



Social Security Disability Insurance and Workers Compensation

INTRODUCTION

Social Security Disability Insurance (SSDI) is a federal program that provides benefits when an individual becomes disabled and cannot return to work. A disability that qualifies a worker for SSDI need not be work related. Workers Compensation (WC) provides benefits when a worker becomes disabled in the course and scope of their employment.

Individuals may file for both WC and SSDI benefits. We estimate that approximately 10% of current SSDI beneficiaries have at one time qualified for WC benefits. In the majority of states—referred to as “Standard Offset” states—the SSDI benefit for dual recipients may be offset to ensure the combined benefits do not exceed a cap established by the Social Security Administration (SSA). However, in some states—referred to as “Reverse Offset” states—the WC benefit may be offset for some or all benefit types to ensure that the combined benefits do not exceed a cap established by the state.¹ Reverse offset rules differ by state and are specified within each state’s workers compensation statutes.

This study describes the interaction between SSDI and WC benefits through detailed examples and explores various channels of cost shifting that may occur between the two programs. The focus of this study is to illustrate, via example, the WC/SSDI interaction for low- and high-benefit WC states, and to explore how significant changes in WC benefits are likely to impact SSDI expenditures.

KEY FINDINGS

- The number of SSDI beneficiaries in active status, and their associated SSDI benefit expenditures, increased by 54% and 138% respectively from 2001 to 2015. However, since 2010, the number of beneficiaries has remained fairly stable. With respect to new entrants to the program, both adult applications and awards reached a peak in 2010 and then decreased through 2015. The award rate per 1,000 insured workers increased during the Great Recession, but by 2015, had dipped back to the 2001 level of approximately five awards per 1,000 insured workers.
- For dual recipients of WC Permanent Total Disability (PTD) benefits and SSDI, WC shoulders a greater portion of total benefits (in standard offset states) than does SSDI. The WC share of total benefits paid ranged from 68% in a low WC benefit state studied, to 90% in a high WC benefit state. Injured workers that receive WC PTD benefits typically file for SSDI.
 - NCCI estimates that for dual recipients in Nebraska, a relatively low PTD benefit state, WC pays 83% of total first-year benefits; SSDI pays 17%. SSDI pays 72% less than it would pay absent the existence of WC. For very high-wage earners, the WC share of combined benefits is lower than for low-wage earners. Over the lifetime of a dual recipient, the WC share dips to 68% of combined benefits, since SSDI benefits are subject to a cost of living adjustment (COLA), while WC PTD benefits in this state are not.
 - NCCI estimates that for dual recipients in Illinois, a relatively high PTD benefit state, WC pays 92% of total first-year benefits; SSDI pays 8%. SSDI pays 85% less than it would pay, absent the existence of WC. For low-wage earners, SSDI pays nothing after offset, due to the relatively high WC benefits. Over the lifetime of a dual recipient, the WC share remains high at 90% of combined benefits, since WC PTD benefits in this state are also subject to a COLA.
- Oklahoma is one of few states that decreased Permanent Partial Disability (PPD) benefits considerably in the last 15 years. SB 1062, effective in 2014, decreased the maximum duration for PPD benefits by 30% from 500 to 350 weeks.

¹ Reverse offset states are Alaska, California, Colorado, Florida, Louisiana, Minnesota, Montana, New Jersey, New York, North Dakota, Ohio, Oregon, Washington, and Wisconsin.

However, despite the large decrease in WC PPD benefits, the impact on SSDI benefits for dual recipients of WC and SSDI in Oklahoma was estimated to be a modest +0.6% over the lifetime of a typical claimant.

- Some have suggested that the reason for the long-term increase in SSDI claims has been a “race to the bottom” by state legislatures looking for immediate rate or loss cost reductions by lowering WC benefit levels, and that these lower levels have caused an inappropriate cost shifting from WC to SSDI. However, an analysis of WC benefit changes and judicial decisions in the last 15 years revealed that the majority of states did not reduce WC indemnity benefits during this period. Further, an analysis of selected states that reduced WC benefits and/or tightened compensability standards revealed that these changes did not appear to induce workers to file for SSDI. In fact, immediately following the reforms in these states, SSDI applications typically decreased. By far the largest increase in countrywide applications occurred during, or immediately following, the Great Recession.² Finally, the majority of WC injuries are not permanent and total; therefore, most WC claimants may not qualify for SSDI, mitigating the argument that WC benefit levels have substantially impacted SSDI applications.

STUDY DESIGN

This research brief is subdivided into the following sections:

- I. Overview of SSDI
- II. SSDI Program Statistics
- III. Dual Recipients of WC and SSDI
- IV. WC Benefit Changes
- V. Impact of WC Changes on Dual Recipients

OVERVIEW OF SSDI

SSDI provides benefits to individuals who are unable to work due to a medically determined physical or mental impairment that is expected to last at least one year or result in death. Benefits are only available for individuals who are totally disabled. The disability may be the result of work and/or non-work-related injuries or conditions. Benefits begin after a five-month waiting period from the established onset date (EOD) of disability and are subject to an annual COLA. Participants are eligible for Medicare Parts A and B (hospital and physician coverage) after receiving disability benefits for 24 months.

To qualify for benefits, applicants must pass a duration of work test to demonstrate that they have worked long enough to be eligible for program benefits. Applicants must undergo a five-step disability determination process that assesses both medical condition and ability to perform work.³ Federally funded state agencies known as Disability Determination Services (DDS) are responsible for reviewing medical evidence and making an initial determination on disability. DDS will first review medical evidence submitted by the claimant. If necessary, DDS will consult with the claimant’s medical providers or seek an independent medical opinion.

SSDI benefits for a disabled worker are determined by formula based on the worker’s earnings since age 21. Under this formula, SSDI provides a decreasing percentage of wage replacement as wages increase.⁴ SSDI benefits automatically convert to retirement benefits at the individual’s retirement age.

The SSDI program was established in 1956, initially providing benefits only to those age 50 and older. An expansion of the program in the 1960s included removing the age restriction and adding eligible dependent benefits. Medicare coverage was added in 1972. Further expansion in 1984 enabled applicants with less serious disorders (e.g., lower back injuries and mental injuries) to more easily qualify for benefits.

² For an overview of this topic, see Barry Lipton and Jim Davis, “SSDI and Workers Compensation Cost Shifting,” NCCI, 2017.

³ See Appendix for details on the five-step disability determination process, described at www.ssa.gov/policy/docs/rsnotes/rsn2013-01.html.

⁴ See Appendix for a sample SSDI benefit calculation.

SSDI PROGRAM STATISTICS

Growth in the SSDI program in recent decades has been significant, receiving national attention. This section provides statistics on the program volume from 2001 through 2015. During this period, the number of beneficiaries and benefits paid grew substantially through approximately 2010, but both have leveled off in recent years.

The following factors are often cited⁵ as possible contributors to the growth in the SSDI program:

- Increases in Social Security retirement age
- Individuals continuing to work at older ages
- Rise in obesity rates
- Aging of the population
- Rising number of women in the workforce
- Labor market conditions (economic downturns)
- Decline in US manufacturing employment

Exhibit 1 provides the SSDI program volume in 2015. SSDI benefit payments surpassed \$143 billion and the number of beneficiaries totaled 12 million in 2015. Disabled workers make up about three quarters of all beneficiaries. Benefits are also payable to dependents (e.g., spouses age 62 or older, spouses caring for a child under age 16, or a disabled child, children under age 18, etc.). Further, an adult disabled before age 22 may qualify for a child's benefit if a parent is deceased, retired, or receiving disability benefits. Lastly, approximately 12% of SSDI disabled workers have at one time been dual eligible for WC or public disability benefits (either currently receiving or having previously received WC or public disability benefits).⁶

⁵ See, for example, the following: David H. Autor and Mark G. Duggan, "The Rise in the Disability Rolls and the Decline in Unemployment," *The Quarterly Journal of Economics*, 2003; Xuguang (Steve) Guo and John F. Burton, Jr., "The Growth in Applications for Social Security Disability Insurance: A Spillover Effect from Workers' Compensation," *Social Security Bulletin*, 2012; Mary C. Daly, Brian Lucking, and Jonathan A. Schwabish, "The Future of Social Security Disability Insurance," FRBSF Economic Letter (2013); and Kathy A. Ruffing, "How Much of the Growth in Disability Insurance Stems From Demographic Changes?" Center on Budget and Policy Priorities, 2014.

⁶ The National Academy of Social Insurance, using unpublished data from the Social Security Administration, reports that about 12% of SSDI recipients also collect, or have collected, WC or public disability benefits (See "Workers' Compensation: Benefits, Coverage, and Costs (2015 Data)," National Academy of Social Insurance, October 2017, Table 19). Based on other Social Security Administration-published data, NCCI estimates that about 88% to 92% of these dual recipients collect, or have collected, WC. Hence, we estimate that approximately 10% of SSDI recipients also collect, or have collected, WC.

SSDI Program Statistics Active Status

2015 SSDI Program Volume	
Benefits Paid*	\$143.4 B
Number of Beneficiaries†	12.0 M
▪ Disabled Workers	8.9 M
▪ Dependent Beneficiaries	2.0 M
▪ Adult Children of Retired, Deceased, or Disabled Workers	1.1 M

Estimated Dual-Eligible Disabled Workers (12%‡ of 8.9M): 1.1 M

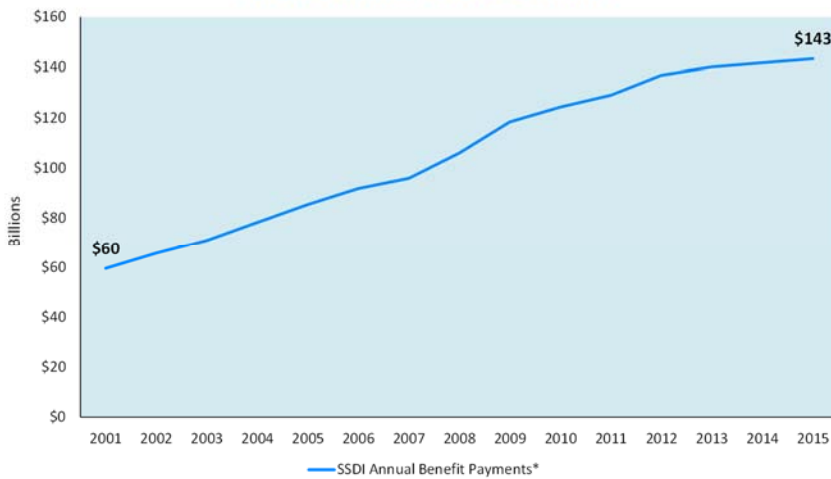
* Source: Page 1 of the *Annual Statistical Supplement to the Social Security Bulletin, 2016*.
 † Source: Table 1 of the *Annual Statistical Report on the Social Security Disability Insurance Program, 2015*.
 ‡ Source of 12% estimate of dual eligible beneficiaries: *Workers Compensation Benefits Coverage and Costs, 2013, August 2015, National Academy of Social Insurance*.



Exhibit 1: 2015 SSDI Program Volume

Exhibit 2 displays SSDI annual benefit payments from 2001 to 2015. Benefit payments grew by 138% from \$60 billion to \$143 billion over the period, but the growth has moderated in recent years. Benefit payments would be expected to increase over time due to inflationary adjustments.

SSDI Program Statistics SSDI Benefits—Active Status



* Source: Table 4.A2 of the *Annual Statistical Supplement to the Social Security Bulletin, 2016*.



Exhibit 2: SSDI Annual Benefit Payments 2001 to 2015

Exhibit 3 displays the number of SSDI disabled workers and total beneficiaries from 2001 to 2015. The number of total beneficiaries grew by 54% from 7.8 million to 12.0 million and the number of disabled workers increased by 68% from 5.3 million to 8.9 million over the period. The growth has subsided in recent years, remaining relatively flat since 2012.

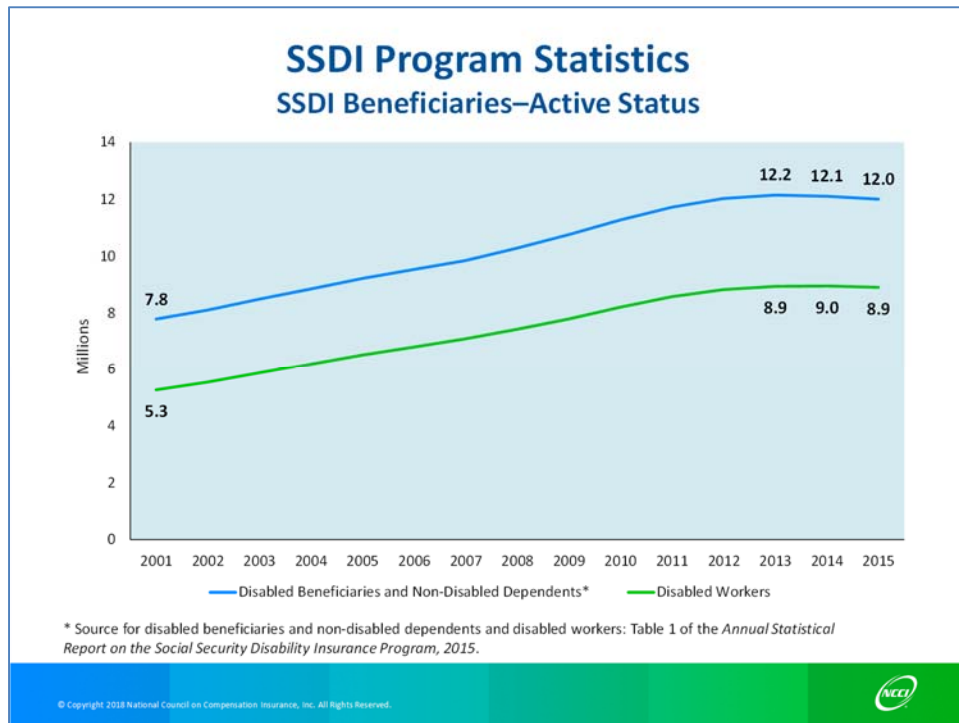


Exhibit 3: SSDI Beneficiaries 2001 to 2015

Exhibit 4 lists the top five SSDI conditions for the 8.9 million disabled workers in 2015. Diseases of the musculoskeletal system and mental disorders account for over 60% of cases. Worth noting is that from 2000 to 2015, the share of musculoskeletal conditions increased from approximately 23% to 32%, while the shares of each of the other categories decreased slightly. Several factors may have contributed to the increase in the share of musculoskeletal conditions including a rise in obesity rates⁷ and the aging of the population.

⁷ Chris Laws and David Colón, “Comorbidities in Workers Compensation,” NCCI, 2012.

SSDI Program Statistics

Top Five SSDI Conditions for Disabled Workers in 2015—Active Status

Diagnostic Group	% Share
Diseases of the Musculoskeletal System and Connective Tissue	31.7%
Mental Disorders	30.6%
Diseases of the Nervous System and Sense Organs	9.4%
Diseases of the Circulatory System	8.2%
Injuries	3.9%
All Other	16.2%
Total (8.9 Million Disabled Workers)	100.0%

* Source: Table 6 of the *Annual Statistical Report on the Social Security Disability Insurance Program, 2015*.

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Exhibit 4: Top Five SSDI Conditions in 2015

Exhibits 1 through 4 provided statistics on the SSDI program for all beneficiaries in active status in the given year, regardless of when they initially began receiving benefits. In contrast, Exhibits 5 through 7 will focus on new enrollees, providing information on applications and awards in each year.

Exhibit 5 displays SSDI applications and awards for calendar years 2001, 2005, 2010, and 2015. Following their 2010 highs, both applications and awards have decreased through 2015. The exhibit also displays two distinctly different award measures:

- Awards as a percentage of applications—This measure decreased dramatically from 2001 through 2010 as applications increased at a faster rate (96%) than awards (52%). The increase in applications may have been influenced by the Great Recession.
- Awards per 1,000 insured workers—The growth in applications had less of an impact on this measure, which increased through 2010, but by 2015 had decreased back to its 2001 level of approximately five awards per 1,000 insured workers. Efforts by the SSA to reduce a backlog in SSDI applications may have had an influence on the relatively high award rate during the post-recessionary period.

SSDI Program Statistics New Enrollees

	2001	2005	2010	2015
Applications (Thousands)	1,498.6	2,112.1	2,935.8	2,427.4
Awards (Thousands)	690.5	829.7	1,049.3	775.7
Awards as a % of Applications	46.1%	39.1%	35.7%	32.0%
Awards per 1,000 Insured Workers	5.0	5.8	7.0	5.1

* Source: Table 6.C7 of the Annual Statistical Supplement to the Social Security Bulletin, 2016.

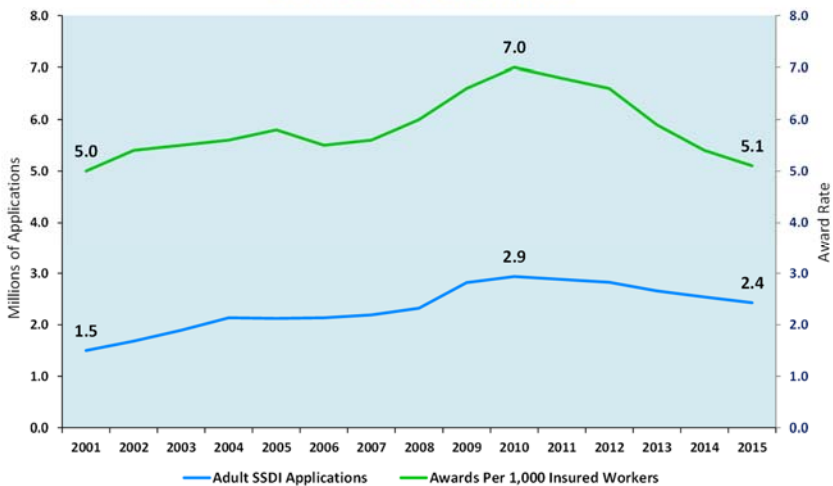
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Exhibit 5: SSDI Award Rates

Exhibits 6 and 7 graphically display the measures above from 2001 through 2015. Exhibit 6 displays SSDI applications and awards per 1,000 insured workers from 2001 to 2015.

SSDI Program Statistics New SSDI Applications



* Source: Table 6.C7 of the Annual Statistical Supplement to the Social Security Bulletin, 2016.

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Exhibit 6: SSDI Applications and Awards per 1,000 Insured Workers

Exhibit 7 illustrates the sharp decline in awards per application from 2001 to 2015. Note that this measure provides information on calendar year activity, but does not represent the number of awards relative to a fixed cohort of

applications. The applications represent all those received in the calendar year whether first time, second time, etc. Similarly, the awards represent all awards in the calendar year regardless of the year of application.

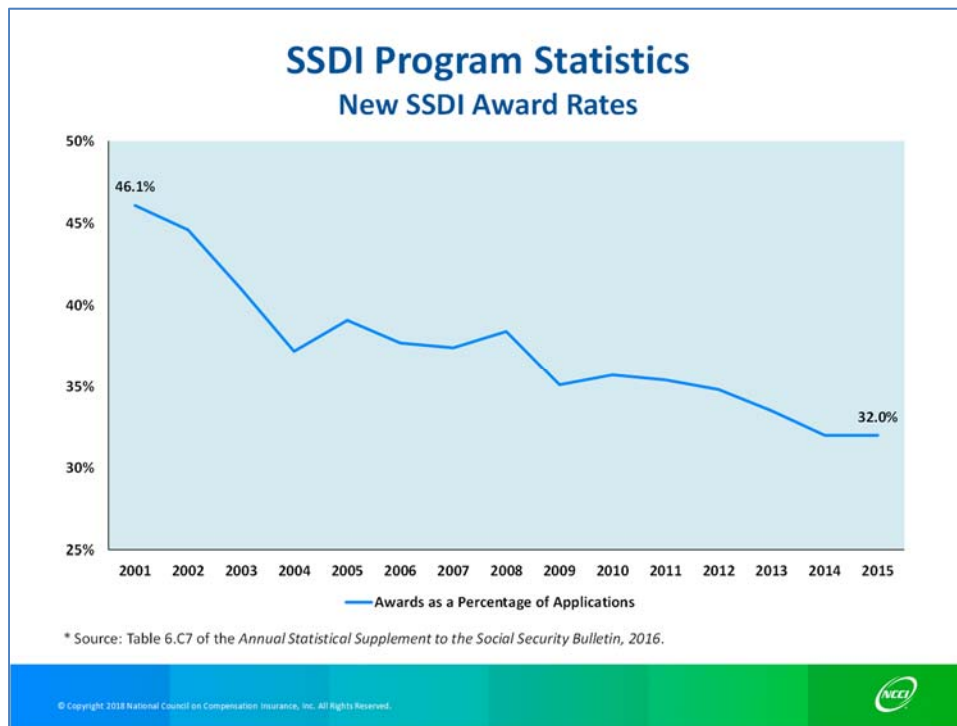


Exhibit 7: SSDI Awards as a Percentage of Applications

DUAL RECIPIENTS OF WC AND SSDI

Individuals receiving both SSDI benefits and WC benefits are referred to as dual recipients. In the majority of states, referred to as “Standard Offset” states, the SSDI benefit for dual recipients may be offset to ensure the combined benefits do not exceed a cap established by the Social Security Administration (SSA). However, in some states, referred to as “Reverse Offset” states, the WC benefit may be offset for some, or all, benefit types.

SSA Dual Benefit Cap

In a standard offset state, the combined benefits for WC and SSDI must not exceed a cap established by the SSA. The cap represents the higher of 80% of Average Current Earnings (ACE) and the SSDI benefit. ACE represents the highest of:

- Average Indexed Monthly Earnings (AIME)⁸
- Average unindexed monthly earnings from the highest five years in a row (“high five” test)
- Average unindexed monthly earnings based on the highest single year in any of the five years immediately preceding the year of disability (“high one” test)

WC PTD claimants typically also file for SSDI in order to maximize their wage replacement benefits and/or to become eligible for Medicare. Since PTD claims are relatively infrequent, most dual recipient claims involve other types of WC injuries, such as PPD. Dual recipients typically file for SSDI benefits a year or more after filing for WC benefits. Back injuries are the most common WC injury among dual recipients. In a Reverse Offset state, if certain benefits are not eligible for the “reverse” offset, the standard offset rules apply.

⁸ See SSDI Benefit Calculation in the Appendix.

Dual Recipient Examples

The examples presented below illustrate the interaction of WC and SSDI benefits in a Standard Offset state over the lifetime of a dual recipient. We selected the states of Nebraska and Illinois that currently have relatively low and high WC PTD benefits, respectively.

- In both states, the compensation rate for PTD injuries is 66 and 2/3% of wages, subject to a maximum. The maximum weekly benefit is 133% of the State Average Weekly Wage (SAWW) in Illinois, vs. 100% in Nebraska.
- PTD benefits are subject to an annual COLA in Illinois, but not in Nebraska.
- Both examples assume that a worker, age 49, suffers a WC injury resulting in PTD in 2016, successfully files for SSDI, and begins receiving SSDI benefits at age 50 in 2017.
- The SSDI benefit is determined by formula, which is a function of the individual's earnings since age 21. Under this formula, the higher the individual's earnings, the lower the percentage of wage replacement.
- For these examples, we have estimated the SSDI benefits, and the corresponding SSA combined benefit cap, based on the wage at time of WC injury. See the Appendix for a full listing of the assumptions pertaining to these examples.

Nebraska

Exhibit 8 displays the interaction of WC and SSDI benefits in the first year of dual benefits. The exhibit displays the WC benefit, the full SSDI benefit, and the SSDI benefit after application of the SSA offset at each weekly wage decile.

For the individual earning the 50th percentile (median) injury wage at time of injury, WC pays 86% of the combined benefits received in the first year. As a result of the offset, SSDI pays 78% less than it would pay absent the existence of WC.

Initial Year Summary (figures rounded)

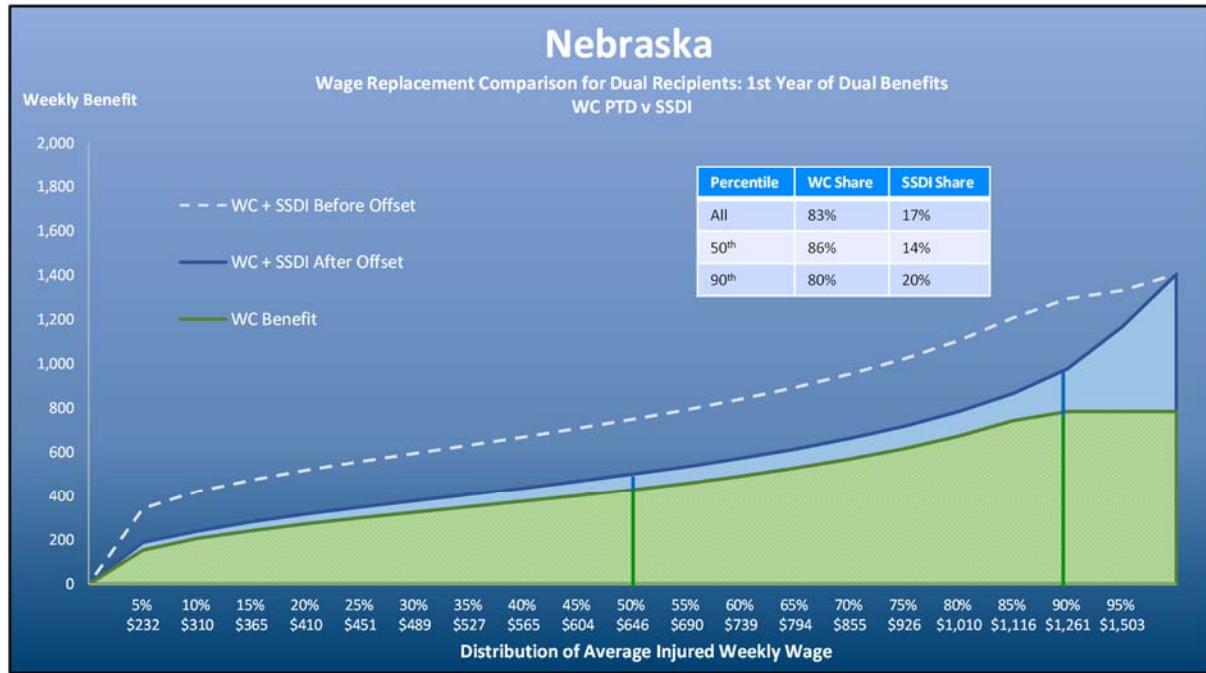
Median Injury Weekly Wage:	\$646
WC Initial Weekly Benefit:	\$431
SSDI Initial Weekly Benefit:	\$319
SSDI Weekly Benefit after Offset:	\$71
WC Share:	86% ($=\$431/(\$431+\$71)$)
SSDI Savings:	78% ($=\$71/\$319-1$)

Across all wage earners in Nebraska, WC pays 83% of the combined benefits received in the first year, with SSDI paying 72% less than it would pay absent WC.

Note that the wages on the x-axis were plotted at various percentiles of the average injury wage (5%, 10%, 15%, etc.) so that the volumes of the shaded areas in the chart would more accurately represent the 83%/17% split of WC vs. SSDI benefits.

For very high-wage earners, the WC share of combined benefits is lower than for low-wage earners. For example, WC pays 80% of the combined benefits for the individual earning the 90th percentile injury wage. This is due to the fact that 1) the SSDI program provides a decreasing percentage of wage replacement as wages increase and 2) WC benefits are subject to a maximum weekly benefit. It follows that, for very high-wage earners, the combined benefits will exceed the SSA's 80% cap to a lesser extent than for low-wage earners (or not at all). Thus, the SSDI benefit will be offset to a lesser degree and WC will pay a lower share of the combined benefits.

Dual Recipients of WC and SSDI Nebraska—Interaction of WC and SSDI Benefits in Year One



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Exhibit 8: First-Year Dual-Recipient Benefits Across All Wages

Exhibit 9 contains the detailed calculations of benefits for first-year dual recipients at all wage percentiles for Nebraska underlying Exhibit 8. The exhibit also shows the final wage replacement rates for WC, SSDI, and in total. For WC, the wage replacement percentage is 66 and 2/3rds subject to the maximum weekly benefit, whereas SSDI provides a decreasing percentage of wage replacement as wages increase.^{9 10}

⁹ See Appendix for a sample SSDI benefit calculation.

¹⁰ Note that the total wage replacement for most individuals of 78% is based on the average injury wage. This differs from the 80% SSA combined benefit cap, which is a function of Average Current Earnings (see column [6]).

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
Workers Below AIW	Average Injured Wage	WC Benefit	SSDI Full	Average Current Earnings (weekly)	.80 x ACE	Combined Cap = Max of (4) and (6)		SSDI After Offset	WC + SSDI After Offset	<<<< Wage Replacement >>>>					WC Share (3)/(10)	
						WC	SSDI			WC	SSDI	WC + SSDI Before Offset	SSDI After Offset	WC + SSDI After Offset		
							Offset	Offset	Offset	(3)/(2)	(4)/(2)	=(3)+(4)/(2)	(9)/(2)	(10)/(2)	(3)/(10)	
5%	\$232	\$154	\$190	\$225	\$180	\$190	\$154	\$36	\$190	67%	82%	149%	16%	82%	81%	
10%	\$310	\$207	\$215	\$301	\$241	\$241	\$181	\$34	\$241	67%	69%	136%	11%	78%	86%	
15%	\$365	\$244	\$232	\$355	\$284	\$284	\$192	\$40	\$284	67%	63%	130%	11%	78%	86%	
20%	\$410	\$273	\$246	\$398	\$318	\$318	\$201	\$45	\$318	67%	60%	127%	11%	78%	86%	
25%	\$451	\$300	\$258	\$437	\$350	\$350	\$209	\$50	\$350	67%	57%	124%	11%	78%	86%	
30%	\$489	\$326	\$270	\$475	\$380	\$380	\$217	\$54	\$380	67%	55%	122%	11%	78%	86%	
35%	\$527	\$351	\$282	\$511	\$409	\$409	\$224	\$58	\$409	67%	54%	120%	11%	78%	86%	
40%	\$565	\$377	\$294	\$548	\$439	\$439	\$232	\$62	\$439	67%	52%	119%	11%	78%	86%	
45%	\$604	\$403	\$306	\$587	\$469	\$469	\$240	\$66	\$469	67%	51%	117%	11%	78%	86%	
50%	\$646	\$431	\$319	\$627	\$502	\$502	\$248	\$71	\$502	67%	49%	116%	11%	78%	86%	
55%	\$690	\$460	\$333	\$670	\$536	\$536	\$257	\$76	\$536	67%	48%	115%	11%	78%	86%	
60%	\$739	\$493	\$348	\$718	\$574	\$574	\$267	\$81	\$574	67%	47%	114%	11%	78%	86%	
65%	\$794	\$529	\$365	\$770	\$616	\$616	\$278	\$87	\$616	67%	46%	113%	11%	78%	86%	
70%	\$855	\$570	\$384	\$830	\$664	\$664	\$290	\$94	\$664	67%	45%	112%	11%	78%	86%	
75%	\$926	\$617	\$406	\$899	\$719	\$719	\$304	\$102	\$719	67%	44%	111%	11%	78%	86%	
80%	\$1,010	\$674	\$432	\$981	\$785	\$785	\$321	\$111	\$785	67%	43%	109%	11%	78%	86%	
85%	\$1,116	\$744	\$465	\$1,083	\$867	\$867	\$342	\$123	\$867	67%	42%	108%	11%	78%	86%	
90%	\$1,261	\$785	\$510	\$1,224	\$979	\$979	\$316	\$194	\$979	62%	40%	103%	15%	78%	80%	
95%	\$1,502	\$785	\$547	\$1,458	\$1,167	\$1,167	\$165	\$382	\$1,167	52%	36%	89%	25%	78%	67%	
Total		\$8,722	\$6,404					\$1,767	\$10,489						83%	
Impact of Offset on SSDI (9)/(4)-1																

Exhibit 9: Nebraska Dual-Recipient Benefits in Year One for All Wage Percentiles

We will now examine the benefits paid to a dual recipient in years two and subsequent.

Exhibit 10 displays the interaction of WC and SSDI benefits over the entire lifetime of a dual recipient; age 49 at the median injury wage. Both the SSDI benefit and the SSA combined benefit cap are subject to a COLA. However, the SSDI COLA is applied annually, whereas the SSA adjusts the combined benefit cap on a triennial basis (for three years of inflation). As shown on the exhibit, the dollar offset is locked-in during this three-year period and then recalculated as a function of the updated cap.

Key Observations:

- WC accounts for 86% of the combined benefits received in the first year and 69% of combined benefits over the lifetime of the dual recipient (i.e., during the period when WC or SSDI benefits are collected).
- The WC share decreases over time, since the SSDI benefit is subject to a COLA, while the WC PTD benefit in Nebraska is not.

As an aside, we estimate that if the SSA updated its cap annually, the WC share of combined benefits over the lifetime of a dual recipient at the median wage of 69%, noted above, would decrease to approximately 68%. Currently, as noted above, the dollar offset is locked-in between adjustments and then recalculated or trued-up at the time of the triennial cap adjustment. In contrast, with annual increases in the cap, the offset would decrease each year. This, in turn, would result in slightly higher SSDI benefits and slightly lower WC benefits, but only during the years between adjustments. Note that the offset (and resulting benefits) would be identical under either approach in the year of the triennial adjustment.

Dual Recipients of WC and SSDI Nebraska—Lifetime PT for Individual at 50th Wage Percentile

Weekly Benefits During Year N at the 50th Wage Percentile										Final Benefit Split	
Year	Age	WC Benefit	SSDI	WC + SSDI	Average	Combined	SSDI After		WC + SSDI	WC Share	SSDI Share
			Before Offset	Before Offset	Historical Earnings	Benefit Cap	Offset	Offset	After Offset		
1	49	430.52		430.52					430.52	100.0%	0.0%
2	50	430.52	319.09	749.61	626.98	501.58	248.03	71.06	501.58	85.8%	14.2%
3	51	430.52	325.47	755.99	n/a	n/a	248.03	77.44	507.96	84.8%	15.2%
4	52	430.52	331.98	762.50	n/a	n/a	248.03	83.95	514.47	83.7%	16.3%
5	53	430.52	338.62	769.14	685.12	548.09	221.05	117.57	548.09	78.5%	21.5%
6	54	430.52	345.39	775.91	n/a	n/a	221.05	124.34	554.86	77.6%	22.4%
7	55	430.52	352.30	782.82	n/a	n/a	221.05	131.25	561.77	76.6%	23.4%
8	56	430.52	359.34	789.87	748.64	598.92	190.95	168.39	598.92	71.9%	28.1%
9	57	430.52	366.53	797.05	n/a	n/a	190.95	175.58	606.10	71.0%	29.0%
10	58	430.52	373.86	804.39	n/a	n/a	190.95	182.91	613.43	70.2%	29.8%
11	59	430.52	381.34	811.86	818.06	654.45	157.41	223.93	654.45	65.8%	34.2%
12	60	430.52	388.96	819.49	n/a	n/a	157.41	231.55	662.08	65.0%	35.0%
13	61	430.52	396.74	827.27	n/a	n/a	157.41	239.33	669.86	64.3%	35.7%
14	62	430.52	404.68	835.20	893.92	715.14	120.07	284.61	715.14	60.2%	39.8%
15	63	430.52	412.77	843.30	n/a	n/a	120.07	292.70	723.23	59.5%	40.5%
16	64	430.52	421.03	851.55	n/a	n/a	120.07	300.96	731.48	58.9%	41.1%
17	65	430.52	429.45	859.97	976.81	781.45	78.52	350.92	781.45	55.1%	44.9%
18	66	430.52	438.04	868.56	n/a	n/a	78.52	359.51	790.04	54.5%	45.5%
										69.4%	30.6%

*SSA locks in the WC \$Offset for 3 years before recalculating. The \$Offset is recalculated after 3 yrs so that the combined SSDI w/ COLA + WC benefits do not exceed the new Max of (80% of Average Indexed Earnings and SSDI with COLA)



Exhibit 10: Lifetime Dual-Recipient Benefits at 50th Wage Percentile (Table)

Exhibit 11 graphically displays the information above.

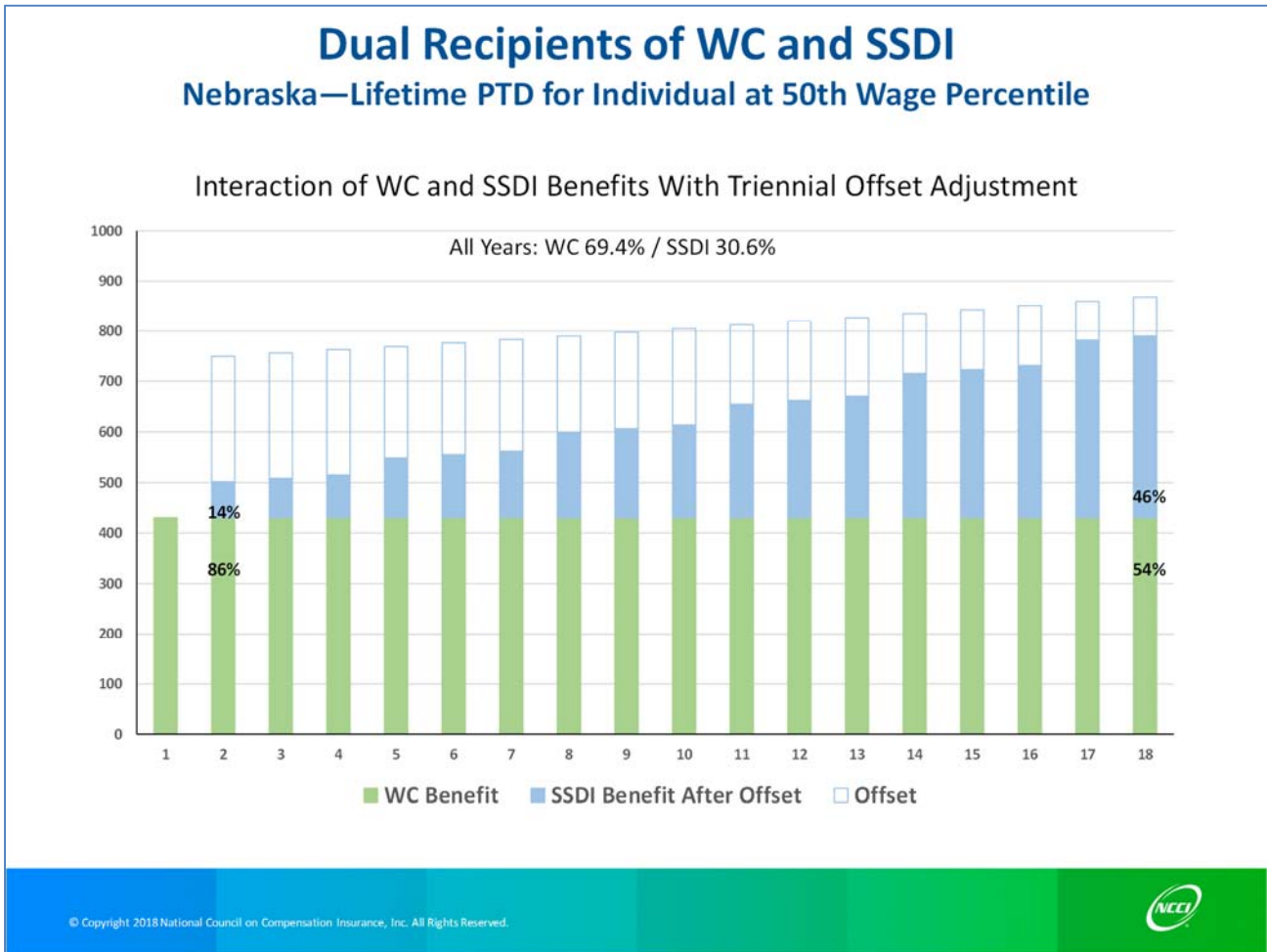


Exhibit 11: Lifetime Dual-Recipient Benefits at 50th Wage Percentile

Exhibit 12 displays the lifetime WC share of benefits for dual recipients of SSDI and WC PTD across all wages. WC bears the majority of benefit payments at all wage percentiles. However, as previously noted, the combined benefits for very high-wage earners will exceed the SSA combined benefit cap by a lesser amount, or not at all, due to the built-in program maximums. Hence, for higher wage earners, the SSDI benefit is higher (i.e., offset to a lesser degree) and the WC share of total benefits decreases, but still represents the majority.

Key Observation:

WC shoulders the majority of wage replacement costs for dual recipients of SSDI and WC PTD benefits in Nebraska. Summing across all wage percentiles, the WC share of total benefits paid is estimated to be 68%.

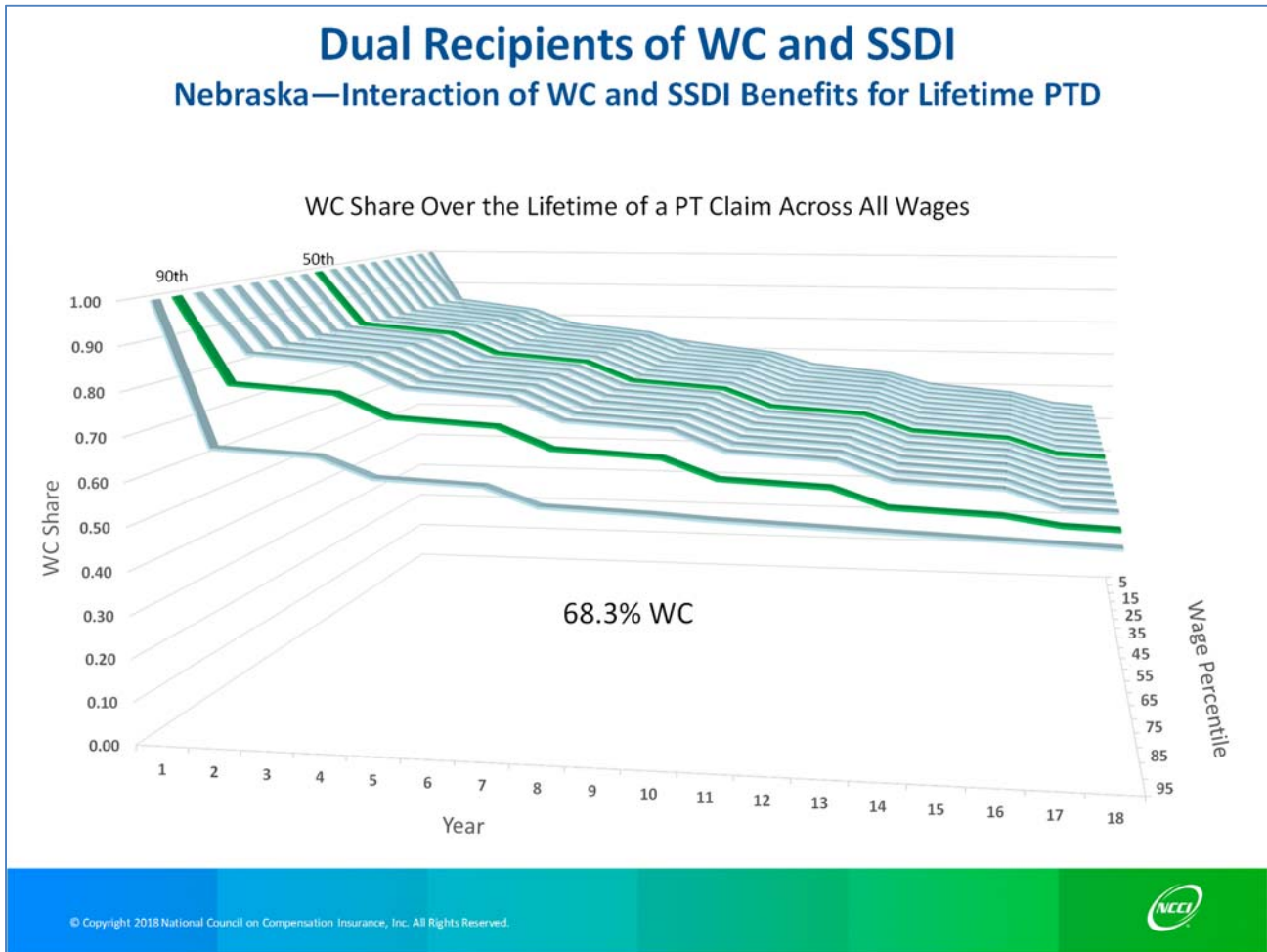


Exhibit 12: Lifetime Dual-Recipient Benefit Split Across All Wages

Illinois

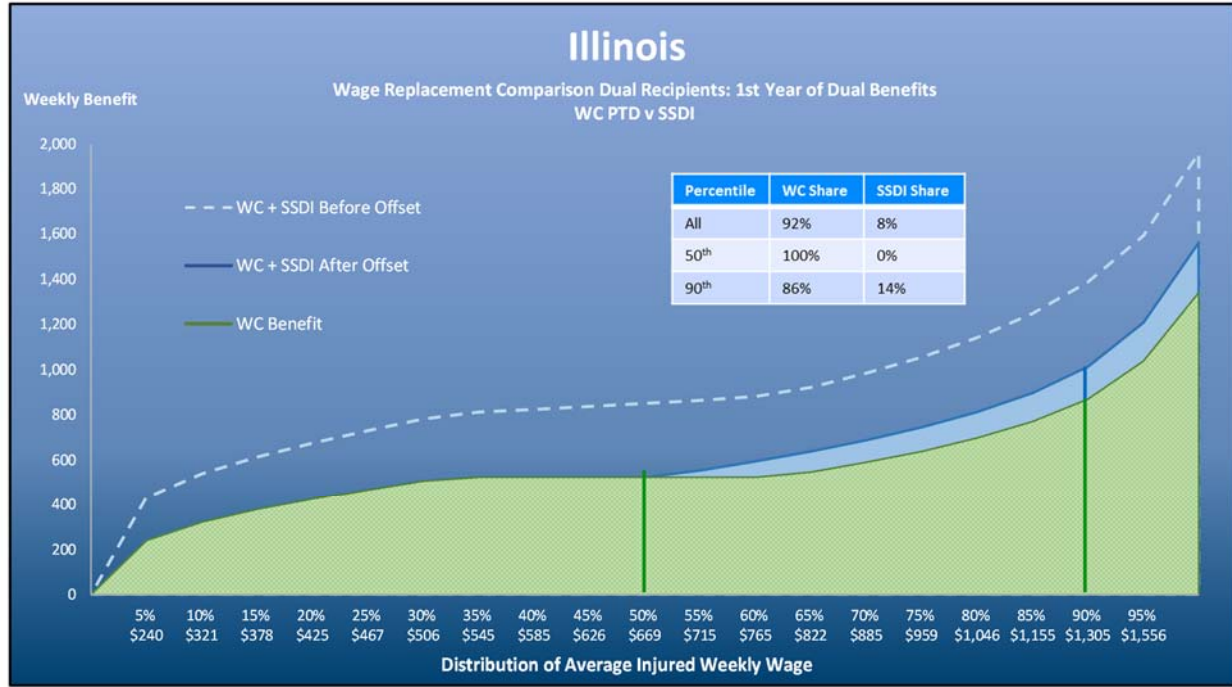
Exhibit 13 displays the interaction of WC and SSDI benefits in the first year of dual benefits in Illinois, a relatively high PTD benefit state, as noted earlier. The exhibit displays the WC benefit, the full SSDI benefit, and the SSDI benefit after application of the SSA offset at each weekly wage decile.

Most notable is that the SSDI benefit after offset is \$0 for lower wage earners. In Illinois, the minimum WC weekly benefit is equal to 50% of the SAWW. This is considered a “soft” minimum in that if the employee’s wage is less than this minimum, the employee receives his/her wage. It follows that the WC wage replacement rate is 100% until the injured worker’s wage exceeds the minimum weekly benefit. Further, the WC benefit exceeds the SSA combined benefit cap for all workers earning less than, or equal to, the median injury wage.¹¹

Across all wage earners in Illinois, WC pays 92% of the combined benefits received in the first year, with SSDI paying 85% less than it would pay absent WC.

¹¹ See Appendix Exhibit 28.

Dual Recipients of WC and SSDI Illinois—Interaction of WC and SSDI Benefits in the First Year



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Exhibit 13: First-Year Dual-Recipient Benefits Across All Wages

Exhibit 14 contains the detailed calculations of benefits for first-year dual recipients at all wage percentiles for Illinois underlying Exhibit 13. The exhibit also shows the final wage replacement rates for WC, SSDI, and in total. For WC, the wage replacement percentage is 100% until the injured worker’s wage exceeds the minimum weekly benefit (as described above) and ultimately reduces to 66 and 2/3rds subject to the maximum weekly benefit. SSDI provides a decreasing percentage of wage replacement as wages increase.^{12 13}

¹² See Appendix for a sample SSDI benefit calculation.

¹³ Note that the total wage replacement for most individuals of 78% is based on the average injury wage. This differs from the 80% SSA combined benefit cap, which is a function of Average Current Earnings (see column [6]).

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Workers Below AIW	Average Injured Wage	WC Benefit	SSDI Full	Average Current Earnings (weekly)	.80 x ACE	Combined Cap = Max of (4) and (6)		SSDI After Offset	WC + SSDI After Offset	<<<< Wage Replacement >>>>					WC Share (3)/(10)
						WC	SSDI			WC	SSDI	WC + SSDI Before Offset	SSDI After Offset	WC + SSDI After Offset	
							Offset	Offset	Offset	(3)/(2)	(4)/(2)	=(3)+(4)/(2)	(9)/(2)	(10)/(2)	
5%	\$240	\$240	\$193	\$233	\$186	\$193	\$240	\$0	\$240	100%	80%	180%	0%	100%	100%
10%	\$321	\$321	\$218	\$312	\$249	\$249	\$290	\$0	\$321	100%	68%	168%	0%	100%	100%
15%	\$378	\$378	\$236	\$367	\$294	\$294	\$320	\$0	\$378	100%	62%	162%	0%	100%	100%
20%	\$425	\$425	\$250	\$412	\$330	\$330	\$345	\$0	\$425	100%	59%	159%	0%	100%	100%
25%	\$467	\$467	\$263	\$453	\$362	\$362	\$368	\$0	\$467	100%	56%	156%	0%	100%	100%
30%	\$506	\$506	\$276	\$492	\$393	\$393	\$389	\$0	\$506	100%	54%	154%	0%	100%	100%
35%	\$545	\$524	\$288	\$530	\$424	\$424	\$389	\$0	\$524	96%	53%	149%	0%	96%	100%
40%	\$585	\$524	\$300	\$568	\$454	\$454	\$370	\$0	\$524	90%	51%	141%	0%	90%	100%
45%	\$626	\$524	\$313	\$607	\$486	\$486	\$351	\$0	\$524	84%	50%	134%	0%	84%	100%
50%	\$669	\$524	\$326	\$649	\$519	\$519	\$331	\$0	\$524	78%	49%	127%	0%	78%	100%
55%	\$715	\$524	\$341	\$694	\$555	\$555	\$310	\$31	\$555	73%	48%	121%	4%	78%	94%
60%	\$765	\$524	\$356	\$743	\$594	\$594	\$286	\$70	\$594	69%	47%	115%	9%	78%	88%
65%	\$822	\$548	\$374	\$798	\$638	\$638	\$283	\$90	\$638	67%	45%	112%	11%	78%	86%
70%	\$885	\$590	\$394	\$860	\$688	\$688	\$296	\$97	\$688	67%	44%	111%	11%	78%	86%
75%	\$959	\$639	\$416	\$931	\$745	\$745	\$311	\$105	\$745	67%	43%	110%	11%	78%	86%
80%	\$1,046	\$697	\$443	\$1,016	\$813	\$813	\$328	\$115	\$813	67%	42%	109%	11%	78%	86%
85%	\$1,155	\$770	\$477	\$1,122	\$897	\$897	\$350	\$127	\$897	67%	41%	108%	11%	78%	86%
90%	\$1,305	\$870	\$518	\$1,267	\$1,014	\$1,014	\$374	\$144	\$1,014	67%	40%	106%	11%	78%	86%
95%	\$1,555	\$1,037	\$554	\$1,510	\$1,208	\$1,208	\$383	\$171	\$1,208	67%	36%	102%	11%	78%	86%
Total		\$10,635	\$6,537					\$951	\$11,586						92%
Impact of Offset on SSDI (9)/(4)-1								-85%							

Exhibit 14: Illinois Dual-Recipient Benefits in Year One for All Wage Percentiles

Exhibit 15 displays the interaction of WC and SSDI benefits over the entire lifetime of a dual recipient; age 49 at the median injury wage. Both the SSDI benefit and the SSA combined benefit cap are subject to a COLA. The SSDI COLA is applied annually, whereas the SSA adjusts the combined benefit cap on a triennial basis. As shown in the exhibit, the dollar offset is locked-in during this three-year period and then recalculated as a function of the updated cap.

Key Observation:

WC accounts for 100% of the combined benefits received in the first year and 96% of combined benefits over all years during which WC or SSDI benefits are received.

Dual Recipients of WC and SSDI

Illinois—Lifetime PT for Individual at 50th Wage Percentile

Weekly Benefits During Year N at the 50th Wage Percentile										Final Benefit Split	
Year	Age	WC Benefit	SSDI	WC + SSDI	Average Historical Earnings	Combined Benefit Cap	SSDI After Offset	SSDI After Offset	WC + SSDI	WC Share	SSDI Share
			Before Offset	Before Offset					After Offset		
1	49	524.34		524.34					524.34	100.0%	0.0%
2	50	524.34	326.20	850.54	649.20	519.36	331.18	0.00	524.34	100.0%	0.0%
3	51	537.45	332.72	870.17	n/a	n/a	331.18	1.54	538.99	99.7%	0.3%
4	52	550.88	339.38	890.26	n/a	n/a	331.18	8.20	559.08	98.5%	1.5%
5	53	564.66	346.16	910.82	709.40	567.52	343.30	2.86	567.52	99.5%	0.5%
6	54	578.77	353.09	931.86	n/a	n/a	343.30	9.78	588.56	98.3%	1.7%
7	55	593.24	360.15	953.39	n/a	n/a	343.30	16.84	610.09	97.2%	2.8%
8	56	608.07	367.35	975.42	775.18	620.14	355.28	12.07	620.14	98.1%	1.9%
9	57	623.28	374.70	997.97	n/a	n/a	355.28	19.41	642.69	97.0%	3.0%
10	58	638.86	382.19	1021.05	n/a	n/a	355.28	26.91	665.77	96.0%	4.0%
11	59	654.83	389.84	1044.66	847.06	677.64	367.02	22.82	677.64	96.6%	3.4%
12	60	671.20	397.63	1068.83	n/a	n/a	367.02	30.61	701.81	95.6%	4.4%
13	61	687.98	405.59	1093.56	n/a	n/a	367.02	38.57	726.54	94.7%	5.3%
14	62	705.18	413.70	1118.88	925.60	740.48	378.40	35.30	740.48	95.2%	4.8%
15	63	722.81	421.97	1144.78	n/a	n/a	378.40	43.58	766.38	94.3%	5.7%
16	64	740.88	430.41	1171.29	n/a	n/a	378.40	52.02	792.89	93.4%	6.6%
17	65	759.40	439.02	1198.42	1011.43	809.14	389.28	49.74	809.14	93.9%	6.1%
18	66	778.39	447.80	1226.18	n/a	n/a	389.28	58.52	836.91	93.0%	7.0%
										96.4%	3.6%

*SSA locks in the WC \$Offset for 3 years before recalculating. The \$Offset is recalculated after 3 yrs so that the combined SSDI w/ COLA + WC benefits do not exceed the new Max of (80% of Average Indexed Earnings and SSDI with COLA)



Exhibit 15: Lifetime Dual-Recipient Benefits at 50th Wage Percentile

Exhibit 16 provides a graph of the information above.

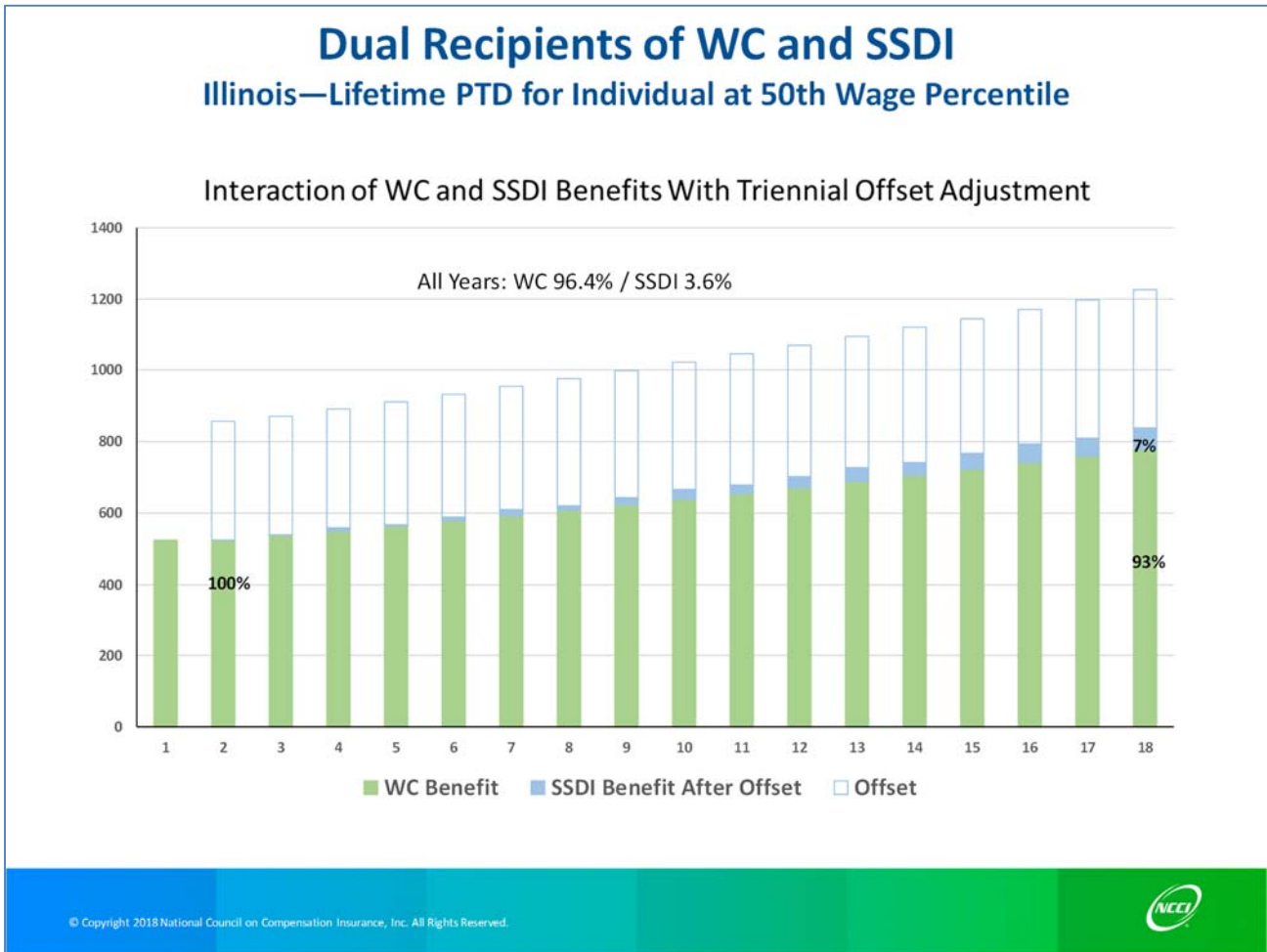


Exhibit 16: Lifetime Dual-Recipient Benefits at 50th Wage Percentile

Exhibit 17 displays the lifetime WC share of benefits for dual recipients of SSDI and WC PTD across all wages. WC bears the majority of benefit payments at all wage percentiles. As previously noted, SSDI pays nothing for the lowest wage earners. This is because the high minimum benefit in Illinois causes the WC benefit by itself to exceed the SSA combined benefit cap.

Key Observation:

Summing across all wage percentiles, the WC share of total benefits paid is estimated to be 90%. WC clearly shoulders the majority of the wage replacement costs when an individual has been awarded WC PTD benefits in Illinois.

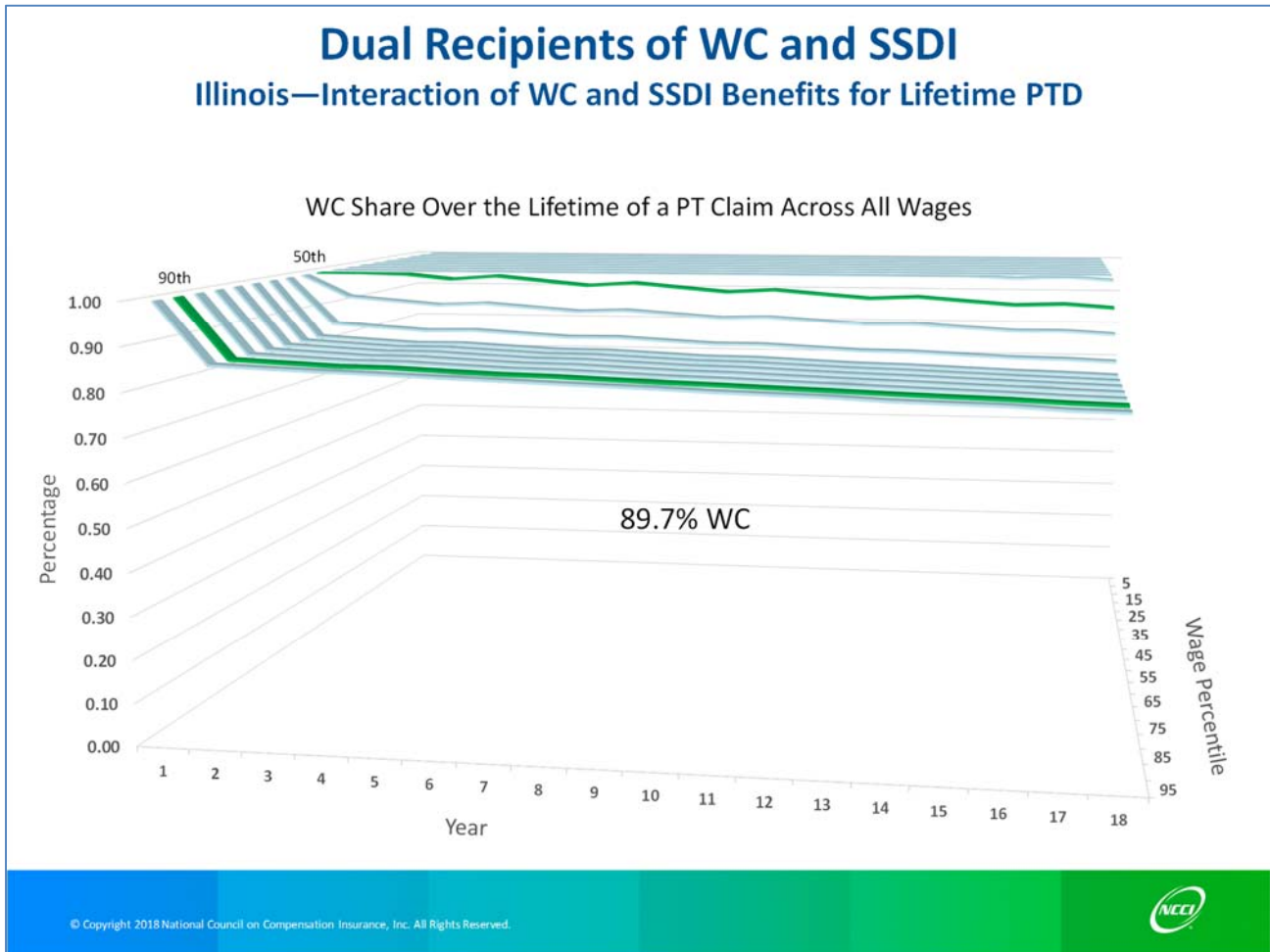


Exhibit 17: Lifetime Dual-Recipient Benefit Split Across All Wages

WC BENEFIT CHANGES

Some have speculated that a reason for the long-term increase in SSDI enrollment has been a “race to the bottom” by state legislatures looking for immediate rate or loss cost reductions by lowering WC benefit levels, and that these lower levels have caused an inappropriate cost shifting from WC to SSDI. However, our review of WC benefit changes and judicial decisions in the last 15 years suggests that the majority of states did not reduce WC indemnity benefits during this period. Specifically, the benefit changes reviewed represent estimated impacts that could be quantified by NCCI at the time of each legislative enactment or judicial decision and do not include the effects of wage inflation on weekly benefits.

In the majority of states, much of the cost shifting in recent history has been favorable to the SSDI program due to WC benefit increases (or in favor of Medicare, due to strengthening enforcement of Medicare’s role as a secondary payer).

Further, we examined several states that reduced WC benefits and/or tightened compensability standards within the last 15 years. Our conclusion is that the reforms in these states did not appear to induce injured workers to file for SSDI. In fact, immediately following the WC changes in these states, SSDI applications typically decreased. By far, the largest increase in countrywide SSDI applications occurred during, or immediately following, the Great Recession.

Cost shifting is not necessarily bad in and of itself. It may be appropriate to realign practices and/or to bring costs back in line with the original intent of a program, whether that program is WC, SSDI, or Medicare.¹⁴

IMPACT OF WC CHANGES ON DUAL RECIPIENTS

In theory, changes in the level of WC PPD or PTD benefits should have an inverse relationship with SSDI benefits in a standard offset state. However, since PTD injuries are very infrequent, the majority of dual-recipient cases involve other injuries such as PPD. For this reason, we elected to examine the impact of PPD benefit changes on the SSDI benefits paid to dual recipients.

For the Oklahoma and Arizona analyses below, we constructed a pricing model that allows us to test the sensitivity of various assumptions including an individual's age, injury wage, and earnings history on the final results.

Oklahoma

Of the small subset of states that reduced PPD benefits in the last 15 years, we selected Oklahoma for this case study. Oklahoma enacted the largest cumulative PPD benefit decrease from 2000 to 2015. SB 1062, effective February 1, 2014, was the primary driver. The bill decreased nonscheduled PPD benefits by 30% by reducing the maximum weeks duration for these benefits from 500 to 350 weeks. Nonscheduled PPD benefits are determined by multiplying the permanent impairment rating times the statutory maximum weeks duration. Our goal was to determine the impact of this major reform on lifetime SSDI benefits for a typical dual recipient of SSDI and WC PPD in Oklahoma.

Exhibit 18 displays the WC and SSDI benefits in the initial year of dual benefits for individuals at age 50 and at various wage percentiles. The benefits are estimated based on Oklahoma's average injury wages, WC benefits, and SSDI benefit formula parameters in effect in 2014.

Note the following:

- The average initial SSDI benefit before offset of \$329 is 38% higher than the average initial SSDI benefit after offset of \$239.
- For the highest wage earners, both WC and SSDI benefits are capped, WC via a maximum weekly benefit (of \$323 effective in 2014) and SSDI via the program formula.¹⁵ It follows that for the highest wage earners there is no offset, since the combined WC and SSDI benefits do not exceed the SSA cap.
- Recall that SSDI benefits are a function of earnings since age 21. For this pricing, for a 50-year-old individual, we constructed a hypothetical earnings history from age 21 through the date of injury at age 49. We used the assumption that the individual received annual wages during this period, consistent with changes in the Oklahoma state average weekly wage.¹⁶

Under the SSDI formula, historical annual earnings are indexed for inflation. Hence, for the same level of "current" earnings, final SSDI benefits will differ depending on whether individuals experienced more earnings growth earlier or later in their careers. In view of this, we confirmed that varying the historical earnings pattern had minimal impact on the relationship between the WC benefit, SSDI benefit before offset, and SSDI benefit after offset. For example, we tested the following scenarios:

- Uniform annual percentage wage growth (e.g., 2% or 3% per year)
- Higher wage growth (e.g., raises, promotions) earlier vs. later in the individual's career
- We also confirmed that varying the age of the individual had minimal impact on the relationship between Oklahoma WC and SSDI benefits as shown below:

¹⁴ For an overview of this topic, see Barry Lipton and Jim Davis, "SSDI and Workers Compensation Cost Shifting," NCCI, 2017.

¹⁵ See Appendix for a sample SSDI benefit calculation.

¹⁶ Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Age	Average of Benefits Across All Wage Ranges				
	27	37	47	50	57
WC	\$302	\$302	\$302	\$302	\$302
SSDI w/o Offset	\$329	\$321	\$325	\$329	\$342
SSDI w/ Offset	\$239	\$235	\$237	\$239	\$245
Relativities					
(SSDI w/o Offset)/(WC)	1.09	1.06	1.08	1.09	1.13
(SSDI w/o Offset)/(SSDI w/ Offset)	1.38	1.36	1.37	1.38	1.40

Impact of WC Changes on Dual Recipients Oklahoma Case Study—Individual Age 50 Initial-Year Benefits

Average Wage at Time of Injury	Cumulative Distribution of Workers	WC Weekly Benefit	SSDI Weekly Benefit w/o Offset	SSDI Weekly Benefit w/ Offset
\$242	10%	\$169	\$182	\$24
\$381	20%	\$267	\$223	\$38
\$470	30%	\$323	\$250	\$53
\$550	40%	\$323	\$274	\$117
\$631	50%	\$323	\$298	\$182
\$721	60%	\$323	\$325	\$254
\$829	70%	\$323	\$357	\$340
\$967	80%	\$323	\$399	\$399
\$1,165	90%	\$323	\$458	\$458
\$1,568	100%	\$323	\$522	\$522
Average		\$302	\$329	\$239

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Exhibit 18: OK Case Study—WC and SSDI Benefits in First Year

Exhibit 19 calculates the lifetime SSDI benefits both pre- and post-reform for a dual recipient of SSDI and WC PPD. We assume that the individual suffers a WC injury at age 49 and, following a one-year healing period, reaches maximum medical improvement and is awarded PPD benefits. We further assume that the PPD award is based on a permanent impairment of 15% (to body as a whole). This translates to the following pre- vs. post-reform PPD benefit durations in addition to healing period benefits:

- Pre-reform: 15% of 500 = 75 weeks
- Post-reform: 15% of 350 = 52.5 weeks
- Decrease in duration: 22.5 weeks

We assume that the individual begins to receive SSDI benefits at age 50, one year after the injury. During the period of dual benefits, the initial SSDI benefit after the offset is \$239. Thereafter, the individual would receive the full SSDI benefit of

\$329 (subject to the annual COLA). Using annuities that reflect the SSDI COLA and mortality, we calculate the total SSDI benefits for the pre- and post-reform scenarios. The key difference is that in the post-reform scenario, the individual would receive the full SSDI benefit 22.5 weeks sooner. Specifically, the increase in SSDI benefits during this 22.5-week period is approximately 38%. However, this turns out to be relatively insignificant when we consider that this 50-year-old person will receive SSDI benefits for 17 years. In conclusion, despite the 30% decrease in WC nonscheduled PPD benefit duration, the impact on SSDI benefits for dual recipients in Oklahoma was estimated to be a modest +0.6% over the lifetime of a typical claimant.

As noted above, we tested a wide variety of assumptions with respect to an individual's age, current wage, and earnings history to determine the initial WC and SSDI benefits, and found very little variation in the results below.

Impact of WC Changes on Dual Recipients Oklahoma Case Study—Individual Age 50 Lifetime Benefits

	Impact on SSDI Benefits	Pre Reform	Post Reform
1	Age at SSDI EOD	50	50
2	Weeks Duration Until Age 67	884	884
3	Initial SSDI Weekly Benefit w/o WC Offset	\$329	\$329
4	Initial SSDI Weekly Benefit w/ WC Offset	\$239	\$239
5	Permanent Impairment Rating (Example)	15%	15%
6	PPD Maximum Weeks Duration	500	350
7	PPD Weeks Duration	75.0	52.5
8	Dual Recipient—Weeks Duration w/ Mortality & COLA	75.94	52.92
9	SSDI Remainder—Weeks Duration w/ Mortality & COLA	913.71	936.74
10	SSDI Total—Weeks Duration w/ Mortality & COLA	989.66	989.66
11	Lifetime SSDI Benefit Cost $(4) \times (8) + (3) \times (9)$	\$319,000	\$321,000
12	Impact on SSDI Benefits	---	+0.6%

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Exhibit 19: OK Case Study—Lifetime SSDI Benefits for Dual Recipient (Table)

Exhibit 20 provides a graph that illustrates the modest impact of this Oklahoma reform on SSDI benefits.

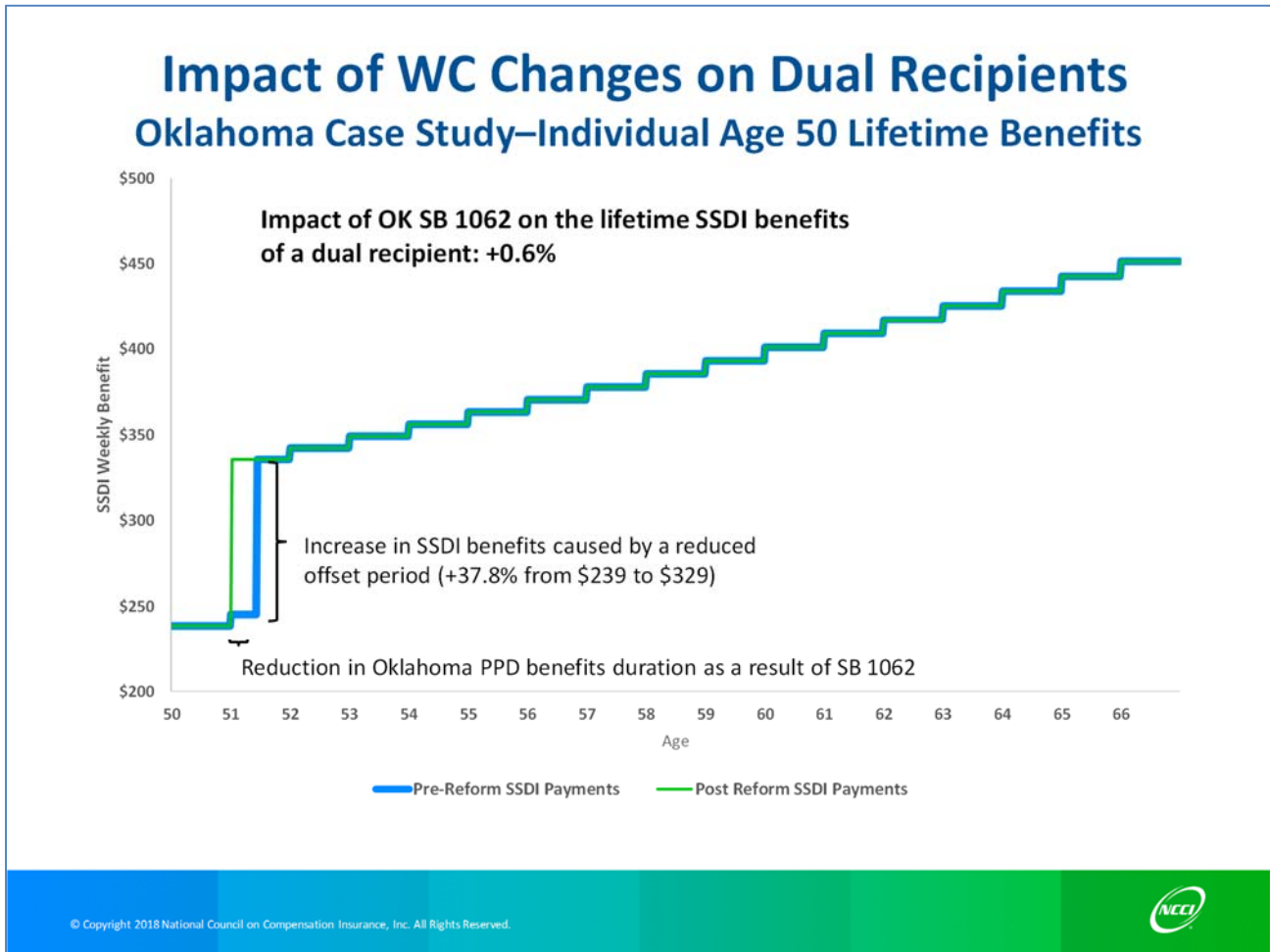


Exhibit 20: OK Case Study—Lifetime SSDI Benefits for Dual Recipient (Graph)

Arizona

We selected Arizona as one of the states that increased PPD benefits in the last 15 years. Arizona House Bill 2195 increased the maximum monthly wage (MMW) in three steps. The state’s MMW is set by statute, and prior to the reform, had been fixed at \$2,400 since July 1, 1999.

- Effective January 1, 2008, the MMW was increased to \$3,000
- Effective January 1, 2009, the MMW was increased to \$3,600
- Effective January 1, 2010, the MMW is adjusted annually by the Industrial Commission of Arizona (ICA)

Nonscheduled PPD benefits in Arizona are payable during the period of disability. Benefits represent 55% of the difference between:

- employee’s average monthly wage prior to the accident (subject to maximum monthly wage)
- employee’s reduced monthly earning capacity (subject to maximum monthly wage)

Earning capacity is based on several factors, including: extent of physical disability, occupational history, and the type of work the employee can perform post-injury. Modification of awards, or rearrangements, may occur due to changes in physical condition and/or earning capacity but are rare.

Exhibit 21 summarizes the results of our pricing model. The exhibit displays Arizona PPD benefits and SSDI benefits for dual recipients both pre- and post-reform for various ages and wages. SSDI benefits that have been offset (because the combined benefits exceed the SSA 80% cap) are highlighted in yellow. Our calculations are based on the following assumptions:

State Average Injury Wage (Weekly)	\$645
State Average Injury Wage (Monthly)	\$2,795
Injury Year	2008
Pre-Reform WC Maximum Monthly Benefit	\$2,400
Post-Reform WC Maximum Monthly Benefit	\$3,000
Statutory Compensation Rate	55%
Estimated Wage Loss Percentage	62%

Consider an employee earning \$2,640 per month (or \$609 per week) at the time of injury. We calculated the WC PPD weekly benefit as follows (figures rounded):

- WC pre-reform: $.55 \times [(\$2,640) \text{ subject to } \$2,400 \text{ max} - (\$2,640) \times (1-.62) \text{ subject to } \$2,400 \text{ max}] \times 12/52 = \177.29
- WC post-reform: $.55 \times [(\$2,640) \text{ subject to } \$3,000 \text{ max} - (\$2,640) \times (1-.62) \text{ subject to } \$3,000 \text{ max}] \times 12/52 = \207.74

Consistent with the Oklahoma pricing above, we determined the SSDI benefits for each age by constructing a hypothetical earnings history from age 21 through the date of injury. For our point estimate, we used the assumption that the individual received annual raises that were consistent with changes in the Arizona state average weekly wage.¹⁷

We observed the following:

- For lower wage workers, the increase in the statutory maximum wage had no impact on the WC benefit. Hence, the SSDI offset pre- vs. post-reform is the same for these workers.
- For higher wage workers, even though the WC benefit differs pre- vs. post-reform, the combined WC plus SSDI benefits generally do not exceed the 80% SSA cap, in most cases. This is because both WC and SSDI provide a lower percentage wage replacement as weekly wages increase.
- There is an in-between point, however, where the increase in WC maximum does result in a slightly higher offset and thus, a slightly lower SSDI benefit.
- We estimate that in the initial year of dual benefits, SSDI benefits to dual recipients in AZ are lower by -0.2% as a result of the January 1, 2008 increase in maximum monthly wage.
- Since SSDI benefits are subject to an annual COLA, we further estimate that the lifetime impact on SSDI benefits for dual recipients in AZ is negligible as a result of this reform.

¹⁷ Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Avg. Injury Wage	Injury Wage Range	Cum. Distr. of Workers	Dual Recipients SSDI vs. WC Benefits									
			Age	27	32	37	42	47	52	57	62	
204	0 to 274	10%	WC Pre-Reform	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70
			WC Post-Reform	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	\$69.70	
			SSDI Pre-Reform	\$93.80	\$93.80	\$93.80	\$93.80	\$93.80	\$93.80	\$107.00	\$120.70	
			SSDI Post-Reform	\$93.80	\$93.80	\$93.80	\$93.80	\$93.80	\$93.80	\$107.00	\$120.70	
322	274 to 362	20%	WC Pre-Reform	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94
			WC Post-Reform	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	\$109.94	
			SSDI Pre-Reform	\$147.96	\$147.96	\$147.96	\$147.96	\$147.96	\$147.96	\$168.66	\$190.36	
			SSDI Post-Reform	\$147.96	\$147.96	\$147.96	\$147.96	\$147.96	\$147.96	\$168.66	\$190.36	
398	362 to 432	30%	WC Pre-Reform	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60
			WC Post Reform	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	\$135.60	
			SSDI Pre-Reform	\$182.50	\$182.50	\$182.50	\$182.50	\$182.50	\$182.50	\$208.10	\$234.80	
			SSDI Post-Reform	\$182.50	\$182.50	\$182.50	\$182.50	\$182.50	\$182.50	\$208.10	\$234.80	
465	432 to 499	40%	WC Pre-Reform	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55
			WC Post Reform	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	\$158.55	
			SSDI Pre-Reform	\$213.45	\$213.45	\$213.45	\$213.45	\$213.45	\$213.45	\$243.25	\$268.30	
			SSDI Post-Reform	\$213.45	\$213.45	\$213.45	\$213.45	\$213.45	\$213.45	\$243.25	\$268.30	
533	499 to 570	50%	WC Pre-Reform	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87
			WC Post Reform	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	\$181.87	
			SSDI Pre-Reform	\$244.83	\$244.83	\$244.83	\$244.83	\$244.83	\$244.83	\$279.13	\$293.30	
			SSDI Post-Reform	\$244.83	\$244.83	\$244.83	\$244.83	\$244.83	\$244.83	\$279.13	\$293.30	
609	570 to 652	60%	WC Pre-Reform	\$177.29	\$177.29	\$177.29	\$177.29	\$177.29	\$177.29	\$177.29	\$177.29	\$177.29
			WC Post Reform	\$207.74	\$207.74	\$207.74	\$207.74	\$207.74	\$207.74	\$207.74	\$207.74	
			SSDI Pre-Reform	\$279.70	\$278.10	\$277.30	\$277.40	\$280.00	\$289.50	\$305.20	\$316.40	
			SSDI Post-Reform	\$279.66	\$278.10	\$277.30	\$277.40	\$279.66	\$279.66	\$305.20	\$316.40	
700	652 to 755	70%	WC Pre-Reform	\$158.24	\$158.24	\$158.24	\$158.24	\$158.24	\$158.24	\$158.24	\$158.24	\$158.24
			WC Post Reform	\$234.39	\$234.39	\$234.39	\$234.39	\$234.39	\$234.39	\$234.39	\$234.39	
			SSDI Pre-Reform	\$307.30	\$305.50	\$304.60	\$304.70	\$307.60	\$318.60	\$334.70	\$342.50	
			SSDI Post-Reform	\$307.30	\$305.50	\$304.60	\$304.70	\$307.60	\$318.60	\$334.70	\$342.50	
817	755 to 892	80%	WC Pre-Reform	\$133.81	\$133.81	\$133.81	\$133.81	\$133.81	\$133.81	\$133.81	\$133.81	\$133.81
			WC Post Reform	\$209.96	\$209.96	\$209.96	\$209.96	\$209.96	\$209.96	\$209.96	\$209.96	
			SSDI Pre-Reform	\$342.70	\$340.60	\$339.50	\$339.70	\$343.10	\$355.90	\$371.10	\$374.70	
			SSDI Post-Reform	\$342.70	\$340.60	\$339.50	\$339.70	\$343.10	\$355.90	\$371.10	\$374.70	
985	892 to 1,113	90%	WC Pre-Reform	\$98.77	\$98.77	\$98.77	\$98.77	\$98.77	\$98.77	\$98.77	\$98.77	\$98.77
			WC Post Reform	\$174.92	\$174.92	\$174.92	\$174.92	\$174.92	\$174.92	\$174.92	\$174.92	
			SSDI Pre-Reform	\$393.50	\$390.90	\$389.70	\$389.80	\$393.90	\$408.30	\$413.90	\$413.30	
			SSDI Post-Reform	\$393.50	\$390.90	\$389.70	\$389.80	\$393.90	\$408.30	\$413.90	\$413.30	
1,326	1,113 to Unlim	100%	WC Pre-Reform	\$27.50	\$27.50	\$27.50	\$27.50	\$27.50	\$27.50	\$27.50	\$27.50	\$27.50
			WC Post Reform	\$103.66	\$103.66	\$103.66	\$103.66	\$103.66	\$103.66	\$103.66	\$103.66	
			SSDI Pre-Reform	\$451.70	\$450.00	\$449.20	\$449.30	\$451.90	\$455.40	\$453.90	\$452.30	
			SSDI Post-Reform	\$451.70	\$450.00	\$449.20	\$449.30	\$451.90	\$455.40	\$453.90	\$452.30	

Exhibit 21: AZ Case Study—Initial-Year Benefits for Dual Recipients at Various Age and Wage Combinations

Exhibit 22 graphically displays the Arizona PPD benefits and SSDI benefits both pre- and post-reform at various wage levels for a 50-year-old dual recipient. The exhibit highlights the point where the increase in WC maximum results in a slightly higher offset and thus, a slightly lower SSDI benefit.

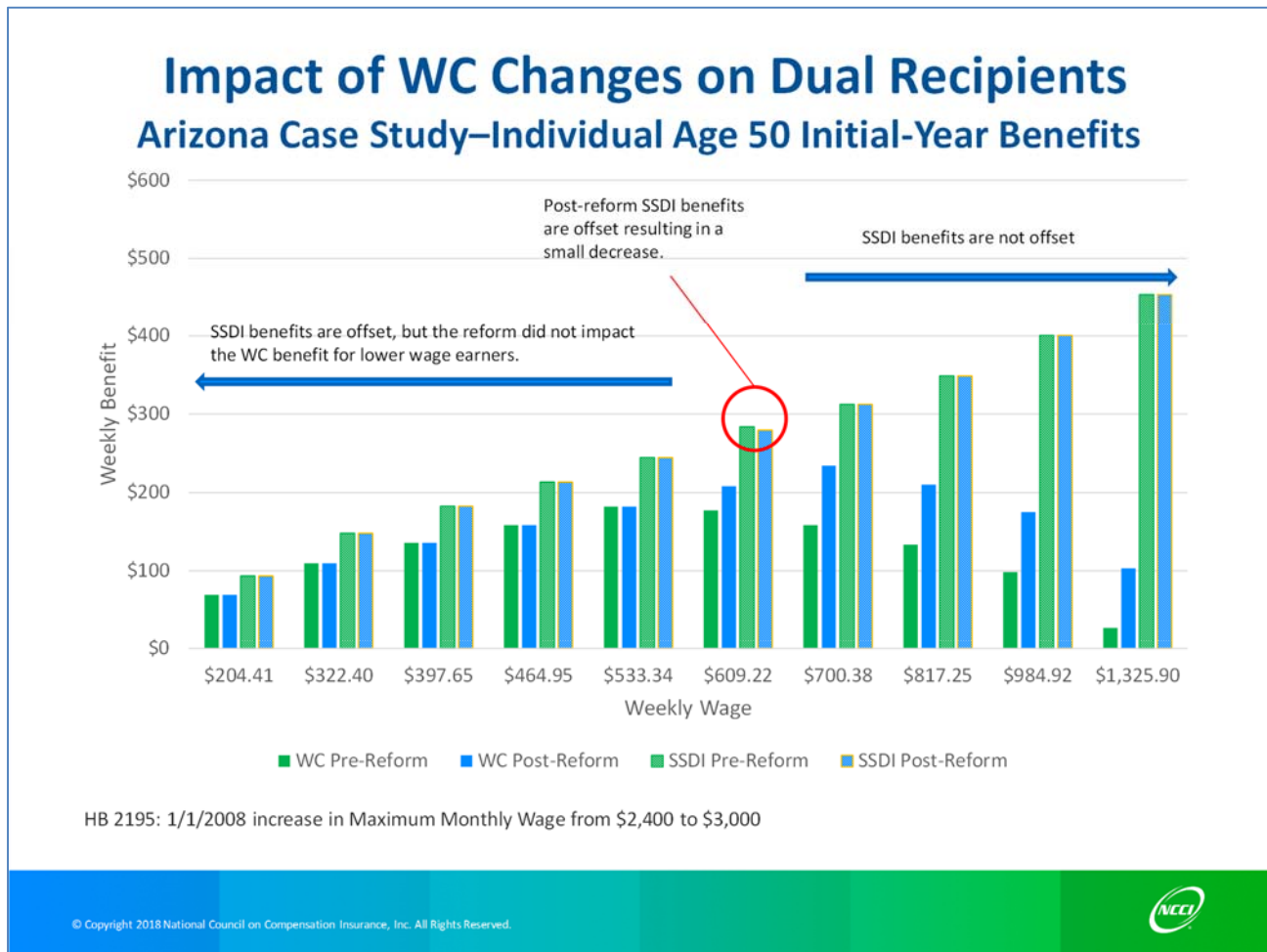


Exhibit 22: AZ Case Study—Individual-Year Benefits for Dual Recipient at Age 50 and Various Wages

CLOSING REMARKS

For dual recipients of WC PTD benefits and SSDI, our analysis of a low- and high-benefit state showed that WC shoulders a greater portion of total indemnity benefits (in standard offset states) than does SSDI.

Since PTD injuries are very infrequent, the majority of dual-recipient cases involve other injuries such as PPD. WC PPD indemnity benefits are typically limited in duration, whereas SSDI benefits are payable until retirement age. Hence, not surprisingly, our analysis of two states that enacted significant WC PPD benefit reforms (an increase and a decrease) revealed a minimal or negligible impact on lifetime SSDI benefits.

The number of SSDI beneficiaries in active status and their associated benefits grew substantially from 2001 through 2010. However, since 2010 the number of beneficiaries has remained fairly stable. With respect to new entrants to the program, both the number of new applicants and awards reached a peak in 2010 and decreased from 2010 through 2015.

Not only did NCCI’s analysis reveal that most states did not reduce WC benefits in the last 15 years but also, in states that lowered WC benefits, SSDI applications typically decreased following these reforms. It appears that SSDI applications were impacted much more by the Great Recession than by WC benefit levels.¹⁸

¹⁸ For an overview of this topic, see Barry Lipton and Jim Davis, “SSDI and Workers Compensation Cost Shifting,” NCCI, 2017.

APPENDIX

SSDI Benefit Example

Consider an individual born in 1975 that became disabled at age 42 in 2017. The SSDI benefit is derived via a multistep process:

1) Determine the number of working years, age 21 and above (42-21)	21
2) Determine number of dropout years*	4
3) Determine annual earnings for the 21-year period**	
4) Determine adjusted annual earnings for the 21-year period by indexing for inflation***	
5) Take the average of highest 17 (= 21 - 4) years adjusted earnings figures (See Exhibit 23)	\$51,379
6) Average Indexed Monthly Earnings (AIME); (5)/12	\$ 4,281
7) SSDI benefit, or Primary Insurance Amount (PIA) (See Exhibit 24)	\$ 1,883

*(1)/5 less any fractional remainder, subject to maximum of five

** Actual earnings for each year are subject to SSA caps (maximum taxable earnings)

*** Based on National Average Wage Indexing Series; indexed to two years prior to first year of eligibility

SSDI Benefit Formula

Example Calculation of Average Indexed Monthly Earnings (AIME)

Years	Age	Year	Nominal Earnings	Indexing Factor	Indexed Earnings	Maximum	Rank	Exclude
1	21	1996	27,261	1.88	51,287	62,700	11	
2	22	1997	28,773	1.79	51,610	65,400	6	
3	23	1998	30,466	1.69	51,631	68,400	5	
4	24	1999	32,246	1.61	51,931	72,600	4	
5	25	2000	33,112	1.53	50,510	76,200	17	
6	26	2001	33,542	1.45	48,485	80,400	19	Yes
7	27	2002	34,462	1.41	48,656	84,900	18	Yes
8	28	2003	36,170	1.40	50,560	87,000	15	
9	29	2004	37,602	1.36	51,305	87,900	10	
10	30	2005	39,444	1.30	51,428	90,000	8	
11	31	2006	41,353	1.26	52,015	94,200	3	
12	32	2007	42,427	1.20	51,021	97,500	12	
13	33	2008	41,907	1.15	48,208	102,000	21	Yes
14	34	2009	43,020	1.12	48,375	106,800	20	Yes
15	35	2010	44,495	1.14	50,799	106,800	14	
16	36	2011	46,015	1.12	51,324	106,800	9	
17	37	2012	46,735	1.08	50,542	110,100	16	
18	38	2013	48,531	1.05	50,895	113,700	13	
19	39	2014	50,362	1.04	52,148	117,000	2	
20	40	2015	51,577	1.00	51,577	118,500	7	
21	41	2016	52,866	1.00	52,866	118,500	1	
Average of highest 17 years =					51,379			
AIME					4,281			

Exhibit 23: Example Calculation of AIME

SSDI Benefit Formula

Example Calculation of Primary Insurance Amount (PIA)

Average Indexed Monthly Earnings (AIME)		\$4,281
SSA: 2017 PIA Formula		
Wage Replacement %	SSA Bend Points	
90% of 1 st Bracket	\$0 to \$885	\$796.50 = 90% x (\$885 - \$0)
32% of 2 nd Bracket	\$885 to \$5,336	\$1,086.72 = 32% x (\$4,281 - \$885)
15% of 3 rd Bracket	Above \$5,336	\$0
PIA (Initial Year)		\$1,883.20

The PIA is increased each year by a cost of living adjustment (COLA) which is based on increases in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), calculated monthly by the Bureau of Labor Statistics. SSA Bend Points are updated each year.

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Exhibit 24: Example Calculation of PIA

Dual Recipients of WC and SSDI

Exhibit 25 contains the major assumptions underlying the Nebraska and Illinois calculations of dual-recipient benefits for an individual earning the median injury weekly wage.

	Nebraska	Illinois
1) State average weekly wage ¹⁹	\$812	\$1,081
2) State average injured weekly wage ²⁰	\$731	\$757
Initial benefits; median wage earner		
3) Median injured weekly wage ²¹	\$646	\$669
4) WC initial weekly benefit ²²	\$431	\$524
5) AIME (converted to weekly basis) ²³	\$627	\$649
6) SSDI initial weekly benefit ²⁴	\$319	\$326
7) Combined weekly benefits (3)+(6)	\$750	\$851

¹⁹ Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages 2015.

²⁰ Estimated based on NCCI's average injured wage analysis by state.

²¹ Estimated based on NCCI's Standard Wage Distribution Table.

²² Based on statutory compensation rate of 66 2/3%, subject to state minimum and maximum weekly benefits (January 15, 2016 IL minimum \$524).

²³ Estimated as Median Injury Wage detrended one year for inflation; 3% inflation selected based on a review of National Average Wage Indexing Series data through 2015.

²⁴ Based on the estimated AIME and SSA's 2017 SSDI benefit (PIA) formula.

8) SSA combined benefit cap ²⁵	\$502	\$519
9) SSA offset	\$248	\$331
10) SSDI weekly benefit after offset; $\text{Max}[(6)-(9),0]$	\$71	\$0
11) WC share of first year benefits $(4)/[(4)+(10)]$	86%	100%
Benefits in years 2 and subsequent		
12) SSDI COLA ²⁶	2%	2%
13) WC PTD COLA ²⁷	n/a	2.5%

Figures rounded to nearest whole number

Exhibit 25: Inputs for Nebraska and Illinois Dual-Recipient Examples

Additional Information on the SSDI Program

Disability Determination Process²⁸

1. Work Test—to determine if the applicant is participating in substantial gainful activity (SGA). An applicant’s monthly earned income is compared to an SGA threshold.
2. Severity Test—to determine if the condition is expected to last 12 months or result in death. SSA will compare medical evidence to the Code of Federal Regulations, that defines “abilities and aptitudes” required to do most jobs. Examples include: walking, standing, sitting, lifting, pushing, pulling, reaching, carrying, handling, seeing, hearing, speaking, understanding, carrying out, and remembering simple instructions, responding to supervision and coworkers, dealing with changes, etc.
3. Medical Listings Test—to determine if the applicant’s condition is included on the SSA Listing of Impairments, which identifies very serious disabling conditions. If so, the applicant is eligible at this step.
4. Previous Work Test—to determine if the applicant can perform previous work. SSA determines your residual functional capacity (RFC) to determine if you are physically able to do your past work as it is generally done in the national economy.
5. Any Work Test—to determine if the applicant can perform any other type of work. SSA assesses your ability to do other work that exists in the national economy based on your work experience (for the past 15 years), age, and education.

²⁵ Maximum of SSDI benefit and 80% of Average Current Earnings; Average Current Earnings assumed to be equal to AIME for these examples.

²⁶ Selected based on a review of historical COLAs awarded by the SSA.

²⁷ Selected based on review of historical COLAs awarded in Illinois.

²⁸ William R. Morton, analyst in income security, “Primer on Disability Benefits: Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI),” October 24, 2016
[https://greenbook-waysandmeans.house.gov/sites/greenbook.waysandmeans.house.gov/files/RL32279%20-%20Primer%20on%20Disability%20Benefits%20-%20Social%20Security%20Disability%20Insurance%20\(SSDI\)%20-%20and%20SSI_0.pdf](https://greenbook-waysandmeans.house.gov/sites/greenbook.waysandmeans.house.gov/files/RL32279%20-%20Primer%20on%20Disability%20Benefits%20-%20Social%20Security%20Disability%20Insurance%20(SSDI)%20-%20and%20SSI_0.pdf).
 Romina Boccia, deputy director, Thomas A. Roe Institute, “What Is Social Security Disability Insurance? An SSDI Primer,” *Backgrounder*, The Heritage Foundation, February 19, 2015.
 Patricia Owens, “An Overview of Social Security Disability Insurance (SSDI).”

Duration of Work Test

- To qualify for SSDI, applicants must have sufficient work history (while making FICA contributions), which is measured in work credits. Individuals may earn a maximum of four work credits per year. The amount of earnings required for one work credit is increased each year (e.g., \$1,300 in 2017).
- The number of work credits required to be eligible for SSDI increases with age. Those ages 31 to 42 need 20 credits. Those 30 and under require fewer credits and those 43 and older require more credits, up to a maximum of 40, 20 of which were earned in the last 10 years ending with the year the worker becomes disabled.²⁹
- Over the course of a lifetime, most individuals will earn more than the minimum required. Extra credits do not increase an individual's benefit amount.

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²⁹ See discussion of number of credits needed for disability benefits at www.ssa.gov/planners/credits.html.