureau various years; author's calculations.

Note: The interquartile range is the difference between the 75th percentile of out-of-pocket child-care costs and the 25th percentile of out-of-pocket child-care costs.

Data are derived from the Current Population Survey and are pooled across the 2012 and 2013 waves.

CURRENT PROGRAMS

Child and Dependent Care Credit (CDCC)

The CDCC, established in 1976, is the oldest of the U.S. tax code credits related to child care. This nonrefundable credit covers qualifying child-care expenses of working parents with children under the age of thirteen. The parent(s) must have earned income and/or net positive self-employment income. For married couples filing jointly, one spouse may be considered having earned income if he or she is a full-time student or disabled; the family may not claim child-care expenses in excess of the lower of the two spouses' earnings. The credit is worth 35 percent of qualifying expenses (capped at $3,000 for one child and $6,000 for two or more children) for families with adjusted gross income (AGI) under $15,000. As such, the maximum credit is $1,050 for one child and $2,100 for two or more children. The credit rate is lowered by 1 percentage point for each $2,000 of AGI above $15,000 until it plateaus at a 20 percent rate for income above $43,000. There is no income cap for eligibility, and because it is nonrefundable, the credit affects only filers with a positive pre-credit tax liability. Therefore, many EITC recipients do not qualify for the current CDCC. The Urban–Brookings Tax Policy Center estimated that in 2013 the largest average benefits of the CDCC accrued to families with annual incomes between $100,000 and $200,000 (Maag 2013).

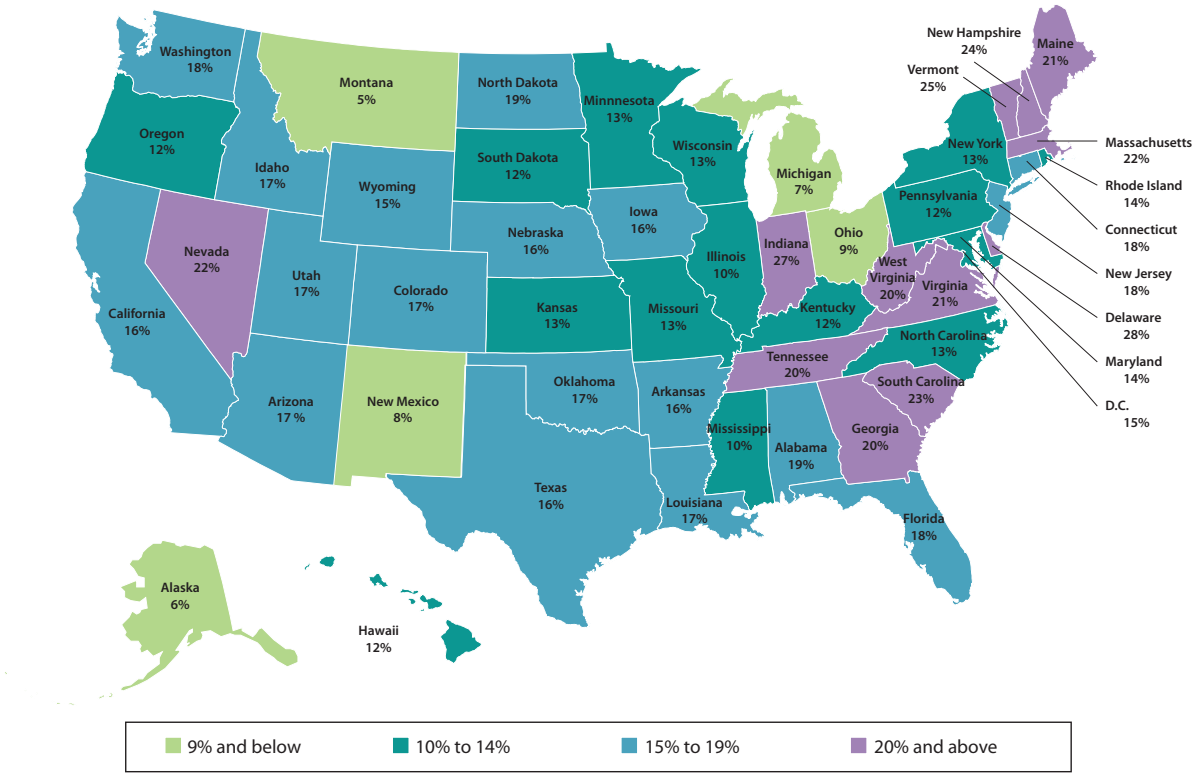
Child Care and Development Fund (CCDF) and Temporary Assistance to Needy Families (TANF)

The 1996 welfare reform law expanded and consolidated the discretionary child-care funding in the CCDBG of 1990 with mandatory child-care funding in Section 418 of the Social Security Act. The CCDF, formed by welfare reform, allocates funds to states to help low- and moderate-income families pay for child care, and also establishes state law and licensing for child care. In fiscal year (FY) 2012, about $5.2 billion was allocated to CCDF: $2.3 billion in discretionary CCDBG funds and $2.9 billion in mandatory Section 418 funds (Congressional Research Service 2012).[5] In addition, states may transfer up to 30 percent of their TANF grant to CCDF, and may also directly spend TANF funds on child care. In FY2012, states transferred about $1.36 billion to CCDF from TANF, and spent about $1.23 billion directly out of TANF on child care. Moreover, states spent about $2.4 billion of their own funds on child care, financed out of Maintenance of Effort requirements for TANF, and/or Separate State Program funds, bringing total federal and state spending in FY2012 to about $10.2 billion (U.S. Department of Health and Human Services [DHHS] 2012).

To be eligible for CCDF assistance, children must be under age thirteen and living with parents who must be working, in school, or in protective services. Federal law limits eligibility to those families with incomes less than 85 percent of state median income. However, states have the option to impose lower limits, and in fact, in 2012 the median eligibility rate was substantially lower at 54 percent of state median income. Child-care assistance via CCDF and TANF is not an entitlement, and in FY2012 twenty-two states either had active waiting lists or had frozen intake (Schulman and Blank 2013). Estimates show that in FY2009 only one in six children

FIGURE 10-3.

Ratio of Median Out-of-Pocket Child-Care Expenses to Median Earnings of Single Mothers, by State



Sources: U.S. Census Bureau various years; author's calculations.

Note: Data are derived from the Current Population Survey and are pooled across the 2012 and 2013 waves.

eligible for CCDF or TANF child care received assistance (DHHS 2013).

Flexible Spending Accounts (FSAs)

FSAs allow workers to set aside a share of pretax income for designated purposes—including medical costs, transportation, and dependent care. Dependent care FSAs allow workers to set aside up to $5,000 annually to pay qualified dependent care costs. Contributions to these accounts are not subject to income or payroll taxes. Married taxpayers must both be working to take advantage of the deduction. Eligible expenses for child care are subject to several limitations, such as the following: Child-care expenses are limited to those for dependent children younger than thirteen. Any given expense cannot be paid through FSA funds and be claimed for the CDCC. Unspent funds are forfeited at the end of the plan year.

Child Tax Credit (CTC)

The CTC was established to partially offset the costs of raising a child as part of the Taxpayer Relief Act of 1997; as of FY2012, the CTC provided a credit worth up to $1,000 per qualifying child under the age of seventeen. In general, the CTC is not refundable, but if earnings exceed $3,000 or the family has three or more qualifying children, it is possible for the filer to qualify for the ACTC, which is refundable. If the value of the CTC exceeds federal tax liability, then a refund not to exceed 15 percent of earnings above the $3,000 threshold can be received as the ACTC. The Urban–Brookings Tax Policy Center estimated that in 2013, 38 million families claimed credits totaling nearly $60 billion, but only 13 percent of benefits went to the bottom income quintile; about 77 percent of benefits accrued to the middle quintiles, and 10 percent went to the top quintile (Maag and Carasso 2013). The CTC is phased out starting at earnings of $110,000 for married couples filing jointly ($75,000 for head

of household), and is eliminated at earnings above $150,000. The lower threshold of $3,000 expires after the 2017 tax year, when it will return to its pre-2001 tax reform level (over $13,000 in 2013); thus, it will no longer offer assistance to families with very low incomes.

PROPOSAL: A REFUNDABLE CHILD AND DEPENDENT CARE CREDIT

Although the federal government is actively involved in the provision of child-care assistance, two of the programs are poorly targeted—the CDCC and CTC—and the one that is targeted to low-income families (CCDF) leaves an overwhelming majority of those eligible for care uncovered. In a marked difference, the EITC is very target efficient and is proven to be a highly successful prowork, antipoverty policy tool. A virtue of the EITC is that, as a cash refund to taxpayers, the taxpayer can spend the money flexibly to meet a host of needs. A case could also be made to supplement the EITC with a targeted assistance program like a child-care credit. Workers with dependent children use child care in tandem with labor-market work, and thus a child-care credit can improve the efficiency of the tax system by lowering some of the disincentives to work from high marginal tax rates (Currie and Gahvari 2008). A survey of the literature on the employment effects of subsidized care suggests that a 10 percent reduction in the price of child care will increase employment of single mothers by 3 to 4 percent and of married mothers by 5 to 6 percent (Ziliak, Hokayem, and Hardy 2008).

Another upside of a targeted child-care credit is that a directed credit ensures that the money is spent on child care. Many low-income working families have insufficient resources to invest in quality child care, and thus resort to lower-quality, but less-expensive, informal care, often relying on friends, family, and others. Research has shown that children in high-quality centers experience both short- and long-term benefits compared to children in informal care settings, ranging from better test scores in the short run to reduced grade retention rates, higher graduation rates, higher earnings, and reduced criminal activity in the long run (Bernal and Keane 2011; Blau and Currie 2006; Heckman, Stixrud, and Urzua 2006; Morris et al. 2009).

A reform that will spur employment among low-income parents, and also expand opportunities for families to place their children in quality, center-based care, is to convert the CDCC from a nonrefundable credit with no income limit to a refundable credit that is targeted to low-income working families. Building off current tax law, I propose the following changes to the CDCC (summarized in table 10-2):

- Convert to refundable credit
- Convert to child age-dependent credit rate
- Place income limit on credit
- Vary by type of child-care provider

For children under the age of five with family AGI of less than or equal to $25,000, I propose a 100 percent refundable credit up to $4,000 in qualifying expenses for the first child in a licensed facility, with a maximum allowable expense of $6,000 for two or more children. The credit rate declines by 10 percentage points for each additional $5,000 in AGI, and is phased out for AGI above $70,000. For children between the ages of five and twelve, the rate is 70 percent for families with AGI below $25,000, declines by 7 percentage points for each additional $5,000 in AGI above $25,000, and is zero for AGI above $70,000. The base of qualifying expenses is the same. Like the current CDCC, the dollar amount of the credit applies to that portion of AGI received from earnings as defined in Form 2441.

In an effort to steer children to licensed, center-based child-care facilities, the credit rate is double that available to those families choosing unlicensed or informal care settings. Making the credit twice as valuable for licensed care is justified because of the high expense of this type of care, as well as the evidence pointing to the child-development benefits of center-based care (note, however, that not all licensed care is in a center). At the same time, allowing the refundable credit for those utilizing unlicensed care facilities acknowledges the fact that many low-income mothers work nonstandard shifts—nights and weekends—when formal care facilities are less readily available. The current Form 2441 used for the CDCC requires the filer to report the name, address, employer identification (or Social Security number), and amount paid for care. The refundable CDCC would also require this information; because licensing of centers is already a function carried out by states, a registry of licensed facilities could be linked to IRS records with this form to verify claims for the licensed- versus unlicensed-care credit amount.[6]

Because child care is generally paid weekly or monthly, and since many low-income families are liquidity constrained, receiving the credit in advance—the Advance CDCC (ACDCC)—should be made optional for claimants. Until 2010, taxpayers had the option of receiving the EITC throughout the year in their paychecks (Advance EITC). However, the experience with the Advance EITC is generally considered a failure because fewer than 3 percent of recipients opted for the advance payment, and those that did frequently made mistakes (Government Accountability Office 2007).

Research suggests that EITC recipients prefer to receive the credit as a lump sum, and want to avoid situations where they receive too large a credit during the year and then are forced

TABLE 10-2.

Schedule for Refundable Child and Dependent Care Credit

	AGI ≤ $25,000	$25,000 < AGI ≤ $70,000	AGI > $70,000
Licensed facility rates			
Children under age 5			
Credit rate	100%	Reduced 10 pp for every $5,000 AGI	0
Credit base	$4,000 first child; $6,000 max.	$4,000 first child; $6,000 max.	0
Refundable	Yes	Yes	0
Children ages 5 to 12			
Credit rate	70%	Reduced 7 pp for every $5,000 AGI	0
Credit base	$4,000 first child; $6,000 max.	$4,000 first child; $6,000 max.	0
Refundable	Yes	Yes	0
Unlicensed facility rates			
Children under age 5			
Credit rate	50%	Reduced 5 pp for every $5,000 AGI	0
Credit base	$4,000 first child; $6,000 max.	$4,000 first child; $6,000 max.	0
Refundable	Yes	Yes	0
Children ages 5 to 12			
Credit rate	35%	Reduced 3.5 pp for every $5,000 AGI	0
Credit base	$4,000 first child; $6,000 max.	$4,000 first child; $6,000 max.	0
Refundable	Yes	Yes	0

Note: pp = percentage points.

to repay the IRS on April 15 (Romich and Weisner 2000). This makes sense when the mental accounting of the EITC is to apply it toward paying off debt or to make a down payment (Gao, Kaushal, and Waldfogel 2009; Smeeding, Ross Phillips, and O'Connor 2000). However, with regular child-care expenses, the ACDCC seems more likely to be used, and more akin to Supplemental Nutrition Assistance Program (SNAP) benefits—formerly known as the Food Stamp Program—that are received monthly.

The issue then is how to design the ACDCC with greater success than the Advance EITC. New Zealand, for example, direct deposits advance tax credits in the recipient's bank account each week (or every two weeks, or annually, depending on the recipient's pay period), and any overpayment is balanced by a subsequent payback schedule for the recipient. Generally, the payback is not lump-sum unless the taxpayer does not report the overpayment until his or her submission of the end-of-year tax return. The United Kingdom offers something similar. A possible structure for the ACDCC, should the taxpayer elect to receive it, is to cap the advance portion at 50 percent of the total prior-year credit and to deposit it in equal monthly installments. At the time of tax filing the credit amount (under or overclaim) can be reconciled. Capping it at 50 percent should reduce the incidence of overclaiming, while also providing needed assistance throughout the year.

COSTS AND BENEFITS

There are three primary benefits of a refundable CDCC. First, by offsetting the costs of child care, the reformed CDCC would encourage greater labor force participation by working parents. This higher labor supply would benefit affected

families and increase our nation's productive capacity. Second, the expanded credit would increase the disposable income of working families, leading to more resources and improved well-being for households with children. Third, subsidized child care would allow more working parents to move their children from informal care arrangements into higher-quality center-based care.

On the cost side, it is important to acknowledge that not all groups are held harmless by this proposal. Namely, families making greater than $70,000 would lose eligibility for the CDCC, which will require those families to bear a slightly higher tax burden. Moreover, shifting the nonrefundable credit that currently benefits high-income families to a refundable credit that benefits low- and middle-income families could reduce labor effort among upper-middle-income families. Any such effect is likely to be minimal because the current maximum nonrefundable credit—$600 for one child and $1,200 for two or more children—represents a small share of income for high-income workers and, as such, is unlikely to be a decisive factor in their labor supply decisions.

An additional potential cost comes from the possibility that the phase-out range of the refundable CCDC will create additional disincentives to work. In particular, the phase-out tax rates of 10.0 percent and 7.5 percent depending on the age of the child (5.0 percent and 3.5 percent for unlicensed care) will overlap with the phase-out rates of the EITC (16.0 percent for one child and 21.1 percent for two or more children). Research by Eissa and Hoynes (2004) suggests that any reduced labor supply response will most likely come from the work decisions of married women—whether to work and how many hours—but the effects are modest. A recent proposal by Kearney and Turner (2013) to provide a secondary-earner tax deduction for earnings up to $60,000, if enacted, is likely to mitigate any disincentive from the refundable CDCC among low- and middle-income married couples.

In terms of tax revenue cost to the government, because the proposed policy would couple the refundability of the credit with an income limit on eligibility, the lost tax revenue associated with this proposal is likely to be modest. Still, even considering that the expanded credit could lead to some tax revenue loss, the benefits of the proposed reform outweigh the costs. A sizable child-care subsidy for low- and middle-income working parents will increase the work efforts and the returns to work for low- and moderate-income families. It will make the U.S. tax code more progressive in a way that will likely have no discernible work disincentives for higher-earning individuals.

Questions and Concerns

Why create a new refundable credit in lieu of expanding the CTC and/or EITC?

A credit that can be used flexibly like the CTC and the EITC is generally favored by economists, and the refundable CDCC is more administratively burdensome because of the need to track expenses, and to track whether the provider is licensed. However, as discussed previously, the evidence suggests that the EITC is not spent directly on the child, and there is no evidence on how the CTC is spent. There is some limited evidence that the expanded generosity of the EITC could lead to improvements in children's math and reading achievement, but the mechanisms are as yet unknown (Dahl and Lochner 2012). If a key goal is to focus policy on boosting employment and early childhood development, then a targeted child-care credit makes sense, and in fact, would be more target efficient in achieving those dual goals than expanding the CTC or EITC. Moreover, while the proposed credit is dedicated to child care only, it maintains a high degree of consumer sovereignty akin to the EITC in that the credit can be received across a host of providers—public, private, licensed, and unlicensed.

Why not expand the CCDF and run all child-care assistance through block grants?

The CCDF provides assistance to TANF and other low-income families, and should be used as a first line of child care for these families. However, the reach of this program is very low. As noted, in 2009 only one of six eligible children was reached by CCDF and TANF child-care programs. On the contrary, recent estimates place take-up rates in each of the EITC and SNAP programs at 79 percent (IRS 2014; U.S. Department of Agriculture 2014). Because the refundable CDCC is a blend of the latter two programs, it is expected that take-up rates will be much higher than CCDF/TANF child care.

Does creating a wedge in the credit's generosity between licensed and unlicensed care facilities raise the prospects of fraudulent claims?

The concern is that taxpayers may falsely claim that the provider is licensed, or may not know whether the provider is licensed, and claim the higher credit amount when they are only eligible for the lower amount. Estimates in 2011 showed that just over 60 percent of children under age five had a regular child-care arrangement, and of those, 25 percent were in an organized care facility and over 40 percent received care from a relative, most often a grandparent (Laughlin 2013). This suggests that there will be opportunities to game the system. A way to mitigate such false claims is to not distinguish licensed from unlicensed facilities, and to offer only a single credit

schedule. However, this does not seem desirable because the benefits of quality, center-based care are well established and the proposed credit is designed to incentivize the use of center-based care. Moreover, as noted, states already have a process of licensing care facilities, and the IRS can utilize this system to verify claims. One option would be to require child-care providers to file a Form 1098 documenting the dollar amount of child-care payments received from the taxpayer. This is akin to what a bank does for mortgage interest payments received, or an educational institution for tuition payments received, with the presumption that dual filing by both the payer and recipient will reduce the incidence of false claims.

Conclusion

The proposed refundable CDCC is highly progressive, redirecting current tax expenditures of the CDCC from the top two income quintiles to the bottom two quintiles. As such, this proposal directly addresses the issue of widening inequality, creating opportunity for upward mobility in the bottom half of the distribution by making work more attractive. Importantly, unlike the current CDCC available only to those with positive tax liability, this new credit is more of a complement to the existing EITC; the two can be received in tandem as refundable credits. Moreover, making the credit rate age-dependent and more valuable for placements in center-based care recognizes the fact that the cost of center-based care is much higher for young children, and potential long-term benefits of making center-based care affordable for low-income parents is backed by evidence (Bernal and Keane 2011; Blau and Currie 2006; Morris et al. 2009). There is also increasing evidence that making the tax code more age-dependent brings us closer to an optimal tax structure (Bastani, Blomquist, and Micheletto 2013; Weinzierl 2011). This is based on the notion of tagging proposed long ago by Akerlof (1978), who showed that tax efficiency and redistribution can be improved if different tax schedules are applied to readily verifiable characteristics, which could include the age of the child as proposed here (Mankiw, Weinzierl, and Yagan 2009). While the size of the benefit is on par with, or larger than, the current EITC, there is precedent for such tax incentives in both the British and New Zealand tax codes, and in both of those countries the size of the child-care benefits are larger. Take-up of the credit, however, is likely to be lower than that of the EITC, especially among married families, as many will continue to keep one parent at home to raise children. The latter, coupled with the fact that families with incomes above $70,000 will no longer be eligible for the CDCC, could easily leave this proposal revenue neutral or better.

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Proposal 11: Building on the Success of the Earned Income Tax Credit

Hilary Hoynes
University of California, Berkeley

Introduction

The Earned Income Tax Credit (EITC) provides a refundable tax credit to lower-income working families. In 2011, the EITC reached 27.9 million tax filers at a total cost of $62.9 billion. Almost 20 percent of tax filers receive the EITC, and the average credit amount is $2,254 (IRS 2013). After expansions to the EITC in the late 1980s through the late 1990s—under Democrat and Republican administrations—the EITC now occupies a central place in the U.S. safety net. Based on the Census Bureau's 2012 Supplemental Poverty Measure (SPM), the EITC keeps 6.5 million people, including 3.3 million children, out of poverty (Center on Budget and Policy Priorities [CBPP] 2014a). No other tax or transfer program prevents more children from living a life of poverty, and only Social Security keeps more people above poverty.

Since the EITC is only eligible to tax filers who work, the credit's impact on poverty takes place through encouraging employment by ensuring greater pay after taxes. The empirical research shows that the tax credit translates into sizable and robust increases in employment (Eissa and Liebman 1996; Meyer and Rosenbaum 2000, 2001). Thus, the credit reduces poverty through two channels: the actual credit, and increases in family earnings. This dual feature gives the EITC a unique place in the U.S. safety net; in contrast, many other programs redistribute income while, at least to some degree, discouraging work. Importantly, transferring income while encouraging work makes the EITC an efficient and cost-effective policy for increasing the after-tax income of low-earning Americans.

Yet a program of this size and impact could be more equitable in its reach. Under the current design of the EITC, childless earners and families with only one child, for instance, receive disproportionately lower refunds.

In 2014, families with two children (three or more children) are eligible for a maximum credit of $5,460 ($6,143) compared to $3,305 for families with one child. Married couples, despite their larger family sizes, receive only modestly more-generous EITC benefits compared to single filers.[1] Childless earners benefit little from the EITC, and have a maximum credit of only $496—less than 10 percent of the two-child credit.

Prominent proposals seek to mitigate these inequalities. President Obama's fiscal year 2015 budget includes an expansion of the childless EITC, a concept outlined by John Karl Scholz in 2007 in a proposal for The Hamilton Project. Notably, MDRC is currently evaluating Paycheck Plus, a pilot program for an expanded EITC for workers without dependent children, for the New York City Center for Economic Opportunity (MDRC 2014). The recent Hamilton Project proposal for a secondary-earner tax credit addresses the so-called EITC penalty for married couples (Kearney and Turner 2013). And the more-generous EITC credit for three or more children was recently enacted as part of the American Recovery and Reinvestment Act of 2009, and is currently scheduled to sunset in 2017.

Considering this broad set of EITC reforms, and recognizing the demonstrated effectiveness of the program as an antipoverty program with numerous benefits, this policy memo proposes an expansion for the largest group of EITC

BOX 11-1.

The Earned Income Tax Credit Schedule

Figure 11-1 presents the schedule for the EITC for tax year 2014. The EITC schedule has three regions. In the phase-in region, the credit is phased in at a constant rate, which is 7.65 percent for taxpayers without children, 34 percent for those with one child, 40 percent for those with two children, and 45 percent for those with three or more children. In the flat region, taxpayers receive the maximum amount of the EITC benefit. In the phase-out region, the credit is phased out at a constant rate: one-child families lose 15.98 percent of each dollar earned due to the lost credit, families with two or more children experience a 21.06 percent phase-out, and childless filers a 7.65 percent phase-out. The dotted lines in figure 11-1 indicate the somewhat more-generous schedule for married taxpayers—the Economic Growth and Tax Relief Reconciliation Act of 2001 and later legislation expanded the flat and phase-out regions for married couples; in 2014, the phase-out threshold for married couples is $5,430 larger than for single filers. This expansion of the schedule for married couples was introduced to reduce the marriage penalties that the EITC creates for lower-income taxpayers.

To illustrate the mechanics of the credit, consider a single mother with one child earning $15,000 per year. Her earnings would place her in the flat region of the credit—that is, in the range of income in which a tax unit receives the maximum credit and in which benefits are neither phased in nor phased out; she would receive an EITC of $3,305. If her earnings were instead $20,000, she would be in the phase-out region and her credit would fall by $347 to $2,958. In other words, her credit would equal the maximum credit minus 15.98 percent of all earnings that lie in the phase-out region.

recipients: families with one child. In particular, I propose to expand the one-child schedule to be on par with the two-child schedule, in equivalence scale-adjusted terms. An equivalence scale captures the cost of living for a household of a given size (and demographic composition) relative to the cost of living for a reference household of a single adult, and is a standard component in defining poverty thresholds. The proposal expands the maximum credit for one-child families to $4,641, from $3,305 under current law, an increase of about 40 percent. The expansion will lead to a roughly $1,000 increase in after-tax income for taxpayers in the bottom 40 percent of the income distribution receiving the higher credit. As this paper outlines, the expansion is justified on equity and efficiency grounds. This expansion is anchored in the equity principle in that the generosity of the credit should be proportional to the needs of families of differing sizes; I use the equivalence scale implicit in the poverty thresholds of the Census SPM as a guide for household needs. This proposal is also supported by efficiency principles given the EITC's demonstrated success at raising labor supply among single mothers.

The target population for the proposal is low-income working families with children. Implementing this proposal requires legislative action by the federal government; it is important to note that altering the EITC schedule requires a simple amendment to the tax code, and not a massive overhaul of our nation's tax system. The revenue cost of the proposal derives from additional federal costs of the EITC, less the additional payroll and ordinary federal income taxes. The private benefits include increases in after-tax income and reductions in poverty. The proposal would also generate social benefits through the spillover effects that the increase in income plays in improving health and children's cognitive skills (Dahl and Lochner 2012; Evans and Garthwaite 2014; Hoynes, Miller, and Simon forthcoming).

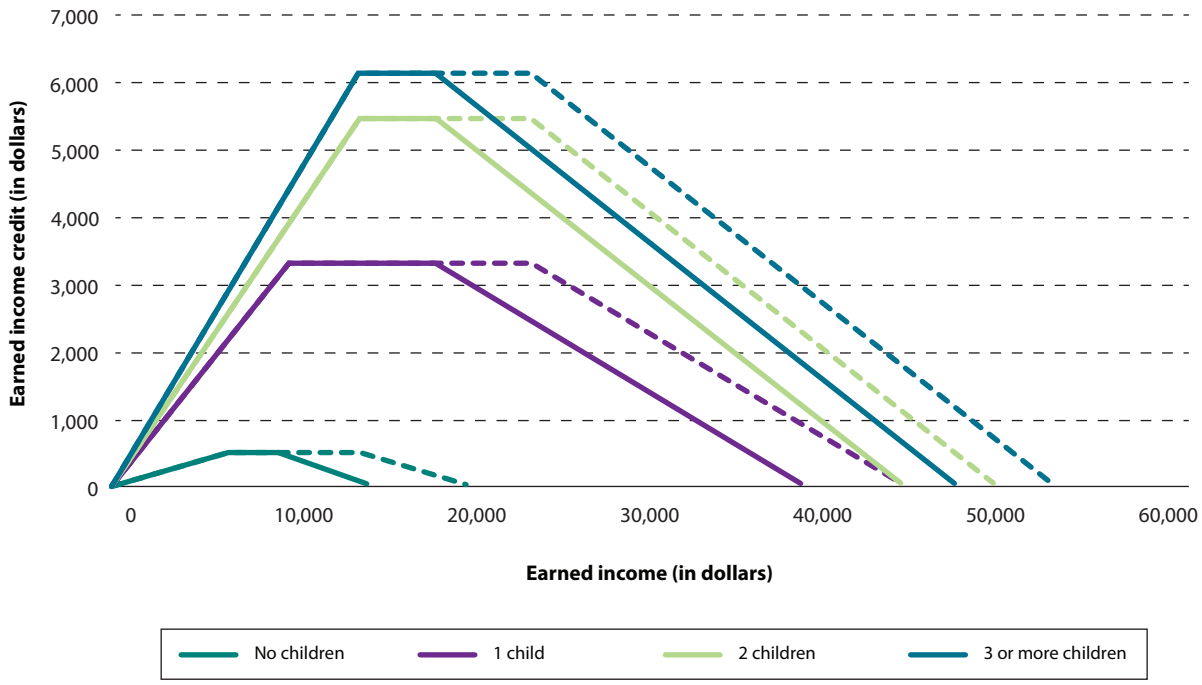
The Challenge

The EITC is a refundable tax credit that gives a taxpayer with no federal income tax liability a tax refund for the full amount of the credit. The amount of the credit depends on filing status, number of qualifying children, and earned income (and, for some taxpayers, adjusted gross income). (The EITC schedule is explained in box 11-1.) Because the EITC is one of our nation's most effective antipoverty programs, the challenge considered in this policy memo is how to leverage this tool to have even greater impact.

Enacted in 1975, the EITC's original intent was to offset payroll taxes for low-income families. The EITC has been expanded by tax legislation five times in the subsequent years: in 1986, 1990, 1993, 2001, and 2009. Figure 11-2 illustrates these policy expansions by plotting the maximum EITC credit by number of children for each year between 1985 and 2014 (in real 2014 dollars). The 1993 expansion is the most significant, having introduced the more-generous schedule for those with two or more children. Additionally, the 1993 expansion introduced the relatively small credit for childless taxpayers. The 2009 expansion, enacted as part of the federal stimulus, introduced a separate schedule for those with three or more children.

FIGURE 11-1.

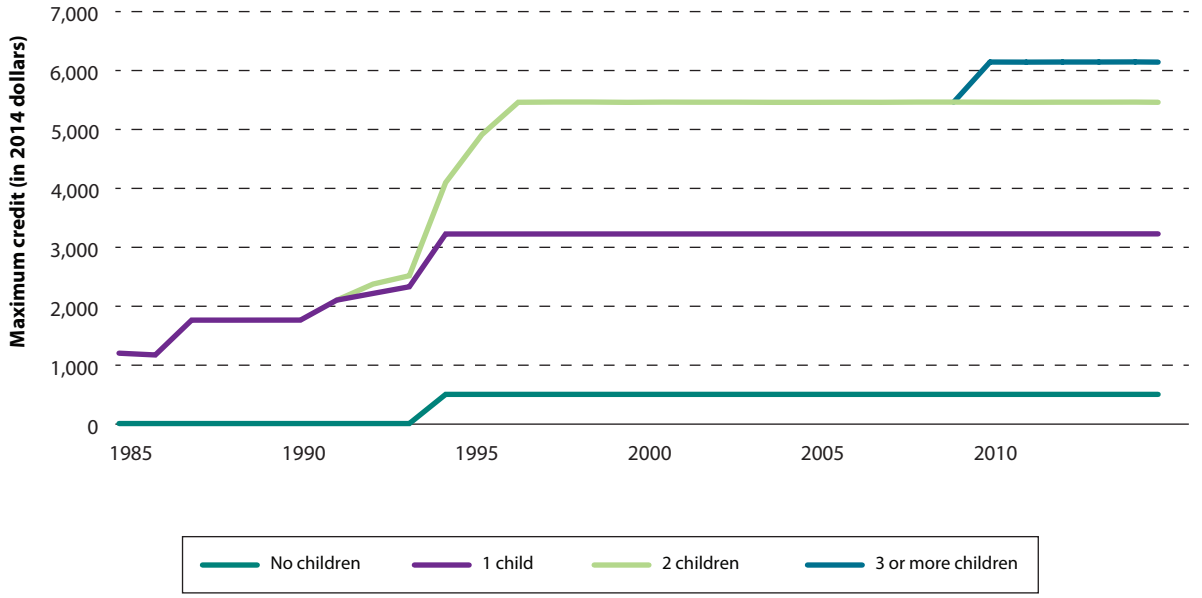
Earned Income Tax Credit Amount by Earnings Level and Number of Children, 2014



Source: Urban-Brookings Tax Policy Center 2014.

FIGURE 11-2.

Earned Income Tax Credit Maximum Credit by Number of Children, 1985–2014



Source: Urban-Brookings Tax Policy Center 2014.

TABLE 11-1.

Earned Income Tax Credit (EITC) Recipients by Number of Children, 2011

	Average credit amount (in dollars)	Share of EITC returns (percent)	Share of EITC benefits (percent)
No children	264	25	3
1 child	2,199	36	35
2 children	3,469	27	41
3 or more children	3,750	12	20
All recipients	2,254	100	100

Sources: IRS 2013; author's calculations.

Table 11-1 gives a snapshot of EITC recipients for 2011 (IRS 2013). A total of 27 million taxpayers received the credit, representing almost 20 percent of all tax filers. The total cost of the credit in 2011 was $62.9 billion. As a comparison, in 2011, payments for the Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp Program, totaled $72.8 billion, and Unemployment Insurance payments totaled $107.0 billion (Bitler and Hoynes 2013). EITC benefits averaged $2,199 for one-child families, $3,469 for two-child families, $3,750 for families with three or more children, and less than $250 for taxpayers with no children. About a quarter of the EITC returns went to taxpayers without children, 36 percent to those with one child, 27 percent to those with two, and 12 percent to those with three or more children. Overall, the majority (97 percent) of EITC dollars go to families with children; the small share of dollars claimed among those without children (3 percent) reflects their much lower potential and actual credit amounts.

Figures 11-1 and 11-2 illustrate that the EITC is substantially more generous for families with two or more children than it is for those with one child. For families with two children, the maximum credit is $5,460 and the phase-out range extends to earned income of $43,756, while for families with one child, the maximum credit is $3,305 and extends to earned income of $38,511. Standard equity arguments would imply that larger families should receive a higher credit than smaller families. But what is the right adjustment? The needs of a family grow with each additional child but, due to economies of scale in consumption, not in a proportional way. I use the family-size adjustment that forms the basis of the poverty thresholds in the Census SPM to capture the varying needs across family sizes. Known as equivalence scales, they are used to establish the appropriate adjustments to the cost of living between different family sizes. Using the SPM equivalence scale, the maximum credit for families with two children should be about 18.7 percent higher than the maximum credit for one-child families. Under current law it is 65 percent higher.[2] I return to this in the proposal below.

The EITC is explicitly tied to work. As shown in figure 11-1, if a family has no earned income, then it is not eligible for the credit. Overall, the credit subsidizes entering and staying in the workforce, and redistribution occurs while encouraging work. This stands in contrast to virtually all other elements of the U.S. safety net—such as SNAP and Temporary Assistance for Needy Families, commonly referred to as welfare—where the largest benefits are transferred to those with no earnings. This work-promoting earnings subsidy is at the core of EITC's cost-effectiveness.

The empirical research provides robust evidence that the EITC leads to sizable increases in the employment of single mothers (Eissa and Liebman 1996; Meyer and Rosenbaum 2000, 2001). For example, Meyer and Rosenbaum (2001) find that a 10 percent increase in EITC income leads to a 6.9 percent increase in employment rates (an elasticity of 0.69). Because of the two potential earners in the household, the labor supply predictions are more complex for married couples, generally suggesting a reduction in employment for secondary earners. The existing evidence shows that the EITC leads to modest reductions (an elasticity of 0.267) in the employment of married women (Eissa and Hoynes 2004). In contrast, we have little empirical evidence on the possible employment effects of the credit for taxpayers without children; the MDRC pilot of a childless EITC currently in the field in New York City should fill this important gap in our knowledge.

TABLE 11-2.

Details of Policy Proposal by Number of Children, 2014 Tax Year

	1 child		2 children		3 or more children	
	Current Law	Proposal	Current Law	Proposal	Current Law	Proposal
Phase-in rate	34.00%	34.00%	40.00%		45.00%	
Minimum income for maximum credit	$9,720	$13,650	$13,650		$13,650	
Maximum credit	$3,305	$4,641	$5,460	No change	$6,143	No change
Phase-out rate	15.98%	21.06%	21.06%		21.06%	
Beginning income of phase-out	$17,830	$17,830	$17,830		$17,830	
Ending income of phase-out	$38,511	$39,867	$43,756		$46,997	

Sources: Urban-Brookings Tax Policy Center 2014; author's calculations.

Note: The gray font applies to cells with values that change under the proposal.

The release of the Census SPM in 2011 provides annual reports on the number of persons lifted out of poverty due to safety net programs. The EITC lifted 3.3 million children out of poverty, more than any other program (CBPP 2014a). SNAP was the next largest, with 2.2 million children lifted from poverty (Short 2013). Overall, the credit lifted 6.5 million individuals out of poverty (CBPP 2014a).

These calculations based on the SPM are static; they calculate poverty with and without the specific income source (e.g., the EITC) but do not take into account the behavioral effects of that source on employment and earnings. To the extent that the EITC leads to an increase in employment and earnings, the statistics cited above are underestimates of the full antipoverty effects of the EITC.

Several studies have quantified benefits of the credit beyond those on employment, earnings, and income. Dahl and Lochner (2012) find that the increase in income through the EITC leads to improvements in child test scores. Hoynes, Miller, and Simon (forthcoming) find the increase in income through the EITC leads to an improvement in infant health by reducing the incidence of low-birth-weight births.[3] Evans and Garthwaite (2014) find evidence that the expansion of the EITC improved health indicators—measured by blood and medical tests—for mothers, suggesting a significant relationship between increased income and a reduction in stress.

A New Approach

Given the efficient and cost-effective reduction in poverty that the EITC achieves for families with children, proposals are being advanced to expand the EITC for childless taxpayers and for married taxpayers. The proposal outlined in this paper to raise EITC benefits for the largest group of recipients—one-child families—is part of this broader set of proposed EITC reforms.

I justify this proposal on the basis of equity and efficiency grounds: first, as discussed below, based on the principle that the credit should be equal across different family sizes in proportion to their needs, the EITC for one-child families is below what it should be. Second, I have robust evidence based on historical expansions that expanding the EITC provides a cost-effective reduction in poverty for families with children by encouraging more work as the credit on income expands. Combined, these justifications are especially important given that real household incomes in the lower half of the income distribution have stagnated over the past forty years, and that the highest poverty rates for Americans are found among children (Short 2013; U.S. Census Bureau 2014).

As presented above, using the family-size adjustment that forms the basis of the poverty thresholds in the SPM, the maximum credit for families with two children should be about 18.7 percent higher than the maximum credit for one-child families, yet under current law it is 65 percent higher. My proposal is to expand the EITC to one-child families to be on par with the maximum credit for two-child families, in equivalence-scale units. I keep the two-child schedule at

TABLE 11-3.

Comparison of Current Law and Earned Income Tax Credit Proposal for Hypothetical Families

	One-child family Current law (2014)	One-child family Proposal
A. Minimum wage ($7.25 per hour)		
Total earnings	15,080	15,080
Payroll taxes	–2,307	–2,307
Federal income tax	0	0
Child Tax Credit (including refundable)	1,000	1,000
EITC	3,305	4,651
Child-care costs	–1,508	–1,508
Child and Dependent Care Credit	527	527
Family disposable income	16,097	17,443
Increase in income		8%
B. 150% of minimum wage ($10.90 per hour)		
Total earnings	22,672	22,672
Payroll taxes	–3,469	–3,469
Federal income tax	–592	–592
Child Tax Credit (including refundable)	1,000	1,000
EITC	2,531	3,621
Child-care costs	–2,267	–2,267
Child and Dependent Care Credit	706	706
Family disposable income	20,581	21,671
Increase in income		5%

Source: Author's calculations using TAXSIM (see Feenberg and Coutts 1993).

Note: The gray font applies to cells with values that change under the proposal. All figures, with the exception of the increase in income, are in dollars.

current law and as the reference schedule. The specific changes to the tax credit are shown in table 11-2. The phase-in rate for one-child families remains at 34 percent, as under current law, but the phase-in income range is extended to $13,650 (from $9,720) to match the range used for two- and three-or-more–child credit schedules. The maximum credit increases from $3,305 to $4,641, an increase of 40 percent. The phase-out rate increases from 15.98 percent to 21.06 percent (matching the two- and three-or-more–child credit rates) and the phase-out income range extends from $17,830 to $39,867 (compared to $17,830 to $38,511 under current law). This proposal presents an opportunity to bring the credit for families with children into a harmonized schedule, using the equivalence scale in the SPM as the basis for harmonization.

To illustrate the effect of this proposal, table 11-3 presents tax and income calculations for hypothetical families with a single parent with one child. Assume that a woman works full-time for the full year and that the family spends 10 percent of gross earnings on child care. Panel A considers the case where the single woman earns the minimum wage of $7.25 per hour. Under current law (column 1), after child-care expenses and payroll taxes, and after federal tax and credits, the family has a disposable income of $16,097.[4] In column 2, I show how taxes and disposable income change with the policy proposal (and no behavioral changes). The EITC rises to $4,651 from $3,305 and disposable income rises to $17,443, an increase of 8 percent. Panel B considers a family where the woman earns 150 percent of the minimum wage ($10.90 per hour). For that family, the proposal would increase family disposable income by 5 percent, from $20,581 to $21,691.

COSTS AND BENEFITS

The costs of the proposal include the federal revenue cost of expanding the EITC. However, including all economic effects, namely higher labor supply, the EITC cost would be offset by the additional payroll tax revenue and (ordinary) federal

TABLE 11-4.

Simulation of Proposed Policy by Expanded Cash Income Percentile

	All taxpayers			Taxpayers with children		
	Tax units with tax cut (in percent)	Average tax cut among beneficiaries (in dollars)	Change in after-tax income (in percent)	Tax units with tax cut (in percent)	Average tax cut among beneficiaries (in dollars)	Change in after-tax income (in percent)
Bottom quintile	5.5	–1,029	0.4	24.9	–1,051	1.2
Second quintile	11.1	–969	0.3	36.7	–975	0.8
Middle quintile	5.0	–830	0.1	14.2	–739	0.2
Fourth quintile	0.2	–741	0.0	0.3	–714	0.0
Top quintile	0.0	0	0.0	0.0	0	0.0
All	5.0	–958	0.1	15.9	–957	0.2

Source: Urban–Brookings Tax Policy Center microsimulation model version 0613-3 (see Rohaly, Carasso, and Saleem 2005).
Note: Includes both filing and nonfiling units but excludes those that are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective income class but are included in the totals. For a description of expanded cash income, see Urban–Brookings Tax Policy Center (n.d.). The income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The resulting percentile breaks are 20 percent $17,272; 40 percent $31,839; 60 percent $52,010; 80 percent $82,156; 90 percent $114,150; 95 percent $160,278; 99 percent $376,776; 99.9 percent $1,971,618 (in 2013 dollars).

income tax revenue collected with increases in employment and earnings. Taxpayers benefit privately from the increase in after-tax income and from the reduction in poverty. Because the expansion in the EITC is expected to boost employment and earnings of single-parent families, their income would increase through the expanded credit as well as through the predicted increase in earnings.[5] The expansion may also lead to important social benefits resulting from the increase in income for these families. Studies find that the increase in income could yield spillover effects by improving health and children's cognitive skills (Dahl and Lochner 2012; Evans and Garthwaite 2014; Hoynes, Miller, and Simon forthcoming).

The distributional effects of the proposal, derived from the Urban–Brookings Tax Policy Center microsimulation model, follow the Joint Committee on Taxation convention of holding gross domestic product constant and subsequently assuming no change in labor supply. As shown in table 11-4, the proposal is decidedly progressive, raising after-tax income by 0.4 percent for taxpayers in the bottom income quintile and 0.3 percent for taxpayers in the second quintile, with effectively no impact on taxpayers in the top two quintiles. Tax units benefitting from this proposal—8.1 million in total—would each see their after-tax income rise by about $1,000.

The benefits would be especially high among taxpayers with one child. The Urban-Brookings Tax Policy Center microsimulation model only shows output for all taxpayers with children, but these estimates illustrate the higher benefit of this proposal on this select demographic group. Roughly one-quarter of taxpayers with children in the bottom quintile and over one-third of these taxpayers in the second quintile would see an increase in after-tax income. Among taxpayers with children, those in the bottom quintile would see their after-tax income rise by an average of 1.2 percent; taxpayers with children in the second income quintile would see their after-tax incomes rise, on average, by 0.8 percent. The average benefits for one-child families would be even higher under my proposal.

The proposal would have a substantial effect on the well-being of low-income families. Using the SPM to define poverty, CBPP (2014b) estimates that this EITC expansion would lift 410,000 people—including 131,000 children—out of poverty. This proposal would also improve the livelihood of a large number of people living below the poverty line. In total, 3 million people in poverty—including 1 million children—would be made less poor.

These estimates are conservative—that is, taking into account behavioral effects and increases in employment and earnings should lead to a reduction in costs (due to the offsetting payroll and federal income taxes) and an increase in private and social benefits. The empirical research shows robust evidence that an increase in the EITC leads to an increase in employment and earnings for single filers. For single parents already in

the labor market, this proposal provides a simple income transfer to those eligible for the EITC (assuming no change in earnings for those already in the labor market). For single women currently out of the workforce, the expanded EITC is predicted to encourage employment and earnings, leading to an increase in after-tax income through the EITC, other tax credits, and earnings (less payroll taxes and any owed federal income taxes). For married couples, the behavioral effects are expected to be more muted, with minimal effects for married men and modest reductions in employment and earnings for married women. In sum, family resources would increase through earnings and the EITC.

The proposal also comes with costs, foremost among them the lost revenue and expanded outlays owing to the more-generous credit. The Urban–Brookings Tax Policy Center microsimulation model estimates that the expanded EITC would lose roughly $9 billion per year, or $92.8 billion between 2015 and 2024. For reasons noted above, namely the convention that labor force be held constant, this estimate overstates the potential cost of the expansion. A second cost is that the expansion increases effective tax rates on those workers whose earnings fall in the phase-out range. For these workers, the lost benefits for each dollar earned rise from 15.98 percent to 21.06 percent—raising the disincentive to work. This raise in effective tax rates may slightly offset the gains to employment.

Questions and Concerns

Given the five prior expansions in the EITC, have we reached the limit of the employment-inducing effects of the program?

As shown in Jim Ziliak's proposal in this series, employment rates for single women with children have declined considerably from their peak in 2000. He shows that the employment rate of single mothers with less than a high school diploma and with a child under age thirteen has fallen 10 percentage points from 70 percent in 2000 to 60 percent in 2012; it has also fallen for single mothers with more than a high school diploma from 82 percent to 72 percent. While these are higher employment rates than were experienced on the eve of welfare reform and the expansion of the EITC in the 1990s, we have no evidence that employment rates will not respond to the proposed expansion.

Can the EITC provide all the safety net we need for low-income families?

This proposal is based on the established track record for the success of the EITC in increasing after-tax income through encouraging work. While the EITC now forms a central piece of the U.S. safety net for families with children, its prominence does not eliminate the need for other safety-net programs such as SNAP. Critically, the EITC does not help families in the face of labor market weakness and job loss. I bring attention to this limitation of the EITC in recent joint research with Marianne Bitler and Elira Kuka (Bitler, Hoynes, and Kuka 2013). The implication is that in the post-welfare reform era, the Great Recession resulted in more extreme poverty than we would have expected from experience prior to welfare reform (Bitler and Hoynes 2013). SNAP is essential for providing protection, especially for keeping families out of extreme poverty (Parrott 2014).

How would your proposal change if you used the equivalence scale implicit in the official poverty thresholds rather than the SPM?

The main theoretical grounding for our proposal—that the one-child schedule is too low relative to the two-child schedule given the difference in family size—holds regardless of whether we use the equivalence scale implied by the SPM or the official poverty threshold.

Why not expand the schedule for childless workers?

The equivalence-scale argument also extends to provide justification for expanding the EITC for taxpayers without dependents. Expanding the EITC for childless workers is supported by many, and recently appears prominently in President Obama's budget. I see my proposal for the one-child credit as part of a broader set of policies for expanding and updating the EITC. I focus on the one-child credit because of the robust employment effects found for single mothers and the prevailing unacceptably high child poverty rates, and in an effort to work in concert with these other proposals.

Doesn't your argument imply that the maximum credit for married couples should be larger than the credit for single taxpayers?

Yes, it does. Families with two parents have greater needs than do families with one parent (for a given number of children), and this is recognized by a larger equivalence scale and poverty threshold. I focus my proposal on expanding the one-child schedule for reasons of cost and in recognition of the broader policy context. In particular, there are other policies—notably The Hamilton Project proposal for a secondary-earner tax credit (Kearney and Turner 2013)—that address the EITC penalty for married couples. Kearney and Turner's proposal is motivated by reducing the tax cost of entering work for low- and moderate-income families. This has the feature of de facto increasing the generosity of the EITC for married couples.

Conclusion

The EITC occupies a central place in the U.S. safety net. The program raises 6.5 million persons, including 3.3 million children, out of poverty. The only program that raises more Americans above poverty is Social Security. The EITC raises after-tax incomes at the bottom of the distribution while encouraging employment. It redistributes income through the credit as well as through increases in earnings. I propose to expand the EITC for families with one child, the largest group of EITC recipients. In particular, I propose to expand the one-child schedule to be on par with the two-child schedule, in equivalence scale–adjusted terms. The proposal expands the maximum credit for one-child families to $4,641, from $3,305 under current law, for an increase of about 40 percent. This expansion is predicted to raise after-tax income by about $1,000 for 8.1 million working families. I view this proposal as part of the broader agenda for expanding the EITC, including the childless expansion proposed by President Obama and The Hamilton Project (Scholz 2007), and expansions for married couples through a secondary-earner tax credit (Kearney and Turner 2013). Together, these expansions will rebalance the EITC such that its benefits more-closely match the varying needs across families of different sizes and so its benefits are more equitably distributed across the population.

Proposal 12: Encouraging Work Sharing to Reduce Unemployment

Katharine G. Abraham
University of Maryland

Susan N. Houseman
The W. E. Upjohn Institute for Employment Research

Introduction

During the Great Recession, millions of Americans lost their jobs as employers downsized in response to falling demand. A substantial body of research implies that these job losses can lead to significant and persistent problems for affected workers, including lengthy periods of unemployment, sustained earnings losses, serious health problems, and other adverse outcomes (see, for example, Black, Devereux, and Salvanes 2012; Davis and von Wachter 2011; Jacobson, LaLonde, and Sullivan 1993; Stevens 1997; Sullivan and von Wachter 2009; von Wachter, Song, and Manchester 2011). Furthermore, the adverse impacts of job loss may extend to future generations: there is growing evidence that job loss for a parent can lead to lower educational attainment and lower lifetime earnings among their children (see, for example, Hilger 2013; Oreopoulus, Page, and Stevens 2008).

Recent public debate about the problem of unemployment—and especially long-term unemployment—has focused to a great extent on providing extended unemployment insurance (UI) benefits to support family incomes following a job loss. Strategies for preventing layoffs have not received comparable attention in the United States. By comparison, many other developed countries have incorporated work sharing into their UI systems, permitting the payment of prorated benefits to workers who are kept on the job with reduced hours because of slack demand.

If work sharing was more accessible in the United States, more employers might be encouraged to reduce work hours during periods of slack demand rather than lay people off. Instead of letting twenty full-time workers go, for example, a company could achieve an equivalent reduction in force by reducing the hours of 100 employees by 20 percent. Work sharing should be particularly attractive when employers expect the reduction in the demand for their products or services to be temporary, as is often the case during a recession. By avoiding layoffs, employers can retain valued employees and avoid screening, hiring, and training costs when the economy improves and they want to hire more workers. By adopting work sharing, employers also may be able to avoid the adverse effects that layoffs have on employee morale and productivity.

Work sharing has been credited with substantially reducing the number of layoffs and mitigating unemployment during the recent recession in several other countries. In contrast, during the Great Recession only seventeen U.S. states offered a formal work-sharing option; even where available, employer use of this option was very low. The success of work sharing in other countries and the lingering impacts of the recession on the U.S. labor market have spurred growing interest in work sharing in this country.

The Middle Class Tax Relief and Job Creation Act of 2012 is best known for extending the payroll tax cut originally introduced in 2011 and authorizing an extension of emergency UI compensation. But the Act also included several provisions designed to encourage wider adoption and greater use of work-sharing programs. Since the recession, an additional nine states and the District of Columbia have incorporated work-share programs into their UI systems. While the 2012

TABLE 12-1.

Percent of Employees Receiving Work-Sharing Benefits in Selected Countries, 2007–2009

	All employees			Manufacturing employees		
	2007	2008	2009	2007	2008	2009
Austria	0.00	0.03	0.63	0.00	0.17	3.41
Belgium	3.22	3.53	5.60	6.44	7.36	16.99
Canada	0.02	0.03	0.34	N/A	N/A	N/A
Czech Republic	N/A	0.61	1.44	N/A	1.59	4.49
Finland	0.36	0.47	1.67	N/A	0.59	2.69
France	0.34	0.31	0.83	N/A	0.53	3.61
Germany	0.08	0.17	3.17	0.17	0.53	12.06
Ireland	N/A	0.17	1.03	N/A	0.48	1.34
Italy	0.64	0.78	3.29	1.75	2.29	9.95
Netherlands	N/A	0.20	0.75	N/A	1.39	5.01
United States	0.04	0.07	0.22	N/A	N/A	N/A

Source: OECD 2010b.
Note: N/A = not available. Take-up rate for the United States is computed for the subset of states with short-time compensation programs. These data were provided as a special tabulation in an EC-OECD questionnaire.

legislation constitutes an important first step, it does not go far enough. We propose that the federal government take additional actions to encourage the use of work sharing as an alternative to layoffs during future U.S. recessions.

The Challenge

In many developed countries, when economic conditions weaken, employers may choose to cut employee hours and have those workers receive prorated UI benefits in lieu of laying workers off. Germany, which has had a work-sharing program since the 1920s, was the first to incorporate work sharing into its UI system. Italy and Norway introduced formal work-sharing programs in the 1950s; Austria, France, and Ireland in the 1960s; and Belgium, Canada, Denmark, Japan, and Luxembourg in the 1970s (Boeri and Bruecker 2011). Many countries with established work-sharing programs also have employment protection laws that mandate significant advance notice before a worker can be laid off and substantial severance payments in the event a layoff occurs. Work-sharing programs can serve as an important complement to strong employment protection legislation by facilitating reductions in the average weekly hours employees work (Abraham and Houseman 1993, 1994; Boeri and Bruecker 2011).

Work-sharing programs played a substantial role in ameliorating the rise in unemployment in many countries during the most recent recession. Although employer work-sharing plans typically are limited in duration, many countries extended the permissible length of these plans as the downturn lingered. Germany, for example, extended the maximum length of a work-sharing plan from six months to twenty-four months for applications submitted in the second half of 2009 and to eighteen months for applications submitted in 2010 (Crimmann and Wiessner 2009; International Labour Office [ILO] 2010). Countries also took steps to reduce employers' costs for using work sharing. Germany temporarily excused employers from paying a portion of the social security contribution on hours not worked for which they otherwise would have been liable (ILO 2010). As shown in table 12-1, when usage peaked during 2009, 1 percent or more of the workforce was collecting work-sharing benefits in six countries, and in three of those countries participation in work-sharing plans exceeded 3 percent. To place these numbers in perspective, in 2009 the number of people on work-share programs was 68 percent of the number of unemployed in Belgium, 38 percent of the number of unemployed in Germany, and 39 percent of the number unemployed in Italy. A study by OECD researchers concluded that work-sharing programs helped to preserve jobs during the recent recession, with the impact being particularly significant in Finland, Germany, Italy, and Japan. In these countries the OECD researchers estimated

that the decline in permanent employment would have been about three-quarters of a percentage point greater in the absence of work sharing (OECD 2010a).[1] Subsequent research has reached similar conclusions about the role of work sharing in preventing employment losses during the recession (Boeri and Bruecker 2011; Hijzen and Martin 2013).

U.S. institutions and employers, in contrast to those in many other countries, historically have favored the use of layoffs over work sharing. The United States has no requirement that employers provide laid-off workers with severance payments, and advance notice provisions in U.S. law are weak. Employees with a sufficient work history are entitled to collect UI benefits if they are laid off, and under states' experience rating systems, employers typically are liable for reimbursing the state UI trust fund for benefit costs received by laid-off employees. Although this means that the United States UI tax system imposes some costs on employers who engage in layoffs, these employers generally do not bear the full cost of the benefits their former employees collect.[2] At the same time, support for work sharing through the payment of prorated UI benefits to employees working reduced hours has been much less prevalent in the United States. Although seventeen states had work-sharing programs on the books at the end of 2007 and several more have introduced such programs in the past few years, twenty-four states still do not have work-sharing programs in operation, and usage of the programs that do exist remained at very low levels through the recession (Abraham and Houseman forthcoming). Together these factors—weak employment protection laws, imperfect experience rating of UI taxes, and weak or absent work-sharing programs—help explain U.S. employers' much greater reliance on adjustment of employment levels and correspondingly lower reliance on adjustment of average worker hours during recessions.

Back-of-the-envelope calculations suggest that moderately greater use of work sharing in the United States could have significantly reduced job loss and thereby mitigated unemployment during the Great Recession. Assuming that hours reductions through work sharing offset hours reductions through layoffs on a one-to-one basis—perhaps an overly generous assumption, but useful as a first approximation—work sharing by U.S. employers in 2009 reached a level sufficient to have prevented the loss of only about 22,000 full-time-equivalent (FTE) jobs. Had usage in all states been as large as in Rhode Island, the state with the highest work-sharing rates, the average number of FTE workers on work sharing in 2009 would have been approximately ten times as large as the number actually observed—in the vicinity of 220,000 FTEs rather than 22,000 FTEs. And had the average take-up rate been similar to that in Germany or Italy in 2009, the average number of FTE workers on work sharing would have approached 1 million. In other words, with work-sharing usage at European levels and assuming that work-sharing expansions translate directly into reductions in the number of layoffs, as many as one in eight of the roughly 8 million jobs lost during the recession could have been saved (Abraham and Houseman forthcoming).

Several factors beyond the relative ease and modest cost of laying off workers are generally cited for the low use of work-sharing programs in the United States. First and foremost is lack of information about the availability of this option in states with work-sharing programs. Prior to the passage of the Middle Class Tax Relief and Job Creation Act of 2012, there was some ambiguity about the legality of state work-sharing programs under federal law. This may have discouraged some states from adopting these programs or promoting their use (Balducchi and Wandner 2008). In addition, insufficient funding from the federal government to administer the program may have deterred states from advertising it to employers. With some exceptions, most notably Rhode Island, states with work-sharing programs have done almost nothing to promote them; as a consequence, many employers are unaware that the programs even exist. In contrast, state officials in Rhode Island have promoted the program enthusiastically, and Rhode Island's take-up of this option has been comparable to that of some European countries (see box 12-1).

The administrative burden of participating in a work-sharing program also may have deterred employers from participating. Besides submitting a work-share plan to the state for approval, employers must certify on a weekly or biweekly basis that the program is still operative, identify which employees are affected, and document the reductions in their hours. Cutting through this red tape is made more difficult because the application and continued claims processes typically are not automated.

Additionally, some states prohibit certain employers—such as those who have reached the maximum UI tax rate or have negative UI account balances because of UI benefits paid to previously laid-off employees—from participating in their work-share program. Similarly, in some states employers who have used the UI system intensively in the past may face a higher effective UI tax rate if they use the work-share program than if they lay off workers. While these provisions are designed to prevent employer abuse of the program, they may unnecessarily restrict access to work sharing, particularly during recessions.

The Middle Class Tax Relief and Job Creation Act of 2012 provided explicit authorization for work-sharing programs meeting certain conditions that are set out in the legislation. Under the Act, states with work-sharing programs that

BOX 12-1.

Work Sharing in the Great Recession: The Case of Rhode Island

Rhode Island has considerably more take-up of its work-sharing program than other states, and is often referenced as a model program. Rhode Island's work-sharing success was especially notable during the Great Recession. In 2007, the state made one new work-sharing payment for roughly every twenty new standard UI payments. By the height of the Great Recession in 2009, Rhode Island paid one new work-sharing claim for roughly every six new standard UI claims (Shelton 2011).

Interestingly, the greater use of work sharing in Rhode Island can be attributed largely to factors unrelated to program design: the parameters of Rhode Island's work-sharing program are representative of those found in other participating states. In contrast to other states, Rhode Island aggressively marketed work sharing to employers engaged in layoffs during the Great Recession and made use of the media to highlight potential work-sharing benefits. According to Ray Filippone, former UI director in Rhode Island, several strategies used in Rhode Island are critical to getting the word out to employers about work sharing:

- *Involve other agencies and stakeholders.* It is important to work with other agencies and stakeholders, such as the governor's office, legislative offices, and chambers of commerce. Typically, the UI office is not the first point of contact for employers who are deciding whether or not to lay off workers. Consequently, staff in these other organizations need to be familiar with the work-sharing program so that they can inform employers about this option.
- *Have a dedicated person who can answer employers' questions about the program.* Although other government representatives or business leaders can tell employers about the work-sharing option, employers interested in utilizing the program will need to contact the state UI office for more information. It is essential to have staff dedicated to answering employers' questions about the program. Employers contemplating a work-sharing plan cannot wait a week or two for someone to answer their questions.
- *Have good presentation materials.* Having a good presentation about the potential benefits of using work sharing over layoffs that can be given to employer groups, workforce investment boards, or other interested parties is important.
- *Contact employers engaged in layoffs.* UI claims staff can flag employers making a lot of layoffs during a recession. Staff then can contact those employers to make sure they are aware of the work-sharing option and its potential benefits.
- *Automate the application and claims process.* Weekly or biweekly certifications, which generally are required of employers on a work-sharing plan, can be burdensome. An automated system reduces the administrative burden on employers and can make the program more attractive to them.

conform to the new federal law are eligible for a share of $100 million in grant funding to be used for program implementation, such as automation of state systems for the filing and processing of work-sharing claims, and for employer outreach. In addition, the law provides full federal reimbursement for all of the benefits paid out under approved state work-sharing laws for up to a three-year period ending in August of 2015. While the 2012 law undoubtedly has helped to raise the level of interest in work sharing, more needs to be done if work sharing is to become a significant weapon in the United States' countercyclical policy arsenal.

A New Approach

The federal government should take several additional steps to make work sharing more available as an option for employers and to encourage the use of work sharing as an alternative to layoffs during future recessions.

MAKE WORK-SHARING PROVISIONS A REQUIREMENT FOR STATE UNEMPLOYMENT INSURANCE PROGRAMS

In the United States, UI is administered as a federal–state system. Although states' laws vary with respect to factors such as exactly how eligibility for UI benefits is determined,

the level of benefit payments, and maximum weeks of benefits, the federal government sets minimum conditions that state law must satisfy. If state law does not conform to the federal requirements, employers in the state are not eligible to receive the credit against the 6.0 percent federal UI tax that is otherwise available (normally 5.4 percent, lowering the effective federal tax rate to 0.6 percent) and the nonconforming state is not entitled to receive federal grants to cover the costs of administering its program. We propose that inclusion of a work-sharing provision in the state's law be made a conforming requirement for participation in the federal–state UI system. Such action would make the work-sharing option available to employers and their employees in the twenty-four states that currently do not offer the program.

CHANGE FEDERAL REQUIREMENTS TO PROHIBIT CERTAIN PROVISIONS OF STATE WORK-SHARING PROGRAMS THAT MAY DISCOURAGE EMPLOYER PARTICIPATION

To make state work-sharing programs more attractive to employers, we recommend that the federal government make several changes to the criteria such programs must meet. Under current federal law, a state must require, among other things, that participating employers submit a work-sharing plan; that the proportional reduction in hours under the employer plan not be less than 10 percent nor more than 60 percent; that employees be offered prorated benefits based on the reduction in their hours; that an employee be considered to have satisfied applicable job search requirements so long as they are available to work their regular work week; and that, if health and retirement benefits are provided at the work place, the employer certify that they will not be reduced.

The last of these conditions, on health and retirement benefits, may dissuade some employers from using work sharing in lieu of layoffs. An employer who lays workers off sheds any associated health and retirement plan costs; an employer who uses work sharing does not. Yet there is a strong public interest in ensuring that individuals continue to have health insurance coverage during a recession. And, in many cases, the Affordable Care Act would not permit employers to reduce the health insurance coverage available to workers whose hours are temporarily reduced even if this were permitted under a state's work-sharing law.[3] Recognizing these concerns and complications, we propose to retain the current requirement that employers continue full health insurance benefits for employees who participate in work sharing. We would, however, eliminate the requirement to maintain full contributions to employee retirement plans. Instead, we would apply the less-stringent requirement that employers provide prorated retirement benefits to employees on work share based on the fraction of regular hours their employees work.

We also recommend that states be prohibited from (a) assessing work-sharing employers a higher UI tax rate than they would face if the same amount of benefits were paid to laid-off workers or (b) excluding employers from participation in work sharing based on their past use of the UI system. Among the twenty-six states plus the District of Columbia that, as of this writing, have work-sharing laws in force, in three states employers who choose work sharing may incur higher UI tax charges than they would if the same total benefit payments been generated through layoffs (because of the tax schedule that is applied), and in another seven states employers that already pay the maximum tax rate or that possess negative reserve balances are precluded from participating in work sharing. These rules unnecessarily impede the use of work sharing.[4]

PROVIDE STATES WITH ADEQUATE CAPACITY AND FUNDING TO OPERATE AND PROMOTE THEIR WORK-SHARING PROGRAMS

In most states, the process for handling work-sharing claims is less automated than the process for handling regular UI claims. The funding provided under the 2012 federal legislation should help to address this problem, but time is running out for states to access this money. States cannot apply until they have passed a new work-sharing law or amended their preexisting work-sharing law to satisfy all of the requirements of the Middle Class Tax Relief and Job Creation Act; in addition, applications for grant funding must be submitted by the end of 2014. Most states with existing work-sharing laws are expected to meet this deadline, but some likely will not, and nearly half of states do not yet have a work-sharing law in place. We recommend that, at a minimum, the deadline be extended for states to submit their applications for the federal grant funding provided in the 2012 law to help with automation of state systems and outreach to employers.

It also will be important to ensure that concerns about the level of ongoing funding do not deter states from promoting their work-sharing programs. The allocation of funding that states receive to administer their UI programs is based on a Department of Labor formula that incorporates information about state workloads and state labor costs. States with higher workloads according to this formula get a larger funding allocation. Work-sharing claims are counted as part of the workload, but the workload formula does not reflect additional tasks that are necessary to operate a successful work-sharing program. For example, state staff must review each employer work-share plan that is submitted, but the number of such reviews is not an element in the workload matrix. Anticipating that work sharing will become a more important part of the UI system in the future, we recommend that the Department of Labor carry out a study to determine how the operation of a work-sharing program impacts a state's administrative

workload and modify its funding formula accordingly. Some level of funding for promoting the program to employers who could benefit from it ideally also would be provided. Changes to the formula used to allocate funding to states could be made administratively and so would not require new legislation. Additional appropriations would be needed to increase the total pool of administrative funding available to be allocated.

SUBSIDIZE WORK-SHARING PAYMENTS DURING ECONOMIC DOWNTURNS

Perhaps most importantly, we propose that mechanisms be put in place to expand support for work sharing automatically during economic downturns. The existing treatment of UI benefit durations provides a model for how this might work. Since 1970 the maximum duration of UI benefits in a state has risen automatically when the state experiences a significant increase in unemployment. The federal government ordinarily covers half the cost of these so-called extended benefits; during the recent recession, the federal government picked up their full cost. Additional increases in benefit duration, such as those created through the emergency UI compensation program that existed in several different forms from June 2008 through December 2013, often are passed into law by Congress during recessions. The cost of such legislated extensions ordinarily is covered fully by the federal government.

Given the value of keeping workers on the job during economic downturns, similar steps should be taken to increase the support provided for work sharing during periods when the economy is weak. More specifically, we recommend that federal funding to cover half of the benefits paid under approved employer work-sharing plans be triggered whenever extended UI benefits under the 1970 law are triggered. In addition, we recommend that, whenever Congress enacts legislation to extend the maximum duration of UI benefits, this legislation also include 100 percent federal support for work-sharing benefits. Finally, we recommend that employers' UI accounts not be charged for the cost of any work-sharing benefits for which the state is receiving federal reimbursement, thus boosting employer incentives to use work sharing in lieu of layoffs during periods in which unemployment is already high. Most states would need to make changes to their UI laws in order to permit noncharging of employers during future periods of federal funding for work-sharing benefits. To facilitate these changes, we recommend that the Department of Labor be directed to provide model legislative language for the states.

IMPLEMENTATION

These proposals would be enacted through a combination of legislation and administrative actions by the Department of Labor. Congress would enact legislation so that federal funding for half of state work-sharing benefits is triggered whenever extended UI benefits under the Federal-State Extended Unemployment Compensation Act of 1970 are triggered. Congress also would enact legislation to add the following requirements for state participation in the federal–state UI compensation system: (1) the participating state has a work-sharing program, (2) the state's work-sharing program does not charge employers who use work sharing higher UI tax rates than they would charge employers if the same benefits were paid to a laid-off worker, and (3) the state's work-sharing program does not prohibit employers from participating in work sharing based on their past usage of the UI system. Congress would need to include provisions in this legislation stipulating that employers' UI accounts not be charged for any work-sharing benefits for which the state is receiving federal reimbursement. And when Congress passed legislation to extend the maximum duration of UI benefits, it would need to include 100 percent support for any work-sharing benefits paid.

The Department of Labor would use its statutory authority to modify the formula for allocating UI administrative dollars to states to ensure that adequate support is provided for operating a work-sharing program. Congressional action to raise the total funding available for UI administrative expenses might be needed to ensure that increased funding for the administration of work-sharing programs do not lead to other UI operations being shortchanged and that states have the capacity to take appropriate steps to make employers aware of the work-sharing option.

COSTS AND BENEFITS

Given the costs imposed by unemployment, increased substitution of work sharing for job layoffs in the United States would have many benefits. The varied costs of unemployment range from diminished health of laid-off workers to lower lifetime earnings, and are well-established in the academic literature. And as noted earlier, work sharing is an especially promising remedy for unemployment; if used at the levels seen in some European countries, work sharing could potentially have saved up to one in eight of the jobs lost during the Great Recession. With fewer people losing their jobs, unemployment—most importantly long-term unemployment—could have been alleviated. In addition, an increased reliance on work sharing would lower job turnover rates and the associated firing, hiring and training costs.

Expanding work sharing in the United States could, however, have significant economic costs. Work-sharing programs are intended for businesses experiencing temporary reductions in demand, as is particularly common during recessions. But recessions also serve to weed out inefficient businesses and

improve the allocation of resources in the economy. A major concern about expanding work-sharing programs is that they will impede needed structural adjustment in the economy (OECD 2010a). Given that there are limits on the length of time that a work-sharing plan can be in effect, however, any impediments to structural adjustment would likely be minor. Also, given the large number of individuals seeking work during a recession, firms that are hiring during recessions generally will not have difficulty finding qualified workers.

On balance, in view of the high individual and social costs associated with unemployment and the relatively low risk of significantly inhibiting structural change, the benefits associated with expanding work-share programs likely outweigh the costs. While work sharing may not be a panacea for reducing painful adjustment in the labor market, the United States could benefit from using it more extensively.

Questions and Concerns

Given the relative ease of firing workers in the United States compared to some other countries, will U.S. employers shift from using layoffs to work share in sufficient numbers to have a noticeable impact on unemployment?

Some might argue that efforts to promote work sharing in the United States are doomed to fail, given the relative ease of hiring and firing in this country. Part of the reason work sharing is attractive to employers in other developed countries is that requirements for advance notice and severance payments to laid-off workers make layoffs costly, which increases the appeal of work sharing as an alternative. The much weaker notice requirements applicable to layoffs in the United States and the fact that employers generally are not required to make severance payments to laid-off workers may be an important explanation for the very low take-up of work sharing in this country.

The experience in Rhode Island, however, provides a basis for optimism about what it is possible to accomplish in the United States, even without the changes we have recommended to make work sharing more attractive to U.S. employers. The level of usage in Rhode Island was similar to that in countries such as France and the Netherlands, and suggests that other factors are behind the low use of work sharing in this country.

By reducing layoffs, will work-share programs inhibit needed structural adjustment?

Some express concern that such measures could cause workers employed at declining enterprises to delay seeking alternative employment, thereby impeding needed reallocations to growing enterprises and sectors (see, for example, OECD 2010a). During a recession, however, firms typically have little difficulty in attracting new recruits, and any effect of work sharing on the pace of economic reallocation cannot be large.

Conclusion

High unemployment during recessions has lasting adverse effects for workers who lose their jobs and for future generations. Work sharing has been an effective policy tool in other developed countries to combat unemployment during recessions, but has been little-used in this country. While some doubt work sharing could ever be used successfully in a country with few impediments to layoffs, many American employers, when faced with a temporary reduction in demand, would like to retain valued employees and could benefit from a work-sharing program. Other factors, including lack of information about the work-sharing option and features that tilt the UI system in the United States toward layoffs, likely have inhibited broader adoption of the program by states and greater use by employers in states where the program is available.

Measures passed as part of the Middle Class Tax Relief and Job Creation Act of 2012 will help reduce the barriers to work sharing in states. We argue, however, that stronger action at the federal level is needed to reduce the bias in the UI system that favors layoffs instead of work sharing. These include effectively mandating that the twenty-four states currently without work-sharing provisions in their UI system adopt them; changing federal requirements concerning maintenance of full retirement benefits, the UI tax rates assessed on work-share employers, and program eligibility under state work-sharing laws to mitigate existing incentives to lay off workers and increase employer take-up of these programs; and providing states with adequate funding to operate their work-sharing programs. Most importantly, we recommend that automatic mechanisms be put in place for federal support of work-sharing benefits during periods of high unemployment, in the same way that the federal government supports extended regular UI benefits for individuals who have been laid off during such periods.

Proposal 13: Designing Thoughtful Minimum Wage Policy at the State and Local Levels

Arindrajit Dube
University of Massachusetts Amherst

Introduction

Rising wage inequality and stagnant real wages have contributed to inequality in family incomes during the past three decades. While the expansion of the Earned Income Tax Credit (EITC) and the Supplemental Nutrition Assistance Program (SNAP) have helped mitigate the impact on low-income families (Bitler and Hoynes 2010), federal minimum wage policy has not contributed to the solution. The federal minimum wage has failed to keep pace with both the cost of living and the median wage in the labor market. As a consequence, working full-time at the minimum wage does not allow many families to escape poverty, or to attain economic self-sufficiency.

State and local governments can set minimum wages in excess of the statutory federal minimum wage.[1] Indeed, state and local governments have played an important role in establishing minimum wages across the country; as a result, thirty-seven states had state minimum wages exceeding the federal level in 2007 prior to the most recent federal increase. Cities, too, have begun setting higher minimum wages, as evidenced by city-level wage minimums in Albuquerque, San Francisco, San Jose, Santa Fe, Seattle, and Washington, DC; other cities are actively exploring possibilities of raising minimum wages.

In this policy memo, I propose a framework for effective state and local minimum wage policy. First, I propose using half the local-area median wage as an important gauge for setting an appropriate level of the minimum wage. Second, I propose that state and local governments take into account the local cost of living as a relevant consideration in setting a minimum wage, and I provide estimates of how state minimum wages would vary if they reflected cost-of-living differences. I also recommend the use of regional consumer price indexes (CPIs) to index the local minimum wage. Finally, I propose that cities and counties coordinate regional wage setting to mitigate possible negative effects of local mandates.

The implementation of the state and local framework does not override the need for reform at the federal level. Thoughtful reforms to the federal minimum wage can help reduce poverty and mitigate inequality. The federal minimum wage has been the focus of substantial debate by academics and policymakers; this proposal focuses on state and local reforms that have received substantially less attention. These state and local reforms can be an important part of the policy portfolio for reducing the incidence of poverty and for helping low-income families support themselves as they strive toward the middle class. In particular, although the federal minimum wage serves as a floor in the labor market, there is some room for additional increases in higher-wage areas.

The Challenge

RISING INEQUALITY AND STAGNANT WAGES

For much of the past three decades, the wages of those at the bottom of the wage distribution have failed to keep up with overall economic gains. Most of the wage increase has occurred among the top half of the wage distribution, especially since

the 1990s. Wages in the lower half rose only during the period of low unemployment in the late 1990s. As a result, the 90th percentile real wage grew by over 30 percent between 1973 and 2011, while the median and 10th percentile real wages grew by less than 5 percent over the same period.

Many factors spurred this dramatic rise in wage inequality, including technological change, de-unionization, increased trade and offshoring, and deregulation (Autor, Katz, and Kearney 2008; Firpo, Fortin, and Lemieux 2011; Philippon and Reshef 2012). However, there is also evidence that a falling real minimum wage has contributed to this growth in inequality. In particular, Autor, Manning, and Smith (2014) find that movements in the minimum wage played an important (though not predominant) role in determining the 50/10 wage gap—a measure that highlights wage inequality in the bottom half of the distribution by comparing how middle earners (50th percentile) fared relative to the lowest earners (10th percentile). The decline in the value of the minimum wage has also had a larger effect on inequality for female workers since they tend to be paid less than male workers.

A DECLINE IN THE MINIMUM WAGE

The federal minimum wage, which has not kept up with the cost of living, reached its high-water mark in 1968. While the specific value varies with the price index used, all measures point toward the real minimum wage falling over time.[2] Using the CPI-U-RS—a revised inflation index that uses current methods for computing inflation—the minimum wage in 2014 dollars stood at $9.59 per hour in 1968 and $8.58 per hour in 1979. During the 1980s, the real minimum wage declined substantially, and over the intervening twenty years it has largely treaded water, reaching a historical low of $6.07 per hour in 2006 prior to the last federal increase. It now stands at $7.25 per hour.

The failure of the minimum wage to keep up with inflation means that, for workers earning the minimum wage, each hour of labor purchases fewer goods and services. And since measures of poverty are indexed to inflation, an unindexed minimum wage means that these workers must work more hours to stay above poverty. Recent evidence suggests that workers earning close to the minimum wage are increasingly those who rely on their earnings to support necessary household consumption, as opposed to those who are dependents of workers with higher earnings. For example, between 1979 and 2011, the share of low-wage workers—defined as those with hourly wages of $10.00 or less in 2011 dollars—who are younger than twenty-five fell from 47.1 percent to 35.7 percent (Schmitt and Jones 2012).

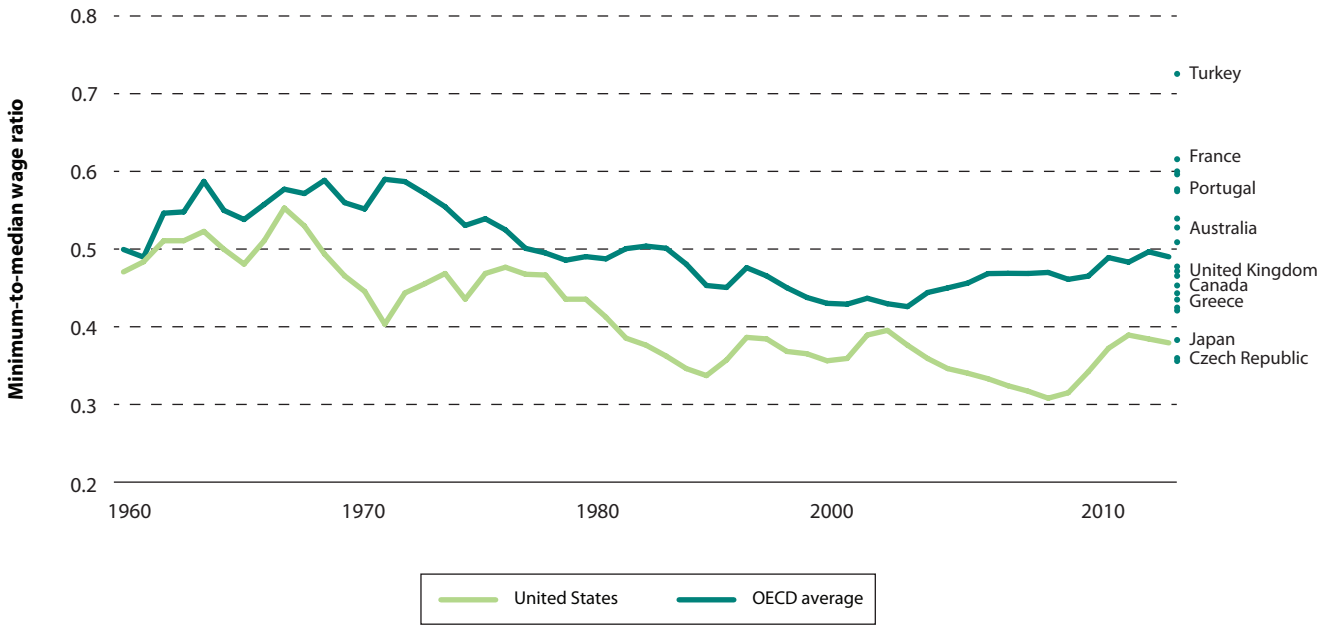
These concerns are exacerbated in states and localities with high costs of living. In these areas, workers earning the minimum wage are especially challenged to pay for food and housing, or obtain other necessary goods and services. Effectively, to escape poverty these workers must earn significantly more than their counterparts in low-cost areas. Workers in areas with high median wages, which are often those with high costs of living, are also subjected to greater levels of local income inequality. In short, the problems associated with a stagnant and inadequate minimum wage are exacerbated in high-cost, high-wage areas.

Low minimum wages are also problematic when they deviate too far from the median wage because they are a reflection of the bottom of the wage distribution falling behind the rest of the distribution. For this reason, economists often consider the ratio of the minimum to the average or median wage, also known as the Kaitz index. There are three reasons to pay attention to this measure, especially using the median as the reference wage. First, a comparison of the minimum wage to the median offers a guide for how binding a particular minimum wage increase is likely to be, and what type of wage the labor market can bear. When this ratio is low—say around 0.2—minimum wage policy is not raising the wages of many workers. In contrast, a high ratio—say around 0.8—indicates a highly interventionist policy where the minimum wage is dramatically compressing differences in wages for nearly half the workforce. Second, this comparison also provides us with a natural benchmark for judging how high or low a minimum wage is across time periods or across countries that vary in terms of their labor markets and wage distributions. Third, the median wage also provides a natural reference point for judging what is a reasonable minimum wage level: no one expects that the minimum wage should be set equal to the median wage, but fairness may become a factor when the minimum wage falls below, say, one-fourth or one-fifth of the median wage.

A natural target is to set the minimum wage to half of the median full-time wage. This target has important historical precedence in the United States: in the 1960s, this ratio was 51 percent, reaching a high of 55 percent in 1968. Averaged over the 1960–1979 period, the ratio stood at 48 percent. Approximately half the median full-time wage is also the norm among all OECD countries with a statutory minimum wage. For OECD countries, on average, the minimum wage in 2012 (using the latest data available) was equal to 49 percent of the median wage; averaged over the entire sample between 1960 and 2012, the minimum stood at 48 percent of the median (OECD 2013). In contrast, the U.S. minimum wage now stands at 38 percent of the median wage, the third-lowest

FIGURE 13-1.

The Ratio of Minimum to Median Full-Time Wage: United States and OECD Countries, 1960–2012



Sources: OECD 2013; author's calculations.

Note: Data were not available for the full period between 1960 and 2012 for each country. For that reason, the OECD average for each year is derived using the individual country ratios that were available for that year.

among OECD countries after Estonia and the Czech Republic (ibid.). (See figure 13-1.)

A New Approach

Adequate state and local minimum wages play an important role in the antipoverty agenda and can compensate for inaction at the federal level. To ensure that wages sufficiently support the lowest-paid workers, I propose that state and local governments gauge their minimum wage to half the local-area median wage. In addition, I propose that states consider the local cost of living when establishing a minimum wage, and that the statutory minimum wage be automatically indexed to inflation to protect against real declines in the wage floor. Finally, I propose that local governments engage in regional wage setting to protect against the unintended consequences of raising the minimum wage.

STATE-LEVEL POLICIES

State initiatives are a sensible strategy in many places with particularly high wages. One way to gauge what constitutes a reasonable target level is to consider the ratio of the minimum to the median wage: a value of 50 percent is in line with the international average and with the U.S. historical average during the 1960s and 1970s. For the purpose of national and international comparability, table 13-1 shows the value of one-half the median full-time wage in 2012 for each state, adjusted to 2014 dollars. Since wages vary substantially by state, the median-adjusted target minimum wage ranges between $12.45 (Massachusetts) and $7.97 (Mississippi). Fourteen states—mostly those in the Northeast and on the West Coast—would see their minimum wage rise above $10.00 per hour with this proposal. In contrast, eighteen states would see their minimums set below $9.00 per hour. It is important to note that the proposed minimum wage would exceed the current federal minimum of $7.25 in all states.

State-level add-ons to the minimum wage thus seem to be a sensible strategy in these high-wage states. Indeed, many states are already doing this: as of now, eleven of the fourteen states whose target minimum wage exceeds $10.00 per hour currently have state minimums exceeding $7.25 per hour. When we factor in current and planned minimum wage increases by states, raising the minimum wage to half the median full-time wage in each state by 2016 would entail a 26.2 percent increase in the statutory minimum wage. (This estimate is a population-weighted average over all fifty states

TABLE 13-1.

Target Minimum Wage by State, Adjusted Based on Median Wage and Regional Price Parity

	Median Wage–Adjusted (in dollars)	Regional Price Parity–Adjusted (in dollars)		Median Wage–Adjusted (in dollars)	Regional Price Parity–Adjusted (in dollars)
Massachusetts	12.45	10.45	**Indiana**	9.41	8.88
Connecticut	12.01	10.67	**Missouri**	9.35	8.59
Maryland	11.69	10.85	**Iowa**	9.30	8.73
New Jersey	11.45	11.12	**Arizona**	9.27	9.56
New Hampshire	11.20	10.35	**North Dakota**	9.21	8.81
Alaska	10.96	10.44	**Hawaii**	9.07	11.43
Rhode Island	10.96	9.62	**Florida**	9.06	9.63
Virginia	10.83	10.06	**Nevada**	8.99	9.57
Washington	10.76	10.06	**New Mexico**	8.96	9.24
New York	10.46	11.25	**Ohio**	8.96	8.70
Minnesota	10.36	9.51	**Kansas**	8.85	8.77
California	10.21	11.01	**Texas**	8.82	9.41
Colorado	10.18	9.91	**Idaho**	8.77	9.13
Illinois	10.07	9.81	**Montana**	8.71	9.18
Delaware	9.96	9.97	**Nebraska**	8.71	8.78
Michigan	9.96	9.20	**Oklahoma**	8.71	8.77
Pennsylvania	9.96	9.62	**South Carolina**	8.71	8.84
Utah	9.96	9.44	**Tennessee**	8.71	8.84
Oregon	9.69	9.63	**North Carolina**	8.64	8.93
Wyoming	9.62	9.40	**Alabama**	8.54	8.59
Wisconsin	9.60	9.06	**Kentucky**	8.37	8.66
West Virginia	9.54	8.64	**South Dakota**	8.30	8.60
Georgia	9.46	8.97	**Louisiana**	8.14	8.91
Maine	9.46	9.58	**Arkansas**	7.97	8.54
Vermont	9.46	9.84	**Mississippi**	7.97	8.42

Sources: Unicon Research Corporation 2012; Bureau of Economic Analysis n.d.; author's calculations.

Note: Median wage–adjusted values are half of the median real wages (in 2014 dollars) for each state in 2012 for full-time, non-self-employed workers using the March Supplement of the Current Population Survey. Regional price parity–adjusted wages use the Bureau of Economic Analysis regional price parity index for each state.

using the maximum of the state or federal minimum wage for each state.) Some states (e.g., California, Nevada, Oregon, and Vermont) would need only small adjustments to their baseline policy (under 10 percent). In contrast, higher-wage states (e.g., Maryland, Massachusetts, New Hampshire, and Virginia) would require substantial increases, exceeding 50 percent. When implementing as substantial an increase as in this latter group of states, a longer phase-in period may be desirable.

While the median wage is a good measure of how binding a minimum wage would be, an additional consideration is cost of living, which tends to be greater in urban areas. To provide an alternative adjustment, table 13-1 also reports the level of minimum wage that would prevail in a state if a $9.75 federal minimum wage—chosen because that is half the median full-time wage nationally—were adjusted using the regional price parity index for that state. To make this an apples-to-apples comparison, both methods entail a similar overall increase in the minimum wage, letting the exact pattern vary across states based on the median wage, as opposed to just on the cost of living.

There is considerable similarity in the target minimum wage constructed using the two methods. This is to be expected since high-wage states also tend to have higher costs of living. Nine states show up in both top ten lists, for example, and for all but five states, the two methods produce a target minimum wage that differs by less than 10 percent.

The overlap is imperfect, however. For example, whereas Massachusetts has the highest median wage of all states, it ranks sixth in terms of the cost of living. Similarly, California ranks twelfth based on median wage, but third based on cost of living. More generally, while the recommended increase in the minimum wage is similar under the two approaches when averaged across all states (i.e., 26.2 percent versus 22.5 percent average increase in the statutory minimum wage), the regional price adjustment produces a narrower range: between $8.42 and $11.43 instead of between $7.97 and $12.45.

Under my proposal, state policymakers should put the greatest emphasis on how binding the minimum wage would be as proxied by half the median wage. This is an important metric for gauging the extent of an intervention in the functioning of the labor market. Often this will also reflect cost-of-living differences across areas. When the regional price parity–adjusted minimum wage differs considerably from the median wage–adjusted value, however, policymakers would do well to also consider the regional price information—perhaps splitting the difference between the two approaches.

Finally, my proposal would index the state minimum wages to the regional CPI. This practice is attractive since the annual adjustment makes the process predictable and also responsive to local conditions. Importantly, it eliminates the need for revisiting a contentious policy issue year after year. As it stands, twelve states already have indexed their minimum wages, paving the way for more to do the same. A few states, including Nevada and Oregon, have adopted practices that are very close to my recommendations: they have set the minimum wage close to half the median wage, and have also indexed their wage to the CPI.

CITY-LEVEL POLICIES

While state-level minimum wages have been the most common means of allowing for regional variation, city-level policies have become increasingly important in policy discussions. Since major metropolitan areas tend to have both higher wages and higher costs of living, minimum wage add-ons may make sense for large cities.

Table 13-2 considers the twenty largest metropolitan areas in the country. Similarly to the state-level policies, I construct both a median wage–adjusted and a regional price parity–adjusted level of the minimum wage for each of these areas.

As table 13-2 reports, DC, San Francisco, Boston, New York, and Seattle are high-wage metropolitan areas where half of the 2012 full-time median wage was at least as large as $11.85 per hour in 2012 (in 2014 dollars). In another eight metropolitan areas, half the full-time median wage exceeded $10.00 per hour. These metropolitan areas represent a second tier of possible laboratories for experimenting with local supplements. Some of these cities are in areas where local wage standards are preempted, but others are free to pursue policies.

Washington, DC and San Francisco already have local minimum wages, and Seattle recently enacted a city-wide minimum wage policy. New York is actively exploring possibilities. The San Francisco experience has been studied and documented extensively (Dube, Naidu, and Reich 2007, 2014). That city currently requires a minimum wage of $10.55 per hour for all workers within city limits and this new minimum wage has raised pay in the bottom of the distribution. Yet employment growth does not appear to have been adversely affected in that city relative to its surrounding areas, even in a high-impact sector like restaurants. Furthermore, Reich, Jacobs, and Dietz (2014) review the literature on four city minimum wage standards, and find that they were implemented without evidence of adverse effects.

A final consideration for local wage setting is regional coordination. Although existing evidence does not indicate substantial movements of businesses across policy borders to avoid a higher minimum wage, such movements may be more likely at higher levels of the minimum wage. Regional coordination in wage setting across economically connected areas can reduce these risks.

One possibility is a regional collaboration in wage setting, as exemplified in the Washington, DC metropolitan area. DC, Prince George's County (Maryland), and Montgomery County (Maryland) coordinated on a simultaneous minimum wage increase, though the extent of the increase varied by overall wage levels. Similarly, in the San Francisco Bay area, the cities of San Francisco and San Jose have both instituted citywide

TABLE 13-2.

Target Minimum Wage by Metropolitan Area, Adjusted Based on Median Wage and Regional Price Parity

Metropolitan Area	Median Wage–Adjusted (in dollars)	Regional Price Parity–Adjusted (in dollars)	Population (in millions)
Washington, DC–Arlington–Alexandria, DC–VA–MD–WV	13.51	11.73	5.64
San Francisco–Oakland–Hayward, CA	13.37	11.81	4.34
Boston–Cambridge–Newton, MA–NH	12.85	10.87	4.55
New York–Newark–Jersey City, NY–NJ–PA	12.25	11.90	19.57
Seattle–Tacoma–Bellevue, WA	11.85	10.42	3.44
Baltimore–Columbia–Towson, MD	11.66	10.66	2.71
Philadelphia–Camden–Wilmington, PA–NJ–DE–MD	11.59	10.62	5.97
Minneapolis–St. Paul–Bloomington, MN–WI	11.23	10.03	3.35
Chicago–Naperville–Elgin, IL–IN–WI	10.79	10.38	9.46
Detroit–Warren–Dearborn, MI	10.42	9.53	4.30
San Diego–Carlsbad, CA	10.36	11.59	3.10
Los Angeles–Long Beach–Anaheim, CA	10.24	11.51	12.83
St. Louis, MO–IL	10.11	8.66	2.79
Atlanta–Sandy Springs–Roswell, GA	9.85	9.31	5.29
Riverside–San Bernardino–Ontario, CA	9.62	10.35	4.22
Dallas–Fort Worth–Arlington, TX	9.59	9.84	6.43
Houston–The Woodlands–Sugar Land, TX	9.50	9.81	5.92
Phoenix–Mesa–Scottsdale, AZ	9.39	9.71	4.19
Tampa–St. Petersburg–Clearwater, FL	9.07	9.68	2.78
Miami–Fort Lauderdale–West Palm Beach, FL	8.55	10.23	5.56

Sources: Ruggles et al. 2010; Bureau of Economic Analysis n.d.; author's calculations.

Note: Median wage–adjusted values are half of the median real wages (in 2014 dollars) for each metropolitan area in 2010–2012 for full-time, non-self-employed workers using American Community Survey data. Regional price parity–adjusted wages use the Bureau of Economic Analysis regional price parity index for each metropolitan area.

wages; Oakland, Berkeley, and Richmond are currently considering following suit. This type of policy coordination makes both economic and political sense because it reduces cross-jurisdictional competition and the possibility of business relocations.

COSTS AND BENEFITS

The framework for reforming state and local minimum wages would have various positive economic benefits, including higher wages and lower poverty. The costs, such as negative employment effects, are expected to be minimal.

Impact on Wages

Under my proposal, the average minimum wage in 2016 across fifty states would rise from $7.71 per hour to $9.73 per hour in 2014 dollars—a 26.2 percent increase (see table 13-3). An increase in the binding minimum wage would benefit a substantial number of workers: those whose wages would be

TABLE 13-3.

Impact on Poverty by 2016 of Raising State Minimum Wages to Half of the State Median Wage

	Estimate		
	Low	Preferred	High
Baseline statutory minimum wage (in dollars)	7.71	7.71	7.71
Statutory minimum wage under proposal (in dollars)	9.73	9.73	9.73
Change in statutory minimum wage (in percent)	26.2	26.2	26.2
Baseline nonelderly poverty rate (in percent)	15.8	15.8	15.8
Nonelderly poverty rate under proposal (in percent)	15.4	15.0	14.6
Change in poverty rate (in percentage points)	–0.4	–0.8	–1.2
Change in population living in poverty (in thousands)	–1,061	–2,238	–3,366

Source: Dube 2014.

Note: All dollar figures are in 2014 dollars. The statutory minimum wage in this table refers to the population-weighted average minimum wage over all fifty states using the maximum of the state or federal minimum wage for each state. The details of the calculations are available at www.arindube.com/THP_projections.pdf.

directly raised by a higher wage floor, and those whose wages would rise through a ripple effect extending beyond the new wage floor by around 50 percent of the wage increase. For example, if a state raised its minimum wage by $2.00 from $7.25 per hour to $9.25 per hour, workers earning up to $10.25 per hour—$1.00 above the new minimum, or 50 percent of the wage increase—would see their wages rise.

Rises in the minimum wage would affect many workers who are not dependents of older, higher-paid workers. Estimates of a raise in the federal minimum wage to $10.10 per hour indicate that the average age of the impacted worker would be thirty-five, and that the majority (51 percent) of those impacted by a wage increase would be aged thirty or older, while only 13 percent would be aged twenty or younger (Cooper 2013). More than half (55 percent) of those affected by a federal increase would be women, and about the same number (54 percent) would be full-time workers. While only 19 percent of all workers have family incomes less than twice the official poverty line, 50 percent of workers affected by a minimum wage increase would be in such families (CBO 2013). These trends at the federal level would likely persist at the state and local levels as well. In sum, the evidence strongly contradicts the suggestion that the typical affected worker is a teenager working for pocket money. While the minimum wage does not explicitly target individuals from families with very low incomes, most of the gains from the policy will accrue to those with low and moderate incomes.

Impact on Employment

A concern with raising the minimum wage is that businesses will respond by cutting back on hiring, thereby reducing jobs. My review of the academic evidence suggests that this impact will likely be small.

In the 1990s, groundbreaking work by Card and Krueger (1994, 2000) built a case-study approach to studying minimum wages. These authors relied on comparing adjacent states like New Jersey and Pennsylvania when one state increased the minimum wage. In the past decade, the Card and Krueger approach has been generalized and refined. Dube, Lester, and Reich (2010) considered all adjacent counties straddling state borders for which data were available continuously for the full period between 1990 and 2006, and found no evidence of job losses for high-impact sectors such as restaurants and retail. In follow-up work, Dube, Lester, and Reich (2013) used the same cross-border methodology to study the effect on teens and found no discernible impact on their employment; Dube and Zipperer (2014) confirm these findings using a "synthetic control group approach," which is a recent innovation in empirical labor economics. Other researchers have obtained similar results. Addison, Blackburn, and Cotti (2009, 2012) found that once they accounted for trends in sectoral employment, there was no evidence of job loss in the retail or restaurant sectors; recent work by Hoffman (2014) finds no evidence of teen job losses using state-level case studies during the 2000s.

To be sure, some studies in the literature do suggest more-sizable job losses. These include estimates using the state-panel approach pioneered by Neumark and Wascher (1992), as recently discussed in Neumark, Salas, and Wascher (2013). My own view is that this approach is less empirically compelling than the cross-border methodology and other more-sophisticated ways of constructing comparison groups that I have used in my own work, as described above and discussed in Allegretto and colleagues (2013). Overall, I believe the best evidence concludes that the net impact of the proposed increase in the real statutory minimum wage would be likely small, and likely too small to be meaningfully different from zero. In addition, there is growing evidence that increased minimum wages reduce job turnover (see Brochu and Green 2013 and Dube, Lester, and Reich 2013). This finding is largely driven by a reduction in vacancies that result from fewer workers leaving jobs and the easier recruitment of workers into higher-paying jobs.

Impact on Poverty

Minimum wage policies tend to increase incomes of low- and moderate-income families. However, the antipoverty aspect of the minimum wage is limited because many families under the poverty line do not have substantial attachment to the labor force. A review of past research finds that, on average, a 10 percent increase in the statutory minimum wage leads to a 1.5 percent reduction in the number of individuals in poverty (Dube 2014).

My own analysis uses more and more-recent data, along with a wider range of statistical techniques than the existing studies, and finds that a 10 percent increase in the minimum wage would reduce the poverty rate among the nonelderly population by between 1.2 and 3.7 percent, with the best estimate suggesting a reduction of 2.4 percent (Dube 2014). In particular, robust evidence shows that an increase in the minimum wage raises family incomes for the bottom 20 percent of the family income distribution. Strong evidence also finds that not just the incidence of poverty but also the depth of poverty would be reduced, as measured by the poverty gap.

Overall, the evidence suggests that the poverty reduction effects are somewhat larger in magnitude for African-American or Hispanic individuals, and for children under age eighteen. The effects are somewhat smaller for single mothers and for younger adults. However, the impacts are larger in magnitude for young adults with no more than a high school diploma.

As mentioned above, the statutory minimum wage averaged over all fifty states would rise 26.2 percent by 2016 under my proposal. Dube (2014) provides a range of estimates for how the poverty rate responds to a higher minimum wage. These estimates, along with state-by-state projected increases in the minimum wage, suggest that the poverty rate among the nonelderly would fall by anywhere between 0.4 and 1.2 percentage points, representing between 1.1 and 3.4 million fewer individuals in poverty. The best estimate suggests that the national nonelderly poverty rate would decline from 15.8 percent to 15.0 percent, and 2.2 million fewer people would live in poverty.

Questions and Concerns

What about the federal minimum wage?

The federal minimum wage plays an important role in setting a nationwide standard. However, a one-size-fits-all approach creates avoidable trade-offs: states as dissimilar as Massachusetts and Mississippi have different capacities to absorb a minimum wage of, say, $11.00 per hour, and a single minimum wage has to balance the needs of states at both ends of the spectrum. By allowing some variation across states, we can raise, say, the Massachusetts minimum wage to a reasonably high level while not putting, say, Mississippi at risk. Leaving minimum wage setting altogether to states, however, will mean that patterns will reflect the vagaries of politics across fifty states. For example, in spite of the popularity among voters of raising the minimum wage, state legislatures do not do so in a regular fashion, and many states have implemented such policies only via costly ballot initiatives. Therefore, the lack of a federal standard can subject low-wage workers in many states to a substantial amount of risk. A moderate level of federal minimum wage, coupled with state-level add-ons, offers a judicious balance.

Are there more-efficient or generally better ways to alleviate poverty?

Increases in the minimum wage have been shown to substantially aid low-income families; most of the gains from the policy accrue to low- and moderate-income families. At the same time, it is also true that the policy specifically targets low-wage workers and not individuals in poverty. Were we to assess public policies based only on their efficacy in reducing poverty, we should prefer more-targeted policies like cash transfers, SNAP, and programs that raise the employment rate for highly disadvantaged groups. The EITC, in particular, is well-targeted at those with very low incomes. It is important to point out, however, that as currently structured, the EITC provides only minimal assistance to adults without children, and may hurt some childless adults through a negative incidence on wages. Because the EITC increases the labor supply, 27 cents of every dollar of EITC

spending accrue to employers as lower wages (Rothstein 2010; Lee and Saez 2012). Moreover, raising funds for the EITC by taxing higher-income individuals also entails efficiency costs, which suggests an additional rationale for raising pretax earnings for low-wage workers (Hendren 2014). For these reasons, it makes sense to combine programs like the EITC with a minimum wage increase.

Is there enough empirical evidence to support increasing the minimum wage to half the full-time median wage?

The proposed increase of the minimum wage to half the full-time median wage does go somewhat above the range from which we can draw the best empirical evidence. This obstacle is difficult to avoid given the rather low levels of minimum wages since 1980. A number of additional factors make it reasonable to apply the existing estimates when evaluating this proposal, however. First, an increase in the minimum wage from 41 percent to 50 percent of the median full-time wage, while substantial, is still cautious. It maintains the ratio within both historical and international bounds. Second, existing U.S. evidence that suggests small employment effects is based on a number of states (e.g., Nevada, Oregon, Vermont) that have all raised their state minimum wages to levels that surpass 46 percent of their median full-time wage. Finally, evidence from the United Kingdom suggests that raising the minimum wage close to the median full-time wage is not associated with sizable effects on employment (Manning 2012).

Would raising the minimum wage affect prices?

A higher minimum wage could lead to higher prices, especially for industries that employ high levels of low-wage labor. To date, the clearest evidence on the effects on prices comes from Aaronson, French, and MacDonald (2008), who find that a 10 percent minimum wage increase would raise fast-food prices by around 0.7 percent. On average, my proposal would raise fast-food prices by under 2 percent. While restaurant prices will see likely increases from minimum wage increases, the overall price level (e.g., the CPI) is unlikely to be noticeably affected by minimum wage hikes.

Conclusion

Minimum wage policies are not an antipoverty panacea. They do, however, tend to raise wages for America's lowest-paid workers—making an adequate minimum wage an important pillar of a national antipoverty agenda. Under my proposal, the poverty rate would likely decline by a little under 1 percentage point, meaning that 2.2 million fewer individuals would live in poverty.

Setting the state and local minimum wages close to half the median full-time wage is a well-balanced policy option. Such a target is close to both U.S. experiences during the 1960s and 1970s and to current practice in advanced industrialized countries. While it pushes the minimum wage beyond the experience over the recent period in this country, it does so in a measured fashion. In addition, states and localities should consider the local cost of living when setting minimum wage policy and should index wage levels for inflation. Incorporating all of these criteria into minimum wage laws would lead to substantially higher wage floors in a subset of states: based on a half-median wage standard, fourteen states would have a minimum exceeding $10.00 per hour, while based on cost-of-living considerations, ten states would do so.

Possible negative impacts of a higher minimum wage can be mitigated with regional wage coordination—localities can cooperate to set adequate minimum wage policies. This strategy, combined with minimum wage laws that set the wage floor based on local economic conditions, can lead to lower poverty, reduced inequality, and more-adequate wages, all while mitigating the potential negative impacts on employment.

Proposal 14: Smarter, Better, Faster: The Potential for Predictive Analytics and Rapid-Cycle Evaluation to Improve Program Development and Outcomes

Scott Cody
Mathematica Policy Research

Andrew Asher
Mathematica Policy Research

Introduction

Public administrators have always been interested in identifying cost-effective strategies for managing their programs. As government agencies invest in data warehouses and business intelligence capabilities, it becomes feasible to employ analytic techniques used more-commonly in the private sector. Predictive analytics and rapid-cycle evaluation are analytical approaches that are used to do more than describe the current status of programs: in both the public and private sectors, these approaches provide decision makers with guidance on what to do next.

Predictive analytics refers to a broad range of methods used to anticipate an outcome. For many types of government programs, predictive analytics can be used to anticipate how individuals will respond to interventions, including new services, targeted prompts to participants, and even automated actions by transactional systems. With information from predictive analytics, administrators can identify who is likely to benefit from an intervention and find ways to formulate better interventions. Predictive analytics can also be embedded in agency operational systems to guide real-time decision making. For instance, predictive analytics could be embedded in intake and eligibility determination systems, prompting frontline workers to review suspect client applications more-closely to determine whether income or assets may be understated or deductions underclaimed.

Rapid-cycle evaluation, another decision-support approach, uses evaluation research methods to quickly determine whether an intervention is effective, and enables program administrators to continuously improve their programs by experimenting with different interventions. Like predictive analytics, rapid-cycle evaluation leverages the data available in administrative records. It can be used to assess large program changes, such as providing clients with a new set of services, as well as small program changes, such as rewording letters that encourage clients to take some action. This type of formative evaluation can be contrasted with the summative program evaluations familiar to many in the policy community. Summative program evaluations often assess whether a program has an impact by comparing program participants with nonparticipants. Rapid-cycle evaluation uses similar techniques, but does not examine the overall impact of the program. Instead, it assesses the impacts of changes to the program by comparing some program participants (with the change) to other program participants (without the change).[1] For example, rapid-cycle evaluation can determine whether an employment training program can use text message prompts to encourage more clients to successfully complete program activities. In this way, rapid-cycle evaluation can identify incremental changes that make the program more effective for its clients, increasing the likelihood that a subsequent summative evaluation would identify large impacts relative to individuals not in the program.

We believe that these techniques can be used to help government programs—including social service programs serving low-income individuals—to improve program services while efficiently allocating limited resources. We believe that the use of predictive modeling and rapid-cycle evaluation—both individually and together—holds significant promise to improve programs in an increasingly fast-paced policy and political environment.

We propose that social service agencies take two actions. First, agency departments with planning and oversight responsibilities should encourage the staff of individual programs to conduct a thorough needs assessment. This assessment should identify where predictive analytics and rapid-cycle evaluation can be used to improve service delivery and program management. The assessment should also evaluate whether the benefits of adopting these tools outweigh the costs, resulting in a recommendation of whether and how these tools should be deployed. Second, federal agencies should take broad steps to promote the use of predictive analytics and rapid-cycle evaluation across multiple programs. These steps include investments in data quality and data linkage, as well as measures to support and promote innovation among agency staff.

The Challenge

Our proposal is based on the simple assumption that government programs could do better. This seems self-evident: despite decades of antipoverty efforts, the reality is that unemployment and underemployment, low food security, high poverty rates, and related problems persist. Rigorous evaluations of federal social programs show that many programs have little or even no impact on program participants.

In fact, even those programs held up as examples of proven, evidence-based programs demonstrate that government programs could do better. For example, the Coalition for Evidence-Based Policy identifies top-tier social programs with rigorous evidence of effectiveness, such as the Nurse-Family Partnership, Nevada's Reemployment and Eligibility Assessment Program, the Transitional Care Model, and other programs (Coalition of Evidence-Based Policy 2012). Multiple randomized controlled trials on each of these programs show positive impacts on client outcomes. But even this positive evidence suggests these programs could be more effective. A systematic review of research on the Nurse Family Partnership program concludes that there is evidence of a positive impact on only seven of the twenty-five measures of child maltreatment, and on only five of the fifty-nine measures of child development and school readiness (U.S. Department of Health and Human Services n.d.). The Nevada Reemployment and Eligibility Assessment Program increased employment among participants, but only modestly: 52 percent of program participants were employed, which is higher—but not substantially higher—than the rate in the control group, in which 48 percent of participants were employed (Michaelides et al. 2012). In short, even programs highlighted as success stories have room for improvement. They could benefit more clients and they could have a larger impact on the clients they benefit.

The administrators of these and other programs are constantly seeking ways to improve outcomes. Some administrators seek to match clients with the right services. But without the right analytic tools, these administrators cannot determine if their services are targeted as effectively as possible. Other administrators seek to test new procedures aimed at improving program services. But again, without the right analytic tools, these administrators may get biased results, leading them to implement ineffective changes or to dismiss effective ones. In the end, progress toward program improvement is slow, and programs end up spending resources inefficiently and leaving participants underserved.

A New Approach

Because predictive analytics and rapid-cycle evaluation have the potential to improve program effectiveness, we believe that social service agencies should conduct thorough needs assessments to identify, program by program, where these tools can be used. The needs assessments should examine the quality of existing program data to determine whether they are robust enough for use in predictive analytics and rapid-cycle evaluation. The assessments should also examine whether and how programs can deploy predicted outcomes operationally in a way that improves program performance. Furthermore, they should assess whether and to what extent experiments can be conducted to test changes in program operations. In addition to conducting program-level needs assessments, agencies should also take steps to promote the use of these tools broadly across multiple programs. These steps could include investments to improve data systems, improve data governance, and promote a willingness among program staff to test program innovations.

To inform the needs assessment, this section begins with an explanation of how predictive analytics and rapid-cycle evaluation can be deployed in the administration of public programs. These tools are not commonly used at this time. Where possible, we provide real-world examples of the application of these tools. We supplement these examples with a discussion of potential applications. Agencies should

consider these real-world and potential applications when conducting their needs assessments.

PREDICTIVE ANALYTICS

At the individual level, predictive analytics leverages the fact that key outcomes and outputs for program clients are often correlated with the client's prior behaviors, circumstances, and characteristics, as well as those of the client's family, associates, service providers, and surroundings. By examining these correlations, predictive analytics methods can be used to rank program clients based on the likelihood that an outcome, whether positive or negative, will occur.

For example, an analysis predicting which participants of a job training program are likely to find employment might leverage existing information about the clients' education levels and their attendance at job training sessions. The model might tap these factors and other information to rank participants on the likelihood that they will find employment. Using these rankings, program administrators could decide, based on their goals and resource constraints, the exact sub-population that they want to target with their additional services. Depending on their program's objectives, administrators might focus on individuals most likely to find employment, or might target additional services to individuals less likely to find employment.[2]

Below we describe two key uses of predictive analytics for policymakers: (1) identifying program participants at risk of an adverse event and (2) predicting the optimal service path for an individual. We then discuss deploying predictive analytics to impact decision making.

IDENTIFYING PROGRAM PARTICIPANTS AT RISK OF AN ADVERSE EVENT

Program administrators can use predictive analytics to identify clients who are at risk of an adverse outcome such as unemployment, fraud, unnecessary hospitalization, mortality, or recidivism. Knowing which participants are most likely to experience an adverse outcome, program staff can provide targeted interventions to reduce the likelihood that such outcomes will occur.

Reducing readmission rates for certain patients discharged from the hospital provides an example of how predictive analytics can be used effectively. Reasons for unplanned readmissions can include clinical and social factors, such as patients' timely access to quality primary health-care services, their underlying conditions, whether they are homeless, and whether they lack social support and other factors that affect their ability to recuperate at home without incident (Peikes et al. 2012–13). If Medicaid programs could anticipate which patients are likely to be readmitted, they could intervene to address some of the factors contributing to the higher likelihood of a repeat visit. This would enable the patients to avoid another hospitalization while the Medicaid program would avoid paying for expensive hospital care.

Researchers at New York University have developed such a predictive model to identify a combination of characteristics and circumstances that indicate an elevated risk that a New York Medicaid beneficiary discharged from a hospital will return within one year (Raven 2009; Raven et al. 2009). New York City Health and Hospitals Corporation is using this model within its operational systems to screen admitted patients and identify interventions for those most likely to be readmitted for a preventable reason (Evans 2011).[3]

A similar approach could be used to prevent recipients of public assistance benefits from letting their eligibility lapse. Assistance programs such as the federal Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp Program, require beneficiaries to demonstrate eligibility through a periodic recertification process. If clients do not complete the recertification process, their benefits are terminated. Clients often do not reapply for the program until they realize their benefits have been terminated. This creates two problems. First, clients who are eligible for assistance forgo benefits for one or two months until they reapply. Second, the program must bear the costs of processing a new application—which is more expensive than recertification. State agencies that administer the federal SNAP program could use predictive analytics to identify clients at risk of such churning. What would be required, beyond the tested and validated analytics themselves, is that the models be built directly into the case maintenance systems. Identifying these at-risk clients prior to the redetermination would enable program administrators to direct targeted, intensive communication efforts to these clients to prevent churning and help the clients maintain benefits while saving program funds.

Other potential areas for using predictive analytics include enforcement and fraud detection applications. For example, some child support enforcement agencies are developing predictive models to identify noncustodial parents who will not make their child support payments. This information can be used to triage enforcement efforts, making sure fewer resources are devoted to collection efforts against those who will ultimately pay without enforcement and identifying those who are likely to pay in response to more-aggressive efforts.

In addition, predictive analytics can be used to identify provider, client, vendor, and billing entity fraud patterns in health-care and social service programs. In SNAP, for instance, geographic patterns of electronic benefits transfer

redemption and historical investigative data can be used to predict which program clients and retailers may be engaged in benefit trafficking (exchanging SNAP benefits for cash at a discount).

PREDICTING OPTIMAL SERVICE PATHS

Many government programs have different approaches to working with clients to achieve the same outcome. For example, there are multiple approaches to preventing recidivism among juvenile offenders, encouraging preventative health care, and boosting the parenting skills of new mothers. These paths may differ in the services involved or the time at which the services are offered. Under the right circumstances, predictive analytics can be used to determine which approaches are most likely to benefit which clients. Administrators can then identify the optimal service path for a client among the available options.

Consider a caseworker trying to find the right jobs program for a nineteen-year-old unemployed man with no high school diploma. This caseworker can enroll the individual in a low-intensity résumé support and job search program, a more-intensive program teaching specific manufacturing skills, or even a very intensive apprenticeship program. Each path has a different cost, and possibly a different outcome, for this individual. The caseworker's job is to match the program to the individual's background and interests. Combining this information—which is readily known at intake—with a prediction, based on which programs are associated with success for similar clients, could yield a better match between client and services, increasing the likelihood that the client will find employment and reducing the likelihood of wasting funds on ineffective training. Many agencies are interested in developing optimal service path predictions, yet in practice few exist. We believe there is an opportunity for optimal service path modeling to benefit the clients of public programs.

RAPID-CYCLE EVALUATION

Rapid-cycle evaluation, another tool that supports decision-making, is increasingly used in public programs with readily available administrative data and the ability to analyze those data in a rapid, cost-effective manner. This type of evaluation uses rigorous experimentation to test changes in agency operations.[4] To determine any impacts from the changes, administrators can compare client outputs and outcomes with those for other clients who are included in the evaluation but continue to receive regular services. The evidence from these tests can be more reliable than other sources, such as feedback from staff, complaints from selected clients, or anecdotes from other agencies.

To better understand how rapid-cycle evaluations can be used to test changes, it is useful to consider the three defining terms:

1. **Rapid.** The "rapid" means that the impact of the intervention will be identified quickly. To facilitate rapid identification of results, the outcomes of interest should be observable in administrative data. This eliminates the time-consuming process of collecting new data. Additionally, any impacts of the intervention should be observable within a short time frame. For example, it would not be possible to rapidly assess whether an intervention delivered to ninth-grade students leads more of those students to graduate from high school.

2. **Cycle.** The "cycle" refers to the iterative nature of the tests. Rapid-cycle evaluations can support a formative, continuous improvement model in which an intervention is tested, the results are examined, the intervention is modified if needed, and the modified intervention is tested again or a new intervention is tested.

3. **Evaluation.** The "evaluation" refers to the use of rigorous research techniques that generate confidence that observed changes in outcomes are due to the intervention and not to other factors (such as differences between the group that received the intervention and the group that did not).

This approach has been used by businesses for years to continuously improve the match between customers and services. For example, Capital One claims it runs more than 30,000 experiments each year to help identify the techniques that cause customers to sign up for new credit cards as well as techniques that encourage customers to pay Capital One back (Davenport and Harris 2007). The company experiments with changes in interest rates, promotional incentives, and even the color of the envelopes used in customer mailings.

Rapid experiments are used in the public sector as well to test a variety of program interventions, including changes in staff procedures, the services provided to clients or customers, and when and where those services are provided. Rapid-cycle evaluations of experiments can assess whether the interventions meet goals such as improving (1) the agency's ability to serve more clients, (2) the quality of information agencies get from clients, (3) client outcomes, and (4) agency efficiency. It is sometimes possible to test numerous variations of program services simultaneously. Box 14-1 shows how experimentation and rapid-cycle evaluation can fit into overall program operations by presenting applications used by New York City Human Resources Administration.

In some cases it may not be feasible to collect the necessary outcome data. For example, target outcomes may occur too far in the future to be examined in a rapid experiment (e.g., the eventual graduation of ninth graders). It may still be feasible, however, to employ rapid-cycle evaluation by looking at impacts on intermediate outcomes (such as class

BOX 14-1.

New York City Human Resources Administration

Agencies such as the New York City Human Resources Administration (HRA) have deployed rapid-cycle evaluation to improve program services. HRA recently tested new administrative procedures to increase the establishment of child support for children receiving cash assistance (Dinan 2013). Since court appearances are assumed to be a deterrent to establishing child support, the agency tested new procedures that would avoid a court appearance for the noncustodial parent. The agency's goal was to increase the percentage of these children with established child support orders, reduce the time needed to establish orders, and increase the proportion of noncustodial parents that comply with their established orders. HRA staff developed a simple random assignment process for determining which cases were eligible for the new procedures, and trained frontline workers to administer the pilot. The analysis showed the new procedures were unsuccessful. The rate of child support order establishment for the treatment group (57.3 percent) was essentially the same as the rate for the control group (56.5 percent). Moreover, it took longer to establish those child support orders established through the new procedures.

HRA also used experimentation to test streamlined procedures for investigating Medicaid eligibility fraud (Weinberg 2013). These streamlined procedures were designed to reduce the number of steps needed to investigate potentially fraudulent Medicaid enrollees. They used a four-month random assignment experiment to evaluate the impact of these new procedures. Although the new procedures reduced the time spent investigating cases by 12 percent, fraud investigations conducted with the streamlined procedures were less likely to be successful. Fraud was established for 44 percent of cases investigated through streamlined procedures, compared with 61 percent of those investigated through status quo procedures.

In both of these experiments HRA's new procedures proved unable to achieve the desired impact. But in each case HRA clearly and quickly established that the procedures were unsuccessful without having to implement these new procedures program-wide.

attendance and grades), as well as program outputs (such as the amount and quality of services provided). Such rapid experiments and rapid-cycle evaluations can often still help improve program services.

Rapid-cycle evaluation also could be used to measure real responses to potential policy changes. For example, programs like SNAP and Temporary Assistance for Needy Families (TANF) have numerous eligibility criteria and other regulations that are often debated by policymakers. These include deduction amounts, certification period lengths, benefit formulas, reporting thresholds for income changes, and even the required number of hours for participation in work programs. When the changes to these regulations are discussed, policymakers debate whether these changes will lead to higher or lower participation rates, and whether they will lead to longer program dependence or encourage employment. Rapid-cycle evaluation has the potential to generate rigorous, reliable information that can take the guesswork out of these policy debates. Regulatory changes can be tested to identify—and quantify—clients' behavioral response to these changes. This information can ensure that regulatory changes better meet policymakers' goals.

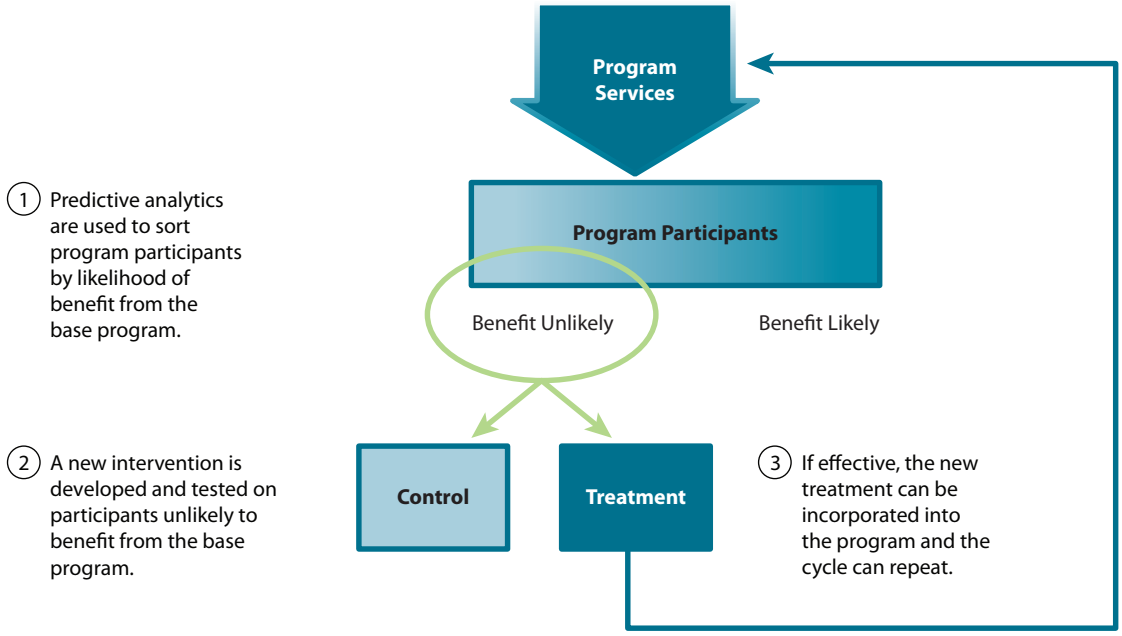
The greatest benefit of rapid-cycle evaluations to the agencies is the rigorous nature of the evaluation, which can replace other, nonexperimental techniques for assessing programmatic changes. For example, programs may pilot new procedures with all staff in a single location. In such cases, it is often not possible to know whether differences in outcomes are caused by the new procedures or simply by the unique circumstances of that location. This can lead program administrators to the false conclusion that a new procedure has promise, only to learn there is no benefit once it is implemented agency wide. Alternatively, it can lead them to reject a procedure that actually has promise.

COMBINING PREDICTIVE ANALYTICS AND RAPID-CYCLE EVALUATIONS

Predictive analytics and rapid-cycle evaluations can be combined to help program administrators build better interventions. Predictive analytics allow administrators to anticipate which individuals are most (and least) likely to benefit from a program. These predictions can help program administrators guide the formulation and scope of the interventions, and determine the group or subgroups to which they would apply. By creating targeted experiments, program

FIGURE 14-1.

Combining Predictive Analytics and Rapid-Cycle Evaluation: A Simplified Example



administrators can identify a series of effective, tailored interventions to maximize their ability to make an impact.[5]

Consider a program administrator seeking to test new approaches for reaching hard-to-serve clients. Initial predictive models could identify which of the program's current clients are least likely to benefit from the program, and could separate the clients into treatment and control groups. New interventions (or potentially multiple variations of the same intervention) could be tested rapidly and, if effective, could be incorporated into service delivery. After the new interventions operate for sufficient time, the entire cycle could be repeated (see figure 14-1) or applied to a different subgroup of program participants.

The new procedures can also be tested on individuals who are likely to benefit from the program. Such tests can help administrators determine whether new approaches would yield even greater improvements for individuals positioned to benefit the most from program services. Some administrators may view targeting those most likely to benefit as the most effective way to achieve gains for participants and improve the program's overall success.

For illustration, consider the hospital readmission prediction model mentioned earlier. A predictive model could be used to identify at-risk patients who are most likely to return to a hospital within one year. If program administrators want to test two different interventions for these at-risk patients, they could randomly assign the at-risk patients to one of three groups—one for each of the two interventions plus a control group—that receive the hospital's normal discharge planning and other services. The team would then monitor hospital admission rates for three months and assess whether the new interventions cause a significantly lower readmission rate. Any successful intervention could be integrated into program operations; the unsuccessful ones could be discarded.

If multiple interventions prove successful, program administrators could implement all of them or choose one based on cost and potential sustainability. The predictive model could be rerun and follow-up analysis could suggest new, tailored interventions for the remaining at-risk population. These interventions could be formulated and tested as in the previous cycle, evaluated, and either discarded or included in program operations.[6]

THE POLICY PROPOSAL

We propose that federal social service agencies take two actions. First, agency departments with planning and oversight responsibilities should encourage the staff of individual programs to conduct thorough needs assessment. This assessment should identify where predictive analytics

and rapid-cycle evaluation can be used to improve service delivery and program management.

For predictive analytics, program administrators should assess:

- Whether predictions about specific client and program outcomes could be employed to target program services;
- Whether the program's current administrative data contain accurate, valid, and reliable measures of those outcomes—as well as valid and reliable measures of information that could predict those outcomes—to support predictive modeling; and
- The magnitude of systems enhancement efforts required to enable frontline workers to use the results of predictive models in real-time when they interact with clients.

For rapid-cycle evaluation, program administrators should assess:

- Whether program changes under consideration would benefit from precise, causally-valid impact estimates generated through rapid-cycle evaluation. The assessment can rely not only on program staff, but also on funders and outside experts to identify program features that they believe would be beneficial to test but were not sure should be implemented permanently without assessment;
- Whether program operations can be modified to facilitate experimentation of these program changes;
- What types of investments in data and systems would be required to deploy predictive analytics and rapid-cycle evaluation together as an integrated strategy;
- What types of programmatic waivers and other policy changes would be needed to facilitate predictive analytics and rapid-cycle evaluation; and
- Whether it would be beneficial to use predictive analytics to subset the program population, and to test program changes on different types of individuals (e.g., those most likely to benefit from current services).

The answers to each of these questions will vary by program. The assessment also should evaluate whether the benefits of adopting these tools outweigh the associated costs. In the end, the assessment should contain a recommendation of whether and how these tools should be deployed.

The second step agencies should take is to promote the adoption of predictive analytics and rapid-cycle evaluation more broadly across programs. We recommend that agencies take the following steps:

1. Help programs make individual-level data available for analytics. Individual-level data provide the best foundation for predictive analytics and rapid-cycle evaluation. These data can be obtained through internal operational systems maintained by the program, or through integrated data systems that combine administrative data across programs. A broad investment in data can facilitate predictive analytics and rapid-cycle evaluation and can promote the use of these tools across multiple programs.

   Federal agencies can help more programs benefit from these analytic tools by facilitating improvements to individual-level administrative data, and ensuring that those data are available for analytic purposes. Some agencies are already taking the lead in this respect. For instance, the Department of Education provided grants to promote the development of statewide longitudinal education data, and the Centers for Medicaid and Medicare Services funded data warehouses to help states manage all aspects of their Medicaid and Children's Health Insurance Programs. Agencies can also use their expertise to help programs identify the key measures to track for prediction and evaluation on an ongoing basis.

2. Improve data governance and facilitate data sharing. Although high-quality data are necessary, agencies also need strong data governance policies that establish accountability for data quality and that define the terms for how and where data are used (see Digital Services Advisory Group 2012). In addition, as part of data governance efforts, agencies should work to actively support efforts to link data across programs, which involves often-challenging technical and legal considerations. That said, linked data can provide a more comprehensive understanding of the services received and circumstances faced by clients, and provide more-accurate predictions and a more-complete understanding of the impact of rapid-cycle experiments.

3. Encourage analytic decision making. The use of predictive analytics and rapid-cycle evaluation requires an organizational commitment to testing program improvements. This means agency staff must develop program innovations—but be willing to abandon those innovations if they prove unsuccessful. For many program staff, this is a change in mindset from a focus on assessment of their program (and compliance with funder guidelines needed to properly evaluate their programs) to a focus on how to improve the programs and empower program administrators. Federal agencies can help foster innovation by providing performance-

based funding opportunities for program improvements.

Predictive analytics and rapid-cycle evaluation can be effective in part because they empower frontline staff to determine the services that best meet their clients' needs. However, the lessons learned for individual programs can be valuable to other programs serving these same populations. Agencies can further the effectiveness of these tools by ensuring successful efforts are highlighted, and their lessons broadly disseminated.

We believe that by taking these steps, federal agencies can help promote the use of these analytic tools at the federal, state, and local levels.

COSTS AND BENEFITS

Predictive analytics and rapid-cycle evaluation have a number of benefits. In particular, greater use of these tools would increase program effectiveness by reducing wasteful and inefficient spending. Even where the proposal results in an increase in direct outlays in one phase of a program's intervention, these outlays may generate net savings. Moreover, these analytical innovations would allow programs to fulfill their missions more effectively by better targeting their intended beneficiaries and helping them continually identify and implement cost-effective interventions.

That said, adopting these tools can require significant investments at a time when government budgets are under pressure. Developing the data and technology infrastructure necessary to deploy these analytical capabilities—if they are not already present—is expensive, as are, to a lesser extent, the resources needed to perform these analytics. For example, what may be considered to be the gold standard for data infrastructure—a full-featured, enterprise-wide data warehouse that integrates data across programs and is refreshed on a weekly basis—can cost several million dollars to build, and millions more annually to staff with dedicated maintenance and analytical personnel. Less-expensive data systems, such as purpose-specific analytical datamarts within existing warehouses or standalone databases focused on specific questions, may be more feasible and more appropriate in some cases.

As part of their needs assessments, agencies should assess the costs of any changes needed to deploy predictive analytics and rapid-cycle evaluation. In addition to data infrastructure costs, agencies should examine the costs associated with training staff, as well as the costs of altering program operations to incorporate predictive analytics and to implement rapid-cycle experiments and evaluations.

Agencies should compare these projected costs with the potential benefits obtained from these tools. In many cases, the benefits will include long-term savings in program administrative costs because the tools render the program more efficient. Other important benefits, however, such as improvements to the quality, availability, and access to services, should also be considered.

In the end, we believe that the benefits of predictive analytics and rapid-cycle evaluation will be substantial for many programs. We believe that this potential may warrant significant investment in these tools for many programs. For virtually all programs, however, we believe that this potential warrants the costs of conducting a needs assessment.

Questions and Concerns

In this section we examine some of the factors that could affect an agency's ability to adopt predictive analytics and rapid-cycle evaluation by posing and addressing a series of key questions and concerns.

What data resources are necessary for the use of these tools?

Programs with advanced information systems that contain individual-level administrative data are better suited to deploy predictive analytics and rapid-cycle evaluation with minimal investment. For example, in many states sophisticated cross-program data warehouses have been developed to support a wide array of Medicaid and social service program monitoring needs. These systems are rapidly updated and could be easily used for both predictive analytics and rapid-cycle evaluation. For other programs, administrative data obtained from transactional systems can provide an important source of information. These programs would require additional investment to create analytics-ready data repositories through the extraction, transformation, and storage of the data.

It is important to note that predictive analytics require historic observations of key outcomes. This means that programs developing new systems may not be able to perform predictive analytics until the system has captured enough history. Similarly, programs extracting data from transactional systems would need to extract a sufficiently large volume of historical data in order for predictive analytics to be effective.

Who would implement these tools?

The program managers and staff in agencies directly responsible for program delivery would implement these tools. To be successful, the implementation of these tools requires a division of labor. Program administration staff—both program operators and those working in support of

them at federal and state agencies—need to determine which interventions are worth implementing and figure out how to do so. These program experts need to be supported by analytical specialists who are charged with designing the predictive analytics and assessing the results of the experiments through the rapid-cycle evaluations. Such a partnership allows this approach to become feasible and avoid burdening those with the pressing responsibility of running programs.

Can predictive analytics be wrong?

Yes. Predictive models detect patterns, but not every individual will follow that pattern. This can lead to incorrect predictions. Administrators can take several steps to minimize problems stemming from inaccuracies in predictive models.

First, predictive models should be subjected to extensive validation. For adverse event situations, such as hospital readmissions or fraud, models should be deployed historically so that their ability to predict known outcomes can be assessed. Through repeated retrospective testing, use and learning, the models can be improved, often to the point where they can be used prospectively.

Second, it is important to ensure model predictions are followed up by human judgment. Whether it is identifying clients who should receive a caseworker visit or those who may be defrauding the government, predictive analytics should be used to prioritize cases; staff should make the final determination. Similarly, even after optimal service paths are predicted, clients should still have a say in the services they receive.

Conclusion

As integrated data repositories become common in government agencies, program administrators have become comfortable using these data to monitor their programs. Now administrators are poised to expand the use of analytics to better decide what to do next. Predictive analytics and rapid-cycle evaluation, if used individually but especially if used together, can help agencies provide services where they are needed and develop more-effective approaches for improving program outcomes.

Authors

Katharine G. Abraham

Professor, Department of Economics and Joint Program in Survey Methodology, University of Maryland

Katharine Abraham is a professor in the department of economics and in the Joint Program in Survey Methodology at the University of Maryland. Abraham first joined the University of Maryland faculty in 1987 after holding prior positions at Massachusetts Institute of Technology's Sloan School of Management and the Brookings Institution. She served two terms as Commissioner of the Bureau of Labor Statistics and, more recently, was a member of the President's Council of Economic Advisers. Among other honors and awards, she is an elected fellow of the American Statistical Association and of the Society of Labor Economists. She received her doctorate in economics from Harvard University. Abraham has studied and written about work-sharing policies, unemployment, and job openings; the operation of internal labor markets; the effects of financial aid on the decision to attend college; the work and retirement decisions of older Americans; and the measurement of market and nonmarket economic activity. From 2002 to 2004, Abraham chaired a National Academy of Sciences panel on accounting for nonmarket activity; its report, Beyond the Market, was published in 2005 by the National Academies Press.

Karen L. Anderson

Managing Director, The Hamilton Project

Karen Anderson is the managing director of The Hamilton Project, a position she has held since 2006. From 2008 to 2009, she served as chief of staff at the President's Council of Economic Advisers. Prior to joining The Hamilton Project, Anderson was a vice president of State and Local Government Relations for Citigroup. She previously served in the White House Office of Political Affairs from 1993 to 1995. Anderson holds a master's in public policy from the Kennedy School of Government at Harvard University and a bachelor's degree in economics from Agnes Scott College.

Andrew Asher

Senior Fellow, Health Policy Division, Mathematica Policy Research

Andrew Asher is a senior fellow at Mathematica and with extensive experience in health care management and data analytics—the use of data to help agencies and health care payers strengthen the integrity of their programs, realize cost savings, and improve program outcomes. He is one of the leaders of Mathematica's data analytics initiative and his expertise includes program integrity, health policy, health program development, big data, and developing strategies to help agencies improve their performance. He is nationally recognized for developing and implementing innovative data-driven approaches to help health care purchasers and insurers reduce fraud and abuse and manage their costs effectively. He rejoined Mathematica in 2013 after serving as vice president and director of government solutions at OptumInsight from 2007 to 2013 and in various leadership roles with the state of Illinois. From 2001 to 2007, he served as the manager of the Fraud Science Team within the Illinois Department of Healthcare and Family Services' Office of Inspector General, a group whose innovative fraud detection and prevention work was featured in Government Accountability Office and Center for Medicare and Medicaid Services best practice reviews. Asher was a health researcher and analyst at Mathematica from 1989 to 1994 and holds a master's in public policy from the University of Michigan.

Jillian Berk

Senior Researcher, Mathematica Policy Research

Jillian Berk is a senior researcher and associate director of research at Mathematica Policy Research. Her research examines employment and training programs for economically vulnerable populations, including dislocated workers, older workers, workers with disabilities, and ex-offenders. Recent projects include the national evaluation of Trade Adjustment Assistance program, an evaluation of the Virginia Community College System's efforts to better meet the education and training needs of adult students, an evaluation of U.S. Department of Labor-funded youth offender programs, and a study on the impact of the subsidization of COBRA health insurance on the take-up of coverage and other health and employment outcomes. She holds a doctorate in economics from Brown University.

Elizabeth U. Cascio

Associate Professor, Department of Economics, Dartmouth College

Elizabeth Cascio is an associate professor of economics at Dartmouth College; a research associate in the programs on Education, Development of the American Economy, and Children at the National Bureau of Economic Research; and a research fellow at the Institute for the Study of Labor. Her research is on the economics of education. A central goal of her research to date has been to understand the implications of a series of historic policy changes that began in the 1960s, including the large wave of state subsidization of early education and the introduction of progressive federal funding for K–12 education. She has also studied early education policy in the modern era. Her work has been funded by the Spencer Foundation and the National Science Foundation and has been published in the *Quarterly Journal of Economics*, *American Economic Journal: Economic Policy*, *The Journal of Human Resources*, and the *Journal of Urban Economics*, among other outlets. She received her doctorate in economics from the University of California, Berkeley, in 2003.

Scott Cody

Vice President and Director of Human Services Research, Mathematica Policy Research

Scott Cody is a vice president and director of human services research in Mathematica's Cambridge, Massachusetts office. He is a national expert in the Supplemental Nutrition Assistance Program (SNAP). He led the first major in-depth study of state efforts to modernize enrollment procedures for programs like SNAP, Temporary Assistance to Needy Families (TANF), and Medicaid. His research also has examined the determinants of SNAP participation. He led an impact evaluation of efforts to increase program participation among the elderly, and multiple studies to identify the circumstances that lead individuals to enter and exit SNAP. Cody played a central role in adapting Mathematica's SNAP policy simulation model to reflect major changes in program policy. In addition to research on SNAP, Cody is the deputy director of the What Works Clearinghouse (WWC). The WWC is an initiative of the U.S. Department of Education's Institute of Education Sciences. The WWC assesses the quality of thousands of studies of education curricula, practices, and policies, and then summarizes the findings of well-designed studies in reports for educators, policymakers, and the general public. Cody holds a master's in public policy from the Johns Hopkins University.

Arindrajit Dube

Associate Professor, Department of Economics, University of Massachusetts Amherst

Arindrajit Dube is an associate professor of economics at the University of Massachusetts Amherst. His work focuses on labor economics, health economics, public finance, and political economy. His core areas of research include minimum wage policies, fiscal policy, income inequality, health reform, and the economics of conflict. Dube received his B.A. in Economics and M.A. in Development Policy from Stanford University, and his Ph.D. in Economics from the University of Chicago. Prior to joining the University of Massachusetts Amherst, he held a research economist position at the Institute for Research on Labor and Employment at University of California, Berkeley. He is also currently a research fellow at IZA. During the spring semester of 2014, Dube visited the economics department at the Massachusetts Institute of Technology.

Benjamin H. Harris

Policy Director, The Hamilton Project

Benjamin H. Harris is the policy director of The Hamilton Project; a fellow in Economic Studies at the Brookings Institution; and deputy director of the Retirement Security Project. His primary areas of focus are tax, budget, and retirement security. Harris has published a variety of papers and policy briefs related to topics in public finance, and is regularly cited in media reports related to fiscal policy. Previously, he was a senior research associate with the Urban Institute and the Urban-Brookings Tax Policy Center, and a senior economist with the President's Council of Economic Advisers. He has also served as a research economist at the Brookings Institution and as a senior economist with the Budget Committee in the U.S. House of Representatives. Harris has also taught as an adjunct professor at the policy schools at both the University of Maryland and Georgetown University. He holds a Ph.D. in economics from George Washington University, a master's degree in economics from Cornell University, a master's degree in quantitative methods from Columbia University, and a bachelor's degree in economics from Tufts University. In 2000, Harris was awarded a Fulbright Scholarship to Namibia.

Harry J. Holzer

Professor, McCourt School of Public Policy, Georgetown University

Harry Holzer is a professor at the McCourt School of Public Policy at Georgetown University. He is also currently an institute fellow at the American Institutes for Research, a senior affiliate at the Urban Institute, a senior affiliate of the National Poverty Center at the University of Michigan, a national fellow of the Program on Inequality and Social Policy at Harvard University, and a research affiliate of the Institute for Research on Poverty at the University of Wisconsin at Madison. He has also been a faculty director of the Georgetown Center on Poverty, Inequality and Public Policy. He received his bachelor's degree (1978) and doctorate (1983) from Harvard University. Prior to coming to Georgetown, Holzer served as chief economist for the U.S. Department of Labor and professor of economics at Michigan State University. He has also been a visiting scholar at the Russell Sage Foundation and a faculty research fellow of the National Bureau of Economic Research. Over most of his career, Holzer's work has focused primarily on the low-wage labor market, with research on both employers and workers in that market as well as a range of policy issues (such as workforce training, welfare reform, and wage supplements).

Susan N. Houseman

Senior Economist, The W. E. Upjohn Institute for Employment Research

Susan Houseman is a senior economist at the W.E. Upjohn Institute for Employment Research. Houseman chairs the Technical Advisory Committee to the Bureau of Labor Statistics, and is a member of the National Bureau of Economic Research Conference on Research in Income and Wealth. Prior to joining the Upjohn Institute, Houseman was on the faculty at the University of Maryland School of Public Policy and was a visiting scholar at the Brookings Institution. She received her doctorate in economics from Harvard University. Houseman's research has examined the effects of labor market policies, including policies that support work sharing, on workforce adjustment in response to demand changes in the United States, Europe, and Japan. She currently is the principal investigator on a demonstration project funded by the Department of Labor that will test whether interventions designed to reduce perceived barriers to work share increase use of this option. Houseman's other research has focused on employers' use of temporary help employment, outsourcing, and nonstandard work arrangements and their implications for workers' wages, benefits, and employment stability. Her research on outsourcing and offshoring also has highlighted measurement problems in U.S. statistics. With funding from the Alfred P. Sloan Foundation and the Bureau of Economic Analysis, she has conducted research and organized conferences on biases in price indexes, productivity, and output growth, along with other measurement problems arising from the growth of globalization.

Hilary Hoynes

Professor of Public Policy and Economics, Haas Distinguished Chair in Economic Disparities, University of California, Berkeley

Hilary Hoynes is a professor of public policy and economics and holds the Haas Distinguished Chair in Economic Disparities. She is the co-editor of the leading journal in economics, American Economic Review. Hoynes is an economist and specializes in the study of poverty, inequality, and the impacts of government tax and transfer programs on low-income families. Current projects include evaluating the impact of the Great Recession across demographic groups, examining the impact of Head Start on cognitive and non-cognitive outcomes, examining the impact of the Earned Income Tax Credit on infant health, and estimating impacts of U.S. food and nutrition programs on labor supply, health, and human capital accumulation. In addition to her faculty appointment, Hoynes has research affiliations at the National Bureau of Economic Research, the University of California, Davis Center for Poverty Research and the Institute for Fiscal Studies. She sits on the National Advisory Committee of the Robert Wood Johnson Foundation Scholars in Health Policy Research Program and the Advisory Committee for the National Science Foundation's Directorate for the Social, Behavioral, and Economic Sciences.

Ariel Kalil

Professor, The Harris School of Public Policy, The University of Chicago; Director, Center for Human Potential and Public Policy, The University of Chicago

Ariel Kalil is a professor in The Harris School of Public Policy at the University of Chicago, where she directs the Center for Human Potential and Public Policy. She is a developmental psychologist who studies how economic conditions and parents' socioeconomic status affect child development and parental behavior. Her recent projects have examined the relationship between parental education and time with children, the effects of the Great Recession on parental behavior and child development, and the association between income inequality and children's educational attainment.

Kalil received her Ph.D. in developmental psychology from the University of Michigan. Before joining Chicago Harris' faculty in 1999, she completed a postdoctoral fellowship at the University of Michigan's National Poverty Center. Kalil has received the William T. Grant Foundation Faculty Scholars Award, the Changing Faces of America's Children Young Scholars Award from the Foundation for Child Development, and the National Academy of Education/ Spencer Postdoctoral Fellowship. In 2003, she was the first-ever recipient of the Society for Research in Child Development Award for Early Research Contributions. Her recent work has been funded by the National Institute of Child Health and Human Development and by the MacArthur and Russell Sage Foundations.

Melissa S. Kearney

Director, The Hamilton Project; Professor, Department of Economics, University of Maryland

Melissa S. Kearney is the director of the Hamilton Project; a senior fellow at the Brookings Institution; and a professor in the department of economics at the University of Maryland, where she has been on the faculty since 2006. She is also a research associate at the National Bureau of Economic Research. Kearney received her Ph.D. in economics from the Massachusetts Institute of Technology in 2002 and her bachelor's degree from Princeton University in 1996. She studied on a National Science Graduate Research Fellowship and a Harry S. Truman Scholarship. Past positions include fellow at the Brookings Institution and assistant professor at Wellesley College. Kearney's research focuses on issues of social policy, poverty, and inequality and has been published in leading economics journals. She is particularly interested in the effect of government programs and economic conditions on the behaviors and outcomes of economically disadvantaged populations.

Jacob Leos-Urbel

Mary Toepelt Nicolai and George S. Blair Assistant Professor, Department of Politics and Public Policy, Claremont Graduate University

Jacob Leos-Urbel is the Mary Toepelt Nicolai and George S. Blair Assistant Professor in American Politics, and teaches public policy courses in the department of politics and policy at Claremont Graduate University. His research interests focus broadly on education, and on child and youth policy. Leos-Urbel's current research evaluates the effectiveness of policies that aim to promote children's education and development while operating outside the traditional school classroom, including after-school programs, summer youth employment, and school meals. He holds a master of public affairs from the Woodrow Wilson School at Princeton University, and a doctorate in public administration from New York University's Wagner School for Public Service. At New York University, he was an Institute for Education Sciences Pre-doctoral Interdisciplinary Research Training Fellow, and conducted research at NYU's Institute for Education and Social Policy. Previously, Leos-Urbel worked with the Urban Institute, Abt Associates, The After-School Corporation, and the U.S. Peace Corps.

Robert I. Lerman

Professor, Department of Economics, American University; Institute Fellow, Urban Institute

Robert Lerman is a professor in the department of economics at American University. He researches and publishes on employment, income support, and youth development, especially as they affect low-income populations. In the 1970s, he worked on reforming the nation's income maintenance programs and on youth employment policies as a staff economist for both the Congressional Joint Economic Committee and the U.S. Department of Labor. He was one of the first scholars to examine the patterns and economic determinants of unwed fatherhood and to propose a youth apprenticeship strategy in the United States. He is currently an institute fellow at the Urban Institute and a research associate at IZA in Bonn, Germany. Lerman is the founder and president of the American Institute for Innovative Apprenticeship.

Phillip B. Levine

Katharine Coman and A. Barton Hepburn Professor of Economics, Wellesley College

Phillip Levine is the Katharine Coman and A. Barton Hepburn Professor of Economics at Wellesley College, a research associate at the National Bureau of Economic Research, a research affiliate of the National Poverty Center, and a member of the National Academy of Social Insurance. He has also served as a senior economist at the President's Council of Economic Advisers. Levine received a bachelor's degree with honors from Cornell University in 1985 and a Ph.D. from Princeton University in 1990. He has been a member of the faculty at Wellesley since 1991. His research has largely been devoted to empirical examinations of the impact of social policy on individual behavior. Along with many publications in academic journals and edited volumes, he is the author of *Sex and Consequences: Abortion, Public Policy, and the Economics of Fertility*, coauthor of *Reconsidering Retirement:*

How Losses and Layoffs Affect Older Workers, and coeditor of *Targeting Investments in Children: Fighting Poverty When Resources are Limited*.

Bridget Terry Long

Academic Dean and Xander Professor of Education and Economics, Harvard Graduate School of Education

Bridget Terry Long is the Academic Dean and the Xander Professor of Education and Economics at the Harvard Graduate School of Education. She is also a faculty research associate of the National Bureau of Economic Research and a research affiliate of Center for Analysis of Postsecondary Education and Employment. Her current projects examine the roles of information and assistance in promoting college savings, the completion of aid applications, and college enrollment. Other work examines the effects of financial aid programs and the impact of postsecondary remediation.

Sheena McConnell

Vice President, Mathematica Policy Research

Sheena McConnell is a vice president and director of human services research in Mathematica's Washington, DC office. Her research focuses primarily on evaluating policies to promote employment and strong families in disadvantaged populations. She is currently directing a national experimental evaluation of the Workforce Investment Act's Adult and Dislocated Workers programs for the U.S. Department of Labor, Employment, and Training Administration. These programs, which provide training, employment counseling, and other employment-related services, are the backbone of the public workforce investment system in the United States. She also has evaluated the use of vouchers to pay for training, programs to assist low-income people who are interested in starting their own business, and programs to assist low-income couples improve their relationships. McConnell is an expert at designing and implementing experimental evaluations of social service interventions for low-income populations. Recently, she completed an experimental study of the impact of teachers from Teach For America and the Teaching Fellows programs on the test scores of students, most of whom were low-income. She received a bachelor's of science from Churchill College, Cambridge University, England, and a doctorate in economics from Princeton University.

Irma Perez-Johnson

Associate Director of Human Services Research, Mathematica Policy Research

Irma Perez-Johnson is an associate director of human services research in Mathematica's Princeton, New Jersey office. She is an expert on the design and implementation of rigorous evaluations of employment training and K–12 education programs, including pilots and demonstrations. For the U.S. Department of Labor, Perez-Johnson currently leads the evaluation of the Self-Employment Training Demonstration, directs the study of Behavioral Interventions for Labor-Related Programs, and recently served as the project director and principal investigator for the Evaluation of the Individual Training Account Experiment. She is also directing a study of Reemployment Services and Eligibility Assessments for recipients of Extended Unemployment Compensation. For the U.S. Department of Education, Institute of Education Sciences, she is helping design an Evaluation of Data-Driven Instruction and until recently served as the deputy director for the Impact Evaluation of Race-to-the-Top and School Improvement Grants. She holds a doctorate in education policy and evaluation from the University of Pennsylvania.

Isabel Sawhill

Cabot Family Chair and Senior Fellow, Brookings Institution

Isabel Sawhill is the Cabot Family Chair and a Senior Fellow at the Brookings Institution where she is co-director of the Center on Children and Families. Sawhill's areas of expertise are poverty, inequality, social mobility, education, fiscal policy, and the family. She is the author or editor of numerous books and articles. This policy memo is drawn in part from her forthcoming book, *Generation Unbound: Drifting into Sex and Parenthood without Marriage*.

Diane Whitmore Schanzenbach

Associate Professor, School of Education and Social Policy, Northwestern University

Diane Whitmore Schanzenbach is an associate professor in the School of Education and Social Policy at Northwestern University, a research associate at the National Bureau of Economic Research, and a research affiliate of the Institute for Research on Poverty. She studies issues related to child poverty, including education policy, child health, and food consumption. She graduated *magna cum laude* from Wellesley College in 1995 with a bachelor's degree in economics and religion, and received a doctorate in economics in 2002 from Princeton University. Much of her research investigates

the longer-run impacts of early life experiences, such as the impacts of receiving SNAP benefits during childhood, the impacts of kindergarten classroom quality, and the impacts of early childhood education. She recently served on the Institute of Medicine's Committee on the Examination of the Adequacy of Food Resources and SNAP Allotments.

Amy Ellen Schwartz

Professor, Steinhardt School of Culture, Education, and Human Development and Robert F. Wagner Graduate School, New York University; Director, New York University Institute for Education and Social Policy; Daniel P. Moynihan Professor of Public Affairs, Maxwell School, Syracuse University

Amy Ellen Schwartz is professor of public policy, education, and economics, and director of the New York University Institute for Education and Social Policy. She teaches courses in public finance and policy at both the Wagner School and the Steinhardt School of Culture, Education, and Human Development. Her research is primarily in applied econometrics, focusing on issues in urban policy, education policy, and public finance. Her current research in K–12 education examines the relationship between student performance and housing and neighborhood change, the role of schools and neighborhoods in shaping childhood obesity, immigration and mobility in urban schools, and the efficacy of school reforms. Her research on urban economic development has included work on Business Improvement Districts, housing investment, school choice, and investment in infrastructure, among other issues in public finance. Schwartz has published numerous articles in academic journals including the *American Economic Review*, *Journal of Human Resources*, the *Journal of Public Economics*, and the *Journal of Urban Economics*. Her research has been supported by grants from the Spencer Foundation, National Institute of Health, Institute of Education Sciences, National Science Foundation, W. T. Grant Foundation, and the John D. and Catherine T. MacArthur Foundation, among others. Schwartz received her doctorate in economics from Columbia University.

Joanna Venator

Research Assistant, Brookings Institution

Joanna Venator is a research assistant in the Center on Children and Families at the Brookings Institution. Venator's research focuses on complex families, unintended pregnancy and contraception, social mobility, and character and opportunity. She received a bachelor's degree from Swarthmore College in 2013.

James P. Ziliak

Carol Martin Gatton Endowed Chair in Microeconomics, Department of Economics, University of Kentucky; Director, Center for Poverty Research, University of Kentucky

James Ziliak holds the Carol Martin Gatton Endowed Chair in Microeconomics in the Department of Economics and is founding director of the Center for Poverty Research at the University of Kentucky. He served as assistant and associate professor of economics at the University of Oregon, and has held visiting positions at the Brookings Institution, University College London, University of Michigan, and University of Wisconsin. He currently serves as chair of the board of overseers of the University of Michigan Panel Study of Income Dynamics. His research expertise is in the areas of labor economics, poverty, food insecurity, and tax and transfer policy. Recent projects include trends in earnings and income volatility in the United States, the origins of persistently poor regions in America, the causes and consequences of hunger among older Americans, and the effect of survey nonresponse on the level of and trends in poverty and inequality. He is editor of *Welfare Reform and its Long Term Consequences for America's Poor* and *Appalachian Legacy: Economic Opportunity after the War on Poverty*.

Endnotes

Introduction

1. The Census Bureau officially measures poverty by comparing family income to a set of money income thresholds that vary by family size and composition. In 2013, the official threshold for a single nonelderly individual was an annual income of $12,119; for a family of two children and two adults, the threshold was $23,624. If a family's total income is less than the family's threshold, then that family and the individuals in it are considered to be living in poverty. The income sources included in these calculations are before taxes and do not include capital gains or noncash benefits (such as public housing, Medicaid, and the Supplemental Nutrition Assistance Program [SNAP]). Since 2010 the Census Bureau has also released poverty estimates based on the SPM, which is a more complex measure. The SPM income or resource measure is cash income plus in-kind government benefits (such as SNAP and housing subsidies) minus nondiscretionary expenditures (taxes, medical expenses, and work expenses). The SPM thresholds are adjusted for geographic differences in the cost of living.
2. See John Karl Scholz's Hamilton Project Discussion Paper 2007-14, "Employment-Based Tax Credits for Low-Skilled Workers," at http://www.hamiltonproject.org/papers/employment-based_tax_credits_for_low-skilled_workers/.
3. See Diane Whitmore Schanzenbach's Hamilton Project Discussion Paper 2013-06, "Strengthening SNAP for a More Food-Secure, Healthy America," at http://www.hamiltonproject.org/papers/strengthening_snap_for_a_more_food-secure_healthy_america/.
4. See Melissa S. Kearney and Lesley Turner's Hamilton Project Discussion Paper 2013-07, "Giving Secondary Earners a Tax Break: A Proposal to Help Low- and Middle-Income Families," at http://www.hamiltonproject.org/papers/giving_secondary_earners_a_tax_break/.
5. See Lori G. Kletzer and Howard F. Rosen's Hamilton Project Discussion Paper 2006-06, "Reforming Unemployment Insurance for the Twenty-First Century Workforce," at http://www.hamiltonproject.org/papers/reforming_unemployment_insurance_for_the_twenty-first_century_workforc/; and Jeffrey R. Kling's Hamilton Project Discussion Paper 2006-05, "Fundamental Restructuring of Unemployment Insurance: Wage-Loss Insurance and Temporary Earnings Replacement Accounts," at http://www.hamiltonproject.org/papers/fundamental_restructuring_of_unemployment_insurance_wage-loss_insuranc/.
6. For example, see Sandy Baum and Judith Scott-Clayton's Hamilton Project Discussion Paper 2013-04, "Redesigning the Pell Grant Program for the Twenty-First Century," at http://www.hamiltonproject.org/papers/redesigning_the_pell_grant_program_for_the_twenty-first_century/; and Caroline M. Hoxby and Sarah Turner's Hamilton Project Discussion Paper 2013-03, "Informing Students about Their College Options: A Proposal for Broadening the Expanding College Opportunities Project," at http://www.hamiltonproject.org/papers/informing_students_about_their_college_options/.
7. See Rebecca M. Blank and Mark H. Greenberg's Hamilton Project Discussion Paper 2008-17, "Improving the Measurement of Poverty," at http://www.hamiltonproject.org/papers/improving_the_measurement_of_poverty/.
8. See Michael Greenstone and colleagues' Hamilton Project Policy Memo, "Thirteen Economic Facts about Social Mobility and the Role of Education," at http://www.hamiltonproject.org/papers/thirteen_economic_facts_social_mobility_education/.
9. For example, see Derek Messacar and Philip Oreopoulos's Hamilton Project Discussion Paper 2012-07, "Staying in School: A Proposal to Raise High School Graduation Rates," at http://www.hamiltonproject.org/papers/staying_in_school_a_proposal_for_raising_high-school_graduation_rates/; Robert Gordon, Thomas J. Kane, and Douglas O. Staiger's Hamilton Project Discussion Paper 2006-01, "Identifying Effective Teachers Using Performance on the Job," at http://www.hamiltonproject.org/papers/identifying_effective_teachers_using_performance_on_the_job/; Bradley M. Allan and Roland G. Fryer Jr.'s Hamilton Project Discussion Paper 2011-07, "The Power and Pitfalls of Education Incentives," at http://www.hamiltonproject.org/papers/the_power_and_pitfalls_of_education_incentives/; Roland G. Fryer Jr.'s Hamilton Project Discussion Paper 2012-06, "Learning from the Successes and Failures of Charter Schools," at http://www.hamiltonproject.org/papers/learning_from_the_successes_and_failures_of_charter_schools/; and Aaron Chatterji and Benjamin F. Jones's Hamilton Project Discussion Paper 2012-05," Harnessing Technology to Improve K–12 Education, at http://www.hamiltonproject.org/papers/harnessing_technology_to_improve_k-12_education/.
10. See Louis S. Jacobson and Robert J. LaLonde's Hamilton Project Discussion Paper, "Using Data to Improve the Performance of Workforce Training," at http://www.hamiltonproject.org/papers/using_data_to_improve_the_performance_of_workforce_training/.

11. See Harry J. Holzer's Hamilton Project Discussion Paper 2011-10, "Raising Job Quality and Skills for American Workers: Creating More-Effective Education and Workforce Development Systems in the States," at http://www.hamiltonproject.org/papers/raising_job_quality_and_skills_for_american_workers_creating_more-effe/.
12. See Harry J. Holzer's Hamilton Project Discussion Paper 2007-15, "Better Workers for Better Jobs: Improving Worker Advancement in the Low-Wage Labor Market," at http://www.hamiltonproject.org/papers/better_workers_for_better_jobs_improving_worker_advancement_in_the_low/.
13. See David Autor's Hamilton Project Discussion Paper, "The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings," at http://www.hamiltonproject.org/papers/the_polarization_of_job_opportunities_in_the_u.s._labor_market_implica/.
14. See Diane Whitmore Schanzenbach's Hamilton Project Discussion Paper 2013-06, "Strengthening SNAP for a More Food-Secure, Healthy America," at http://www.hamiltonproject.org/papers/strengthening_snap_for_a_more_food-secure_healthy_america/.

Proposal 1

1. See Fryer and Levitt (2013). That paper's primary goal is to explore the emergence of achievement gaps by race rather than by income.
2. Duncan and Magnuson (2011) estimate a 1.3 standard deviation difference in math and reading test performance at the start of kindergarten between children in the lowest and highest quintiles of the family income distribution. The corresponding gaps in teacher ratings of attention and behavior are 0.75 and 0.25 standard deviations, respectively.
3. These are the authors' calculations from the 2011 October Current Population Survey School Enrollment supplement (NBER n.d.). The lowest family income quintile has a maximum annual income of $17,500, while the top family income quintile has a minimum annual income of $125,000.
4. The 2011–12 school year is the most recent with data available; data are from the NIEER.
5. The proposal defines low- and moderate-income families as those with income at or below 200 percent of the federal poverty level. The Preschool for All initiative has other elements as well, including incentives for states to implement full-day kindergarten, a shift in the focus of Head Start toward three-year-olds, and an expansion of the Early Head Start program, which serves younger children.
6. For illustrative purposes this is drawn as a straight line, but the actual relationship may be curved.
7. Recent work by Heckman, Pinto, and Savelyev (2013) finds that the Perry program induced changes in personality skills, which in turn explain a large portion of the improvement in adult outcomes. In a re-analysis of the Perry data, Anderson (2008) finds that the positive impacts were found for girls but not boys. Heckman et al. (2010) dispute the finding, and contend that the positive benefit-to-cost ratios found in Perry are for both boys and girls.
8. Ludwig and Miller (2007) take a different approach, comparing children in counties that barely qualified for and barely missed qualifying for special grant-writing assistance for Head Start at the program's inception. They find evidence that Head Start reduces child mortality, and they find suggestive evidence that it increases educational attainment.
9. In terms of benefit-to-cost ratios, the two programs appear to be roughly equivalent, resulting in about $8.00 worth of benefits for each $1.00 spent (Deming 2009; Heckman et al. 2010). The reason is that Head Start is relatively low cost.
10. In particular, the Tennessee program meets nine of the quality benchmarks represented in figure 1-2, whereas the average Head Start program meets only five (Espinosa 2002). Below we discuss the potential limitations of using inputs to proxy for quality.
11. This is not to suggest that preschool makes some children worse off overall. High–socioeconomic status families who choose to enroll their children in the public program experience a reduction in out-of-pocket preschool spending that offsets the decline in the learning environment.
12. To our knowledge, similar estimates for Georgia do not exist.
13. Recent results from a high-quality prekindergarten program in Boston does find substantial short-term impacts on the test scores of higher-income children (Weiland and Yoshikawa 2013).

Proposal 3

1. In an increasing number of cases these unmarried mothers are living with the father of the child at the time of the birth, but these cohabiting relationships are much less stable than marriages and typically break up before the child is age five.
2. The term "unintended" comes from the National Survey of Family Growth, which asks women to characterize the intentionality of their pregnancies and births at the time they first learned of their pregnancy. If they say the pregnancy was unintended, they are further asked whether it was "unwanted" or "mistimed." An unwanted pregnancy is one the woman did not want ever, whereas a mistimed pregnancy is one that simply came earlier than she might have wanted—in some cases by only a year, but in other cases by many years.
3. Literature on teen pregnancies suggests that most of the correlation between having a baby as a teen and later outcomes is due to confounding factors or unobserved traits of the women involved. Quasi-natural experiments find that teenagers who miscarry their pregnancy do not have significantly better outcomes than teenagers who carry their

child to term (Hotz, McElroy, and Sanders 2005). However, the broader literature on the effects of contraception shows that it has increased women's educational and labor-market achievements quite dramatically (Bailey, Hershbein, and Miller 2012; Goldin and Katz 2002).

4. An IUD is a contraceptive device that a provider inserts into a patient's uterus; an implant is a contraceptive device that a provider places under a patient's skin, typically on the arm. Both procedures need to be done by a trained health-care provider, usually a physician. Both last up to three years, with some brands of IUD lasting up to twelve years.
5. This social marketing campaign coincided with Iowa's expansion of Medicaid family planning services in 2010 and a huge increase in funding for family planning clinics starting in 2007, so we cannot conclusively attribute this whole effect to the social marketing campaign. However, it should be noted that the decline in pregnancies accelerated during the campaign. Whereas the percent of unintended pregnancies dropped from 46.1 percent to 45.2 percent between 2007 and 2009, it dropped from 45.2 percent to 40.9 percent between 2009 and 2011.
6. The estimate of taxpayer savings for mistimed births does not account for the fact that delaying a birth may result in a woman having fewer children overall or may result in an improvement of her living situation during the intermittent years. It does, however, account for the fact that the present discounted value of future benefit payouts is less than the value of payouts now. See Monea and Thomas (2010) for more information on how to derive this formula.

Proposal 4

1. Earlier this year, President Obama introduced an initiative, My Brother's Keeper, calling for the private and philanthropic sectors to institute mentoring programs. In his remarks he credited those who "never gave up on me, and so I didn't give up on myself" (Obama 2014).
2. To provide a couple of examples, Child Trends identifies the programs Fostering Healthy Futures and Parent Mentors for Children with Asthma. These programs are targeted at children who have suffered abuse in foster-care settings and children who need assistance dealing with their respiratory issues, respectively. Lawner, Beltz, and Moore (2013) summarizes most of these programs.
3. The impact on GPA is only statistically significant at the 10 percent level. Given the overall strength of the results indicating that academic ability improved and the ability to more-easily translate GPA into subsequent wages, I conclude that this is a meaningful effect and take this estimate as a summary statistic of the educational impact of the intervention. The point estimates also suggest that the effect of mentoring on academic achievement in this experiment is larger for girls than for boys, although these differences are unlikely to be statistically significant (insufficient information is provided to conduct a formal hypothesis test).
4. One possible explanation for the divergence in results is that the pilot results were strongly (although not exclusively) restricted to one of the five sites in which the program was implemented (Levine and Zimmerman 2010). The ability of a single administrator to make a program work and the inability to replicate those results elsewhere is one potential weakness of any smaller-scale intervention.
5. One shortcoming of this analysis is that we have access to only the short-run effect of the Big Brothers Big Sisters intervention. An active literature exists in other areas, such as the Head Start program, that is concerned with test score fade-out and the long-term impact on economic outcomes. We do not have the ability to explore that issue more deeply in this context. Yet the benefit–cost ratio we report here is so large that the short-run impact would have to depreciate extensively to substantively alter this result.

Proposal 5

1. The program was implemented in five cities, spanning two consecutive summers, which included summer jobs plus academic remediation and training; evaluations found short-term increases in reading and math scores, compared to a comparison group that received only jobs.
2. We address this point later in our discussion of the costs and benefits of summer jobs.
3. Seven months after the program, there were 3.7 fewer arrests per 100 participants, a 51 percent decline.
4. This study sample of youth ages fourteen to twenty-four in high crime neighborhoods included 421 participants and a comparison group of 192 eligible youth from the waiting list.
5. Funds could be spent through June 2011. The one success indicator for the program was achievement of workforce readiness goals, which was up to local sites to define (Bellotti et al. 2010).
6. An earlier SYEP was funded through the federal JTPA and administered through the U.S. Department of Labor; see appendix 5-B for more details.
7. For example, NYC's CTE Summer Scholars summer paid internship program rewards students who have perfect attendance at the end of the program with a $500 bonus. The YIEPP improvement of school enrollment rates could be attributed to the requirement that students be enrolled in school to participate—requiring participants to be enrolled in the school year prior in order to be eligible might also provide some incentive for students to stay in school.
8. New York State also administers a 15 percent ceiling for NYC SYEP administrative costs.
9. For example, NYC's SYEP allocates between $300 and $700 per participant for educational services, depending on the type

of youth and intensity of services offered.

10. For example, NYC's Conditional Cash Transfer program offered high school students a $600 incentive for each Regents exam passed, but yielded no significant effect (Riccio et al. 2013).
11. To give a sense of magnitudes of the costs of crime, McCollister, French, and Fang (2010) estimate the societal cost of household burglary at $6,169 in tangible costs and $321 in intangible costs, totaling $6,462; vandalism is valued at $4,860 in tangible costs, with no intangible costs.
12. Focusing on youth still enrolled in school, summer employment only, and including training closely connected to the youth's employment experiences separates this proposed program from prior less-effective federal youth employment programs. For example, the youth employment initiatives funded by the 1982 JTPA targeted out-of-school youth who are likely difficult to reach without intensive services and time and had limited effects on participants (Bloom et al. 1997). The YIEPP, a federal program operating under the Comprehensive Employment and Training Act (CETA) that preceded JTPA and targeted in-school youth, had small positive impacts on school enrollment rates (Farkas, Smith, and Stromsdorfer 1983). YIEPP did not, however, provide training or job search assistance to students, and we believe that a program that provides these connections has the potential to provide greater benefits. (More details about these programs can be found in appendix 5-B.)

Proposal 6

1. Low income refers to the bottom 20 percent of all family incomes, and high income refers to the top 20 percent.
2. The terms "remedial" and "developmental" are often used interchangeably in the literature because some states favor one term over the other. In this paper, both are meant to refer to the courses and services offered to postsecondary students below college level, including basic-skills training and nontraditional coursework.
3. The question as posed by Complete College America (2012) is, "Can an 'open access' college be truly open access if it denies so many access to its college-level courses?"
4. In 2004, the data suggest only 27 percent of high school seniors had completed high-level academic coursework, defined as four years of English, three years of mathematics (including at least one year of a course higher than Algebra II), three years of science, three years of social studies, and two years of a single non-English language (NCES 2010).
5. Greene and Foster (2003) define being minimally college ready as (1) graduating from high school after (2) having taken four years of English, three years of math, and two years each of science, social science, and foreign language; and (3) demonstrating basic literacy skills by scoring at least 265 on the reading NAEP.
6. Those authors' estimate is based on the number of first-time degree-seeking fall enrollees and on assumptions about the percent placed in remediation, the number of remedial courses they will take, and the costs of providing a remedial course.
7. For example, according to Rebecca Trounson writing in the Los Angeles Times on January 31, 2002 ("Cal State Ouster Rate Rises Slightly"), in the fall of 2001, a California State University campus "kicked out more than 2,200 students—nearly 7 percent of the freshman class—for failing to master basic English and math skills."
8. The most widely used placement exams are the Computerized Adaptive Placement Assessment and Support Systems (COMPASS) and the Assessment of Skills for Successful Entry and Transfer, each published by ACT, Inc., as well as the ACCUPLACER, published by the College Board.
9. Moreover, she finds that the placement exam varies in how well it predicts success in math versus English, and it does a better job predicting who is likely to succeed rather than who is likely to fail.
10. For example, see the California Early Assessment Program, Kentucky Early Mathematics Testing Program, North Carolina Early Mathematics Placement Testing Program, Oklahoma Educational Planning and Assessment System, and the Ohio Early Mathematics Placement Testing.

Proposal 7

1. The figures come from tabulations by the author from the March 2013 Current Population Survey (National Bureau of Economic Research n.d.).
2. For a detailed look at the barriers to expanding apprenticeship in the United States, see Lerman (2013).
3. Data from the combined 2001 and 2005 National Household Education Surveys indicate that 1.5 percent of adults were in an apprenticeship program in the prior year (National Center for Education Statistics 2008). If these data are accurate, the number of unregistered apprentices would far exceed the number of registered ones.
4. See http://as.edu/index.html for the school's Web site.

Proposal 8

1. The National Fund for Workforce Solutions (http://www.nfwsolutions.org/) is also trying to scale sectoral and career pathway approaches in about thirty cities and regions nationally.
2. Deming, Goldin, and Katz (2013) argue that the for-profit colleges often have stronger incentives than public colleges to keep up with evolving trends in labor demand. Rosenbaum, Deil-Amen, and Person (2006) also argue that proprietary occupational schools do a better job than community colleges of having students complete vocational training and of linking their students to jobs after graduation.

3. The practical difficulty of measuring labor market shortages is emphasized in Barnow, Trutko, and Piatak (2013). States would have to decide how best to measure such shortages, or to simply reward institutions for placing students into occupations showing tightness or strong recent employment growth.
4. Up to one-fourth of the 3,000 or so Job Centers around the country funded by the Workforce Investment Act are already colocated on campuses. One proposal requiring all older (defined as age twenty-five and above) Pell Grant recipients to obtain career counseling at Job Centers appears in the College Board (2013) recommendations for Pell Grant reform.
5. A range of market failures, such as imperfect information, may also contribute to sub-optimal training by firms.
6. Hollenbeck's (2008) evidence is descriptive but not rigorous, as is earlier work by Ahlstrand, Bassi, and McMurrer (2003). Other evidence on targeting tax credits to disadvantaged workers using the federal Work Opportunity Tax Credit by Hamersma (2014) suggests limited effectiveness. A number of other studies looking at localized tax credits for employer location or economic development (Bartik 2010; Busso, Gregory, and Cline 2013; Faulk 2002; Ham et al. 2008) are mixed as well, though many studies have been more positive in the past few years. Holzer, İmrohoroğlu, and Swenson (1993) also find positive effects on worker performance (as measured by reductions in scrap rates) of a program for training grants to small manufacturers in Michigan.
7. The availability of such data at the state level has been encouraged by the State Longitudinal Data Systems grants from the U.S. Department of Education and the Workforce Data Quality Initiative from the U.S. Department of Labor, as well as the Workforce Data Quality Campaign being undertaken by the National Skills Coalition (described in Zinn and Van Kluenen 2014).
8. Alternatively, the rewards might only be based on students who remain in-state.
9. See Heckman, Heinrich, and Smith (2011) for a discussion of how performance measures in workforce programs encourage manipulation by the states of who is admitted to the workforce system and whether they are ever counted among the program exiters, on whose outcomes performance is measured.
10. Stackable credentials are a series of certifications representing specific skills and competencies that might be more portable than one specific occupational or industry certification.

Proposal 9

1. While we recognize the potential importance of job search assistance, job readiness training, and work experience, this paper focuses on training programs that provide skills specific to an occupation.
2. This includes the Job Training Partnership Act of 1982 (JTPA) adult program, WIA Adult and Dislocated Worker programs, H-1B Skill Training Grants, Trade Adjustment Assistance, JTPA and WIA youth programs, YouthBuild, and Job Corps.
3. The U.S. Department of Labor is currently conducting a national, experimental study of the WIA Adult and Dislocated Worker programs. Findings on the short-term effectiveness of the programs will be available in 2016.

Proposal 10

1. Author's calculations using data from two-year averages of earnings by state in 2012 and 2013 Annual Social and Economic Study of the Current Population Survey (U.S. Census Bureau various years).
2. The CDCC and the CCDF require children under age thirteen to be present for eligibility, while the CTC extends eligibility to families with children under age seventeen. Employment trends are nearly identical for mothers including this wider age range of children.
3. Beginning with the 2011 wave, the Census Bureau has asked respondents the amount of out-of-pocket child-care costs they incur because of work. The numbers in table 10-1 and figure 10-3 pool the 2012 and 2013 survey years in order to reduce the influence of outliers in smaller states (U.S. Census Bureau various years).
4. The tax code also subsidizes child care through the employer-provided child-care exclusion, which permits employers to exclude up to $5,000 from an employee's salary on a pretax basis. There are other programs that assist with early childhood development, such as Head Start, that are beyond the scope of this paper.
5. Discretionary CCDBG grants are allocated to states based on a formula that accounts for the state's share of children under age five, the state's share of children receiving free or reduced price lunch, and the state's per capita income. Part of the mandatory CCDF funds are allocated based on the state's funding for child-care programs authorized under the Aid to Families with Dependent Children program in fiscal years 1994 and 1995, and part based on the state's share of children under age thirteen (Congressional Research Service 2012). Since 1996 the basic TANF block grant to states totaled $16.5 billion, which had declined by about one-third in inflation-adjusted terms by FY2012 (Congressional Research Service 2013). The state's share of the block grant is a function of its average expenditure on Aid to Families with Dependent Children during FY1992-FY1994.
6. See https://daycare.com/states.html for links to each state's licensing requirements.

Proposal 11

1. The maximum credit is the same for married and single filers. However, the flat and phase-out regions of the credit are expanded for married couples, in essence raising the EITC

credit amounts for married filers with earnings over $17,000.

2. The SPM equivalence scale for families with one parents is (1 + 0.8*first child + 0.5*other children)$^{0.7}$, which is equal to 1.50 for one-child families and 1.79 for two-child families. Interestingly, the three-child EITC is already on par with the two-child credit in equivalence-scale units: the three-child equivalence scale is 2.06, suggesting a 15 percent higher maximum benefit compared to the two-child credit; under current law it is 12.5 percent higher.
3. Additionally, Baker (2008) and Strully, Rehkopf, and Xuan (2010) find that the EITC increases average birth weight.
4. In this and the other calculations in this policy memo, we assume incidence of the payroll tax is on the worker and thus the worker "pays" the employer and employee portions of the payroll tax. We also assume child-care costs of 10 percent of gross earnings.
5. Earnings are predicted to decrease for married couples through the modest predicted reduction in work for secondary earners (Eissa and Hoynes 2006). Figures calculate households' taxes based on earnings and demographic variables from the March Current Population Survey, as well as Census Bureau estimates of tax filing units and adjusted gross income. Poverty status is based on after-tax resources of the SPM family unit.

Proposal 12

1. Perhaps not surprisingly, the study found no effects of work-sharing programs on the level of temporary employment during the recession. Belgium also made heavy use of work sharing during the downturn, but quantifying the impact on employment is complicated by the fact that work sharing was prevalent there even before the recession began.
2. Because employer repayment normally is spread out over a number of years and states do not charge interest on the balances employers owe, the present value of the benefits paid out typically exceeds the present value of the employer reimbursement. States also set minimum and maximum UI tax rates; for employers already at these minimum or maximum rates, the cost of an additional layoff may be very low or zero. Additionally, in most states, if a laid-off worker has worked recently for other employers, those previous employers will be charged a prorated portion of the UI benefits the worker receives. UI systems in many other advanced countries are not experience-rated at all, meaning that employers do not bear any of the cost of UI benefits paid to their employees, but as already noted, employers in these countries are typically subject to stringent advance notice and severance pay requirements.
3. The Affordable Care Act requires, in essence, that all large employers (defined as employers with fifty or more full-time equivalent employees) offer health insurance coverage to their full-time workers (defined as individuals who work thirty hours a week or more on average). Employer size is to be determined by employment during the prior calendar year; in cases where an individual employee's hours are variable, full-time status is based on the hours worked during a base period and that status holds for the following six to twelve months even if the employee's hours change.
4. Some states also charge 100 percent of work-share benefits to the work-share employer rather than prorating the charges to all recent employers, or require all work-share employers already at the maximum UI tax rate or with negative reserve balances to fully reimburse the state for benefits paid. Such provisions also likely have discouraged the use of work sharing. The Department of Labor recently informed states that these practices are no longer permitted, and states have begun to amend their laws to comply with this directive, but the Department does not believe it has the legal authority to require the additional changes we are recommending.

Proposal 13

1. A statutory minimum wage is a binding, broad-based minimal pay standard set by legal statute, as opposed to by collective bargaining or other voluntary agreements. Some countries (e.g., Sweden and Switzerland) do not have a statutory minimum wage, but do have sectoral pay standards set by collective bargaining.
2. Had the minimum wage been indexed to inflation in the same manner as the IRS tax code or Social Security payments (i.e., using the CPI-U), it would have been $10.93 per hour in 2014. The CPI-U-RS is a more reliable gauge of past cost of living, however. Conversely, if we were to use the Personal Consumption Expenditure deflator, the 1968 value of the minimum wage would be $8.56 per hour. In all cases, however, the real minimum wage has fallen since the 1960s and 1970s.

Proposal 14

1. We recognize that there are other definitions of rapid-cycle evaluation that will not utilize a comparison group. In this paper, we focus on the assessment of rapid experiments using comparison groups.
2. It is important to note that the performance of predictive analytics can vary. A number of considerations, including the extent to which strong predictors are available and the quality of the data, can affect performance. The strength of the underlying predictive models should be assessed before deploying predictive analytics in high-stakes situations.
3. The estimated equation generated by this model is used as part of an automated algorithm to find at-risk patients for intervention among those newly admitted to the hospital. In one early pilot, inpatient readmissions declined by 45 percent (Raven 2009; Raven et al. 2009).

4. Rigorous experimental techniques include randomized controlled trials and orthogonal research designs, and rigorous quasi-experimental designs include regression discontinuity research designs. These designs can be used to determine whether an intervention caused an outcome. Like a clinical drug trial, randomized controlled trials create randomly formed treatment and control groups, each receiving a different intervention. Orthogonal research designs use a similar approach but test variation in the components of an intervention. Regression discontinuity studies create a treatment group with individuals above (or below) a certain eligibility threshold (with individuals on the other side of the threshold forming the control group), and use analysis techniques to control for the eligibility score in the assessment of the program.
5. While we are not aware of specific, published examples of the use of these methods together, we believe the integration of these approaches is powerful and compelling, as the discussion that follows demonstrates.
6. It is noteworthy that examining multiple groups requires additional sample observations if the same level of precision is to be obtained. Generalizing beyond one hospital or program likewise requires additional sample observations.

References

Introduction

Abraham, Katharine G., and Susan N. Houseman. Forthcoming. "Short-Time Compensation as a Tool to Mitigate Job Loss? Evidence on the U.S. Experience during the Recent Recession." *Industrial Relations*.

Adelman, Clifford. 2006. "The Toolbox Revisited: Paths to Degree Completion from High School through College." U.S. Department of Education, Washington, DC.

Almond, Douglas, Hilary W. Hoynes, and Diane Whitmore Schanzenbach. 2011. "Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes." *Review of Economics and Statistics* 93 (2): 387–403.

Autor, David H., Lawrence F. Katz, and Melissa S. Kearney. 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *Review of Economics and Statistics* 90 (2): 300–323.

Bailey, Martha J., and Susan M. Dynarski. 2011. "Inequality in Postsecondary Education." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances* edited by Greg J. Duncan and Richard J. Murnane, 117–131. New York: Russell Sage Foundation and Spencer Foundation.

Bishaw, Alemayehu. 2013. "Poverty: 2000 to 2012." American Community Survey Briefs, U.S. Census Bureau, Washington, DC.

Bruce, Mary, and John Bridgeland. 2014. "The Mentoring Effect: Young People's Perspectives on the Outcomes and Availability of Mentoring." Civic Enterprises with Hart Research Associates for MENTOR: The National Mentoring Partnership, Washington, DC.

Cavell, Timothy, David DuBois, Michael Karcher, Thomas Keller, and Jean Rhodes. 2009. "Policy Brief: Strengthening Mentoring Opportunities for At-Risk Youth." National Mentoring Center, Portland, OR.

Center on Budget and Policy Priorities (CBPP). 2014. "Policy Basics: The Earned Income Tax Credit." Center on Budget and Policy Priorities, Washington, DC.

Dahl, Gordon, and Lance Lochner. 2012. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review* 102(5): 1927–56.

Danziger, Sheldon, and Sandra K. Danziger. 2005. "The U.S. Social Safety Net and Poverty: Lessons Learned and Promising Approaches." Population Studies Center, Institute for Social Research, University of Michigan, Ann Arbor, MI.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. 2013. "Income, Poverty, and Health Insurance Coverage in the United States: 2012." Current Population Reports, U.S. Census Bureau, Washington, DC.

Edwards, Ashley N. 2014. "Dynamics of Economic Well-Being: Poverty, 2009–2011." Household Economic Studies, U.S. Census Bureau, Washington, DC.

Evans, William, and Craig Garthwaite. 2014. "Giving Mom a Break: The Impact of Higher EITC Payments on Maternal Health." *American Economic Journal: Economic Policy* 6 (2): 258–90.

Fox, Liana, Irv Garfinkel, Neeraj Kaushal, Jane Waldfogel, and Christopher Wimer. 2013. "Waging War on Poverty: Historical Trends in Poverty Using the Supplemental Poverty Measure." Working Paper 13-02, Columbia Population Research Center, Columbia University, New York, NY.

Greene, Jay, and Greg Foster. 2003. "Public High School Graduation and College Readiness Rates in the United States." Working Paper No. 3, Manhattan Institute, New York, NY.

Guryan, Jonathan, Eric Hurst, and Melissa Kearney. 2008. "Parental Education and Parental Time with Children," *Journal of Economic Perspectives* 22 (3): 23-46.

Heckman, James J., Jora Stixrud, and Sergio Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." Working Paper 12006, National Bureau of Economic Research, Cambridge, MA.

Hoynes, Hilary W., Diane Whitmore Schanzenbach, and Douglas Almond. 2012. "Long Run Impacts of Childhood Access to the Safety Net." Working Paper 18535, National Bureau of Economic Research, Cambridge, MA.

Hoynes, Hilary, Douglas L. Miller, and David E. Simon. Forthcoming. "Income, the Earned Income Tax Credit, and Infant Health." *American Economic Journal: Economic Policy*.

Ingels, Steven J., Jeffrey A. Owings, and Phillip Kaufman. 2002. "Coming of Age in the 1990s: The Eighth-Grade Class of 1988 12 Years Later." National Center for Education Statistics, Washington, DC.

Kalil, Ariel, Rebecca Ryan, and Michael Corey. 2012. "Diverging Destinies: Maternal Education and the Developmental Gradient in Time with Children." *Demography* 49 (4): 1361–83.

Kearney, Melissa S., Benjamin H. Harris, Elisa Jácome, and Lucie Parker. 2013. "A Dozen Facts about America's Struggling Lower-Middle Class." Policy Memo, The Hamilton Project, Brookings Institution, Washington, DC.

Knudsen, Eric I., James J. Heckman, Judy L. Cameron, and Jack P. Shonkoff. 2006. "Economic, Neurobiological, and Behavioral Perspectives on Building America's Future Workforce." Working Paper 12298, National Bureau of Economic Research, Cambridge, MA.

Rank, Mark R., and Thomas A. Hirschl. 1999. "The Likelihood of Poverty across the American Adult Life Span." *Social Work* 44 (3): 201–16.

Shattuck, Rachel M., and Rose M. Kreider. 2013. "Social and Economic Characteristics of Currently Unmarried Women With a Recent Birth: 2011." American Community Survey Reports, U.S. Census Bureau, Washington, DC.

Swanson, Christopher B. 2009. "Cities in Crisis 2009: Closing the Graduation Gap: Educational and Economic Conditions in America's Largest Cities." Editorial Projects in Education, Bethesda, MD.

Waldfogel, Jane, and Elizabeth Washbrook. 2011. "Early Years Policy." *Child Development Research* 2011 (2011): 1–12.

Proposal 1

Anderson, Michael L. 2008. "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American Statistical Association* 103 (484): 1481–95.

Barnett, W. Steven, Megan E. Carolan, Jen Fitzgerald, and James H. Squires. 2012. "The State of Preschool 2012: State Preschool Yearbook." National Institute for Early Education Research, Graduate School of Education, Rutgers University, Rutgers, NJ.

Bassok, Daphna. 2012. "Competition or Collaboration? Head Start Enrollment during the Rapid Expansion of State Pre-kindergarten." *Educational Policy* 26 (1): 96–116.

Cascio, Elizabeth, and Diane Whitmore Schanzenbach. 2013. "The Impacts of Expanding Access to High-Quality Preschool Education." *Brookings Papers on Economic Activity*, Fall, 127–92. Brookings Institution, Washington, DC.

Currie, Janet. 2001. "Early Childhood Education Programs." *Journal of Economic Perspectives* 15 (2, Spring): 213–38.

Currie, Janet, and Duncan Thomas. 1995. "Does Head Start Make a Difference?" *American Economic Review* 85 (3, June): 341–64.

Deming, David. 2009. "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start." *American Economic Journal: Applied Economics* 1 (3): 111–34.

Duncan, Greg, and Katherine Magnuson. 2011. "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 47–69. New York: Russell Sage Foundation and Spencer Foundation.

Espinosa, Linda M. 2002. "High-Quality Preschool: Why We Need It and What It Looks Like." NIEER Preschool Policy Matters 1, National Institute for Early Education, New Brunswick, NJ.

Fitzpatrick, Maria D. 2008. "Starting School at Four: The Effect of Universal Pre-Kindergarten on Children's Academic Achievement." *The B.E. Journal of Economic Analysis & Policy* 8 (1).

Fryer, Roland G., and Steven D. Levitt. 2013. "Testing for Racial Differences in the Mental Ability of Young Children." *American Economic Review* 103 (2): 981–1005.

Garces, Eliana, Duncan Thomas, and Janet Currie. 2002. "Longer-Term Effects of Head Start." *American Economic Review* 92 (4): 999–1012.

Gordon, Robert, and Sara Mead. 2014. "How to Fix Head Start." Brookings Institution, Washington, DC.

Gormley, William T., and Ted Gayer. 2005. "Promoting School Readiness in Oklahoma An Evaluation of Tulsa's Pre-K Program." *Journal of Human Resources* 40 (3): 533–58.

Gramlich, Edward M. 1986. "Evaluation of Education Projects: The Case of the Perry Preschool Program." *Economics of Education Review* 5 (1): 17–24.

Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitz. 2010. "The Rate of Return to the HighScope Perry Preschool Program." *Journal of Public Economics* 94 (1): 114–28.

Heckman, James J., Rodrigo Pinto, and Peter Savelyev. 2013. "Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes." *American Economic Review* 103 (6): 2052–86.

The Inter-university Consortium for Political and Social Research (ICPSR). n.d. "Current Population Survey Series." The Inter-university Consortium for Political and Social Research, Institute for Social Research, University of Michigan, Ann Arbor. https://www.icpsr.umich.edu/icpsrweb/ICPSR/series/24.

Lipsey, Mark W., Kerry G. Hofer, Nianbo Dong, Dale C. Farran, and Carol Bilbrey. 2013a. "Evaluation of the Tennessee Voluntary Prekindergarten Program: End of Pre-K Results from the Randomized Control Design." Research Report, Peabody Research Institute, Vanderbilt University, Nashville, TN.

———. 2013b. "Evaluation of the Tennessee Voluntary Prekindergarten Program: Kindergarten and First Grade Follow-Up Results from the Randomized Control Design." Research Report, Peabody Research Institute, Vanderbilt University, Nashville, TN.

Ludwig, Jens, and Douglas L. Miller. 2007. "Does Head Start Improve Children's Life Chances? Evidence from a Regression Discontinuity Design." *Quarterly Journal of Economics* 122 (1): 159–208.

Martin, Joyce A., Brady E. Hamilton, Michelle J. K. Osterman, Sally C. Curtin, and T. J. Mathews. 2013. "Births: Final Data for 2012." Table 1. National Vital Statistics System, National Center for Health Statistics, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Washington, DC. http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_09.pdf.

National Bureau of Economic Research (NBER). n.d. "NBER CPS Supplements." National Bureau of Economic Research, Cambridge, MA. http://www.nber.org/data/current-population-survey-data.html.

National Center for Health Statistics. 2005. *Vital Statistics of the United States, 2003, Volume I, Natality.* Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Hyattsville, Maryland.

Office of Head Start (OHS). Various years. "Head Start Program Fact Sheets." Office of Head Start, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC. http://eclkc.ohs.acf.hhs.gov/hslc/mr/factsheets.

Office of the Press Secretary. 2013. "Fact Sheet President Obama's Plan for Early Education for all Americans." Office of the Press Secretary, The White House, Washington, DC.

Puma, Mike, Stephen Bell, Ronna Cook, Camilla Heid, Pam Broene, Frank Jenkins, Andrew Mashburn, and Jason Downer. 2012. "Third Grade Follow-up to the Head Start Impact Study Final Report." OPRE Report # 2012-45b. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Reardon, Sean. 2011. "The Widening Academic-Achievement Gap between the Rich and the Poor: New Evidence and Possible Explanations." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 91–116. New York: Russell Sage Foundation and Spencer Foundation.

Robin, Kenneth B., Ellen C. Frede, and W. Steven Barnett. 2006. "Is More Better? The Effects of Full-Day vs. Half-Day Preschool on Early School Achievement." NIEER Working Paper, National Institute for Early Education Research, New Brunswick, NJ.

Sabol, Terri J., Sandra L. Soliday Hong, Robert C. Pianta, and Margaret R. Burchinal. 2013. "Can Rating Pre-K Programs Predict Children's Learning?" *Science* 341 (6148): 845–46.

Schweinhart, Lawrence J., Jeanne Montie, Zongping Xiang, W. Steven Barnett, Clive R. Belfield, and Milagros Nores. 2005. "Lifetime Effects: The HighScope Perry Preschool Study Through Age 40." HighScope Press, Ypsilanti, MI.

Walters, Christopher. 2014. "Inputs in the Production of Early-childhood Human Capital: Evidence from Head Start." White Paper, University of California, Berkeley, Berkeley, CA.

Weiland, Christina, and Hirokazu Yoshikawa. 2013. "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills." *Child Development* 84 (6): 2112–30.

Wong, Vivian C., Thomas D. Cook, W. Steven Barnett, and Kwanghee Jung. 2008. "An Effectiveness-Based Evaluation of Five State Pre-Kindergarten Programs." *Journal of Policy Analysis and Management* 27 (1): 122–154.

Yoshikawa, Hirokazu, Christina Weiland, Jeanne Brooks-Gunn, Margaret R. Burchinal, Linda M. Espinosa, William T. Gormley, Jens Ludwig, Katherine A. Magnuson, Deborah Phillips, and Martha J. Zaslow. 2013. *Investing in Our Future: The Evidence Base on Preschool Education.* Policy Monograph, Society for Research in Child Development.

Proposal 2

Administration for Children and Families (ACF). 2002. "Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start, vol. 1 Final Technical Report." U.S. Department of Health and Human Services, Washington, DC.

Altintas, Evrim. 2012. "Parents' Time with Children: Micro and Macro Perspectives." Unpublished doctoral dissertation, Nuffield College, University of Oxford, UK.

Aos, Steve, Roxanne Lieb, Jim Mayfield, Marna Miller, and Annie Pennucci. 2004. "Benefits and Costs of Prevention and Early Intervention Programs for Youth." Washington State Institute for Public Policy, Olympia, WA.

Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines." *Quarterly Journal of Economics* 121: 635–72.

Atkinson, Anthony B., Thomas Piketty, and Emmanuel Saez. 2011. "Top Incomes in the Long Run of History." *Journal of Economic Literature* 49: 3–71.

Babcock, Elisabeth D. 2014. "Using Brain Science to Design New Pathways Out of Poverty." Crittenton Women's Union, Boston, MA.

Baggett, Kathleen M., Betsy Davis, Edward G. Feil, Lisa B. Sheeber, Susan H. Landry, Judith J. Carta, and Craig Leve. 2010. "Technologies for Expanding the Reach of Evidence-Based Interventions: Preliminary Results for Promoting Social-Emotional Development in Early Childhood." *Topics in Early Childhood Special Education* 29 (4): 226–38.

Bailey, Martha J., and Susan M. Dynarski. 2011. "Inequality in Postsecondary Education." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 117–32. New York: Russell Sage Foundation and Spencer Foundation.

Belley, Philippe, and Lance Lochner. 2007. "The Changing Role of Family Income and Ability in Determining Educational Achievement." *Journal of Human Capital* 1: 37–89.

Bierman, Karen, Brenda Heinrichs, Robert Lee Nix, Janet Welsh, Scott David Gest, Celene Elizabeth Domitrovich, and Sukhdeep Gill. 2013. "The Head Start REDI Parenting Program: Extending the Impact of Classroom Intervention." Paper presented at the Society for Prevention Research Twenty-First Annual Meeting.

Charness, Gary, and Uri Gneezy. 2005. "Incentives to Exercise." *Econometrica* 77: 909–31.

Chetty, Raj, John N. Friedman, Nathaniel Hilger, Emmanuel Saez, Diane Whitmore Schanzenbach, and Danny Yagan. 2011. "How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project STAR." *Quarterly Journal of Economics* 126: 1593–1660

Currie, Janet. 2001. "Early Childhood Intervention Programs." *Journal of Economic Perspectives* 15: 213–38.

Davidson, Richard J., Jon Kabat-Zinn, Jessica Schumacher, Melissa Rosenkranz, Daniel Muller, Saki F. Santorelli, Ferris Urbanowski, Anne Harrington, Katherine Bonus, and John F. Sheridan. 2003. "Alterations in Brain and Immune Function Produced by Mindfulness Meditation." *Psychosom Medicine* 65 (4): 564–70.

Deming, David. 2009. "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start." *American Economic Journal: Applied Economics* 1: 111–34.

Duncan, Greg J., and Katherine Magnuson. 2011. "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 47–69. New York: Russell Sage and Spencer Foundation.

Duncan, Greg J., Ariel Kalil, Kjetil Telle, and Katherine M. Ziol-Guest. 2013. "Increasing Inequality in Parent Incomes and Children's Completed Schooling: Correlation or Causation?" Paper presented at the Annual Meeting of the Population Association of America, New Orleans, LA.

Duncan, Greg J., Ariel Kalil, Susan E. Mayer, Robin Tepper, and Monique R. Payne. 2005. "The Apple Does Not Fall Far from the Tree." In *Unequal Chances: Family Background and Economic Success*, edited by Samuel Bowles, Herbert Gintis, and Melissa Osborne Groves, 23–79. Princeton, NJ: Princeton University Press.

Eckenrode, John, Mary Campa, Dennis W. Luckey, Charles R. Henderson, Robert Cole, Harriet Kitzman, Elizabeth Anson, Kimberly Sidora-Arcoleo, Jane Powers, and David Olds. 2010. "Long-Term Effects of Prenatal and Infancy Nurse Home Visitation on the Life Course of Youths: Nineteen-Year Follow-up of a Randomized Trial." *Archives of Pediatric and Adolescent Medicine* 164 (5): 9–15.

Fudenberg, Drew, and David K. Levine. 2006. "A Dual-Self Model of Impulse Control." *American Economic Review* 96 (5): 1449–76.

Furstenberg, Frank F. 2011. "The Challenges of Finding Causal Links between Family Educational Practices and Schooling Outcomes." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 465–82. New York: Russell Sage Foundation and Spencer Foundation.

Guryan, Jonathan, Erik Hurst, and Melissa Kearney. 2008. "Parental Education and Parental Time with Children." *Journal of Economic Perspectives* 22 (3): 23–46.

Hurst, Erik. 2010. "Comments and Discussion." *Brookings Papers on Economic Activity*, 177–84. Brookings Institution, Washington, DC.

Kalil, Ariel, Rebecca Ryan, and Michael Corey. 2012. "Diverging Destinies: Maternal Education and the Developmental Gradient in Time with Children." *Demography* 49: 1361–83.

Kamenica, Emir. 2012. "Behavioral Economics and the Psychology of Incentives." *Annual Review of Economics* 4: 427–52.

Laibson, David. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 112: 443–77.

Landry, Susan H., Jason L. Anthony, Paul R. Swank, and Pauline Monseque-Bailey. 2009. "Effectiveness of Comprehensive Professional Development for Teachers of At-Risk Preschoolers." *Journal of Educational Psychology* 101 (2): 448–65.

Love, John M., Ellen Eliason Kisker, Christine Ross, Helen Raikes, Jill Constantine, Kimberly Boller, Jeanne Brooks-Gunn, Rachel Chazan-Cohen, Lousia Banks Tarullo, Christy Brady-Smith, Allison Sidle Fuligni, Peter Z. Schochet, Diane Paulsell, and Cheri Vogel. 2005. "The Effectiveness of Early Head Start for 3-Year-Old Children and their Parents: Lessons for Policy and Programs." *Developmental Psychology* 41 (6): 885–901.

Ludwig, Jens, and Deborah A. Phillips. 2008. "Long-Term Effects of Head Start on Low-Income Children." *Annals of the New York Academy of Sciences* 1136: 257–68.

Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao. 2013. "Poverty Impedes Cognitive Function." *Science* 341 (6149): 976–80.

Michalopoulos, Charles, Anne Duggan, Virginia Knox, Jill H. Filene, Helen Lee, Emily K. Snell, Sarah Crowne, Erika Lundquist, Phaedra S. Corso, and Justin B. Ingels. 2013. "Revised Design for the Mother and Infant Home Visiting Program Evaluation." Report 2013-18, Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Milkman, Katherine L., John Beshears, James J. Choi, David Laibson, and Brigitte C. Madrian. 2011. "Using Implementation Intentions Prompts to Enhance Influenza Vaccination Rates." *Proceedings of the National Academy of Sciences* 108 (26): 10415–20.

Mullainathan, Sendhil, and Eldar Shafir. 2013. "Decision Making and Policy in the Context of Poverty." In *Behavioral Foundations of Public Policy*, edited by Eldar Shafir, 281–300. Princeton, NJ: Princeton University Press.

Office of Management and Budget (OMB). 2013. "Next Steps in the Evidence and Innovation Agenda." Office of Management and Budget, Executive Office of the President, Washington, DC.

Olds, David L., John Eckenrode, Charles R. Henderson, Harriet Kitzman, Jane Powers, Robert Cole, Kimberly Sidora, Pamela Morris, Lisa M. Pettit, and Dennis Luckey. 1997. "Long-Term Effects of Home Visitation on Maternal Life Course and Child Abuse and Neglect. Fifteen-Year Follow-Up of a Randomized Trial." *Journal of the American Medical Association* 278 (8): 637–43.

Olds, David L., Charles R. Henderson, and Harriet J. Kitzman. 1994. "Does Prenatal and Infancy Nurse Home Visitation Have Enduring Effects on Qualities of Parental Caregiving and Child Health at 25 to 50 Months of Life?" *Pediatrics* 93 (1): 89–98.

The Pew Charitable Trusts. 2014. "Plenary Presentation at the National Summit on Quality in Home Visiting Programs." *Public Opinion on Home Visiting*. January 29–30, 2014.

Price, Joseph. 2010. "The Effect of Parental Time Investments: Evidence from Natural Within-Family Variation." Unpublished paper, Brigham Young University, Provo, UT.
Reardon, Sean F. 2011. "The Widening Socioeconomic Status Achievement Gap: New Evidence and Possible Explanations." In *Whither Opportunity?: Rising Inequality and the Uncertain Life Chances of Low-Income Children*, edited by Greg J. Duncan and Richard J. Murnane. New York: Russell Sage Foundation and Spencer Foundation.
Reeves, Richard, and Kimberly Howard. 2013. "The Parenting Gap." Brookings Institution, Washington, DC.
Rowe, Meredith L. 2008. "Child-Directed Speech: Relation to Socioeconomic Status, Knowledge of Child Development, and Child Vocabulary Skill." *Journal of Child Language* 35: 185–205.
Schweinhart, Lawrence J., Jeanne Montie, Zongping Xiang, W. Steven Barnett, Clive R. Beldfield, and Milagros Nores. 2005. *Lifetime Effects: The High/Scope Perry Preschool Study through Age 40*. Ypsilanti, MI: High/Scope Press.
Seger, Shane. 2012. "Researchers Explore Smartphone App to Combat Depression among First-Time, Low-Income Mothers." Yale School of Public Health, Yale University, New Haven, CT.
Shah, Anuj, Mullainathan, Sendhil, and Eldar Shafir. 2012. "Some Consequences of Having Too Little." *Science* 338 (6107): 682–85.
Shonkoff, Jack P. 2012. "Leveraging the Biology of Adversity to Address the Roots of Disparities in Health and Development." *Proceedings of the National Academy of Sciences of the United States of America* 109 (2): 17302–7.
Stockwell, Melissa S., Elyse Olshen Kharbanda, Raquel Andres Martinez, Celibell Y. Vargas, David K. Vawdrey, and Stewin Camargo. 2012. "Effect of a Text Messaging Intervention on Influenza Vaccination in an Urban, Low-Income Pediatric and Adolescent Population: A Randomized Controlled Trial." *Journal of the American Medical Association* 307 (16): 1702–8.
Thaler, Richard. 1991. "Some Empirical Evidence on Dynamic Inconsistency." In *Quasi Rational Economics*, edited by Richard Thaler, 127–33. New York: Russell Sage Foundation.
Thaler, Richard H., and Shlomo Benartzi. 2004. "Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving." *Journal of Political Economy* 112: S164–S187.
Villena-Rodán, Benjamín, and Cecilia Ríos-Aguilar. 2011. "Causal Effects of Maternal Time Investment on Children's Cognitive Outcomes." Documentos de Trabajo 285, Centro de Economía Aplicada, Universidad de Chile, Santiago.
Wagner, Mary, Donna Spiker, and Margaret Inman Linn. 2002. "The Effectiveness of the Parents as Teachers Program with Low-Income Parents and Children." *Topics in Early Childhood Special Education* 22 (2): 67–81.
Zaveri, Heather, Andrew Burwick, and Erin Maher. 2014. "Home Visiting: The Potential for Cost Savings from Home Visiting Due to Reductions in Child Maltreatment." Casey Family Programs, Washington, DC.

Proposal 3

Bailey, Martha J., Brad Hershbein, and Amalia R. Miller. 2012. "The Opt-In Revolution? Contraception and the Gender Gap in Wages." Working Paper 17922, National Bureau of Economic Research, Cambridge, MA.
Centers for Disease Control and Prevention (CDC). 2014. "VitalStats–Births." Centers for Disease Control and Prevention, Washington, DC.
Darney, Philip, Ashlesha Patel, Kimberly Rosen, Lena S. Shapiro, and Andrew M. Kaunitz. 2009. "Safety and Efficacy of a Single-Rod Etonogestrel Implant (Implanon): Results from 11 International Clinical Trials." *Fertility and Sterility* 91 (5): 1646–53.
Dehlendorf, Christine, Kira Levy, Rachel Ruskin, and Jody Steinauer. 2010. "Health Care Providers' Knowledge About Contraceptive Evidence: A Barrier to Quality Family Planning Care?" *Contraception* 81 (4, April): 292–98. doi:10.1016/j.contraception.2009.11.006.
Edin, Kathryn, Paula England, Emily Fitzgibbons Shafer, and Joanna Reed. 2007. "Forming Fragile Families: Was the Baby Planned, Unplanned, or In Between." In *Unmarried Couples with Children*, edited by Paula England and Kathryn Edin, 25–54. New York: Russell Sage Foundation.
Espey, Eve, and Tony Ogburn. 2011. "Long-Acting Reversible Contraceptives: Intrauterine Devices and the Contraceptive Implant." *Obstetrics & Gynecology* 117 (3): 705–19.
Evans, W. D., Olivia Silber-Ashley, and Jennifer Gard. 2007. "Social Marketing as a Strategy to Reduce Unintended Adolescent Pregnancy." *The Open Communication Journal* 1 (1, December 26): 1–8. doi:10.2174/1874916X00701010001.
Farrelly, Matthew C., Kevin C. Davis, M. Lyndon Haviland, Peter Messeri, and Cheryl G. Healton. 2005. "Evidence of a Dose–Response Relationship between 'Truth' Antismoking Ads and Youth Smoking Prevalence." *American Journal of Public Health* 95 (3): 425–31. doi:10.2105/AJPH.2004.049692.
Finer, Lawrence B., Jenna Jerman, and Megan L. Kavanaugh. 2012. "Changes in Use of Long-acting Contraceptive Methods in the United States, 2007–2009." *Fertility and Sterility* 98 (4): 893–97.
Frohwirth, Lori, Ann M. Moore, and Renata Maniaci. 2013. "Perceptions of Susceptibility to Pregnancy among U.S. Women Obtaining Abortions." *Social Science & Medicine* 99 (December): 18–26.
Gold, Rachel Benson, Adam Sonfield, Cory L. Richards, and Jennifer J. Frost. 2009. "Next Steps for America's Family Planning Program: Leveraging the Potential of Medicaid and Title X in an Evolving Health Care System." Guttmacher Institute, New York, NY.

Goldin, Claudia, and Lawrence F. Katz. 2002. "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions." *Journal of Political Economy* 110 (4, August): 730–70. doi:10.1086/340778.

Harper, Cynthia C., Maya Blum, Heike Thiel de Bocanegra, Philip D. Darney, J. Joseph Speidel, Michael Policar, and Eleanor A. Drey. 2008. "Challenges in Translating Evidence to Practice: The Provision of Intrauterine Contraception." *Obstetrics & Gynecology* 111 (6, June): 1359–69. doi:10.1097/AOG.0b013e318173fd83.

Hotz, V. Joseph, Susan Williams McElroy, and Seth G. Sanders. 2005. "Teenage Childbearing and Its Life Cycle Consequences Exploiting a Natural Experiment." *Journal of Human Resources* 40 (3): 683–715.

Hubacher, David, Roger Lara-Ricalde, Douglas J. Taylor, Fernando Guerra-Infante, and Raymundo Guzmán-Rodríguez. 2001. "Use of Copper Intrauterine Devices and the Risk of Tubal Infertility among Nulligravid Women." *New England Journal of Medicine* 345 (8): 561–67.

Jones, Jo, William Mosher, and Kimberly Daniels. 2012. "Current Contraceptive Use in the United States, 2006–2010, and Changes in Patterns of Use since 1995." *National Health Statistics Reports* 60: 1–25.

Karpilow, Quentin, Jennifer Manlove, Isabel V. Sawhill, and Adam Thomas. 2013. "The Role of Contraception in Preventing Abortion, Nonmarital Childbearing, and Child Poverty." Paper presented at the Association for Public Policy Analysis and Management Annual Fall Research Conference, Washington, DC.

Kaye, Kelleen, Katherine Suellentrop, and Corinna Sloup. 2009. "The Fog Zone: How Misperceptions, Magical Thinking, and Ambivalence Put Young Adults at Risk for Unplanned Pregnancy." National Campaign to Prevent Teen and Unplanned Pregnancy, Washington, DC.

Kearney, Melissa S., and Phillip B. Levine. 2014. "Media Influences on Social Outcomes: The Impact of MTV's 16 and Pregnant on Teen Childbearing." Working Paper 19795, National Bureau of Economic Research, Cambridge, MA.

Lichter, Daniel T., and Deborah Roempke Graefe. 2001. "Finding a Mate? The Marital and Cohabitation Histories of Unwed Mothers." *In Out of Wedlock: Causes and Consequences of Nonmarital Fertility*, edited by Lawrence L. Wu and Barbara Wolfe, 317–43. New York: Russell Sage Foundation.

Madden, Tessa, Jenifer E. Allsworth, Katherine J. Hladky, Gina M. Secura, and Jeffrey F. Peipert. 2010. "Intrauterine Contraception in Saint Louis: A Survey of Obstetrician and Gynecologists' Knowledge and Attitudes." *Contraception* 81 (2, February): 112–16. doi:10.1016/j.contraception.2009.08.002.

McLanahan, Sara, and Gary Sandefur. 1994. *Growing up with a Single Parent: What Hurts, What Helps*. Cambridge, MA: Harvard University Press.

Monea, Emily, and Adam Thomas. 2010. "The Public Cost of Pregnancy." Working Paper, Brookings Institution, Washington, DC.

Monea, Emily, and Adam Thomas. 2011. "Unintended Pregnancy and Taxpayer Spending." *Perspectives on Sexual and Reproductive Health* 43 (2): 88–93.

Mosher, William D., and Jo Jones. 2010. "Use of Contraception in the United States: 1982–2008." Vital and Health Statistics, Series 23, Data from the National Survey of Family Growth (29) (August): 1–44.

Ng, Alison Stewart, and Kelleen Kaye. 2012. "Teen Childbearing, Education, and Economic Well-Being. Why It Matters." National Campaign to Prevent Teen and Unplanned Pregnancy, Washington, DC.

Peterson, Herbert B., and Kathryn M. Curtis. 2005. "Long-Acting Methods of Contraception." *New England Journal of Medicine* 353 (20): 2169–75.

Pederson, Sally. 2012. "Iowa Initiative to Reduce Unintended Pregnancies." Webinar presented at the Department of Health and Human Services. www.hhs.gov/opa/pdfs/11-26-12-iowa-initiative-transcript.pdf.

Prevention First Colorado. 2009. "Develop Social Marketing and Public Education Campaigns to Increase Contraceptive use and Knowledge of the Impacts of Unintended Pregnancy." Prevention First Colorado, Denver, CO.

Sawhill, Isabel. 2012. "Are We Headed to a Permanently Divided Society?" Policy Brief, Brookings Institution, Washington, DC.

Sawhill, Isabel, and Joanna Venator. 2014. "Three Policies to Close the Class Divide in Family Formation" *Social Mobility Memos* (blog). http://www.brookings.edu/blogs/social-mobility-memos/posts/2014/01/21-3-policies-to-close-family-formation-class-divide-sawhill.

Sawhill, Isabel, Adam Thomas, and Emily Monea. 2010. "An Ounce of Prevention: Policy Prescriptions to Reduce the Prevalence of Fragile Families." *The Future of Children* 20 (2): 133–55. doi:10.1353/foc.2010.0004.

Secura, Gina M., Jenifer E. Allsworth, Tessa Madden, Jennifer L. Mullersman, and Jeffrey F. Peipert. 2010. "The Contraceptive CHOICE Project: Reducing Barriers to Long-acting Reversible Contraception." *American Journal of Obstetrics and Gynecology* 203 (2, August): 115.e1–7. doi:10.1016/j.ajog.2010.04.017.

Stoddard, Amy, Colleen McNicholas, and Jeffrey F. Peipert. 2011. "Efficacy and Safety of Long-Acting Reversible Contraception." *Drugs* 71 (8): 969–80.

Thomas, Adam. 2012. "Three Strategies to Prevent Unintended Pregnancy." *Journal of Policy Analysis and Management* 31 (2, March): 280–311. doi:10.1002/pam.21614.

Tolaymat, Lama L., and Andrew M. Kaunitz. 2007. "Long-Acting Contraceptives in Adolescents." *Current Opinion in Obstetrics and Gynecology* 19 (5): 453–60.

U.S. Census Bureau. 2012. "Data on Families and Living Arrangements." Table FM-1. U.S. Census Bureau, Washington, DC.

U.S. Census Bureau. 2013. "Poverty - Experimental Measures." Table 6. U.S. Census Bureau, Washington, DC.

University of California, San Francisco Bixby Center for Global Reproductive Health. 2014. LARC Project. http://bixbycenter.ucsf.edu/research/cd_and_fp/larc.html.
Waldfogel, Jane, Terry-Ann Craigie, and Jeanne Brooks-Gunn. 2010. "Fragile Families and Child Wellbeing." *The Future of Children* 20 (2): 87–112.
Weinreich, Nedra Kline. 1999. "The 'Don't Kid Yourself' Campaign Case Study." In *Hands-On Social Marketing: A Step-by-Step Guide*, edited by Nedra Kline Weinreich. Thousand Oaks, CA: Sage.
Zolna, Mia R., and Laura Lindberg. 2012. "Unintended Pregnancy: Incidence and Outcomes Among Young Adult Unmarried Women in the United States, 2001 and 2008." Guttmacher Institute, New York, NY.

Proposal 4

Behncke, Stefanie, Markus Frölich, and Michael Lechner. 2010. "A Caseworker Like Me: Does The Similarity between the Unemployed and Their Caseworkers Increase Job Placements?" *Economic Journal* 120 (549):1430–59.
Bernstein, Lawrence, Catherine Dunn Rappaport, Lauren Olsho, Dana Hunt, and Marjorie Levin. 2009. "Impact Evaluation of the U.S. Department of Education's Student Mentoring Program." U.S. Department of Education, Washington, DC.
Big Brothers Big Sisters of America. 2012. "Annual Report 2011/12." Philadelphia: Big Brothers Big Sisters of America.
Bruce, Mary, and John Bridgeland. 2014. "The Mentoring Effect: Young People's Perspectives on the Outcomes and Availability of Mentoring." Civic Enterprises with Hart Research Associates for MENTOR: The National Mentoring Partnership, Washington, DC.
Cavell, Timothy, David DuBois, Michael Karcher, Thomas Keller, and Jean Rhodes. 2009. "Policy Brief: Strengthening Mentoring Opportunities for At-Risk Youth." National Mentoring Center, Portland, OR.
Child Trends. 2014. "List of Programs." Child Trends, Bethesda, MD. http://www.childtrends.org/what-works/list-of-programs/.
Dee, Thomas S. 2004. "Teachers, Race and Student Achievement in a Randomized Experiment." *Review of Economics and Statistics* 86 (1): 195–210.
Dee, Thomas S. 2005. "A Teacher Like Me: Does Race, Ethnicity or Gender Matter?" *American Economic Review* 95 (2): 158–65.
DuBois, David L., Nelson Portillo, Jean E. Rhodes, Naida Silverthorn, and Jeffrey C. Valentine. 2011. "How Effective Are Mentoring Programs for Youth? A Systematic Assessment of the Evidence." *Psychological Science in the Public Interest* 12 (2): 57–91.
Hahn, Andrew, Tom Leavitt, and Paul Aaron. 1994. "Evaluation of the Quantum Opportunities Program. Did the Program Work?" Center for Human Resources, Brandeis University, Waltham, MA.
Herrera, Carla, Jean Baldwin Grossman, Tina J. Kauh, Amy F. Feldman, Jennifer McMaken, and Linda Z. Jucovy. 2007. "Making a Difference in Schools: The Big Brothers Big Sisters School-Based Mentoring Impact Study." Public/Private Ventures, Philadelphia, PA.
Karcher, Michael J. 2008. "The Study of Mentoring in the Learning Environment (SMILE): A Randomized Evaluation of the Effectiveness of School-based Mentoring." *Prevention Science* 9 (2): 99–113.
Lawner, Elizabeth, Martha Beltz, and Kristin A. Moore. 2013. "Research Brief: What Works for Mentoring Programs: Lessons from Experimental Evaluations of Programs and Interventions." Child Trends, Bethesda, MD.
Levine, Phillip B., and David J. Zimmerman. 2010. *Targeting Investments in Children: Fighting Poverty When Resources Are Limited*. Chicago: University of Chicago Press.
Obama, Barack. 2014. "Remarks by the President on 'My Brother's Keeper' Initiative." The White House, Washington, DC.
Schirm, Allen, Elizabeth Stuart, and Allison McKie. 2006. "The Quantum Opportunity Program Demonstration: Final Impacts." Mathematica Policy Research, Washington, DC.
Tierney, Joseph P., Jean Baldwin Grossman, and Nancy L. Resch. 1995. "Making a Difference: An Impact Study of Big Brothers Big Sisters." Public/Private Ventures, Philadelphia, PA.
U.S. Census Bureau. 2013. "Living Arrangements of Children." U.S. Census Bureau, Washington, DC. https://www.census.gov/hhes/families/data/children.html.
Wheeler, Marc E., Thomas E. Keller, and David L. DuBois. 2010. "Review of Three Recent Randomized Trials of School-Based Mentoring." *Social Policy Report* 24 (3): 1–19.

Proposal 5

Bellotti, Jeanne, Linda Rosenberg, Samina Sattar, Andrea Mraz Esposito, and Jessica Ziegler. 2010. "Reinvesting in America's Youth: Lessons from the 2009 Recovery Act Summer Youth Employment Initiative." Mathematica Policy Research, Washington, DC.
Bloom, Howard S., Larry L. Orr, Stephen H. Bell, George Cave, Fred Doolittle, Winston Lin, and Johannes M. Bos. 1997. "The Benefits and Costs of JTPA Title II-A Programs: Key Findings from the National Job Training Partnership Act Study." *Journal of Human Resources* 32 (3): 549–76.
Bureau of Labor Statistics. n.d. "CPS Tables." U.S. Bureau of Labor Statistics. Washington, DC. http://www.bls.gov/cps/tables.htm.
Bureau of Labor Statistics. Various years. "Current Population Survey: Employment Status of the Civilian Noninstitutional Population by Age, Sex, and Race, 2003–2012." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.

Castleman, Benjamin L., Karen Arnold, and Katherine Lynk Wartman. 2012. "Stemming the Tide of Summer Melt: An Experimental Study of the Effects of Post-High School Summer Intervention on Low-Income Students' College Enrollment." *Journal of Research on Educational Effectiveness* 5 (1): 1–17.

Curnan, Susan P., and Andrew B. Hahn. 2010. "Innovating Under Pressure: The Story of the 2009 Recovery Act Summer Youth Employment Initiative." Center for Youth and Communities, Brandeis University, Waltham, MA.

Dee, Thomas S. 2011. "Conditional Cash Penalties in Education: Evidence from the Learnfare Experiment." *Economics of Education Review* 30 (5): 924–37.

Deming, David J., Sarah Cohodes, Jennifer Jennings, and Christopher Jencks. 2013. "School Accountability, Postsecondary Attainment and Earnings." Working Paper 19444, National Bureau of Economic Research, Cambridge, MA.

Doolittle, Fred, Steve Bell, Howard Bloom, George Cave, James Kemple, Larry Orr, Linda Traeger, and John Wallace. 1993. "A Summary of the Design and Implementation of the National JTPA Study." MDRC, New York, NY.

Entwisle, Doris R., Karl L. Alexander, and Linda Steffel Olson. 2000. "Early Work Histories of Urban Youth." *American Sociological Review* 65 (2).

Farkas, George, D. Alton Smith, and Ernst W. Stromsdorfer. 1983. "The Youth Entitlement Demonstration: Subsidized Employment with a School Requirement." *Journal of Human Resources* 28 (4) 557–73.

Foster, E. Michael. 1995. "Why Teens Do Not Benefit from Work Experience Programs: Evidence from Brother Comparisons." *Journal of Policy Analysis and Management* 14 (3): 393–414.

Greenberg, David H., Charles Michalopoulus, and Philip K. Robins. 2003. "A Meta-Analysis of Government-Sponsored Training Programs." *Industrial and Labor Relations Review* 57 (1): 31–53.

Gueron, Judith M. 1984. "Lessons from a Job Guarantee: The Youth Incentive Entitlement Pilot Projects." MDRC, New York, NY.

Heckman, James. 1998. "What Should Be Our Human Capital Investment Policy?" *Fiscal Studies* 19 (2): 103–19.

Heller, Sara. 2014. "The Effects of Summer Jobs on Disadvantaged Youth." Unpublished manuscript, University of Pennsylvania, Philadelphia, PA.

Hirsch, Barton J., Larry V. Hedges, JulieAnn Stawicki, and Megan A. Mekinda. 2011. "After-School Programs for High School Students: An Evaluation of After School Matters." Manuscript, Northwestern University, Evanston, IL.

Leos-Urbel, Jacob. Forthcoming. "What Is a Summer Job Worth? The Causal Impact of Summer Youth Employment on Academic Outcomes: Evidence from a Large-Scale Lottery." *Journal of Policy Analysis and Management*.

Lillydahl, Jane H. 1990. "Academic Achievement and Part-Time Employment of High School Students." *Journal of Economic Education* 21 (3): 307–16.

McClanahan, Wendy S., Cynthia L. Sipe, and Thomas J. Smith. 2004. "Enriching Summer Work: An Evaluation of the Summer Career Exploration Program." Public/Private Ventures, New York, NY.

McCollister, Kathryn E., Michael T. French, and Hai Fang. 2010. "The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation." *Drug Alcohol Dependence* 108 (1–2): 98–109.

Morisi, Teresa L. 2010. "The Early 2000s: A Period of Declining Teen Summer Employment Rates." *Monthly Labor Review*, Bureau of Labor Statistics, Department of Labor, Washington, DC.

Mortimer, Jeylan T. 2003. *Working and Growing Up in America*. Cambridge, MA: Harvard University Press.

New York University Institute for Education and Social Policy. 2014. Steinhardt School of Culture, Education, and Human Development, New York University, New York, NY. http://steinhardt.nyu.edu/iesp/.

Orr, Larry L., Howard S. Bloom, Stephen H. Bell, Fred Doolittle, and Winston Lin. 1996. *Does Training for the Disadvantaged Work? Evidence from the National JTPA Study*. Washington, DC: Urban Institute Press.

Painter, Matthew A. 2010. "Get a Job and Keep It! High school Employment and Adult Wealth Accumulation." *Research in Social Stratification and Mobility* 28 (2): 233–49.

Rees, Albert. 1986. "An Essay on Youth Joblessness." *Journal of Economic Literature* 24 (1): 613–28.

Riccio, James A., Nadine Dechausay, David M. Greenberg, Cynthia Miller, Zawadi Rucks, and Nandita Verma. 2010. "Toward Reduced Poverty across Generations: Early Findings from New York City's Conditional Cash Transfer Program." MDRC, New York, NY.

Riccio, James A., Nadine Dechausay, Cynthia Miller, Stephen Nuñez, Nandita Verma, Edith Yang. 2013. "Conditional Cash Transfers in New York City: The Continuing Story of the Opportunity NYC-Family Rewards Demonstration." MDRC, New York, NY.

Rose, Heather. 2005. "Do Gains in Test Scores Explain Labor Market Outcomes?" *Economics of Education Review* 25 (2006): 430–46.

Ruhm, Christopher J. 1995. "The Extent and Consequences of High School Employment." *Journal of Labor Research* 16 (3): 293–303.

Schwartz, Amy E., Jacob Leos-Urbel, Megan Silander, and Matthew Wiswall. In progress. "Making Summer Matter. The Impact of Youth Employment on Academic Performance."

Stanley, Marcus, Lawrence Katz, and Alan Krueger. 1998. "Developing Skills: What We Know about the Impacts of American Employment and Training Programs on Employment, Earnings, and Educational Outcomes." Paper presented at G8 Economic Summit, Birmingham, UK.

Sum, Andrew, Ishwar Khatiwada, Joseph McLaughlin, and Sheila Palma. 2008. "The Collapse of the National Teen Job Market and the Case for an Immediate Summer and Year Round Youth Jobs Creation Program." Center for Labor Market Studies Publications, Center for Labor Market Studies, Northeastern University, Boston, MA.

Sum, Andrew, Mykhaylo Trubskyy, and Walter McHugh. 2013. "The Summer Employment Experiences and the Personal/Social Behaviors of Youth Violence Prevention Employment Program Participants and Those of a Comparison Group Center for Labor Market Studies." Center for Labor Market Studies, Northeastern University, Boston, MA.

U.S. Census Bureau. 2000. "Table 2-32: New York: Total Voting-Age Population and Citizen Voting-Age Population by Sex, for Counties: 2000." *2005–2009 American Community Survey 5 year estimates*. U.S. Census Bureau, Washington, DC.

Walker, Gary, and Frances Vilella-Velez. 1992. "Anatomy of a Demonstration: The Summer Training and Education Program (STEP) from Pilot through Replication and Post-Program Impacts." Public/Private Ventures, Philadelphia, PA.

Weinstein, Meryle, and Michele C. Leardo. 2013. "CTE Summer Scholars Program: Year 2 Evaluation Report." IESP Evaluation Report, IESP, New York University, New York, NY.

Proposal 6

Adelman, Clifford. 1999. "Answers in the Toolbox: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment." U.S. Department of Education, Washington, DC.

Adelman, Clifford. 2006. "The Toolbox Revisited: Paths to Degree Completion from High School through College." U.S. Department of Education, Washington, DC.

Alliance for Excellent Education. 2006. "Paying Double: Inadequate High Schools and Community College Remediation." Issue Brief, Alliance for Excellent Education, Washington, DC.

Attewell, Paul, and Thurston Domina. 2008. "Raising the Bar: Curricular Intensity and Academic Performance." *Educational Evaluation and Policy Analysis* 30: 51–71.

Bailey, Thomas. 2009. "Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College." *New Directions for Community Colleges* 145: 11–30.

Bailey, Thomas, Dong Wook Jeong, and Sung-Woo Cho. 2010. "Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges." *Economics of Education Review* 29 (2): 255–70.

Belfield, Clive, and Peter Crosta. 2012. "Predicting Success in College: The Importance of Placement Tests and High School Transcripts." Working Paper No. 42, Community College Research Center, Teachers College, Columbia University, New York, NY.

Bettinger, Eric, Angela Boatman, and Bridget Terry Long. 2013. "Student Supports: Developmental Education and Other Academic Programs." In Cecilia Rouse, Lisa Barrow, and Thomas Brock, Eds., *Future of Children: Postsecondary Education in the U.S.* 23 (1, Spring).

Bettinger, Eric, and Bridget Terry Long. 2005. "Remediation at the Community College: Student Participation and Outcomes." *New Directions for Community Colleges* 129: 17–26.

———. 2007. "Institutional Responses to Reduce Inequalities in College Outcomes: Remedial and Developmental Courses in Higher Education." In *Economic Inequality and Higher Education: Access, Persistence, and Success*, edited by Stacy Dickert-Conlin and Ross Rubenstein, 69–100. New York: Russell Sage Foundation.

———. 2009. "Addressing the Needs of Under-Prepared College Students: Does College Remediation Work?" *Journal of Human Resources* 44 (3, Summer).

Boatman, Angela. 2012. "Evaluating Institutional Efforts to Streamline Postsecondary Remediation: The Causal Effects of the Tennessee Developmental-Course Redesign Initiative on Early Student Academic Success." Doctoral dissertation, Harvard Graduate School of Education, Cambridge, MA.

Boatman, Angela. 2014. "Beyond Ready, Fire, Aim: New Solutions to Old Problems in College Remediation." American Enterprise Institute, Washington, DC.

Boatman, Angela, and Bridget Terry Long. 2010. "Does Remediation Work for All Students? How the Effects of Postsecondary Remedial and Developmental Courses Vary by Level of Academic Preparation." Working Paper, National Center for Postsecondary Research, Teachers College, Columbia University, New York, NY.

Calcagno, Juan Carlos, and Bridget Terry Long. 2008. "The Impact of Postsecondary Remediation Using a Regression Discontinuity Approach: Addressing Endogenous Sorting and Noncompliance." Working Paper 14194, National Bureau of Economic Research, Cambridge, MA.

Cho, Sung-Woo, Elizabeth Kopko, Davis Jenkins, and Shanna Smith Jaggars. 2012. "New Evidence of Success for Community College Remedial English Students: Tracking the Outcomes of Students in the Accelerated Learning Program (ALP)." Community College Research Center, Teachers College, Columbia University, New York, NY.

Cloud, John. 2002. "Who's Ready for College?" *Time*, October 14.

Complete College America. 2012. "Remediation: Higher Education's Bridge to Nowhere." Complete College America, Washington, DC.

Edgecombe, Nikki. 2011. "Accelerating the Academic Achievement of Students Referred to Developmental Education." Working Paper No. 30, Assessment of Evidence Series, Community College Research Center, Teachers College, Columbia University, New York, NY.

Edgecombe, Nikki, Di Xu, Melissa, Barragan, and Shanna Smith Jaggars. 2012. "Analysis of Chabot College's Accelerated Developmental English course." Community College Research Center, Teachers College, Columbia University, New York, NY. Manuscript in preparation.

Education Commission of the States. 2012. "Instructional Delivery." http://gettingpastgo.org/policy-levers/instructional-delivery/.

Epper, Rhonda M., and Elaine Baker. 2009. "Technology Solutions for Developmental Math: An Overview of Current and Emerging Practices." Report prepared for the William and Flora Hewlett Foundation and the Bill and Melinda Gates Foundation.

Georgia Board of Regents. 2010. "Board of Regents Policy Manual." Section 4.2.1.1: Freshman Admission Requirements. University System of Georgia, Atlanta, GA.

Greene, Jay, and Greg Foster. 2003. "Public High School Graduation and College Readiness Rates in the United States." Working Paper No. 3, Manhattan Institute, New York, NY.

Howell, Jessica S., Michal Kurlaender, and Eric Grodsky. 2010. "Postsecondary Preparation and Remediation: Examining the Effect of the Early Assessment Program at California State University." *Journal of Policy Analysis and Management* 29 (4): 726–48.

Hughes, Katherine L., and Judith Scott-Clayton. 2010. "Assessing Developmental Assessment in Community Colleges: A Review of the Literature." Working Paper No. 19, Community College Research Center, Teachers College, Columbia University, New York, NY.

Jenkins, Davis, Matthew Zeidenberg, and Gregory S. Kienzl. 2009. "Building Bridges to Postsecondary Training for Low-Skill Adults: Outcomes of Washington State's I-BEST program." Brief No. 42, Community College Research Center, Teachers College, Columbia University, New York, NY.

Logue, Alexandra W., and John Mogulescy. 2013. "CUNY Start: Analysis of Student Outcomes." Office of Academic Affairs, City University of New York, New York, NY.

Long, Bridget Terry. 2012. "Remediation: The Challenge of Helping Underprepared Students." In *Getting to Graduation: The Completion Agenda in Higher Education*, edited by Andrew P. Kelly and Mark Schneider. Baltimore: The Johns Hopkins University Press.

Long, Bridget Terry, and Angela Boatman. 2013. "The Role of Remediation and Developmental Courses in Access and Persistence." In *The State of College Access and Completion: Improving College Success for Students from Underrepresented Groups*, edited by Anthony Jones and Laura Perna, 77–95. New York: Routledge Books.

Long, Bridget Terry, and Michal Kurlaender. 2009. "Do Community Colleges Provide a Viable Pathway to a Baccalaureate Degree?" *Educational Evaluation and Policy Analysis* 31 (1): 30–53.

Long, Bridget Terry, and Erin K. Riley. 2007. "Sending Signals to Students: The Role of Early Placement Testing in Improving Academic Preparation." In *Minding the Gap: Why Integrating High School with College Makes Sense and How to Do It*, edited by Nancy Hoffman, Joel Vargas, Andrea Venezia, and Marc S. Miller, 105–12. Cambridge: Harvard Education Press and Jobs for the Future.

Long, Mark C., Dylan Conger, and Patrice Iatarola. 2012. "Effects of High School Course-Taking on Secondary and Postsecondary Success." *American Education Research Journal* 49 (2): 285–322.

McCabe, Robert H. 2001. "Developmental Education: A Policy Primer." *League for Innovation in the Community College* 14 (1): 1–4.

Martorell, Paco, and Isaac McFarlin Jr. 2011. "Help or Hindrance? The Effects of College Remediation on Academic and Labor Market Outcomes." *Review of Economics and Statistics* 93 (2): 436–54.

National Bureau of Economic Research (NBER). n.d. "Current Population Survey (CPS) Data at the NBER." National Bureau of Economic Research, Cambridge, MA.

National Center for Education Statistics (NCES). 2003. "Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000." U.S. Department of Education, Washington, DC.

National Center for Education Statistics (NCES). 2010. "Academic Preparation for College in the High School Senior Class of 2003-04: Education Longitudinal Study of 2002 (ELS:2002), Base-year, 2002, First Follow-up, 2004, and High School Transcript Study, 2004." U.S. Department of Education, Washington, DC.

Ohio Board of Regents. 2002. "Making the transition from high school to college in Ohio 2002." Columbus, OH: Ohio Board of Regents.

Parsad, Basmat, Laurie Lewis, and Bernard Greene. 2003. "Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000." Report No. NCES 2004-101, National Center for Education Statistics, U.S. Department of Education, Washington, DC.

Quint, Janet, Shanna S. Jaggars, D. Crystal Byndloss, Asya Magazinnik. 2013. "Bringing Developmental Education to Scale: Lessons from the Developmental Education Initiative." MDRC, New York, NY.

Reed, Charles B. 2010. "The Early Start Program Executive Order No. 1048." Memorandum, June 11. http://calstate.edu/eo/EO-1048.html.

Scott-Clayton, Judith. 2012. "Do High Stakes Placement Exams Predict College Success?" Working Paper No. 41, Community College Research Center, Teachers College, Columbia University, New York, NY.

Scott-Clayton, Judith, Peter M. Crosta, and Clive R. Belfield. 2012. "Improving the Targeting of Treatment: Evidence from College Remediation." Working Paper 18457, National Bureau of Economic Research, Cambridge, MA.

Scott-Clayton, Judith, and Olga Rodriguez. 2012. "Development, Discouragement, or Diversion? New Evidence on the Effects of College Remediation." Working Paper 18328, National Bureau of Economic Research, Cambridge, MA.

Scrivener, Susan, and Michael Weiss. 2013. "Two-Year Results from an Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students." MDRC, New York, NY.

Smith, Matthew. 2012. "Choosing who Delivers: The Impact of Placing Limits on the Delivery of Remedial Education at Four-Year Institutions." Getting Past Go Project, Education Commission of the States, Denver, CO.

Sommo, Colleen, Alexander K. Mayer, Timothy Rudd, and Dan Cullinan. 2012. "Commencement Day: Six Year Effects of a Freshman Learning Community Program at Kingsborough Community College." MDRC, New York, NY.

Strong American Schools. 2008. "Diploma to nowhere." Strong American Schools, Washington, DC.

Twigg, Carol. 2011. "The Math Emporium: Higher Education's Silver Bullet." *Change: The Magazine of Higher Learning* (May–June): 25–34.

Venezia, Andrea, Michael Kirst, and Anthony Antonio. 2003. "Betraying the College Dream: How Disconnected K–12 and Postsecondary Education Systems Undermine Student Aspirations." Stanford Institute for Higher Education Research, Stanford, CA.

Zachry, Elizabeth, and Emily Schneider. 2011. "Unlocking the Gate: What We Know About Improving Developmental Education." MDRC, New York, NY.

Proposal 7

Bauernschuster, Stefan, Olivier Falck, and Stephan Heblich. 2009. "Training and Innovation." *Journal of Human Capital* 3 (4): 323–53.

Cellini, Stephanie. 2012. "For-Profit Higher Education: An Assessment of Costs and Benefits." *National Tax Journal* 65 (1): 153–80.

Evans, Stephen, and Gerhard Bosch. 2012. "Apprenticeships in London: Boosting Skills in a City Economy with Comment on Lessons from Germany." Organisation for Economic Co-operation and Development, Paris, France.

Halpern, Robert. 2009. *The Means to Grow Up: Reinventing Apprenticeship as a Developmental Support in Adolescence*. New York: Routledge.

Hollenbeck, Kevin. 2008. "State Use of Workforce System Net Impact Estimates and Rates of Return." Paper presented at the Association for Public Policy Analysis and Management (APPAM) Conference, Los Angeles, CA.

Lerman, Robert I. 2013. "Expanding Apprenticeship in the United States: Barriers and Opportunities." In *Contemporary Apprenticeship: International Perspectives on an Evolving Model of Learning*, edited by Alison Fuller and Lorna Unwin. New York: Routledge.

Lerman, Robert I. 2014. "Do Firms Benefit from Apprenticeship?" IZA World of Labor. http://wol.iza.org/articles/do-firms-benefit-from-apprenticeship-investments.

Lerman, Robert I., Lauren Eyster, and Kate Chambers. 2009. "The Benefits and Challenges of Registered Apprenticeship: The Sponsors' Perspective." The Urban Institute Center on Labor, Human Services, and Population, Washington, DC.

National Bureau of Economic Research. n.d. "NBER CPS Supplements." National Bureau of Economic Research, Cambridge, MA. http://www.nber.org/data/currentpopulation-survey-data.html.

National Center for Education Statistics. 2008. "Recent Participation in Formal Learning Among Working-Age Adults With Different Levels of Education." National Center for Education Statistics, U.S. Department of Education, Washington, DC.

National Center for Education Statistics. 2013. "Table 322.20: Advance Release of Selected 2013 Digest Tables." Digest of Education Statistics, National Center for Education Statistics, Washington, DC.

Olinsky, Ben, and Sarah Ayres. 2013. "Training for Success: A Policy to Expand Apprenticeships in the United States." Center for American Progress, Washington, DC.

Reed, Debbie, Albert Yung-Hsu Liu, Rebecca Kleinman, Annalisa Mastri, Davin Reed, Samina Sattar, and Jessica Ziegler. 2012. "An Effectiveness Assessment and Cost–Benefit Analysis of Registered Apprenticeship in 10 States." Mathematica Policy Research, Washington, DC.

Skills Funding Agency. 2014. "Breakdown by Geography, Equality & Diversity and Sector Subject Area: Starts 2002/03 to 2012/13." Skills Funding Agency, Department for Business Innovation & Skills, London, UK. https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships--2.

Workforce Training and Education Coordinating Board. 2014. "2014 Workforce Training Results by Program." Olympia, WA. http://wtb.wa.gov/WorkforceTrainingResults.asp.

Proposal 8

Ahlstrand, Amanda, Laurie Bassi, and Daniel McMurrer. 2003. *Workplace Education for Low-Wage Workers*. Kalamazoo: W. E. Upjohn Institute for Employment Research.

Bailey, Martha, and Susan Dynarski. 2011. "Inequality in Postsecondary Education." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 117–32. New York: Russell Sage Foundation and Spencer Foundation.

Barnow, Burt, John Trutko, and Jaclyn Schede Piatak. 2013. *Occupational Labor Shortages: Concepts, Causes, Consequences and Cures*. Kalamazoo: W. E. Upjohn Institute for Employment Research.

Bartik, Timothy. 2010. "Not All Job Creation Tax Credits Are Created Equal." Economic Policy Institute, Washington, DC.

Becker, Gary. 1996. *Human Capital* (2nd ed.). Chicago: University of Chicago Press.

Bettinger, Eric, Angela Boatman, and Bridget Terry Long. 2013. "Student Supports: Developmental Education and Other Academic Programs." *The Future of Children* 23 (1): 93–115.

Bound, John, Michael Lovenheim, and Sarah Turner. 2009. "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." Working Paper 15566, National Bureau of Economic Research, Cambridge, MA.

Busso, Matias, Jesse Gregory, and Patrick Cline. 2013. "Results of the Federal Empowerment Zone Program." Kalamazoo: Upjohn Institute for Employment Research.

Choitz, Vicky. 2013. "A Framework for Measuring Career Pathways Innovation: A Working Paper." Center for Law and Social Policy, Washington, DC.

College Board. 2013. "Rethinking Pell Grants." Rethinking Pell Grants Study Group, College Board Advocacy and Policy Center, New York, NY.

Davidson, Carl, and Stephen A. Woodbury. 1990. "The Displacement Effect of Reemployment Bonus Programs." Working Paper No. 90-02, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.

Deming, David, Claudia Goldin, and Lawrence Katz. 2013. "For Profit Colleges." *The Future of Children* 23 (1): 137–63.

Faulk, Dagney. 2002. "Do State Economic Development Incentives Create Jobs? An Analysis of State Employment Tax Credits." *National Tax Journal* 55 (2): 263–80.

Greenstone, Michael, and Adam Looney. 2011. "Where is the Best Place to Invest $102,000—In Stocks, Bonds, or a College Degree?" The Hamilton Project, Brookings Institution, Washington, DC.

Greenstone, Michael, Adam Looney, Jeremy Patashnik, and Muxin Yu. 2013. "Thirteen Economic Facts about Social Mobility and the Role of Education." The Hamilton Project, Brookings Institution, Washington, DC.

Ham, John, Ayşe İmrohoroğlu, and Charles Swenson. 2010. "Government Programs Can Improve Local Labor Markets: Evidence from State Enterprise Zones, Federal Empowerment Zones and Federal Enterprise Communities." University of Southern California, Los Angeles, CA.

Hamersma, Sarah. 2014. "Employment Subsidies to Firms and Workers: Key Distinctions Between the Effects of the Work Opportunity Tax Credit and the Earned Income Tax Credit." In *What Works for Workers?*, edited by Stephanie Luce, Jennifer Luff, Joseph A. McCartin, and Ruth Milkman, 186–214. New York: Russell Sage Foundation.

Heckman, James J., Carolyn J. Heinrich, and Jeffrey Smith. 2011. "Do Short-Run Performance Measures Predict Long-Run Impacts?" In *The Performance of Performance Standards*, edited by James J. Heckman, Carolyn J. Heinrich, Pascal Courty, Gerald Marschke, and Jeffrey Smith, 273–304. Kalamazoo: W.E. Upjohn Institute for Employment Research.

Heckman, James, Robert Lalonde, and Jeffrey Smith. 1999. "The Economics and Econometrics of Active Labor Market Policies." In *Handbook of Labor Economics*, edited by Orley Ashenfelter and David Card, volume III. Amsterdam: Elsevier Science B.V.

Hollenbeck, Kevin. 2008. "Is There a Role for Public Support of Incumbent Worker On-the-Job Training?" W. E. Upjohn Institute for Employment Research, Kalamazoo, MI.

Hollenbeck, Kevin. 2012. "Returns on Investment in Workforce Development Programs." Working Paper, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.

Holzer, Harry, and Erin Dunlop. 2013. "Just the Facts Ma'am: Postsecondary Education and Labor Market Outcomes in the U.S." CALDER Working Paper, American Institutes for Research, Washington, DC.

Holzer, Harry. 2013. "Workforce Development Programs" In *Legacies of the War on Poverty*, edited by Martha J. Bailey and Sheldon Danziger. New York: Russell Sage Foundation.

Holzer, Harry, Richard Block, Marcus Cheatham, and Jack Knott. 1993. "Are Training Subsidies for Firms Effective? The Michigan Experience." *Industrial and Labor Relations Review* 46 (4): 625–636.

Holzer, Harry, and Robert Lerman. Forthcoming. "Work-Based Learning to Expand Jobs and Occupational Qualifications for Youth." *Challenge* 37 (4): 3–16.

Jacobson, Louis, and Christine Mokher. 2009. "Pathways to Boosting the Earnings of Low-Income Students by Increasing their Educational Attainment." CNA Corporation, Washington, DC.

Jacobson, Louis, Robert LaLonde, and Daniel G. Sullivan. 2005. "Estimating The Returns To Community College Schooling For Displaced Workers." *Journal of Econometrics* 125 (1–2): 271–304.

Lerman, Robert, Signe-Mary McKernan, and Stephanie Riegg. 2004. "The Scope of Employer-Provided Training in the United States: Who, What, Where and How Much." In *Job Training Policy in the United States*, edited by Christopher J. O'Leary, Robert A. Straits, and Stephen A. Wandner. Kalamazoo: W. E. Upjohn Institute for Employment Research.

Maguire, Sheila, Joshua Freely, Carol Clymer, Maureen Conway, and Deena Schwartz. 2010. "Tuning In to Local Labor Markets: Findings from the Sectoral Employment Study." Public/Private Ventures, Philadelphia, PA.

Martin, Vanessa, and Joseph Broadus. 2013. "Enhancing GED Instruction to Prepare Students for College and Careers." Policy Brief, MDRC, New York, NY.

National Conference of State Legislatures. 2014. "Performance-Based Funding for Higher Education." National Conference of State Legislatures, Washington, DC.

National Governors Association. 2013. "State Sector Strategies Coming of Age: Implications for State Workforce Policymakers." Center for Best Practices, National Governors Association, Washington, DC.

National Student Clearinghouse Research Center. 2011. "National Post-Secondary Enrollment Trends: Before, During and After the Great Recession." National Student Clearinghouse, Herndon, VA.

Office of Management and Budget. 2014. "Fiscal Year 2015 Budget of the U.S. Government." Office of Management and Budget, Executive Office of the President, Washington, DC.

Reardon, Sean. 2011. "The Widening Academic Achievement Gap between the Rich and the Poor: New Evidence and Possible Explanations." In *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane, 91–116. New York: Russell Sage Foundation and Spencer Foundation.

Reed, Debbie, Albert Yung-Hsu Liu, Rebecca Kleinman, Annalisa Mastri, Davin Reed, Samina Sattar, and Jessica Ziegler. 2012. "An Effectiveness Assessment and Cost–Benefit Analysis of Registered Apprenticeship in 10 States." Mathematica Policy Research, Washington, DC.

Robst, John. 2007. "Education and Job Match: The Relatedness of College Major and Work." *Economics of Education Review* 26 (4): 397–407.

Roder, Anne, and Mark Elliott. 2012. "A Promising Start: Year Up's Initial Impact on the Earnings of Young Adults." Economic Mobility Coroporation, New York, NY.

Rosenbaum, James, Regina Deil-Amen, and Ann E. Person. 2006. *After Admission: From College Access to College Success*. New York: Russell Sage Foundation.

Scott-Clayton, Judith. 2011. "The Shapeless River: Does a Lack of Structure Inhibit Student Progress at Community Colleges?" Working Paper, Community College Research Center, Teachers College, Columbia University, New York, NY.

Webber, Douglas A., and Ronald G. Ehrenberg. 2010. "Do Expenditures Other Than Instructional Expenditures Affect Graduation and Persistence Rates in American Higher Education?" *Economics of Education Review* 29 (6): 947–58.

Zeidenberg, Matthew, Sung-Woo Cho, and Davis Jenkins. 2010. "Washington State's I-BEST Program: New Evidence of Effectiveness." Working Paper, Community College Research Center, Columbia University, New York, NY.

Zinn, Rachel, and Andy Van Kluenen. 2014. "Making Workforce Data Work: How Improved Education and Workforce Data Systems Could Help the U.S. Compete in the 21st Century Economy." Workforce Data Quality Campaign, National Skills Coalition, Washington, DC.

Proposal 9

Berk, Jillian. 2012. "Understanding the Employment Outcomes of Trainees in the Trade Adjustment Assistance (TAA) Program under the 2002 TAA Program." Submitted to the U.S. Department of Labor by Mathematica Policy Research, Princeton, NJ.

Bloom, Howard, Larry Orr, George Cave, Steve Bell, and Fred Doolittle. 1993. "The National JTPA Study: Title II-A Impacts on Earnings and Employment at 18 Months." Abt Associates, Bethesda, MD.

Card, David, Jochen Kluve, and Andrea Weber. 2010. "Active Labour Market Policy Evaluations: A Meta-Analysis." *Economic Journal* 120 (548): F452–F477.

D'Amico, Ronald, Kate Dunham, Jennifer Henderson-Frakes, Deborah Kogan, Vinz Koller, Melissa Mack, Micheline Magnotta, Jeffrey Salzman, Andrew Wiegand, Dan Weissbein, and Gardner Carrick. 2004. "The Workforce Investment Act After Five Years: Results from the National Evaluation of the Implementation of WIA." Employment and Training Occasional Paper 2004-05, U.S. Department of Labor, Washington, DC.

Fein, David J. 2012. "Career Pathways as a Framework for Program Design and Evaluation: A Working Paper from The Innovative Strategies for Increasing Self-Sufficiency (ISIS) Project." Report 32012-30, Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Goldin, Claudia, and Lawrence F. Katz. 2012. "The Future of Inequality. The Other Reason Education Matters So Much." *The Milken Institute Review* (July 2009): 26–33.

Goldrick-Rab, Sara, and Kia Sorenson. 2010. "Unmarried Parents in College." *Fragile Families* 20 (2): 179–203.

Heinrich, Carolyn. 2013. "Targeting Workforce Development Programs: Who Should Receive What Services? And How Much?" Paper prepared for Workforce Development Needs in the Global Economy: US and Cross-National Perspectives, School of Public Policy, University of Maryland, College Park, MD

Heinrich, Carolyn, Peter Mueser, Kenneth Troske, Kyung Seong-Jeon, and Daver C. Kahveciogly. 2013. "Do Public Employment and Training Programs Work? Nonexperimental Net Impact Estimates of the Workforce Investment Act Program." *IZA Journal of Labor Economics* 2 (6): 1–23.

Hollenbeck, Kevin. 2009. "Workforce Investment Act (WIA) Net Impact Estimates and Rates of Return." W. E. Upjohn Institute for Employment Research, Kalamazoo, MI.

Holzer, Harry, and Erin Dunlop. 2013. "Just the Facts, Ma'am: Postsecondary Education and Labor Market Outcomes in the U.S." IZA Discussion Paper Series, No. 7319, Bonn, Germany.

Holzer, Harry, Julia Lane, David Rosenblum, and Fredrik Andersson. 2011. *Where Are All the Good Jobs Going? What National and Local Job Quality and Dynamics Mean for U.S. Workers*. New York: Russell Sage Foundation.

Horn, Laura, and Thomas Weko. 2009. "On Track To Complete? A Taxonomy of Beginning Community College Students and Their Outcomes Three Years After Enrolling: 2003–04 Through 2006." National Center for Education Statistics, Washington, DC.

Jacobson, Louis, and Robert LaLonde. 2013. "Using Data to Improve the Performance of Workforce Training." The Hamilton Project, Brookings Institution, Washington, DC.

Jacobson, Louis, Robert LaLonde, and Daniel G. Sullivan. 2005. "Estimating the Returns to Community College Schooling for Displaced Workers." *Journal of Econometrics* 125 (1–2): 271–304.

Johnson, Terry, Mark Gritz, Russell Jackson, John Burghardt, Carol Boussy, Jan Leonard, and Carlyn Orians. 1999. "National Job Corps Study: Report on the Process Analysis." Battelle Memorial Institute, Seattle, WA.

Kemple, James, Fred Doolittle, and John Wallace. 1993. "The National JTPA Study: Final Implementation Report." MDRC, New York, NY.

Laird, Elizabeth, and Pamela Holcomb. 2011. "Effective Case Management: Key Elements and Practices from the Field." Issue brief, U.S. Department of Labor, Washington, DC.

Lane, Julia. 2000. "The Role of Job Turnover in the Low-Wage Labor Market." In *The Low-Wage Labor Market: Challenges and Opportunities for Self-Sufficiency*, edited by Kelleen Kaye and Demetra Smith Nightingale, 185–198. Washington, DC: Urban Institute.

Maguire, Sheila, Joshua Freely, Carol Clymer, Maureen Conway, and Deena Schwartz. 2010. "Tuning In to Local Labor Markets: Findings from the Sectoral Employment Impact Study." Public/Private Ventures, Philadelphia, PA.

Manyika, James, Susan Lund, Byron Auguste, and Sreenivas Ramaswamy. 2012. "Help Wanted: The Future of Work in Advanced Economies." Discussion Paper, McKinsey Global Institute, New York, NY.

Meyer, Daniel, and Geoffrey L. Wallace. 2009. "Poverty Levels and Trends in Comparative Perspective." In *Changing Poverty, Changing Policies*, edited by Maria Cancian and Sheldon Danziger, 1–33. New York: Russell Sage Foundation.

Mikelson, Kelly, and Demetra Smith Nightingale. 2004. "Estimates of Public and Private Expenditures on Job Training." The Urban Institute, Washington, DC.

Organisation for Economic Co-operation and Development (OECD). 2008. *OECD Glossary of Statistical Terms*, 299. Paris: OECD Publishing.

———. 2013. Public expenditure and participant stocks on LMP." Labour Market Programmes, OECD Stat Extracts, OECD, Paris, France. http://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP.

Perez-Johnson, Irma, Quinn Moore, and Robert Santillano. 2011. "Improving the Effectiveness of Individual Training Accounts: Long-Term Findings from an Experimental Evaluation of Three Service Delivery Models." Final report submitted to the U.S. Department of Labor by Mathematica Policy Research, Princeton, NJ.

Richburg-Hayes, LaShawn. 2008. "Helping Low-Wage Workers Persist in Community College." MDRC, New York, NY.

Schochet, Peter Z., John A. Burghardt, and Sheena M. McConnell. 2008. "Does Job Corps Work? Impact Findings from the National Job Corps Study." *American Economic Review* 68 (5): 1864–86.

Schochet, Peter Z., Ronald D'Amico, Jillian Berk, Sarah Dolfin, and Nathan Wozny. 2012. "Estimated Impacts for Participants in the Trade Adjustment Assistance (TAA) Program Under the 2002 Amendments" and "Methodological Notes on the Impact Analysis." Final reports submitted to the U.S. Department of Labor, Employment and Training Administration by Mathematica Policy Research, Princeton, NJ.

U.S. Government Accountability Office (GAO). 1996. "Job Training Partnership Act: Long-Term Earnings and Employment Outcomes." GAO/HEHS-996-40, Government Accountability Office, Washington, DC.

———. 2011. "Employment and Training Programs: Opportunities Exist for Improving Efficiency." GAO-11-506T, Government Accountability Office, Washington, DC.

U.S. Bureau of Labor Statistics. 2014. "Employment Projects." U.S. Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. http://www.bls.gov/emp/ep_chart_001.htm.

U.S. Department of Labor. 2002. "One-Stop Innovations: Leading Change under the WIA One-Stop System, Final Report." John J. Heldrich Center for Workforce Development, New Brunswick, NJ.

———. 2014. "Training and Employment Programs, Summary of Budget Authority, FY 1984 to 2012, By Year of Appropriation." Employment and Training Administration, U.S. Department of Labor, Washington, DC. http://www.doleta.gov/budget/bahist.cfm.

Vollman, Jim. 2011. "Brookings Institution LMI Forum Real Time Labor Market Information." Brookings Institution, Washington, DC.

Woolsey, Lindsey, and Kenneth Groves. 2010. "State Sector Strategies Coming of Age: Implications for State Workforce Policymakers." National Governors Association Center for Best Practices, Washington, DC.

Zeidenberg, Matthew, Sung-Woo Cho, and Davis Jenkins. 2010. "Washington State's Integrated Basic Education And Skills Training Program (I-BEST): New Evidence Of Effectiveness." Working Paper, Community College Research Center, Teachers College, Columbia University, New York, NY.

Proposal 10

Akerlof, George. 1978. "The Economics of 'Tagging' as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning." *American Economic Review* 68 (1): 8–19.

Bastani, Spencer, Soren Blomquist, and Luca Micheletto. 2013. "The Welfare Gains of Age-Related Optimal Income Taxation." *International Economic Review* 54 (4): 1219–49.

Baum II, Charles. 2002. "A Dynamic Analysis of the Effect of Child Care Costs on the Work Decisions of Low-Income Mothers with Infants." *Demography* 39: 139–64.

Berger, Mark, and Dan Black. 1992. "Child Care Subsidies, Quality of Care, and the Labor Supply of Low-Income, Single Mothers." *The Review of Economics and Statistics* 74: 635–42.

Bernal, Raquel, and Michael P. Keane. 2011. "Child Care Choices and Children's Cognitive Achievement: The Case of Single Mothers." *Journal of Labor Economics* 29 (3): 459–512.

Blank, Rebecca, and Brian Kovak. 2008. "Helping Disconnected Single Mothers." Center on Children and Families Brief #38, The Brookings Institution, Washington, DC.

Blau, David, and Janet Currie. 2006. "Preschool, Day Care and After-School Care: Who's Minding the Kids." In *Handbook of Economics of Education*, edited by Eric Hanushek and Finis Welch, 1163–1278. Amsterdam: North Holland.

Bollinger, Christopher, Luis Gonzalez, and James P. Ziliak. 2009. "Welfare Reform and the Level and Composition of Income." In *Welfare Reform and its Long-Term Consequences for America's Poor*, edited by James P. Ziliak, 59–103. Cambridge: Cambridge University Press.

Child Care Aware of America. 2013. *Child Care in America: 2013 State Fact Sheets*. Child Care Aware of America, Arlington, VA.

Congressional Research Service. 2012. "The Child Care and Development Block Grant: Background and Funding." RL30785, by Karen Lynch.

Congressional Research Service. 2013. "The Temporary Assistance for Needy Families (TANF) Block Grant: A Primer on TANF Financing and Federal Requirements." RL32748, by Gene Falk.

Currie, Janet, and Firouz Gahvari. 2008. "Transfers in Cash and In-Kind: Theory Meets the Data." *Journal of Economic Literature* 46 (2): 333–83.

Dahl, Gordon, and Lance Lochner. 2012. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review* 102 (5): 1927–56.

Eissa, Nada, and Hilary Hoynes. 2004. "Taxes and the Labor Market Participation of Married Couples: The Earned Income Tax Credit." *Journal of Public Economics* 88 (9–10): 1931–58.

Fox, Liana, Wen-Jui Han, Christopher Ruhm, and Jane Waldfogel. 2013. "Time for Children? Trends in the Employment Patterns of Parents, 1967–2009." *Demography* 50 (1): 25–49.

Gao, Qin, Neeraj Kaushal, and Jane Waldfogel. 2009. "How Have Expansions in the Earned Income Tax Credit Affected Family Expenditures?" In *Welfare Reform and its Long-Term Consequences for America's Poor*, edited by James P. Ziliak, 104–171. Cambridge: Cambridge University Press.

Government Accountability Office (GAO). 2007, August. "Advanced Earned Income Tax Credit." Report to the Joint Committee on Taxation. http://www.gao.gov/assets/270/265295.pdf.

Grogger, Jeffrey. 2003. "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income Among Female-Headed Families." *Review of Economics and Statistics* 85 (2): 394–408.

Heckman, James, Jora Stixrud, and Sergio Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." *Journal of Labor Economics* 24 (3): 411–82.

IRS. 2014. "EITC Participation Rate by States." IRS, Washington, DC. http://www.eitc.irs.gov/EITC-Central/Participation-Rate.

Kearney, Melissa, and Lesley Turner. 2013. "Giving Secondary Earners a Tax Break: A Proposal to Help Low- and Middle-Income Families." Discussion Paper 2013-07, The Hamilton Project, Brookings Institution, Washington, DC.

Kimmel, Jean. 1995. "The Effectiveness of Child-Care Subsidies in Encouraging the Welfare-To-Work Transition of Low-Income Single Mothers." *American Economic Review* 85: 271–75.

Laughlin, Lynda. 2013. *Who's Minding the Kids? Child Care Arrangements: Spring 2011*. U.S. Census Bureau, 70–135. http://www.census.gov/prod/2013pubs/p70-135.pdf.

Maag, Elaine. 2013. "Taxation and the Family: How Does the Tax System Subsidize Child Care Expenses?" Urban-Brookings Tax Policy Center, Washington, DC.

Maag, Elaine, and Adam Carasso. 2013. "Taxation and the Family: What is the Child Tax Credit?" Urban-Brookings Tax Policy Center, Washington, DC.

Mankiw, N. Gregory, Matthew Weinzierl, and Danny Yagan. 2009. "Optimal Taxation in Theory and Practice." *Journal of Economic Perspectives* 23 (4): 147–74.

Meyer, Bruce, and Dan Rosenbaum. 2001. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics* 116 (3): 1063–1114.

Morris, Pamela, Lisa Gennetian, Greg Duncan, and Aletha Huston. 2009. "How Welfare Policies Affect Child and Adolescent School Performance: Investigating Pathways of Influence with Experimental Data." In *Welfare Reform and its Long-Term Consequences for America's Poor*, edited by James P. Ziliak, 255–89. Cambridge: Cambridge University Press.

Romich, Jennifer, and Thomas Weisner. 2000. "How Families View and Use the EITC: Advance Payment versus Lump Sum Delivery." *National Tax Journal* 53 (4): 1245–65.

Schulman, Karen, and Helen Blank. 2013. "Pivot Point: State Child Care Assistance Policies 2013." National Women's Law Center, Washington, DC.

Smeeding, Timothy, Katherin Ross Phillips, and Michael O'Connor. 2000. "The EITC: Expectation, Knowledge, Use, and Economic and Social Mobility." *National Tax Journal* 53 (4): 1187–1209.

Tekin, Erdal. 2007. "Child Care Subsidies, Wages, and the Employment of Single Mothers." *Journal of Human Resources* 42: 453–87.

U.S. Census Bureau. Various years. "Current Population Survey." U.S. Census Bureau, Washington, DC. www.census.gov/cps.

U.S. Department of Agriculture. 2014. "Supplemental Nutrition Assistance Program Participation Rates: Fiscal Years 2010 and 2011." Office of Policy Support, Food and Nutrition Service, U.S. Department of Agriculture, Washington, DC.

U.S. Department of Health and Human Services (DHHS). 2012. "TANF Financial Data FY2012." Office of Family Assistance, Office of the Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

———. 2013. "Temporary Assistance for Needy Families: Tenth Report to Congress." Office of Family Assistance, Office of the Administration for Children and Families, U.S. Department of Health and Human Services, Washington, DC.

Weinzierl, Matthew. 2011. "The Surprising Power of Age-Dependent Taxes." *Review of Economic Studies* 78 (4): 1490–1518.

Ziliak, James P., Charles Hokayem, and Bradley Hardy. 2008. "Child Care Subsidies and the Economic Well-Being of Recipient Families: A Survey and Implications for Kentucky." Technical Report Prepared for the Kentucky Youth Advocates. University of Kentucky Center for Poverty Research, Lexington, KY.

Proposal 11

Baker, Kevin. 2008. "Do Cash Transfer Programs Improve Infant Health: Evidence from the 1993 Expansion of the Earned Income Tax Credit?" Mimeo, University of Notre Dame, South Bend, IN.

Bitler, Marianne, and Hilary Hoynes. 2013. "The More Things Change, the More They Stay the Same: The Safety Net, Living Arrangements, and Poverty in the Great Recession." Working Paper 19449, National Bureau of Economic Research, Cambridge, MA.

Bitler, Marianne, Hilary Hoynes, and Elira Kuka. 2013. "Do In-Work Tax Credits Serve As A Safety Net?" Working Paper 19785, National Bureau of Economic Research, Cambridge, MA.

Center on Budget and Policy Priorities (CBPP). 2014a. "Policy Basics: The Earned Income Tax Credit." Center on Budget and Policy Priorities, Washington, DC.

Center on Budget and Policy Priorities (CBPP). 2014b. "Unpublished Center on Budget and Policy Priorities analysis of March 2013 Current Population Survey and Supplemental Poverty Measure (SPM) public use files." Center on Budget and Policy Priorities, Washington, DC.

Dahl, Gordon, and Lance Lochner. 2012. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review*, 102(5): 1927–56.

Eissa, Nada, and Hilary Hoynes. 2004. "Taxes and the Labor Market Participation of Married Couples: The Earned Income Tax Credit." *Journal of Public Economics* 88: 9–10.

Eissa, Nada, and Hilary Hoynes. 2006. "Behavioral Responses to Taxes: Lessons from the EITC and Labor Supply." *Tax Policy and the Economy* 20: 74–110.

Eissa, Nada, and Jeffrey Liebman. 1996. "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics* 111: 605–37.

Evans, William, and Craig Garthwaite. 2014. "Giving Mom a Break: The Impact of Higher EITC Payments on Maternal Health." *American Economic Journal: Economic Policy* 6(2): 258–90.

Feenberg, Daniel Richard, and Elizabeth Coutts. 1993. "An Introduction to the TAXSIM Model." *Journal of Policy Analysis and Management* 12 (1): 189–194. http://www.nber.org/taxsim/.

Hoynes, Hilary, Douglas L. Miller, and David E. Simon. Forthcoming. "Income, the Earned Income Tax Credit, and Infant Health." *American Economic Journal: Economic Policy*.

IRS. 2013. "Statistics of Income Tax Year 2011." Table 2.5. IRS, Washington, DC. http://www.irs.gov/uac/SOI-Tax-Stats-Individual-Income-Tax-Returns-Publication-1304-(Complete-Report).

Kearney, Melissa, and Leslie Turner. 2013. "Giving Secondary Earners a Tax Break: A Proposal to Help Low- and Middle-Income Families." Discussion Paper 2013-07, The Hamilton Project, Brookings Institution, Washington, DC.

MDRC. 2014. "Paycheck Plus: Expanded Earned Income Tax Credit for Single Adults." http://www.mdrc.org/project/paycheck-plus-expanded-earned-income-tax-credit-single-adults#featured_content.

Meyer, Bruce D., and Dan T. Rosenbaum. 2000. "A Making Single Mothers Work: Recent Tax and Welfare Policy and its Effects." *National Tax Journal*, Vol. 53: 1027–1062.

Meyer, Bruce D., and Dan T. Rosenbaum. 2001. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics* 116(3): 1063–1114.

Parrott, Sharon. 2014. "The EITC Works Very Well—But It Is Not a Safety Net by Itself." Center for Budget and Policy Priorities, Washington, DC.

Rohaly, Jeffrey, Adam Carasso, and Mohammed Adeel Saleem. 2005. "The Urban-Brookings Tax Policy Center Microsimulation Model: Documentation and Methodology for Version 0304." Urban-Brookings Tax Policy Center, Washington, DC. http://www.urban.org/UploadedPDF/411136_documentation.pdf.

Scholz, John Karl. 2007. "Employment-Based Tax Credits for Low-Skilled Workers." Discussion Paper 2007-14, The Hamilton Project, Brookings Institution, Washington, DC.

Short, Kathleen. 2013. "The Research Supplemental Poverty Measure: 2012." Current Population Report P60-247, U.S. Census Bureau, U.S. Department of Commerce, Washington, DC.

Strully, Kate, David H. Rehkopf, and Ziming Xuan. 2010. "Effects of Prenatal Poverty on Infant Health: State Earned Income Tax Credits and Birth Weight." *American Sociological Review* 75: 534–562.

Urban–Brookings Tax Policy Center. 2014. "Tax Facts, Historical EITC Parameters." Urban-Brookings Tax Policy Center, Washington, DC.

Urban–Brookings Tax Policy Center. n.d. "Tax Topics: Income Measure Used in Distributional Analyses by the Tax Policy Center." Urban-Brookings Tax Policy Center, Washington, DC. http://www.taxpolicycenter.org/TaxModel/income.cfm.

U.S. Census Bureau. 2014. "Historical Income Tables: Income Inequality." U.S. Census Bureau, Washington, DC.

Proposal 12

Abraham, Katharine G., and Susan N. Houseman. 1993. *Job Security in America: Lessons from Germany*. Washington: Brookings Institution.

———. 1994. "Does Employment Protection Inhibit Labor Market Flexibility? Lessons from Germany, France and Belgium." In *Social Protection vs. Economic Flexibility: Is There A Trade Off?*, edited by R. Blank, 59–93. Chicago: University of Chicago Press.

———. Forthcoming. "Short-Time Compensation as a Tool to Mitigate Job Loss? Evidence on the U.S. Experience during the Recent Recession." *Industrial Relations*.

Balducchi, David E., and Stephen A. Wandner. 2008. "Work Sharing Policy: Power Sharing and Stalemate in American Federalism." *Publius: The Journal of Federalism* 38 (1): 1–27.

Black, Sandra E., Paul J. Devereux, and Kjell G. Salvanes. 2012. "Losing Heart? The Effect of Job Displacement on Health." Working Paper 18660, National Bureau of Economic Research, Cambridge, MA.

Boeri, Tito, and Herbert Bruecker. 2011. "Short-Time Work Benefits Revisited: Some Lessons from the Great Recession." *Economic Policy* 26 (68, October): 697–765.

Crimmann, Andreas, and Frank Wiessner. 2009. "Verschnaufpause dank Kurzarbeit." IAB Kurzbericht.

Davis, Steven J., and Till von Wachter. 2011. "Recessions and the Costs of Job Loss." *Brookings Papers on Economic Activity* 43 (2, Fall): 1–72.

Hijzen, Alexander, and Sebastien Martin. 2013. "The Role of Short-Time Work Schemes During the Global Financial Crisis and Early Recovery: A Cross-Country Analysis." *IZA Journal of Labor Policy* 2 (5): 1–31.

Hilger, Nate. 2013. "How Does Family Income Affect Enrollment?" Unpublished working paper.

International Labour Office (ILO). 2010. *Germany's Response to the Crisis*. G20 Country Brief prepared for the Meeting of Labour and Employment Ministers, Washington, DC.

Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *American Economic Review* 83 (4): 685–709.

Oreopoulos, Philip, Marianne Page, and Ann Huff Stevens. 2008. "The Intergenerational Effects of Worker Displacement." *Journal of Labor Economics* 26 (3): 455–83.

Organisation for Economic Co-operation and Development (OECD). 2010a. "Moving Beyond the Jobs Crisis." *Employment Outlook*. Paris: OECD Publishing.

———. 2010b. "Moving Beyond the Jobs Crisis—Supporting Material for Chapter 1 of the 2010 OECD Employment Outlook." Paris: OECD Publishing.

Shelton, Alison. 2011. "Compensated Work Sharing Arrangements (Short-Time Compensation) as an Alternative to Layoffs." Congressional Research Service Report 40689, Washington, DC.

Stevens, Ann Huff. 1997. "Persistent Effects of Job Displacement: The Importance of Multiple Job Losses." *Journal of Labor Economics* 15 (1): 165–88.

Sullivan, Daniel, and Till von Wachter. 2009. "Job Displacement and Mortality: An Analysis using Administrative Data." *Quarterly Journal of Economics* 124 (3): 1265–1306.

von Wachter, Till, Jae Song, and Joyce Manchester. 2011. "Long-Term Earnings Losses Due to Mass Layoffs during the 1982 Recession: An Analysis Using Longitudinal Administrative Data from 1974 to 2008." Unpublished working paper.

Proposal 13

Aaronson, Daniel, Eric French, and James MacDonald. 2008. "The Minimum Wage, Restaurant Prices, and Labor Market Structure." *Journal of Human Resources* 43 (3): 688–719.

Addison, John T., McKinley L. Blackburn, and Chad D. Cotti. 2009. "Do Minimum Wages Raise Employment? Evidence from the U.S. Retail-Trade Sector." *Labor Economics* 16 (4): 397–408.

———. 2012. "The Effects of Minimum Wages on Labor Market Outcomes: County-Level Estimates from the U.S. Restaurant and Bar Sector." *British Journal of Industrial Relations* 50 (3): 412–35.

Allegretto, Sylvia, Arindrajit Dube, Michael Reich, and Ben Zipperer. 2013. "Credible Research Designs for Minimum Wage Studies." IZA Discussion Paper 7638, Institute for the Study of Labor, Bonn, Germany.

Autor, David H., Lawrence F. Katz, and Melissa S. Kearney. 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *Review of Economics and Statistics* 90 (2): 300–323.

Autor, David H., Alan Manning, and Christopher L. Smith. 2014. "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment." Working Paper, Massachusetts Institute of Technology, Cambridge, MA.

Bitler, Marianne P., and Hilary W. Hoynes. 2010. "The State of the Social Safety Net in the Post-Welfare Reform Era." *Brookings Papers on Economic Activity* Fall (2): 71–127.

Brochu, Pierre, and David A. Green. 2013. "The Impact of Minimum Wages on Labour Market Transitions." *Economic Journal* 123 (573): 1203–35.

Bureau of Economic Analysis. n.d. "Regional Data: GDP & Personal Income." Bureau of Economic Analysis, U.S. Department of Commerce, Washington, DC.

Card, David, and Alan Krueger. 1994. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review* 48 (4): 772–93.

———. 2000. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply." *American Economic Review* 90 (5): 1397–1420.

Congressional Budget Office (CBO). 2013. "The Effects of a Minimum-Wage Increase on Employment and Family Income." Report, Congressional Budget Office, Washington, DC.

Cooper, David. 2013. "Raising the Federal Minimum Wage to $10.10 Would Lift Wages for Millions and Provide a Modest Economic Boost." Briefing Paper no. 371, Economic Policy Institute, Washington, DC.

Dube, Arindrajit. 2014. "Minimum Wages and the Distribution of Family Incomes." Unpublished manuscript.

Dube, Arindrajit, T. William Lester, and Michael Reich. 2010. "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties." *Review of Economics and Statistics* 92 (4): 945–64.

———. 2013. "Minimum Wage Shocks, Employment Flows and Labor Market Frictions." IRLE Working Paper 149-13, Institute for Research on Labor and Employment, Berkeley, CA.

Dube, Arindrajit, Suresh Naidu, and Michael Reich. 2007. "The Economic Effects of a Citywide Minimum Wage." *Industrial and Labor Relations Review* 60 (4): 522–43.

———. 2014. "Labor Market Impacts of San Francisco's Minimum Wage." In *Making Mandates Work: Raising Labor Standards at the Local Level*, edited by Michael Reich, Ken Jacobs, and Miranda Dietz, 47–69. University of California Press, Los Angeles.

Dube, Arindrajit, and Ben Zipperer. 2014. "Pooled Synthetic Control Estimates for Recurring Treatments: An Application to Minimum Wage Laws." Unpublished manuscript.

Firpo, Sergio, Nicole M. Fortin, and Thomas Lemieux. 2011. "Occupational Tasks and Changes in the Wage Structure." Unpublished manuscript.

Hendren, Nathaniel. 2014. "The Inequality Deflator: Interpersonal Comparisons without a Social Welfare Function." Unpublished manuscript.

Hoffman, Saul D. 2014. "Are the Effects of Minimum Wage Increases Always Small? A Re-Analysis of Sabia, Burkhauser, and Hansen?" Unpublished manuscript.

Lee, David, and Emmanuel Saez. 2012. "Optimal Minimum Wage Policy in Competitive Labor Markets." *Journal of Public Economics* 96 (9–10): 739–49.

Manning, Alan. 2012. "Minimum Wage: Maximum Impact." Resolution Foundation.

Neumark, David, and William Wascher. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." *Industrial & Labor Relations Review* 46 (1): 55–81.

Neumark, David, J. M. Ian Salas, and William Wascher. 2013. "Revisiting the Minimum Wage-Employment Debate: Throwing Out the Baby with the Bathwater?" Working Paper 18681, National Bureau of Economic Research, Cambridge, MA.

Organisation for Economic Co-operation and Development (OECD). 2013. ""Earnings: Minimum wages relative to median wages." OECD Employment and Labour Market Statistics (database). doi: 10.1787/data-00313-en (Accessed on 27 May 2014).

Philippon, Thomas, and Ariell Reshef. 2012. "Wages and Human Capital in the US Finance Industry: 1909–2006." *Quarterly Journal of Economics* 127 (4): 1551–1609.

Reich, Michael, Ken Jacobs, and Miranda Dietz. 2014. *Making Mandates Work: Raising Labor Standards at the Local Level*. Los Angeles: University of California Press.

Rothstein, Jesse. 2010. "Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence." *American Economic Journal: Economic Policy* 2 (1): 177–208.

Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. 2010. Integrated Public Use Microdata Series (IPUMS), American Community Survey (ACS): Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota.

Schmitt, John, and Janelle Jones. 2012. "Where Have All the Good Jobs Gone?" Center for Economic and Policy Research, Washington, DC.

Unicon Research Corporation. 2012. "Current Population Survey." https://www.unicon.com/.

Proposal 14

Coalition of Evidence-Based Policy. 2012. "Social Programs that Work." Coalition for Evidence-Based Policy, Washington, DC.

Davenport, Thomas, and Jeanne Harris. 2007. *Competing on Analytics: The New Science of Winning*. Boston: Harvard Business School Publishing.

Digital Services Advisory Group, Federal Chief Information Officers Council, and Federal Web Managers Council. 2012. "Digital Service Governance Recommendations." http://www.whitehouse.gov/digitalgov/digital-services-governance-recommendations.

Dinan, Kinsey. 2013. "Local Agency Lessons On Implementing Random Assignment: An Example from NYC's Child Support Program." Presentation to the Association for Public Policy Analysis and Management, Washington, DC.

Evans, Melanie. 2011. "Healthcare's 'Moneyball': Predictive Modeling Being Tested in Data-Driven Effort to Strike Out Hospital Readmissions." *Modern Healthcare* 41 (41): 28–30.

Michaelides, Marios, Eileen Poe-Yamagata, Jacob Benus, and Dharmendra Tirumalasetti. 2012. "Impact of the Reemployment and Eligibility Assessment (REA) Initiative in Nevada." Impaq International LLC, Columbia, MD.

Peikes, Deborah, Rebecca Sweetland Lester, Boyd Gilman, and Randall Brown. 2012–13. "The Effects of Transitional Care Models on Re-Admissions: A Review of the Current Evidence." *GENERATIONS—Journal of the American Society on Aging* 36 (4, Winter): 44–55.

Raven, Maria C. 2009. "Improving Care and Cutting Costs for High-Risk Medicaid Patients." New York State Health Foundation, New York, NY.

Raven, Maria C., John C. Billings, Lewis R. Goldfrank, Eric D. Manheimer, and Marc N. Gourevitch. 2009. "Medicaid Patients at High Risk for Frequent Hospital Admission: Real-Time Identification and Remediable Risks." *Journal of Urban Health* 86 (2): 230–41.

U.S. Department of Health and Human Services (HHS). n.d. "Home Visiting Evidence of Effectiveness." U.S. Department of Health and Human Services, Washington, DC.

Weinberg, Stephen. 2013. "Using RCTs to Test Procedural Changes: Evidence From Medicaid Fraud Investigations." Presentation to the Association for Public Policy Analysis and Management, Washington, DC.

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