MATHEMATICA
CENTER FOR
STUDYING DISABILITY POLICY

REPORT

FINAL REPORT

Assessing the Costs and Benefits of Return-to-Work Programs

March 2015

Maura Bardos
Hannah Burak
Yonatan Ben-Shalom

Submitted to:
U.S. Department of Labor
Office of Disability Employment Policy
200 Constitution Avenue, NW
Washington, DC 20210
Project Officer: Meredith DeDona
Contract Number: GS10F0050L/DOLQ121A21886/DOLU139435199

Submitted by:
Mathematica Policy Research
1100 1st Street, NE
12th Floor
Washington, DC 20002-4221
Telephone: (202) 484-9220
Facsimile: (202) 863-1763
Project Director: Yonatan Ben-Shalom
Reference Number: 40292.300

Preparation of this item was funded by the Office of Disability Employment Policy, U.S. Department of Labor, Contract Number DOLU139435199. This document does not necessarily reflect the views or policies of the Office of Disability Employment Policy, U.S. Department of Labor, nor does the mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

ACKNOWLEDGMENTS

This report was prepared by Maura Bardos, Hannah Burak, and Yonatan Ben-Shalom of Mathematica Policy Research for the Office of Disability Employment Policy (ODEP), U.S. Department of Labor. The authors thank Annalisa Mastri and Gina Livermore for helpful comments on the report and Alfreda Holmes for production support. The authors also thank Meredith DeDona and Michael Reardon of ODEP for their guidance and support throughout the entire study.

This page has been left blank for double-sided copying.

CONTENTS

ACRONYMS ix

I INTRODUCTION 1

A. Background 1

1. Workers experiencing disability onset and exiting the labor force 1
2. Costs for workers and taxpayers 2
3. The (private-sector) employer perspective 3

B. Overview of methodology 4

C. Overview of findings 5

D. Report organization 5

II ANALYSIS METHODS 7

A. Cost and benefit components 7

B. Data sources 9

C. Key assumptions and sensitivity analyses 9

1. Accounting for inflation 10
2. Key assumptions 10

D. Limitations of the analytic approach 13

III WORKPLACE ACCOMMODATIONS 15

A. Scenario 1 (employee returns to work) 15

1. One-time accommodation costs 15
2. Recurring accommodation costs 15

B. Scenario 2 (employee is replaced) 16

C. Summary of workplace accommodation costs 16

IV HR COSTS 17

A. Scenario 1 (employee returns to work) 17

B. Scenario 2 (employee is replaced) 17

1. Recruiting costs 17
2. Training costs 18

C. Summary of HR costs 18

V LABOR COMPENSATION 21

A. Scenario 1 (employee returns to work) 21

B. Scenario 2 (employee is replaced) 21

V *(continued)*

C. Tax revenue 22
D. Summary of labor compensation benefits and costs 22
VI PRODUCTIVITY 23
A. Scenario 1 (employee returns to work) 23
B. Scenario 2 (employee is replaced) 23
C. Summary of productivity differences 23
VII MEDICAL OOP EXPENDITURES 25
A. Scenario 1 (employee returns to work) 25
B. Scenario 2 (employee is replaced) 25
C. Summary of OOP costs 26
VIII COST OF PUBLIC ASSISTANCE PROGRAMS 29
A. Scenario 1 (employee returns to work) 29
B. Scenario 2 (employee is replaced) 29
1. Unemployment insurance 29
2. SSDI, SSI, Medicare, and Medicaid 29
3. Administrative costs 30
C. Summary of public assistance program costs 31
IX AGGREGATING COSTS AND BENEFITS 33
A. Net benefits and costs to the employer 33
B. Net benefits and costs from other perspectives 33
C. Sensitivity analyses 34
X CONCLUSION 37
A. Additional RTW benefits to the employer 37
1. Improved staff morale and productivity 37
2. Reduced risk of staff turnover 37
3. Reduced risk of legal liability 38
4. Tax credits 38
B. Discussion 38
REFERENCES 41

TABLES

II.1 Costs and benefits of RTW investments, by perspective 8

II.2 Key assumptions and alternative values used in sensitivity analysis 11

III.1 Costs of workplace accommodations, by perspective 16

IV.1 HR costs, by perspective 19

V.1 Benefits and costs from labor compensation differences, by perspective 22

VI.1 Benefits and costs due to productivity, by perspective 24

VII.1 Costs of OOP medical expenditures, by perspective 27

VIII.1 Costs of government benefits, by perspective 31

IX.1 Summary of costs and benefits of RTW investments, by perspective 34

IX.2 Net benefits under alternative assumptions, by perspective 35

This page has been left blank for double-sided copying.

ACRONYMS

ACA	Affordable Care Act
ACOEM	American College of Occupational & Environmental Medicine
ADA	Americans with Disabilities Act
BLS	Bureau of Labor Statistics
CPI-U	Consumer Price Index-All Urban Consumers
CPS	Current Population Survey
DOL	Department of Labor
EBHI	Employer-Based Health Insurance
EUC	Emergency Unemployment Compensation
FRA	Full Retirement Age
FTE	Full-Time Equivalent
FY	Fiscal Year
HR	Human Resources
JAN	Job Accommodation Network
MAX	Medicaid Analytic eXtract
ODEP	Office of Disability and Employment Policy
OOP	Out-of-Pocket
PDI	Private Disability Insurance
RTW	Return-to-Work
SEPT	Survey of Employer-Provided Training
SGA	Substantive Gainful Activity
SHRM	Society for Human Resource Management
SNAP	Supplemental Nutrition Assistance Program
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
UI	Unemployment Insurance
WC	Workers' Compensation

This page has been left blank for double-sided copying.

I. INTRODUCTION

The Department of Labor's (DOL) Office of Disability and Employment Policy (ODEP), which leads the nation's efforts to develop and influence policies and practices to improve employment outcomes for people with disabilities, has a keen interest in the employment of workers who experience the onset of a disability. As part of its mission, ODEP is interested in promoting successful return-to-work (RTW) strategies that will result in lower public assistance costs for taxpayers, lower personnel costs for employers, and higher incomes for workers with disabilities.

To support this objective, Mathematica Policy Research conducted a review and analysis of existing research, data, and other relevant material to provide a comparison of the cost and benefits of implementing an RTW program in the private sector. More specifically, we compared the costs and benefits of retaining an employee who experiences disability onset to the costs and benefits of permanently losing a valued trained employee and incurring the expense and time of recruiting and developing a replacement employee. In doing so, we assessed whether the net benefits of RTW investments are positive from the perspectives of the employer, the worker with a disability, and taxpayers, and from a societal point of view.

We first provide some relevant background on workers experiencing disability onset and exiting the labor force; the consequences for workers, taxpayers, and employers; and the potential promise of RTW supports.

A. Background

1. Workers experiencing disability onset and exiting the labor force

Each year, millions of workers in the U.S. experience the onset of long-lasting or permanent conditions that challenge their ability to work. These conditions may be linked to occupational or nonoccupational causes. Many such workers are at risk of exiting the labor force, especially if they do not receive timely and effective RTW supports.

More often than not, RTW programs extend beyond the provision of health care or medical services to include case management, workplace accommodations, occupational training, or other strategies (see, for example, Orslene [2013]). As we will discuss below, there is strong evidence that many workers with disabilities who enter Social Security Disability Insurance (SSDI) could return to gainful employment, perhaps with some assistance, but only a minority do so. Other evidence indicates that early intervention through carefully designed RTW programs has the potential to keep many workers with disabilities in the labor force.

The number of workers with disabilities who exit the labor force every year is obviously very large, although not well measured. Annual applications and awards for SSDI benefits are the most reliable indicator of the size of the annual flow. In 2010, 2.7 million workers applied for benefits, and 943,000 of those applications had been approved by December 2012 (Social Security Administration [SSA] 2013a).

Many individuals who enter SSDI are capable of returning to work, but relatively few do so. Using random variation in assignment rates across adjudicators to simulate a randomized

experiment, Maestas et al. (2013) estimate that 18 percent of new SSDI beneficiaries are able to engage in substantial gainful activity (SGA)[1]—the definition of work for purposes of SSDI eligibility—within two years after entering the program, but only 5 percent actually do. That amounts to a difference of 13 percentage points.[2] Applying that difference of 13 percentage points to the number of awards in 2010 suggests that, with just modest assistance, more than 120,000 could have returned to work but did not.

The 120,000 figure might considerably understate the number of workers with disabilities who needlessly leave the labor force each year. One reason is that it is based on estimates for an environment in which many workers with disabilities have little access to RTW assistance. Improving that environment would increase the number of those who could return to work. In addition to the limited availability of RTW assistance, only SSDI awards are considered in the 120,000 figure. Presumably, almost all denied applicants have disabilities, even if they are not significant enough to meet SSDI eligibility criteria, and historically, only about half of denied applicants return to work (von Wachter et al. 2011). This implies that many of the 2.7 million applicants in 2010 would be denied benefits and would not return to work.

2. Costs for workers and taxpayers

The consequences of work disability vary according to which stakeholder's perspective is being considered, but from every perspective they are enormous. From the perspective of workers and their families, a frequent consequence is a substantial reduction in their standard of living. The best recent information on the consequences of work disability for household incomes is for those who experience disability onset in their fifties, from analysis of the Health and Retirement Study (Schimmel and Stapleton 2012). The authors estimate that, among all workers who experience disability onset (including those who stop working), mean earnings are 50 percent lower, mean household income is 23 percent lower, and the percentage in poverty by the official definition is 8.8 percentage points higher two years after onset than they would have been in the absence of the disability. SSDI and early Social Security retirement benefits make up for just one-eighth of the reduction in earnings. Interestingly, mean spousal earnings do not increase to compensate for the earnings loss of the worker with a disability—they actually decrease somewhat. That may be because the spouse often needs to devote time to caring for the worker with a disability.[3]

The consequences for public programs and taxpayers are also large. If, as Maestas et al. (2013) found, 13 percent of current SSDI beneficiaries were instead in the labor force and self-sufficient, SSDI benefit payments would have been as much as 13 percent lower. In 2012, that would have amounted to as much as a $15.6 billion reduction in payments from the SSDI trust

[1] In 2013, SGA for non-blind individuals was defined as the ability to earn $1,040 or more per month in unsubsidized employment, net of any impairment-related work expenses; the amount for blind individuals was $1,740.

[2] Maestas et al. (2013) used random variation in allowance rates for initial decisions across disability examiners within the same states. French and Song (forthcoming) obtained very similar results using random variation in allowance rates for appellate decisions across administrative law judges.

[3] See Boden (2005) for more information on the hardship experienced by families in which a parent incurs an occupational illness or injury.

fund.[4] Medicare payments for the health care of SSDI beneficiaries would also have been lower; 13 percent of Medicare payments for SSDI beneficiaries under Parts A and B in 2012 is $7.3 billion,[5] bringing the total to almost $23 billion. For this reason, much of the discussion about how to address the projected 2016 exhaustion of the SSDI Trust Fund has focused on how to slow the exit of workers with disabilities from the labor force and into SSDI.

3. The (private-sector) employer perspective

The economics-related literature on investing in RTW often concentrates on the central role that employers play in the investment decision. There is a good reason for that. Ultimately, the employer makes the decisions about retention efforts, and the employer is in the position to take steps that would help the worker with a disability return to work quickly (see, for instance, Stapleton et al. 2009).

When a modest investment by the employer in services and supports would result in successful RTW, a profit-maximizing employer would presumably make the investment if an assessment of all the company's associated costs and benefits revealed that the benefits outweigh the costs. In fact, many employers do make such investments when benefits clearly outstrip costs. This is most likely to occur when the worker possesses skills and abilities that are particularly valuable to the employer and the cost of replacing that human capital through hiring and training is very high. For this reason, many companies with large numbers of highly skilled employees have established disability management programs to reduce the cost of disability through prevention support for early RTW after disability onset. If the worker has low skills and can be readily replaced, however, it is much less likely that a for-profit employer would make any investment to support RTW unless the cause of disability is work-related. In work-related cases, some investment might be worthwhile to avoid the payment of higher workers' compensation (WC) premiums.[6]

Employers might also fail to invest in RTW services because of imperfect information about the cost and benefits of doing so. Some might simply underestimate the cost of replacing the worker, be unaware of inexpensive investments that would enable RTW, or ignore the negative impact that employment termination will have on the productivity of the worker's colleagues. In addition, many of the benefits of RTW investments are external to the for-profit employer. The loss of household income and the cost of public benefits do not impact the employer's bottom line. For this reason, some recent policy proposals would, through varying means, cause employers to bear an increased share of the costs for SSDI benefits for recent employees who enter the program (Autor and Duggan 2010; Burkhauser and Daly 2012). In theory, such mechanisms would tip the employer's cost-benefit analysis in favor of retaining the worker and encourage support for wellness and injury-prevention activities.

[4] Calculations based on information in SSA (2013a).

[5] Calculations based on information in the annual report by the Medicare Board of Trustees (The Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds 2013).

[6] Worker's compensation premium rates are modified based on the employer's safety record and RTW outcomes. See, for example, ADP (2014).

4. Promoting outcomes through RTW supports

The view that substantially more workers with disabilities could return to work, perhaps with modest assistance, is bolstered by qualitative assessments of what happens to workers when they experience disability onset. In 2006, the American College of Occupational & Environmental Medicine (ACOEM) released a review entitled Preventing Needless Work Disability by Helping People Stay Employed, based on the evidence available at the time (ACOEM 2006). The report clearly laid out the systemic problems that result in low RTW by workers with disabilities. It points out that such workers fall into the gap between employers who, although positioned well to support RTW, have inadequate motivation to do so, and health care and other providers who are less well positioned are often not motivated to help the individual return to work quickly. The ACOEM report describes a compelling vision for how all stakeholders should respond when working people's lives are disrupted by illness, injury, or the effects of aging. This positive picture of the stakeholders collaborating as a team to explore ways to avoid needless work disability and help people work is now referred to as the work-disability prevention model.

The belief that a substantially greater number of workers with disabilities could return to work is further bolstered by a mounting body of rigorous evidence that timely and appropriate assistance to workers with disabilities can improve RTW. Franche et al. (2005) conducted a systematic review of 10 workplace-based interventions designed to assist workers with musculoskeletal and other pain-related conditions. They found strong evidence that interventions—including components of work accommodation and early contact between workplace and health care provider—can reduce sick leave and the duration of the disability. They also found moderate evidence that components consisting of early contact of workers by the workplace, ergonomic worksite visits, and the presence of an RTW coordinator reduce disability duration. Waddell et al. (2008) conducted an extensive review of the evidence for the United Kingdom Department of Work and Pensions. They concluded that the most effective ways to improve employment outcomes for workers with disabilities involve intervening earlier—especially before the connection between worker and employer is severed—with health care and other services that are integrated and work-focused. The evidence concerning one of the most common causes work disability—low back pain—is especially compelling (Sullivan and Adams 2010).

B. Overview of methodology

We assessed whether the net benefits of RTW investments are positive from the perspectives of the employer, the worker with a disability, taxpayers, and society as a whole. Our analysis approach focused first on the perspective of the (private-sector) employer: the choice of investing in (1) returning the worker with a disability to work versus (2) an assumed next-best alternative—hiring a replacement for that worker. The cost-benefit analysis we performed essentially compares the costs and benefits accrued under the first alternative to those accrued under the second. The cost and benefit components we considered include those associated with workplace accommodations, human resources (HR), labor compensation, productivity, medical out-of-pocket (OOP) costs, and public assistance programs. We used a variety of published research and data collected by various organizations to obtain relevant cost and benefit measures, making informed assumptions were needed.

C. Overview of findings

Our findings under the main set of assumptions suggest that the worker with a disability, taxpayers, and society as a whole stand to gain much from RTW investments. The employer, however, incurs substantial net costs. From each of the perspectives, the basic results remain the same under our alternative assumptions, though the employer's bottom line is clearly very sensitive to the assumption regarding productivity loss due to disability. From the employer's perspective, therefore, reducing costs related to the loss of productivity is vital for making RTW cost-effective.

D. Report organization

The remainder of this report is organized as follows. In Chapter II, we describe in detail our analysis methods, including the analysis framework, costs and benefit components we considered, data sources we used, and key assumptions made. In Chapters III through VIII, we provide details on the calculation of the costs and benefits for each of the components under consideration. In Chapter IX, we compare the net benefits and costs to the employer and from the employee's and taxpayer's perspective, and perform sensitivity analyses. We provide a summary and concluding remarks in Chapter X.

This page has been left blank for double-sided copying.

II. ANALYSIS METHODS

In this study, we estimate the costs and benefits of RTW for workers who experience the onset of a long-lasting disability. In doing so, we assess whether the net benefits of RTW investments are positive from the perspectives of the employer, the worker with a disability, taxpayers, and society. Our analysis approach focuses first on the perspective of the (private-sector) employer: the choice of investing in (1) returning the worker with a disability to work versus (2) an assumed next-best alternative—hiring a replacement for that worker.[7]

To facilitate the analysis, we defined two scenarios representing each of the two alternatives, as described below. The cost-benefit analysis we performed essentially compares the costs and benefits accrued under the first scenario to those accrued under the second scenario. We expressed costs under scenario 1 as negative numbers and costs under scenario 2—which are forgone under scenario 1—as positive numbers. This representation facilitates simple computation of the net costs as the sum of the two.

- **Scenario 1:** The worker with a disability's employer has an RTW or disability management program in place. After RTW, the worker remains employed full time in his or her current position until full retirement age (FRA).
- **Scenario 2**: The employer has no RTW program in place, lays off the worker with a disability, and hires a new employee to fill the worker with a disability's position. The replacement worker was already employed in a comparable job before being hired.

A. Cost and benefit components

Table II.1 presents the accounting framework we used for this analysis. The columns indicate whether the component is an anticipated cost (-), benefit (+) or neither (0), from the viewpoint of the stakeholder listed in the column headings. The question marks (?) indicate that the direction of the effect on the stakeholder is uncertain (that is, whether it will be a benefit or cost is unknown). The bottom line for each column shows the difference between aggregated benefits and aggregated costs, indicating either total net benefits (if positive) or total net costs (if negative) for the relevant perspective, measured in 2013 dollars.

We included the following cost and benefit components in our analysis:

- **Workplace accommodations**. The costs of workplace accommodations, such as improving accessibility, purchasing assistive devices, or hiring a personal assistant, are essential components of RTW investments. These costs are borne by the employer under scenario 1.
- **HR costs.** HR costs are accrued by the employer under both scenarios. Under scenario 1, the employer incurs HR costs associated with maintaining disability management services. Under scenario 2, the employer incurs HR costs associated with finding a replacement worker.

[7] Note that the next best alternative might not be the hiring of a replacement worker; it might be, for instance, employing the worker with a disability part-time, or having other workers assume the various responsibilities of the worker with a disability. We assume the alternative of hiring a replacement worker to facilitate the analysis.

- **Labor compensation**. Under scenario 1, the employer compensates the re-employed worker for labor provided after RTW and through his or her FRA. Under scenario 2, the employer compensates the replacement worker. Labor compensation (including non-wage benefits and payroll taxes) is a cost to employers but a benefit to workers. In addition, the difference in tax revenue between the two compensation levels is borne by taxpayers.
- **Productivity.** We consider the productivity of the re-employed worker with a disability under scenario 1 relative to the productivity of the replacement worker under scenario 2. We assume the former is reduced, to some extent, due to the disability. We also assume productivity of the replacement worker is relatively low while he or she masters the new job.
- **Medical OOP costs**. Medical OOP costs are accrued by the worker with a disability under both scenarios. Under scenario 1, the worker with a disability pays a share of the premium for any employer-sponsored health care plan and for any co-payments and cost-sharing. Under scenario 2, the laid-off worker will incur OOP costs for any health care obtained elsewhere (including publicly provided health care).
- **Public assistance programs.** Under scenario 2, the worker with a disability might qualify for government benefits (such as SSDI, Supplemental Security Income [SSI], Medicare, or Medicaid) for which he or she would not qualify under scenario 1. The benefits themselves are transfers from the government to the worker, but the government has additional costs for administering these programs. Employers contribute to the financing of these programs through payroll taxes; we accounted for those taxes under labor compensation costs.

Table II.1. Costs and benefits of RTW investments, by perspective

		Perspective			
Cost and benefit component	Relevant scenario	Employer	Employee	Taxpayer	Society
Workplace Accommodations	Scenario 1	-	0	0	-
HR Costs					
Cost of disability management services	Scenario 1	-	0	0	-
HR cost for hiring a replacement worker	Scenario 2	+	0	0	+
Labor Compensation					
Compensation to re-employed worker	Scenario 1	-	+	+	?
Compensation to replacement worker	Scenario 2	+	0	-	?
Productivity					
Productivity of the worker with a disability	Scenario 1	+	0	0	+
Productivity of the replacement worker	Scenario 2	-	0	0	-
Medical OOP Costs					
Costs under original health plan	Scenario 1	0	-	0	-
Costs under alternative health plan	Scenario 2	0	+	0	+
Public Assistance Programs	Scenario 2	0	-	+	0
Net Benefits (+)/Costs (-)		?	?	?	?

Note: "-" indicates an anticipated cost, "+" indicates an anticipated benefit, and "0" indicates neither. The question marks (?) indicate that the direction of the effect on the stakeholder is uncertain.

B. Data sources

We used a variety of published research and data collected by various organizations to obtain cost and benefit measures relevant to this analysis. We first conducted a comprehensive literature review, which produced more than 70 sources of data, including surveys, journal articles, organizational reports, and policy briefs. We organized the sources according to the previously described cost and benefit components. We then summarized each data source, drawing out information on the industry, time frame, and population used in the study, and the relevant cost/benefit estimates and parameters. For qualitative sources, we summarized the key points and findings. This literature review guided our search for the most appropriate estimates to use in each component category.

As much as possible, the estimates used in the report were drawn from reliable sources of data and rigorous studies. Where relevant, we point out the limitations of a certain study or data source. In a few instances, where little or no relevant information was found, we made assumptions that are documented in this report. To test the sensitivity of the results to these assumptions, we conducted a comprehensive sensitivity analysis; the results of the sensitivity analyses are also presented in this report.

The first criterion for including existing estimates in our analysis was alignment with our assumptions (described in further detail below). Although it was difficult to find data that exactly matched the conditions of the two scenarios we compare in this analysis, we looked for data obtained under conditions that were easily translated or generalized to our scenarios. For example, an estimate of costs incurred in 2010 is more relevant than an estimate based on costs incurred in 2001. An estimate based on a study of 12 different industries would be considered more representative across industries than a study based on one or 2 industries.

Once we found estimates that were fairly consistent with our scenarios, we selected what appeared to be the best estimates for each cost or benefit component. We did this by assessing the population size and characteristics as well as the perceived rigor of the study. In general, we looked for estimates produced by individuals or organizations that have relevant subject matter expertise and produce data and studies that are widely used or cited by scholars in the literature. Estimates from studies that were cited often and were used to conduct other analyses were more likely to be chosen. In cases in which multiple reliable estimates were available, they were used as a check on the reasonableness of the ones ultimately chosen. Finally, we made every effort to use estimates based on the most recent data available. We cite the relevant data sources as they are discussed in the report sections below. A comprehensive reference list is included at the end of this report.

C. Key assumptions and sensitivity analyses

We briefly described above the two scenarios compared in this study. Many additional assumptions were needed to complete the analysis, however. Below, we describe how we accounted for inflation, and we detail the key assumptions we made to facilitate the analysis. We also describe the sensitivity analyses we performed to examine how certain assumptions might have influenced our findings.

1. Accounting for inflation

To integrate into our analysis cost and benefit measures that are based on data collected in different time periods we first converted them into 2013 dollars to account for inflation. We chose 2013 as our reference year because it is the most recent year with complete data available for the Consumer Price Index-All Urban Consumers (CPI-U). We used the CPI-U to calculate the cumulative inflation between the year from which each cost estimate originated and 2013. To calculate the cumulative inflation factor, we divided the average value of the CPI-U in 2013 by its average value in the original year for the estimate.

2. Key assumptions

Table II.2 presents key assumptions made to facilitate the analysis and the sources on which we based those assumptions. We discuss each of these assumptions below. Other assumptions are discussed, when relevant, in subsequent chapters. The table also includes the alternative values we used in our sensitivity analysis.

- **Age at disability onset and years affected by disability.** The time frame of many of the ongoing costs and benefits under consideration depend on the employee's remaining working years. We used age at award of SSDI as an approximation for age at disability onset. According to SSA data, the average age at SSDI benefit award in 2012 was 50. Therefore, we used 50 as the age at disability onset in our calculations (Table 39, SSA 2013a). We further assumed a retirement age of 67, which is the FRA for people born in 1960 or later (SSA 2013b).
- **Time away from work.** To set a time frame for the occurrence of certain cost and benefit components under scenario 1, we used an estimate of the number of weeks away from work from the time of disability onset. One 2000 study, using a survey of large California employers, estimated the median time to RTW for workers with an occupationally related permanent disability at 40 weeks for employers with no RTW program and 21 weeks for those with a program (McLaren et al. 2010). We used the estimate of 21 weeks as the time between disability onset and RTW in scenario 1.[8]
- **Time to fill a position.** Under scenario 2, we needed to know, among other things, how long it would take to fill the worker with a disability's position with a new employee. According to the Society for Human Resource Management's (SHRM) Benchmarking Database, the time to fill a position is, on average, 29 calendar days for organizations with fewer than 1,000 employees and 43 calendar days for larger organizations (SHRM 2012). We used the former estimate in our baseline calculations and the latter estimate as a sensitivity check.

[8] Using California data on Workers Compensation claims (for occupational cases) and State Disability Insurance (for nonoccupational cases), Neuhauser (2010) found no difference in the length of time away from work between the two types of cases. We, therefore, do not distinguish here between occupational and nonoccupational cases.

Table II.2. Key assumptions and alternative values used in sensitivity analysis

Description	Source	Value in main analysis	Value for sensitivity analysis
Age at disability onset	SSA (2013a)	50 years	45 years 55 years
Time away from work	McLaren et al. (2010)	21 weeks	12 weeks 40 weeks
Time to fill a position	SHRM (2012)	29 calendar days	43 calendar days
Weekly full-time wage earnings	BLS (2013b)	$710 for ages 25–34 $870 for ages 35+	20 percent higher
Costs of workplace accommodations	Loy (2013) Solovieva et al. (2009)	$10,063 over 17 years	$0 over 17 years $20,126 over 17 years
RTW costs to HR	N/A	10 percent of HR employee's time	0 percent of HR employee's time 20 percent of HR employee's time
Productivity loss	Goetzel (2004)	16.3 percent	0 percent
Probability of getting on SSDI under scenario 2	SSA (2011)	0.45	0.25 0.75
Family structure and health insurance coverage	Coe et al. (2013) Janicki (2013)	25 percent married, have access to spouse's EBHI 25 percent married, obtain health insurance through ACA exchanges 50 percent unmarried, qualify for Medicaid	N/A
Discounting rate	Government Accountability Office (1991)	0 percent	3.5 percent

N/A = not available.

- **Total compensation**. To monetize certain costs, we must multiply some estimates by a wage figure. In keeping with our assumption about age at disability onset, we used median usual weekly earnings for full-time workers ages 45–54 in the U.S., which was $870 in the third quarter of 2013 (Table 3, Bureau of Labor Statistics [BLS] 2013a). To capture the full level of compensation, however, we must also account for non-wage benefits, such as health insurance, retirement benefits, and unemployment insurance. According to the BLS, wages account for 70 percent of compensation for U.S. private industry (BLS 2014a). Therefore, we divided the weekly earnings by 0.7 to calculate total compensation costs. This translates to $64,629 in annual total compensation costs.

- **Costs of workplace accommodations.** Our measures for the costs of workplace accommodations are primarily based on a survey of employers who contacted the Job Accommodation Network (JAN) for assistance with accommodating employees with disabilities. After adding up expected one-time and recurring accommodation costs, we arrived at a value of $10,063 in accommodations costs over 17 years.
- **RTW costs to HR.** We assumed that the HR division of the employer incurs the costs of the RTW program in the form of labor costs and that the HR department for a company of 1,000 employees handles on average about 31 RTW cases each year (BLS 2014c). Absent information on the HR costs associated with managing a certain number of RTW cases per year, we assumed the cost of HR activities on behalf of this number of employees with disabilities at 10 percent of a full-time HR employee's time (see Chapter IV for more details).
- **Productivity loss.** We used estimates from Goetzel and colleagues (2004) to measure productivity loss due to missed work days and presenteeism (on-the-job productivity loss) after RTW. Across 10 costly and prevalent health conditions, the study authors estimated that an average of 4.3 percent of productivity was lost due to absenteeism and 12 percent of productivity was lost due to presenteeism. We therefore assumed a total productivity loss of 16.3 percent throughout the remaining career of the employee with a disability.
- **Probability of getting on SSDI.** Under scenario 2, we assumed that the worker applies for SSDI benefits immediately after disability onset and that the probability of getting on SSDI is 45 percent, based on SSA statistics on the final award rate for disabled-worker applicants (SSA 2013a).
- **Family structure and health insurance coverage.** To monetize OOP and public assistance costs, we had to make assumptions regarding family structure and health insurance coverage. According to Coe et al. (2013), 50 percent of SSDI applicants are married and, among those who are married, 63 percent have a spouse who is employed; about 76 percent of workers ages 45–64 are offered employer-based health insurance (EBHI) (Janicki 2013). We assumed, therefore, under scenario 2, that roughly 25 percent of SSDI applicants have access to EBHI through their spouse. For those who are married, the spouse's annual earnings are $33,300 (Coe et al. 2013) which would, in the absence of EBHI, qualify the family for a relatively large subsidy through the Affordable Care Act (ACA) health insurance exchange markets. We therefore assumed, under scenario 2, that the remaining 25 percent of SSDI applicants who are married but do not have access to EBHI will obtain health insurance through the exchange markets. We further assumed that all unmarried SSDI applicants would qualify for Medicaid based on low income.[9]
- **Discounting rate.** For ease of exposition, we did not incorporate a discount factor in our baseline analysis. Discounting takes into account the fact that a dollar in 2013 is worth more than a dollar in later years because it could be invested and earn interest. In our sensitivity analysis, we examine how discounting might have changed the results.

[9] In non-expansion states, some percentage of unmarried SSDI applicants may remain uninsured or choose to use COBRA. For simplicity, we assume all unmarried SSDI applicants qualify for Medicaid under scenario 1.

In the following chapters, we provide details on the calculation of the costs and benefits under scenarios 1 and 2 for each of the components under consideration.

D. Limitations of the analytic approach

It is important that readers be aware of several limitations of our analytic approach. The values one uses to monetize the various cost and benefit components under consideration must depend on the circumstances of the individual case (for example, characteristics of the worker, the specific industry, the job, the type and severity of disability, and fringe benefits). Rather than conduct the analysis for a very specific population of workers identified according to such circumstances, we based many of our calculations on the average or median case. For example, we assumed the age at disability onset was equal to the average age at SSDI award (50), and we assumed the percentage productivity loss due to disability was equal to the average productivity loss over 10 costly physical and mental health conditions.[10] We made many other simplifying assumptions along the way and describe them clearly so our results can be useful to others who are attempting to understand the costs and benefits of RTW from the various perspectives. We also performed a careful sensitivity analysis to assess how specific assumptions influenced our results.

In many respects, our analytic approach yields a conservative estimate of the benefits of implementing an RTW program from the employer's perspective because some potential benefits of RTW investments, such as potential reductions in long-term private disability insurance (PDI) payments and reduced premiums for PDI and WC, are not included in our calculations.[11] Moreover, certain intangible benefits—such as changes in quality of life that may result from employment—are not incorporated in the analysis because it is difficult to place a value on them.

[10] The 10 conditions are: allergy, arthritis, asthma, any cancer, depression/sadness/mental illness, diabetes, heart disease, hypertension, migraine/headache, and respiratory disorders (Goetzel et al. 2004).

[11] WC is experience-rated, which means that WC premiums can be reduced by improving RTW among workers who experience occupational injury or illness. The majority of long-term disability cases are nonoccupational, however. Within PDI, certain mechanisms exist (including experience rating) to encourage retention by employers, but only 32 percent of private-sector employees are covered by PDI (BLS 2013a).

This page has been left blank for double-sided copying.

III. WORKPLACE ACCOMMODATIONS

Workers with long-lasting or permanent conditions that challenge their ability to work may need services and supports to stay at work or return to work. Accommodations that promote employment could include services and supports paid for by public or private sources, no-cost supports, or supports paid for out of pocket by the worker. In this chapter, we summarize the costs to the employer, under scenario 1, of providing workplace accommodations to a worker who experiences disability onset. Under scenario 2, we assumed there are no such costs.

A. Scenario 1 (employee returns to work)

Our measures for the costs of workplace accommodations are primarily based on a survey of employers who contacted the Job Accommodation Network (JAN) for assistance with accommodating employees with disabilities. The most recent JAN survey estimates are based on 807 employers interviewed between June 28, 2008 and July 31, 2013. Although we identified other estimates of the cost of workplace accommodations, none was as recent or comprehensive (in terms of the coverage of employers by size and industry) as the JAN survey. The employers surveyed had contacted JAN for resources on accommodating workers with disabilities and may not represent the average employer or the average disability case. However, the JAN survey is the best evidence on workplace accommodation costs that we were able to identify.

Advancements in technology have facilitated more flexible work arrangements, and these practices are becoming more common—and encouraged—by employers. Examples of no-cost accommodations include reassignment of job tasks, flexible work schedule, or working remotely from home. Notably, more than half (58 percent) of JAN employers surveyed between June 2008 and July 2013 reported that it cost nothing to implement the reported accommodation (Loy 2013). Table III.1 provides a summary of the expected costs of providing one-time and recurring accommodations to workers with long-lasting or permanent disability, taking into account the prevalence rates of the different types of accommodations.

1. One-time accommodation costs

Employers may incur the one-time cost of making physical alterations to the workplace or purchasing adaptive technology to facilitate RTW. Examples of accommodations with one-time costs include providing phones with accessibility features, large computer monitors, software applications that speak output, or Braille printers. Thirty-six percent of JAN employers reported that they incurred a one-time accommodation cost. The median one-time cost among these employers was $534 in 2013 dollars. Thus, the expected one-time cost per worker with a disability across all employers is $192.

2. Recurring accommodation costs

Assistance with personal-care needs and job-related tasks is an additional cost to consider. Unlike the cost of equipment or workplace modifications, workplace assistance services are labor costs and represent a recurring expenditure for an employer. Examples include sign language interpreters, document readers, scribes, job coaches, drivers, and personal care assistants who help with such personal needs as using the restroom and eating (Orslene et al. 2010). According to the JAN survey, the median one-time costs of personal-assistance services

are $2,208, followed by a median of $9,548 in annual costs (Solovieva et al. 2009). Assuming an employee would require a constant level of support throughout the remainder of his or her working years, we summed the annual cost values for the years starting from the assumed age of disability onset (50) to FRA (a total of 17 years), resulting in a total cost of $164,524 (including the initial $2,208). Because only 6 percent of employers incur these costs, we multiplied this value by 0.06 to arrive at $9,871 in expected costs for recurring accommodations.

B. Scenario 2 (employee is replaced)

No accommodation costs are incurred under scenario 2.

C. Summary of workplace accommodation costs

Table III.1 summarizes our estimates of the workplace accommodation costs incurred under scenarios 1 and 2.

Table III.1. Costs of workplace accommodations, by perspective

Cost and benefit component	Relevant scenario	Perspective			
		Employer	Employee	Taxpayer	Society
Cost of Providing Accommodation	Scenario 1				
One-time accommodation costs		-$192	$0	$0	-$192
Recurring accommodation costs		-$9,871	$0	$0	-$9,871
Cost of Not Providing Accommodations	Scenario 2	$0	$0	$0	$0
Net Benefits (+)/Costs (-)		**-$10,063**	**$0**	**$0**	**-$10,063**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

IV. HR COSTS

Each of the two scenarios under consideration presents challenges and costs to the HR department of the employer. In this chapter, we compare the costs to HR of maintaining an RTW program under scenario 1, in which the employee with a disability stays with the employer, to the scenario 2 costs of recruiting and training a replacement worker.

A. Scenario 1 (employee returns to work)

To encourage worker retention and adaptation to the altered abilities of those who experience disability onset, some firms maintain an RTW program or pay for disability management services. The costs of these programs are above and beyond the accommodation costs discussed in the previous chapter. They include resources for employees and employers to manage claims, guidance on appropriate communication with co-workers, and advice on adjusting work responsibilities to the abilities of the worker with a disability. Program specialists also work with medical providers to help the employee with a disability return to work.

Under scenario 1, we assumed that the HR division of the employer incurs the costs of the RTW program in the form of labor costs. According to the BLS's employment situation summary, about 3.1 percent of the employed population (ages 16–64) has disabilities (BLS 2014c). That means that a company of 1,000 employees can expect to employ about 31 people with disabilities; only a few of them will require RTW services in a given year, however. We did not find any information on the HR costs associated with managing a certain number of RTW cases per year. Absent such information, we assumed the cost of HR activities on behalf of this number of employees with disabilities at 10 percent of a full-time HR employee's time.[12] To monetize the cost, we multiplied the average annual total compensation for an HR specialist, $87,943 (BLS 2014b), by 0.1 and 17 (for the number of remaining working years), and divided by 31 to get the cost per RTW case. This calculation results in a total cost estimate of $4,823 in HR costs per RTW case.

B. Scenario 2 (employee is replaced)

Under scenario 2, the employer incurs one-time HR costs for recruiting and training the replacement employee.

1. Recruiting costs

The cost of recruiting new employees varies greatly. Factors such as industry, size of the company that is hiring, profitability, and geographic region influence costs per hire. We used an estimate of this cost from a 2011–2012 SHRM study based on the SHRM Benchmarking

[12] We consulted with an HR professional to check this assumption. That professional reported almost no recurring costs for handling disability cases, except for coordinating some accommodations. She compared dealing with the logistics and paperwork of disability onset to those for maternity leave, and estimated that this takes about 5 hours of an HR specialist's time per case. This means that 31 cases in one year would take about 7.5 percent of an HR specialist's time—close to our estimate of 10 percent. Because 31 disability cases represents stock and not flow, using 10 percent of a full- time HR specialist's salary as an *annual* cost for managing disability cases likely results in an overestimation of the costs to the employer. We checked the sensitivity of our results to this assumption in the sensitivity analysis.

database, which compiles HR information from 10,000 member organizations (SHRM 2012). The cost per hire includes such external costs as third-party agency fees, advertising, and travel expenses, as well as the salary and benefits paid to HR staff. The SHRM study calculated the average cost per hire for businesses with fewer than 1,000 employees at $3,079. For businesses with more than 1,000 employees, the figure is $4,285. We used the former estimate as the recruiting cost to the employer under scenario 2, which amounts to $3,125 when converted to 2013 dollars; we used the larger estimate as a sensitivity check.

2. Training costs

Under scenario 2, in addition to recruiting costs, the employer would incur training costs associated with the replacement worker. We calculated training costs as the costs of the time supervisors or co-workers spend training a newly hired employee. We assumed that non-labor costs, such as tuition reimbursements or payments to outside trainers, were similar for new hires and existing employees because such costs are likely to be part of the year-to-year training costs for all employees. We also assumed the training would occur during the first two years of employee tenure.

The Survey of Employer-Provided Training (SEPT) is a national survey that was conducted with more than 1,000 private establishments of 50 or more employees from May through October 1995. The survey measured the costs and labor hours associated with formal and informal training, including classroom work, seminars, workshops, skills training, occupational safety training, orientation training, awareness training, and other types of training. We used data from SEPT to estimate the labor costs to the employer of training. We know of no more recent information on employee training. Although it is entirely possible costs have risen slightly since that time, there is no evidence to suggest they have risen markedly.

The labor costs of training account for the time spent away from work by supervisors and/or co-workers during formal and informal training sessions. According to SEPT data, an employee with less than two years at his or her current employer spent, on average, 65.3 hours in training over a six-month period; the average employee spent 44.5 hours in training over that same time period (BLS 1996). We based our measure for the labor costs of training on the difference between these two averages—20.8 hours over the six-month period—to ensure that we captured only training costs related to new employees. We multiplied the 20.8 hours by four to capture the cost of new-employee training that occurs in the first two years with an employer at 83.2 hours. We multiplied the 83.2 hours by $31.07, the median total hourly compensation for workers ages 35–54 (also used elsewhere in this report). This calculation results in an estimate of $2,585 for the supervisor's or co-worker's labor costs of training the new employee.

C. Summary of HR costs

Table IV.1 provides a summary of our estimates of HR costs incurred under scenarios 1 and 2.

Table IV.1. HR costs, by perspective

Cost and benefit component	Relevant scenario	Perspective			
		Employer	Employee	Taxpayer	Society
Cost of Disability Management Services	Scenario 1	-$4,823	$0	$0	-$4,823
Cost of Hiring a Replacement	Scenario 2				
Cost per hire for the replacement		$3,125	$0	$0	$3,125
Cost of training the replacement		$2,585	$0	$0	$2,585
Net Benefits (+)/Costs (-)		**$888**	**$0**	**$0**	**$888**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

This page has been left blank for double-sided copying.

V. LABOR COMPENSATION

In this chapter, we consider the labor compensation paid to the re-employed worker experiencing disability under scenario 1 relative to the labor compensation paid to the replacement worker under scenario 2. Compensation is a broad term that takes into account both earnings and none-wage benefits, such as employer contributions to health insurance premiums. Compensation paid to the re-employed worker is a benefit to the employee and a cost to the employer. In addition, the difference in tax revenues between the two compensation levels is borne by taxpayers.

A. Scenario 1 (employee returns to work)

Under scenario 1, we assumed that the employer has instituted an RTW program and will re-employ the worker with a disability full time. We also assumed that the worker with a disability, in the presence of an RTW program, experiences 21 weeks, on average, away from work after the onset of the disabling health condition (see Table II.2), and that the worker continues to collect compensation during the first three of these weeks by exhausting available sick and vacation days. For this reason, under scenario 1, we assumed full compensation of a re-employed full-time worker for 16 years and 34 weeks (or 16.7 years).

Our measure of the compensation earned by the re-employed worker comes from the Current Population Survey (CPS). According to the CPS, median usual weekly earnings for Americans 45–54 years old are $870 (BLS 2013b), which equates to annual full-time earnings of $45,240. Based on the profile of average earnings by age, we would expect earnings to remain constant after age 50 (Murphy and Welch 1990; Casanova 2013). Overall, we assumed the re-employed worker would earn $753,420 in wages from RTW through retirement. According to BLS statistics, legally required and voluntary benefits account for approximately 30 percent of employer compensation in private industry (BLS 2014a). We therefore divided the above earnings estimate by 0.7 and summed it over 17 years to FRA to calculate the total compensation received by the re-employed worker: $1,076,314.

B. Scenario 2 (employee is replaced)

Under scenario 2, when an employer seeks out a replacement worker, it is reasonable to assume he or she will try to fill the position with someone who is somewhat younger and less experienced. We assumed that the replacement worker would be age 30 at hire and would work full time. We also assumed it would take 29 calendar days on average to fill a position (SHRM 2012), which translates to 0.08 years.

According to the CPS, median usual weekly earnings for full-time workers 25–34 years old are $710 (BLS 2013b), which equates to annual full-time earnings of $36,920. We would expect an increase in earnings over the newly hired worker's career due to increased experience, tenure, and natural career progression. We assumed the replacement worker would have weekly earnings from age 30 to 35 of $710, and that weekly earnings would increase to $870 (the median weekly earnings for both the 35–44 and 45–54 age groups) over the remaining 12 years. Under these assumptions, the replacement worker will earn $724,540 in compensation over the 17 years between disability onset and the FRA of the laid-off worker. Again, we divided the earnings by 0.7 to account for non-wage benefits, resulting in $1,035,057 in total compensation.

C. Tax revenue

We assumed that both re-employed workers and replacement workers would pay 20.9 percent of their earnings in taxes. This tax rate is derived from combining the effective federal income tax rates with state consumption and property tax rates. According to the Tax Policy Center, the total average federal tax rates for the middle quintile of household income in 2010 was 11.5 percent (Tax Policy Center 2014). State tax rates are reported by the Institute on Taxation and Economic Policy (Davis et al. 2013). The middle 20 percent of non-elderly taxpayers in households in all 50 states and the District of Columbia pay 9.4 percent in state and local taxes as a share of family income. Although tax rates have changed over time and are likely to fluctuate in the future, we did not account for such fluctuation, primarily because tax payments are considered a direct transfer from the employee to the government and are neutral from the perspective of the employer.

D. Summary of labor compensation benefits and costs

Table V.1 provides a summary of our estimates of the benefits and costs from labor compensation differences incurred under scenarios 1 and 2.

Table V.1. Benefits and costs from labor compensation differences, by perspective

		Perspective			
Cost and benefit component	Relevant scenario	Employer	Employee	Taxpayer	Society
Compensation to Re-employed Worker	Scenario 1				
Employee compensation		-$1,076,314	$1,076,314	$0	$0
Taxes		$0	-$157,465	$157,465	$0
Compensation to Replacement Worker	Scenario 2				
Employee compensation		$1,035,067	$0	$0	$1,035,067
Taxes		$0	$0	-$151,430	-$151,430
Net Benefits (+)/Costs (-)		**-$41,247**	**$918,850**	**$6,035**	**$883,637**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

VI. PRODUCTIVITY

Losses in worker productivity, compared with the productivity of the worker before disability onset, are likely to occur under both scenarios 1 and 2. In this chapter, we compare the retained productivity of the worker with a disability under scenario 1 to the productivity of the new worker under scenario 2.

A. Scenario 1 (employee returns to work)

Under scenario 1, a worker with a disability retained by the employer may cost the employer productive time in several ways. Any absence of the employee with a disability reduces that person's own productivity and, potentially, that of any teams on which he or she works. The employee is assumed to take leave from work after disability onset in order to recover, and may also be absent from work after recovery due to disability symptoms, fatigue, physical therapy, and medical appointments (absenteeism). The worker with a disability may also experience on-the-job productivity loss (presenteeism).

At disability onset, the employee's productive time is spent in medical treatment and recovery. During this time, the employee does not engage in productive work for the employer. We assumed this period lasts 21 weeks (see Table II.2), or 40 percent of one year. We used estimates from Goetzel and colleagues (2004) to measure productivity loss due to missed work days and presenteeism after RTW. Those researchers calculated annual absenteeism and presenteeism losses as a percentage of eligible work time for 10 costly and prevalent health conditions as measured across two or more surveys used in the analysis. Across the 10 conditions, the study authors reported, an average of 4.3 percent of productivity was lost due to absenteeism and 12 percent of productivity was lost due to presenteeism. Therefore, we assumed a total productivity loss of 16.3 percent throughout the remaining career of the employee with a disability. Subtracting these losses from the median annual total compensation in 2013 for full-time workers ages 45–54 ($64,629), we estimated the annual monetized productivity of the worker with a disability to be $54,094. Multiplying this value by the assumed years remaining in the worker's career (16.6) we obtained an estimate of $900,875 for the total productivity of the worker with a disability.

B. Scenario 2 (employee is replaced)

Under scenario 2, the monetized productivity of the replacement worker is essentially equal to the estimated total labor compensation described in the previous chapter, which we calculated to be $1,035,057.

C. Summary of productivity differences

Table VI.1 provides a summary of our productivity estimates under scenarios 1 and 2.

Table VI.1. Benefits and costs due to productivity, by perspective

Cost and benefit component	Relevant scenario	Perspective			
		Employer	Employee	Taxpayer	Society
Productivity of worker with a disability	Scenario 1	$900,875	$0	$0	$900,875
Productivity of replacement worker	Scenario 2	-$1,035,057	$0	$0	-$1,035,057
Net benefits (+)/costs (-)		**-$134,182**	**$0**	**$0**	**-$134,182**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

VII. MEDICAL OOP EXPENDITURES

In this chapter, we compare medical OOP costs under scenarios 1 and 2. Under scenario 1, we assumed the worker with a disability retains his or her EBHI. As described in Chapter II, we assumed that under scenario 2 the worker with a disability has access to EBHI through his or her spouse (25 percent), obtains health insurance through the exchange markets (25 percent), or qualifies for Medicaid (50 percent).

We made further assumptions about the number of children in the worker with a disability's family. According to Coe et al. (2013), SSDI applicants have on average 0.7 kids. The authors do not report on how the number of children changes with marital status, however. We also do not know how the number of children changes with EBHI status. To facilitate the analysis, we assume 1 child on average per married couple and 0.5 children on average per unmarried applicant. These assumptions result in 0.75 children per family, on average, which is close to the 0.7 estimate reported by Coe and her coauthors.[13]

A. Scenario 1 (employee returns to work)

Employees usually pay a portion of their health insurance premiums and incur other OOP expenses through co-payments and cost-sharing. We assumed, based on estimates by Auerbach and Kellerman (2011), that a married re-employed worker with one child would spend $2,544 per year in employee premium contributions and $3,060 per year in additional OOP outlays.[14] Carrying these costs from age 50 until FRA, we calculated that a married re-employed worker will spend $95,268 over the 17 years following disability onset. We assumed, based on information from Bernard (2007) and BLS (2013a), that an unmarried re-employed worker with one child would spend $3,810 per year in employee premium contributions and $938 per year in additional OOP outlays. Carrying these costs from age 50 until FRA, we calculated that an ummarried re-employed worker with one child would spend $80,712 over the 17 years following disability onset. We assumed that an unmarried re-employed worker without children would spend only $1,090 per year in employee premium and $806 per year in additional OOP outlays. Carrying these costs from age 50 until FRA, we calculated that an unmarried re-employed worker without children will spend $32,233 over the 17 years following disability onset. Weighting the above three estimates by the assumed family structure distribution, we arrived at $75,870 in total OOP expenses ($42,450 in employee contributions to premiums and $33,420 in other OOP costs), on average, over the 17 year following disability onset.

B. Scenario 2 (employee is replaced)

The worker will also face medical costs under scenario 2, but will have to look for a different source of coverage. As previously mentioned, we assumed that under scenario 2, at least initially, the worker with a disability either has access to EBHI through their spouse (25 percent), obtains health insurance through the exchange markets (25 percent), or qualifies for Medicaid (50 percent). Similar to scenario 1, we assumed that a married worker with a disability

[13] It is unlikely that the children of 50 year old workers will continue to be their dependants through age 67. For simplicity, however, we assume that the number of children remains constant from age 50 to 67.

[14] Our assumption likely underestimates OOP costs under Scenario 1 because the family does not face any additional OOP costs after disability onset; this is realistic only for employers with very generous insurance plans.

with one child and EBHI through their spouse will pay $2,544 in OOP costs. In addition, we assumed that a married worker with a disability with one child and no EBHI will obtain health insurance through the ACA exchange markets and incur an annual cost of $2,269 in premiums and $4,500 in other OOP outlays (Kaiser Family Foundation 2014a). Finally, we assumed that an unmarried worker with a disability, while covered under Medicaid, will spend approximately $571 per year in OOP spending in 2013 dollars—regardless of the number of children (Ku and Broaddus 2005).[15]

We also assumed that in the year after the onset of a disability, the worker with a disability would receive unemployment insurance (UI). Following the exhaustion of UI benefits, we assumed that a portion (45 percent) of workers with disabilities will be found eligible for SSDI benefits (see next chapter for more details). Those deemed eligible for SSDI benefits would also be eligible to receive health insurance coverage under Medicare following a 24-month waiting period. For these workers, we assumed the above coverage distribution in the first three years after disability onset, followed by Medicare coverage.

While on Medicare, we assumed the worker with a disability will spend approximately $3,528 per year in OOP spending in 2013 dollars (Noel-Miller 2012). We assumed that those not eligible for DI benefits will maintain the initial coverage distribution. Extrapolating these costs until FRA, we calculated total OOP medical costs for those found eligible for DI benefits as $49,385 on average. The costs for those ineligible for DI and receiving insurance under the initial coverage distribution are $189,210 over the same period. We weighted the costs by the proportion eligible for each health care program in each year to obtain an estimate of $58,376 in medical expenditures ($12,875 in insurance premiums and $45,501 in other OOP costs), on average, under scenario 2.

C. Summary of OOP costs

Table VII.1 provides a summary of our OOP cost estimates under scenarios 1 and 2.

[15] We follow Ku and Broaddus (2005) and assume children will incur zero dollars in OOP costs since children covered under Medicaid are exempt from cost sharing.

Table VII.1. Costs of OOP medical expenditures, by perspective

Cost and benefit component	Relevant scenario	Perspective			
		Employer	Employee	Taxpayer	Society
Cost Under Original Health Plan	Scenario 1				
Employee contribution to premiums		$0	-$42,450	$0	-$42,450
Other OOP expenditures		$0	-$33,420	$0	-$33,420
Cost Under Alternative Health Plan	Scenario 2				
Insurance premiums		$0	$12,875	$0	$12,875
Other OOP expenditures		$0	$45,501	$0	$45,501
Net benefits(+)/costs (-)		**$0**	**-$17,495**	**$0**	**-$17,495**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

This page has been left blank for double-sided copying.

VIII. COST OF PUBLIC ASSISTANCE PROGRAMS

In this section, we consider the cost of public assistance programs under scenario 2, in which the worker with a disability is laid off by the employer. The benefits themselves are transfers from the government to the worker. The government benefits we consider are SSDI, SSI, UI, Medicare, and Medicaid.[16]

A. Scenario 1 (employee returns to work)

There are no costs for public assistance under scenario 1.

B. Scenario 2 (employee is replaced)

1. Unemployment insurance

Under scenario 2, we assumed the worker with a disability would fail to become re-employed. We also assumed that, in the absence of earnings, the worker with a disability immediately would apply and qualify for UI. Most states offer up to 26 weeks of UI benefits for eligible workers. In 2013, unemployed workers were eligible to receive an additional 14 to 47 weeks, depending on the unemployment rate in the state, through the Federal Emergency Unemployment Compensation (EUC) program (Center on Budget and Policy Priorities 2013). We did not include the EUC, however, because it is unlikely to be active in the future. The benefit formulas for calculating weekly benefits vary by state. For simplicity, we assumed the worker with a disability receives the national weekly average payment in 2013 of $306.60 (DOL 2013) over six months (26 weeks). In total, UI costs are $7,972.

2. SSDI, SSI, Medicare, and Medicaid

Under scenario 2, we also assumed that the worker immediately would apply for SSDI benefits. According to SSA statistics, the final award rate for disabled-worker applicants is about 45 percent for claims filed from 2001 through 2010 (SSA 2013a). The time from application submission to initial decision is three to five months (SSA 2014a). If the initial application is approved, SSDI payments begin in the sixth full month after the date of disability onset (SSA 2014b). In many cases, however, the initial application is denied, and the applicant goes through a lengthy appeals process. In fiscal year (FY) 2013, the average processing time for appeals was 382 days (SSA 2014c). We took into account the appeals process and assumed that, on average, it would take one year from initial SSDI application to payments for the 45 percent who are approved. Workers with disabilities who have minimal assets might also be eligible to receive SSI in addition to SSDI benefits. We assumed that 8.5 percent of those eligible for SSDI benefits would also be eligible for SSI (Rupp and Riley 2011).

Once approved, the worker with a disability would become eligible for cash benefits and health care. We used estimates from Riley and Rupp (2012) to calculate foregone expenditures. The authors followed a cohort of working-age adults with disabilities who first entered SSDI

[16] Other government benefits, such as the Supplement Nutrition Assistance Program (SNAP), are also relevant but not included here. For example, Thompkins et al. (2014) estimate that 29 percent of SSDI applicants received SNAP benefits in the first year after application and about 10 percent received energy assistance during that time.

and/or SSI in 2000 and used administrative data to calculate expenditures under SSDI, SSI, Medicare, and Medicaid.[17] They calculated that cash benefit and health care expenditures over a six-year period averaged $128,515 in 2013 dollars, of which $76,779 was for cash benefits and $51,737 was for health care. We extrapolated the cost over the 16-year period between initiation of benefits and full retirement age and obtained total costs of $342,707. Because the Medicare prescription program ("Part D") was not included in the Rupp and Riley (2011) estimates, we added to that $1,806 in annual Medicare Part D expenditures, over 14 years, to arrive at $367,988. Finally, given our assumption that 45 percent of workers with disabilities would be approved for SSDI benefits, we multiplied the costs by 0.45 and obtained $165,595.

We also accounted for ACA premium subsidies and Medicaid costs for workers with disabilities before receiving Medicare coverage, if approved for SSDI, and from age 50 through FRA, if not approved for SSDI. We assumed annual ACA premium subsidy costs of $8,396 (Kaiser Family Foundation 2014a) and annual Medicaid costs of $3,233 per year (Kaiser Family Foundation 2014b). Weighting these costs by the proportions assumed to be receiving ACA premium subsidies (25 percent) and Medicaid coverage (50 percent) results in $3,716. We multiplied this amount by three to account for public health costs during the first three years in which no one is on Medicare, to arrive at $11,147. We then multiplied $11,147 by 0.55 and 14 to account for public health costs for the proportion of the population not approved for SSDI (55 percent), resulting in $28,609. Adding $11,147 to $28,609 gives us the total amount spent on public health care benefits for workers with disabilities while they are not receiving Medicare benefits: $39,756.

Summing the cash and health care expenditures for the SSDI approved population ($165,595) and the health care expenditures for the non-Medicare population ($39,756), results in $205,351 total cash benefits and health care expenditure costs.

3. Administrative costs

We assumed that during the six months the worker with a disability collects UI benefits, the government would incur $514 in administrative expenses.[18] The government also incurs administrative expenses while the worker with a disability collects cash benefits and is covered under Medicare or Medicaid for health insurance. We estimated that the taxpayer would incur $2,465 in SSDI and $299 in SSI program administrative costs per beneficiary, on average, over the 16-year period between initiation of benefits and full retirement age.[19] For health insurance,

[17] Approximately 50 percent of the study sample was age 50 at disability program entry, 60 percent had DI eligibility only, 16 percent had SSI only, and 24 percent were eligible for both programs, though not always concurrently.

[18] According to Employment and Training Administration (2013), administrative costs for UI represent 6.45 percent of total benefits paid.

[19] We arrived at per-beneficiary administrative costs by dividing the total administrative costs in for SSDI in FY 2013 ($3.8 billion) by the total number of beneficiaries during the same time (11.1 million) and weighted by the probability of being in SSDI (0.45) (Szymendera 2013). The SSI program incurred $4 billion in administrative costs in FY 2013 and had 8.2 million beneficiaries. We weighted SSI program administration costs by the probability the worker with a disability receives SSI benefits (0.45 x 0.085 = 0.038) (Szymendera 2013).

we estimated that the taxpayer incurs $6,693 in program-administration expenses over the same time period.[20]

C. Summary of public assistance program costs

Table VIII.1 provides a summary of our public assistance program cost estimates under scenarios 1 and 2.

Table VIII.1. Costs of government benefits, by perspective

		Perspective			
Cost and benefit component	Relevant scenario	Employer	Employee	Taxpayer	Society
Cost of No Public Assistance	Scenario 1	$0	$0	$0	$0
Unemployment Insurance	Scenario 2	$0	-$7,972	$7,972	$0
Administrative costs		$0	$0	$514	$514
SSA and Public Health Care	Scenario 2	$0	-$205,531	$205,531	$0
Administrative costs		$0	$0	$5,890	$5,890
Net Benefits (+)/Costs (-)		**$0**	**-$213,322**	**$219,726**	**$6,404**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding.

[20] We arrived at per-beneficiary administrative costs by dividing the total administrative costs for Medicare in FY 2010 ($7 billion) by the total number of beneficiaries during the same time (46.6 million) and weighted by the probability of being on Medicare (0.45) over 14 years (Kaiser Family Foundation 2014c; Sullivan 2013). The Medicaid program incurred $431 billion in total costs in FY 2012 (Kaiser Family Foundation 2014d). Analysis of Medicaid Analytic eXtract (MAX) data found that per-member, per-month administrative costs accounted for on average 6 percent of total expenditures (Lipson et al. 2010). We assumed that 50 percent of workers with disabilities (those who are unmarried) would receive Medicaid for three years, and that 50 percent of the proportion not receiving SSDI benefits (0.55) would continue to receive Medicaid coverage until FRA.

This page has been left blank for double-sided copying.

IX. AGGREGATING COSTS AND BENEFITS

The employer, employee, taxpayers, and society as a whole all stand to accrue the benefits and costs from supporting, or failing to support, RTW. Table IX.1 is the populated version of Table II.1, with estimates from Chapters III through VIII replacing the original "+,'' "-," and "?" markers that we used as placeholders in that table. The bottom line for each column shows the difference between benefits and costs aggregated over all the components we considered, indicating either total net benefits (if positive) or total net costs (if negative) from the relevant perspective. Below, we compare the net benefits and costs under our baseline assumptions to the employer and from the perspectives of the employee, taxpayer, and society. We perform sensitivity analyses to ascertain how each of the baseline assumptions we made might have influenced the analysis results.

A. Net benefits and costs to the employer

Under our baseline assumptions, the employer would incur net costs of $184,614 from implementing an RTW program and re-employing a worker with a disability rather than laying off that worker (Table IX.1). A relatively modest investment is required to implement an RTW program and accommodate the worker with a disability under scenario 1; the bulk of the net costs to the employer are due to the assumed 16.3 percent reduction in productivity of the re-employed worker.

B. Net benefits and costs from other perspectives

The net costs and benefits presented in Table IX.1 make a clear case for RTW from the employee's perspective. Under our baseline assumptions, the worker with a disability stands to accrue $688,033 in net benefits from the onset of the disabling condition until FRA if re-employed. Without RTW, workers with disabilities and their families face a substantial reduction in standard of living.

Taxpayers also stand to gain much from employer RTW investments and accrue $225,761 in net benefits over the remainder of a worker with a disability's career. The net benefits to the taxpayer are almost entirely due to foregone government benefits that would be received by the worker with a disability if he or she were unable to return to work.

Under our baseline assumptions, society stands to accrue $729,180 in net benefits from re-employment of the worker with a disability.

Table IX.1. Summary of costs and benefits of RTW investments, by perspective

Cost and benefit component	Relevant scenario	Perspective			
		Employer	Employee	Taxpayer	Society
Workplace Accommodations	Scenario 1	-$10,063	$0	$0	-$10,063
HR Costs					
Disability management services	Scenario 1	-$4,823	$0	$0	-$4,823
Hiring a replacement worker	Scenario 2	$5,711	$0	$0	$5,711
Labor Compensation					
Compensation to re-employed worker	Scenario 1	-$1,076,314	$918,850	$157,465	$0
Compensation to replacement worker	Scenario 2	$1,035,067	$0	-$151,430	$883,636
Productivity					
Productivity of the worker with a disability	Scenario 1	$900,875	$0	$0	$900,875
Productivity of the replacement worker	Scenario 2	-$1,035,067	$0	$0	-$1,035,067
Medical OOP Costs					
Costs under original health plan	Scenario 1	$0	-$75,870	$0	-$75,870
Costs under alternative health plan	Scenario 2	$0	$58,367	$0	$58,367
Public Assistance Programs	Scenario 2	$0	-$213,322	$219,726	$6,404
Subtotal					
Re-employing the worker with a disability	Scenario 1	-$190,325	$842,979	$157,465	$810,119
Hiring a replacement worker	Scenario 2	$5,711	-$154,946	$68,296	-$80,939
Net Benefits (+)/Costs (-)		**-$184,614**	**$688,033**	**$225,761**	**$729,180**

Note: Costs under scenario 1 are negative numbers and costs under scenario 2—which are forgone under scenario 1—are positive numbers. Similarly, benefits under scenario 1 are positive numbers and benefits under scenario 2 are negative numbers. Numbers might not add exactly due to rounding

C. Sensitivity analyses

Although we based our estimates of the benefits and costs of RTW on the best available and, in our judgment, the most appropriate assumptions, some uncertainty is inherent in our assumptions and corresponding calculations. For this reason, we tested the sensitivity of the bottom line to alternative assumptions (Table IX.2). We focused our sensitivity tests on nine areas of the analysis, as listed in Table II.1, changing assumptions for only one element at a time and leaving all others at their benchmark value.

- **Age at disability onset**. The time frame of each component of the ongoing costs and benefits under consideration depend on the employee's remaining working years. We calculated our results under the assumption that the age at disability onset was five years older or younger than our benchmark assumption. Decreasing the age of disability onset to 45 results in an increase—to 22 years—that the worker with a disability returns to work until FRA under scenario 1. This change results in increased costs for the employer as the worker with a disability accrues compensation for additional years while providing reduced productivity. The converse is true if we assume disability onset occurs at age 55, leaving 12 years between disability onset and FRA.

Table IX.2. Net benefits under alternative assumptions, by perspective

	Perspective			
Cost and benefit components	Employer	Employee	Taxpayer	Society
Benchmark	-$184,614	$688,033	$225,761	$729,180
Age at Disability Onset				
45 years	-$238,705	$896,340	$290,003	$947,638
55 years	-$130,524	$479,726	$161,519	$510,721
Time Away from Work				
12 weeks	-$185,830	$694,399	$226,852	$735,421
40 weeks	-$180,157	$664,690	$221,761	$706,294
Time to Fill a Position				
43 days	-$184,614	$688,033	$226,057	$729,476
Weekly Full-Time Wage Earnings				
20 percent higher	-$219,185	$871,803	$227,323	$879,941
Costs of Workplace Accommodations				
$0	-$174,551	$688,033	$225,761	$739,243
$20,126	-$194,677	$688,033	$225,761	$739,243
RTW Costs to HR				
0 percent FTE	-$179,792	$688,033	$225,761	$734,002
20 percent FTE	-$189,437	$688,033	$225,761	$724,357
Productivity Loss				
0 percent	-$9,175	$688,033	$225,761	$904,619
Probability of Getting on SSDI Under Scenario 2				
0.25	-$184,614	$751,227	$161,442	$728,055
0.75	-$184,614	$593,866	$322,239	$731,491
Discounting				
3.5 percent	-$142,242	$523,974	$175,109	$556,841

- **Time away from work.** To set a time frame for the occurrence of certain cost and benefit components under scenario 1, we used a benchmark estimate of 21 weeks away from work from the time of disability onset, which is the median time to resume working for occupationally related permanent disability with an RTW program (McLaren et al. 2010). To assess the sensitivity of our results to this assumption, we calculated our results under the assumption of an ineffective RTW program (40 weeks) and an improved RTW program (12 weeks). Changing this assumption affects both compensation and productivity under scenario 1. If the worker with a disability returns to work in only 12 weeks, the costs to the employer actually increase somewhat, as do employee compensation and tax revenues. If the worker with a disability returns to work in 40 weeks, the costs to the employer decrease, along with employee compensation and tax revenues.

- **Time to fill a position.** According to the SHRM Benchmarking Database, the time to fill a position is 29 calendar days, on average, for organizations with fewer than 1,000 employees, and 43 calendar days for larger organization (SHRM 2012). In our benchmark estimate, we used for our calculations the estimate of 29 days to fill a position. We calculated our results under the assumption of a larger organization (43 calendar days). Under scenario 2, the employer paid the replacement worker for 14 fewer days but lost the same number of days in productivity, netting out to no changes from the employer perspective.
- **Weekly full-time wage earnings.** We calculated our results under the assumption of weekly wages that are 20 percent higher than the benchmark estimate, reflecting the fact that mean wages are higher than the median wages used in baseline. This change affects our costs calculations for human resources, compensation to the worker with a disability and the replacement worker, and productivity. As a result, we calculated an increase in net benefits for the employee and taxpayers. For employers, however, productivity losses were higher, resulting in a worse bottom line.
- **Costs of workplace accommodations.** We calculated our results under the assumptions of zero cost of workplace accommodations and double the cost of workplace accommodations. Net costs for the employer are reduced by the baseline cost of workplace accommodations under the former assumption and increased by the same amount under the latter.
- **RTW costs to HR.** We calculated our results under the assumptions of 20 percent and 0 percent of a full-time equivalent (FTE) HR specialist's time to administer the RTW program. The results indicate that the employer's bottom line is not sensitive to these changes.
- **Productivity loss.** We calculated our results under the assumption of 0 percent productivity loss for the worker with a disability. Under this assumption, the employer costs of compensation to the worker with a disability are equal to the benefits accrued from productivity. As a result, the employer accrues only the costs associated with providing accommodations and facilitating re-employment, and the net costs to the employer of implementing an RTW program decrease significantly.
- **Probability of getting on SSDI under scenario 2.** We calculated our results under the alternative assumptions of 25 and 75 percent probability of getting on SSDI benefits under scenario 2. Under the assumption of a lower probability of receiving SSDI benefits, foregone government benefits decrease, so the potential costs saved by the government are lower relative to the benchmark estimate. For the worker with a disability, we calculated an increase in average benefits. This means a higher value to the employee of implementing an RTW program, but a lower value to the taxpayer. If the probability of going on DI increases to 0.75, foregone government benefits increase and the government has "more to lose" under scenario 2, making the RTW program of higher value to the taxpayer but less to the employee.
- **Discounting**. Following the Government Accountability Office's recommendation of using the Treasury borrowing rate for discounting future costs and benefits, we calculated our results using a discount rate of 3.5 percent—approximately the average real rate of return on 30-year Treasury bonds in the past 10 years (Government Accountability Office 1991). The results are qualitatively similar to the benchmark case.

X. CONCLUSION

Our findings under the main set of assumptions suggest that the worker with a disability, taxpayers, and society as a whole stand to gain much from RTW investments. The employer, however, incurs substantial net costs. From each of the perspectives, the basic results remain the same under our alternative assumptions, although the employer's bottom line is clearly very sensitive to any productivity loss resulting from disability. From the employer's perspective, therefore, reducing costs due to productivity loss is vital for making RTW cost effective.

Below, we consider additional benefits to the employer that are not currently included in our calculations and could easily tip the employer's bottom line from net costs to net benefits.

A. Additional RTW benefits to the employer

The literature frequently cites benefits to accommodating a worker with a disability that we did not include under scenario 1 because they are difficult to quantify. We consider some of them below.

1. Improved staff morale and productivity

A well-designed RTW program can have a positive impact on staff morale, the benefits of which can accrue to the employer on a company-wide basis. For example, Schartz et al. (2006) cites the positive effects accommodation has on both morale and productivity throughout the company. Employers who had initiated accommodation cited improved interactions with co-workers, improved overall company morale, increased overall company productivity, improved interactions with customers, increased overall company attendance, increased profitability, and increased customer base. Other intangible benefits to employers could be increased diversity and a positive corporate image.

Under our benchmark assumptions, a very small increase in company-wide productivity can tip the employer's bottom line in favor of RTW. For example, a company of 1,000 workers each paid $777, on average (the median weekly wage in the third quarter of 2013) in weekly wages would need an across-the-board productivity increase of less than two-tenths of one percent (0.02 percent) to make RTW cost-neutral from the perspective of the employer. Notably, the break-even percentage will be smaller for larger companies and for companies with higher average productivity. This fact can at least partially explain why larger companies and companies with more high-skilled workers compared to low-skilled workers are more likely than others to offer PDI benefits and invest in RTW.

2. Reduced risk of staff turnover

A successful RTW program will most likely result in decreased turnover (beyond the retention of the worker with a disability in question). Staff turnover decreases with tenure and is more likely for a new hire (the replacement worker) than for the worker with a disability who has likely developed a commitment to his or her employer (Cohen 1993). Reduced turnover would mean lower recruitment and training costs in the long term.

3. Reduced risk of legal liability

The Americans with Disabilities Act (ADA) prohibits discrimination in hiring, firing, and wage discrimination on the basis of a disability. It also requires the employer to provide reasonable accommodations for employees with disabilities. Between 1992 and 1997, the Equal Opportunity Employment Commission, which enforces the ADA, resolved more than 11,000 complaints brought under the ADA. Employers paid more than $174 million in settlements during that period, a figure that does not include administrative costs, lawyers' fees, and out-of-court settlements. Over all discrimination cases, Condon and Zolna (1997) estimated an average award of more than $167,000, and defense costs of more than $40,000. These costs are considerable, and employers should give them sufficient weight when they consider whether to re-employ a worker with a disability. The threat of incurring litigation costs in a wrongful termination suit could tip the employer's cost-benefit balance in favor of RTW.

4. Tax credits

We did not account for employer tax credits that are available for hiring and/or accommodating workers with disabilities (Internal Revenue Service 2014). At the federal level, employers can take advantage of three tax credits, depending on company size. The Work Opportunity Tax Credit (WOTC) is a one-time tax credit available to employers who hire workers within certain target groups. Workers with disabilities may fit within two of those categories: SSI recipients or vocational rehabilitation referrals. Although it is perhaps not applicable, given our focus on the worker who experiences disability onset late in his or her career, it may be beneficial in other situations. The maximum tax credit ranges from $1,200 to $9,600, depending on wages and hours.[21] Two additional tax credits are available for certain employers to assist in the accommodation of a worker with a disability—the Disabled Access Credit and the Barrier Removal Tax Deduction.[22] State-level tax credits may also be available. For example, employers in Utah can use the Utah Targeted Tax Credit, which is a two-year credit based on the worker with a disability's wages (Utah State Tax Commission 2014).

B. Discussion

From a societal perspective, the benefits of RTW are clear. Even with the potential additional benefits to employers noted above, however, it will often not be in the employer's financial interest to invest in RTW. This is especially true for small employers, employers in industries where productivity loss might be relatively high, and employers for whom turnover is of relatively little concern. Policies that would shift some of the benefits of RTW from the taxpayers (including employees) to employers could, therefore, be warranted. By reducing the costs (particularly of reduced productivity) to the employer, such policies could shift economic incentives such that employers will seek to retain workers who experience disability onset.

[21] At the time of this report's issuance, WOTC's legislative authority had lapsed. States are permitted to accept applications for new employees in the current WOTC target groups hired on or after January 1, 2015, but have been instructed to postpone final processing of certification requests pending further Congressional legislative action (United States Department of Labor 2015).

[22] According to Internal Revenue Service data, very few businesses use the Work Opportunity and Disabled Access tax credits (Government Accountability Office 2002).

Although the cost of such subsidies may be high, the potential savings to the taxpayer are likely to be even higher.

In this context, a program that subsidizes employers for the reduced productivity might be more effective in encouraging retention than subsidizing the costs of one-time workplace accommodations. A particularly relevant example is provided in SourceAmerica's Pathways to Careers program. Under contract with SourceAmerica, Mathematica developed a model of reductions in the employer payroll tax rate that provide an incentive for employers to hire people with disabilities. The incentive model is budget neutral in that the reductions in payroll tax revenues are offset by reductions in federal expenditures on disability benefits and health care (Institute for Economic Empowerment 2014). The model is currently being implemented as part of the Pathways to Careers demonstration program in Davis County, Utah, which assists individuals with severe disabilities in obtaining competitive paid jobs. The descriptive evaluation of the Pathways model, including an assessment of the employer payroll tax adjustment, is currently ongoing.

Another option for encouraging retention by employers has been proposed by Burkhauser and Daly (2011). They propose to "experience rate" SSDI by raising SSDI employer taxes for firms whose workers end up on SSDI at a higher-than-average rate. Such a system is similar to those currently implemented in state unemployment insurance and WC programs and was behind the Dutch disability policy reform implemented in 2002. One problem with this proposal is that it creates substantial risk for small employers, whose claim rates could vary greatly from year to year. In addition, it could prompt some employers to avoid hiring individuals perceived to be at risk of disability onset.

As mentioned in Chapter II, some potential benefits to the employer of RTW investments were not included in our calculations. This includes potential reductions in long-term DI payments and reduced premiums for DI and WC. WC is experience-rated and includes an incentive for employee retention, but is not relevant for nonoccupational cases, which constitute the majority of long-term disability cases. Within PDI, certain mechanisms already exist (including experience rating) to encourage retention by employers. Only 32 percent of private-sector employees are covered by PDI, however (BLS 2013a), and those who are covered work for employers that have already concluded it is in their best interest to provide such insurance.

Autor and Duggan (2010), propose a "universal PDI" policy that would "assist workers with work-limiting disabilities to remain in their current jobs or to transition to more suitable jobs." The universal PDI benefits would include vocational rehabilitation services, workplace accommodations, and partial wage replacement for up to 24 months. Firms with at least 50 FTE employees will pay experience-rated premiums; smaller firms will pay an industry-rated premium. However, the proposal seems to ignore the additional costs that would be imposed on employers of the 68 percent of private-sector workers who are not currently covered by long-term PDI.

In summary, our findings highlight both the benefits of RTW to society and the significant challenges employers face when considering whether to retain or return to work an employee who experiences the onset of a disability. While recent policy proposals have considered these challenges to some extent, many questions remain. Further examination of models that provide

employers with economic incentives to retain workers who experience disability onset would be useful to ODEP in its mission to promote successful RTW strategies.

REFERENCES

ADP. "Guide to Workers' Compensation Premiums: Understanding the Facts and Three Steps to Lowering Premium Costs." Available at http://insurance.adp.com/~/media/Insurance/White%20Papers/Guide-to-Workers-Compensation-Premiums-white-paper.ashx. Accessed May 14, 2014.

American College of Occupational & Environmental Medicine. "Preventing Needless Work Disability by Helping People Stay Employed." *Journal of Occupational and Environmental Medicine*, vol. 48, no. 9, 2006, pp. 972–987.

Auerbach, David, and Arthur Kellermann. "A Decade of Health Care Cost Growth Has Wiped Out Real Income Gains for an Average U.S. Family." *Health Affairs*, vol. 30, no. 9, September 2011.

Autor, David H., and Mark Duggan. "Supporting Work: A Proposal for Modernizing the U.S. Disability Insurance System." Washington, DC: Center for American Progress, December 2010.

Bernard, Didem. "Out-of-Pocket Expenditures on Health Care among the Nonelderly Population, 2004." Medical Expenditure Panel Survey Statistical Brief #159, 2007.

Boden, Leslie I. "Running on Empty: Families, Time, and Workplace Injuries." *American Journal of Public Health*, vol. 95, no. 11, 2005, pp. 1894–1897.

Bureau of Labor Statistics. "BLS Reports on the Amount of Formal And Informal Training Received By Employees." USDL-96-515. Washington, DC: U.S. Department of Labor, December 1996.

Bureau of Labor Statistics. "National Compensation Survey: Employee Benefits in the United States, March 2013." Washington, DC: U.S. Department of Labor, September, 2013a.

Bureau of Labor Statistics. "Usual Weekly Earnings of Wage and Salary Workers: Third Quarter 2013." USDL-13-2078. Washington, DC: U.S. Department of Labor, November, 2013b.

Bureau of Labor Statistics. "Employer Costs for Employee Compensation: December 2013." Washington, DC: U.S. Department of Labor, March, 2014a.

Bureau of Labor Statistics. "Occupational Employment and Wages—May 2013." Washington, DC: U.S. Department of Labor, March, 2014b.

Bureau of Labor Statistics. "Table A-6. Employment Status of the Civilian Population by Sex, Age, and Disability Status, Not Seasonally Adjusted." Available at http://www.bls.gov/news.release/empsit.t06.htm. Accessed May 22, 2014c.

Burkhauser, Richard V., and Mary Colleen Daly. *The Declining Work and Welfare of People with Disabilities: What Went Wrong and a Strategy for Change*. Washington, DC: American Enterprise Institute, 2011.

Burkhauser, Richard V., and Mary Colleen Daly. "Social Security Disability Insurance: Time for Fundamental Change." *Journal of Policy Analysis and Management*, vol. 31, no. 2, 2012, pp. 454–461.

Casanova, Maria. "Revisiting the Hump-Shaped Wage Profile." Unpublished mimeo, UCLA, 2013.

Center on Budget and Policy Priorities. "Policy Basics: How Many Weeks of Unemployment Compensation Are Available?" Washington, DC: Center on Budget and Policy Priorities, December 2013.

Coe, Norma B., Stephan Lindner, Kendrew Wong, and April Yanyuan Wu. "How Do the Disabled Cope While Waiting for SSDI?" Working Paper No. 2013-12. Boston: Center for Retirement Research, 2013.

Cohen, A. "Organizational Commitment and Turnover: A Meta-Analysis." *Academy of Management Journal*, vol. 36, no. 5, 1993, pp. 1140–1157.

Condon, David, and Stan Zolna. "Stakes on the Rise of EPL Insurance." *National Underwriter / Property and Casualty-Risk and Benefits Management*, vol. 101, no. 37, 1997, pp. 20–22.

Davis, Carl, Kelly Davis, Matthew Gardner, Harley Heimovitz, Robert S. McIntyre, Richard Phillips, Alla Sapozhnikova, and Meg Wiehe. *Who Pays: A Distributional Analysis of the Tax Systems in All 50 States, 4th Ed.* Washington, DC: Institute on Taxation and Economic Policy, January 2013.

Employment and Training Administration. "Unemployment Compensation: Federal-State Partnership." Washington, DC: U.S. Department of Labor, April 2013.

Franche, R., K. Cullen, J. Clarke, E. Irvin, S. Sinclair, and J. Frank. "Workplace-Based Return-to-Work Interventions: A Systematic Review of the Quantitative Literature." *Journal of Occupational Rehabilitation*, vol. 15, no. 4, 2005, pp. 607–631.

French, Eric, and Jae Song. 2014. "The Effect of Disability Insurance Receipt on Labor Supply."*American Economic Journal: Economic Policy*, vol. 6, no. 2, pp. 291–337.

Goetzel, Ron Z., Stacey R. Long, Ronald J. Ozminkowski, Kevin Hawkins, Shaohung Wang, and Wendy Lynch. "Health, Absence, Disability, and Presenteeism Cost Estimates of Certain Physical and Mental Health Conditions Affecting U.S. Employers." *Journal of Occupational and Environmental Medicine*, vol. 46, no. 4, April 2004, pp. 398–412.

Government Accountability Office. "Business Tax Incentives: Incentives to Employ Workers with Disabilities Receive Limited Use and Have an Uncertain Impact." Washington, DC: Government Accountability Office, 2002.

Government Accountability Office. "Discount Rate Policy." GAO/OCE-17.1.1. Washington, DC: GAO, 1991.

Institute for Economic Empowerment. "Pathways to Careers Employer Incentive." Available at http://www.instituteforempowerment.org/research-development/employer-payroll-tax-incentives. Accessed May 27, 2014.

Internal Revenue Service. "Tax Benefits for Businesses Who Have Employees with Disabilities." Available at http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Tax-Benefits-for-Businesses-Who-Have-Employees-with-Disabilities. Accessed May 14, 2014.

Janicki, Hubert. "Employment-Based Health Insurance: 2010." Washington, DC: U.S. Census Bureau, February 2013.

Kaiser Family Foundation. "Subsidy Calculator: Premium Assistance for Coverage in Exchanges." Available at http://kff.org/interactive/subsidy-calculator/. Accessed May 22, 2014a.

Kaiser Family Foundation. "State Health Facts: Medicaid Payments per Enrollee, FY2010." Available at http://kff.org/medicaid/state-indicator/medicaid-payments-per-enrollee/. Accessed May 22, 2014b.

Kaiser Family Foundation. "Total Number of Medicare Beneficiaries." Available at http://kff.org/medicare/state-indicator/total-medicare-beneficiaries/. Accessed May 22, 2014c.

Kaiser Family Foundation. "Total Medicaid Spending, FY2012." Available at http://kff.org/medicaid/state-indicator/total-medicaid-spending/. Accessed May 22, 2014d.

Ku, Leighton, and Matt Broaddus. "Out-of-Pocket Medical Expenses for Medicaid Beneficiaries Are Substantial and Growing." Center on Budget and Policy Priorities, May 31, 2005.

Lipson, Debra, Margaret Colby, Tim Lake, Su Liu, and Sarah Turchin. "Value for the Money Spent? Exploring the Relationship between Medicaid Costs and Quality." Washington, DC: Mathematica Policy Research, August 2010.

Loy, Beth. "Accommodation and Compliance Series Workplace Accommodations: Low Cost, High Impact." Morgantown, WV: Job Accommodation Network, September 2013.

Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand. "Disability Insurance and Healthcare Reform: Evidence from Massachusetts." Working Paper 2013-289. Ann Arbor, MI: University of Michigan Retirement Research Center, November 2013.

Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand. "Does Disability Insurance Receipt Discourage Work? Using Examiner Assignment to Estimate Causal Effects of SSDI Receipt." *American Economic Review*, vol. 103, no. 5, 2013, pp. 1797–1829.

McLaren, Christopher F., Robert T. Reville, and Seth A. Seabury. "How Effective Are Employer Return to Work Programs?" RAND Working Paper WR-745-CHSWC. Santa Monica, CA: RAND Institute for Civil Justice, March 2010.

Murphy, Kevin M. and Finis Welch. "Empirical Age-Earnings Profiles." *Journal of Labor Economics*, vol. 8, no. 2, 1990, pp. 202–229.

Neuhauser, Frank. "What Does Case Management Really Get Employers? Comparing Disability Duration under Workers' Compensation and State Disability Insurance." Unpublished manuscript, 2010.

Noel-Miller, Claire. "Medicare Beneficiaries' Out-of-Pocket Spending for Health Care." AARP Public Policy Institute: Insight on the Issue 65, May 2012.

Orslene, Louis E. "Accommodation and Compliance Series: Return-to-Work Programs." Washington, DC: Office of Disability Employment Policy, U.S. Department of Labor, March 2013.

Orslene, Louis, Linda Carter Batiste, Carmen Fullmer, and Mandy Gamble. "Personal Assistance Services (WPAS) in the Workplace." Morgantown, WV: Job Accommodation Network, March 29, 2010.

Riley, Gerald F. and Kalman Rupp. "Expenditure Patterns Under the Four Major Public Cash Benefit and Health Insurance Programs for Working-Age Adults With Disabilities." *Journal of Disability Policy Studies*. Prepublished December 27, 2012.

Rupp, Kalman, and Gerald F. Riley. "Longitudinal Patterns of Participation in the Social Security Disability Insurance and Supplemental Security Income Program for People with Disabilities." *Social Security Bulletin*, vol. 71, no. 2, 2011.

Schartz, Helen A., D.J. Hendricks, and Peter Blanck. "Workplace Accommodations: Evidence-Based Outcomes." *Work*, vol. 27, 2006, pp. 345–354.

Schimmel, Jody, and David C. Stapleton. "The Financial Repercussions of New Work-Limiting Health Conditions for Older Workers." *Inquiry*, vol. 49, issue 2, summer 2012, pp. 345–354.

Social Security Administration. "Longitudinal Patterns of Participation in the Social Security Disability insurance and Supplemental Security income Programs for People with Disabilities." *Social Security Bulletin*, vol. 71, no. 2, 2011, pp. 25–51.

Social Security Administration. "Annual Statistical Report on the Social Security Disability Insurance Program, 2012." SSA Publication No. 13-11826. Washington, DC: Social Security Administration, November 2013a.

Social Security Administration. "Social Security Retirement Benefits." SSA Publication No. 05-10035. Washington, DC: Social Security Administration, April 2013b.

Social Security Administration. "Disability Planner: How You Apply." Available at http://www.ssa.gov/dibplan/dapply.htm#ht=0. Accessed April 29, 2014a.

Social Security Administration. "Disability Planner: You're Approved." Available at http://www.ssa.gov/dibplan/dapproval.htm. Accessed April 29, 2014b.

Social Security Administration. "Hearings and Appeals." Available at http://ssa.gov/appeals/#a0=1. Accessed April 29, 2014c.

Society for Human Resource Management. "Executive Brief: What Factors Influence Cost-per-Hire?" Alexandria, VA: Society for Human Resource Management, 2012.

Solovieva, T.I, R.T. Walls, D.J. Hendricks, and D.L. Dowler. "Cost of Workplace Accommodations For Individuals With Disabilities: With or Without Personal Assistance Services." *Disability Health Journal*, vol. 2 no. 4, October 2009, pp. 196–205.

Stapleton, David C., Richard V. Burkhauser, Peiyun She, Robert Weathers, and Gina A. Livermore. "Income Security for Workers: A Stressed Support System in Need of Innovation." *Journal of Disability Policy Studies*, vol. 19, no. 4, 2009, pp. 204–220.

Sullivan, Kip. "How to Think Clearly About Medicare Administrative Costs: Data Sources and Measurement." *Journal of Health Politics, Policy and Law*, vol. 38, no. 3, June 2013, pp. 479-504.

Sullivan, Michael J.L., and Heather Adams. "Psychosocial Treatment Techniques to Augment the Impact of Physiotherapy Interventions for Low Back Pain." *Physiotherapy Canada*, vol. 63 no. 3, summer 2010, pp.180–189.

Szymendera, Scott. "Social Security Administration (SSA): Budget Issues." Washington, DC: Congressional Research Service, March 2013.

Tax Policy Center. "Historical Average Federal Tax Rates for All Households." Washington, DC: Tax Policy Center, April 2014.

The Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. "The 2013 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds." Washington, DC: May, 2013.

Thompkins, Allison, Todd Honeycutt, Claire Gill, Joe Mastrianni, and Michelle Bailey. "To Apply or Not to Apply: The Employment and Program Participation of Social Security Disability Insurance Applicants and Non-Applicants." Draft report submitted to the Social Security Administration. Washington, DC: Mathematica Policy Research, April 2014.

United States Department of Labor. "Employment and Training Administration: Monthly Program and Financial Data." Washington, DC: United States Department of Labor, 2013.

United States Department of Labor. "WOTC Program Guidance: January 7, 2015." Available at http://www.doleta.gov/business/incentives/opptax/PDF/InterimInstructions_2014Reauthorization_2015Hiatus.pdf. Accessed February 10, 2015.

Utah State Tax Commission. "Employers Who Hire Persons with Disabilities Tax Credit." Available at http://tax.utah.gov/forms/current/tc-40hd.pdf. Accessed April 29, 2014.

Von Wachter, Till, Jae Song, and Joyce Manchester. "Trends in Employment and Earnings of Allowed and Rejected Applicants to the Social Security Disability Insurance Program." *American Economic Review*, vol. 101, no. 7, 2011, pp. 3308–3329.

Waddell, Gordon, A. Kim Burton, and Nicholas A.S. Kendall. "Vocational Rehabilitation: What Works, for Whom, and When?" London: Department for Work and Pensions, 2008.

www.mathematica-mpr.com

Improving public well-being by conducting high quality, objective research and data collection

PRINCETON, NJ ■ ANN ARBOR, MI ■ CAMBRIDGE, MA ■ CHICAGO, IL ■ OAKLAND, CA ■ WASHINGTON, DC

MATHEMATICA
Policy Research