

V. PROFILE OF VA DISABILITY COMPENSATION RECIPIENTS

This chapter provides a profile of the recipients of the VA's disability compensation benefit using the Compensation and Pension (C&P) Master Record and the 2001 National Survey of Veterans (NSV) data. The profile focuses on the demographics and other characteristics of the disability compensation recipients such as combined degree of disability (CDD), type of disability, and age.

NSV data was utilized mainly to compare and contrast the characteristics of the service-connected disabled (SCD) veterans with those of the non-SCD veterans, which is our comparison group in the earnings loss analysis presented later in this volume. Note that the NSV data is self-reported, and it is possible that some of the self-reported responses may result in findings that do not match exactly with VA administrative data.

Characteristics of the Beneficiaries

Using the C&P Master Record data we compared the profile of beneficiaries as of September 2007 with that of beneficiaries as of September 2001. We also provided a profile of the new enrollees between 2001 and 2007 in order to observe recent trends.⁸⁴ We compared the profiles for three mutually exclusive groups of veterans: (1) individuals who receive Special Monthly Compensation (SMC), (2) those with an Individual Unemployability (IU) rating, and (3) all other veterans.

As shown in Table V-1 the number of veterans receiving disability compensation from VA increased approximately 13 percent, from 2.3 million as of September 2001, to 2.6 million veterans as of September 2007. Major increases can be attributed to the number of veterans receiving SMC and IU. The number of SMC recipients increased 77 percent from about 146.8 thousand in 2001 to 259.6 thousand in 2007. The number of veterans with IU status increased 74 percent from about 109.1 thousand in 2001 to 189.8 thousand in 2007.

Between 2001 and 2007 about 776,500 new enrollees started receiving disability compensation (see Table V-2).⁸⁵ About 90,000 were SMC new enrollees and 41,000 were IU enrollees.

Combined Degree of Disability – In 2007, the largest group of disabled veterans, overall, had a 10% CDD rating (27.5 percent). The second and third largest groups were rated at 20% CDD (15 percent) and 30% CDD (12.1 percent). However, the overall percentage of veterans with a 10%, 20%, and 30% CDD decreased between 2001 and 2007 (see Table V-1).

⁸⁴ That is, individuals who were not on the rolls as of September 2001 but were on the rolls as of September 2007.

⁸⁵ The number does not include those veterans who received compensation between 2001 and 2007 but dropped off the rolls as of September 2007. It also does not include those veterans who received compensation between 2001 and 2007 but died before 2007.

Table V-1. SCD Veterans by CDD, as of September 2001 and September 2007

Combined Disability Rating	SMC Veterans		IU Veterans		Other Veterans		Total	
	2001	2007	2001	2007	2001	2007	2001	2007
0	11.4%	5.1%	0.0%	0.0%	0.0%	0.0%	0.7%	0.5%
10	4.8%	2.8%	0.0%	0.0%	39.5%	32.8%	35.5%	27.5%
20	2.6%	4.1%	0.0%	0.0%	17.8%	17.6%	16.0%	15.0%
30	6.3%	4.7%	0.0%	0.0%	14.5%	14.1%	13.3%	12.1%
40	7.8%	8.0%	0.0%	0.0%	9.2%	10.6%	8.7%	9.6%
50	5.9%	5.7%	0.1%	0.1%	5.5%	6.6%	5.2%	6.0%
60	8.5%	8.9%	23.9%	16.5%	4.2%	5.9%	5.4%	7.0%
70	6.8%	8.8%	37.6%	39.0%	2.1%	3.2%	4.0%	6.4%
80	7.4%	9.9%	25.4%	28.6%	0.9%	1.7%	2.5%	4.5%
90	5.3%	8.1%	12.6%	15.7%	0.3%	0.6%	1.2%	2.4%
100	33.3%	34.0%	0.3%	0.2%	6.1%	6.9%	7.5%	9.1%
Total (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Number of Veterans (in thousands)								
	146.8	259.6	109.1	189.8	2,060.9	2,178.4	2,316.8	2,627.9

Source: C&P Master Record data, September 2001 and September 2007.

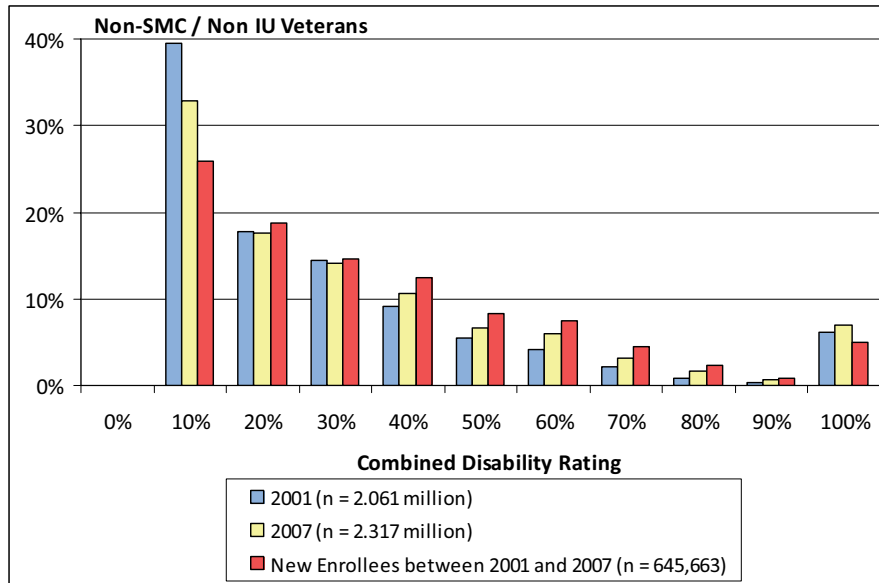
Table V-2. New SCD Enrollees Receiving VA Disability Compensation between 2001 and 2007

Combined Disability Rating	SMC Veterans	IU Veterans	Others	Total
0	2.1%	NA	0.0%	0.2%
10	2.2%	NA	25.9%	21.8%
20	8.3%	NA	18.8%	16.6%
30	4.7%	NA	14.6%	12.7%
40	11.0%	NA	12.5%	11.7%
50	6.6%	NA	8.3%	7.6%
60	10.4%	11.3%	7.5%	8.0%
70	10.2%	48.5%	4.4%	7.4%
80	10.6%	25.9%	2.4%	4.6%
90	7.8%	14.1%	0.8%	2.3%
100	26.2%	NA	4.9%	7.1%
Total (%)	100.0%	100.0%	100.0%	100.0%
Total Number of Veterans	89,625	41,206	645,663	776,494

Source: C&P Master Record data, September 2001 and September 2007.

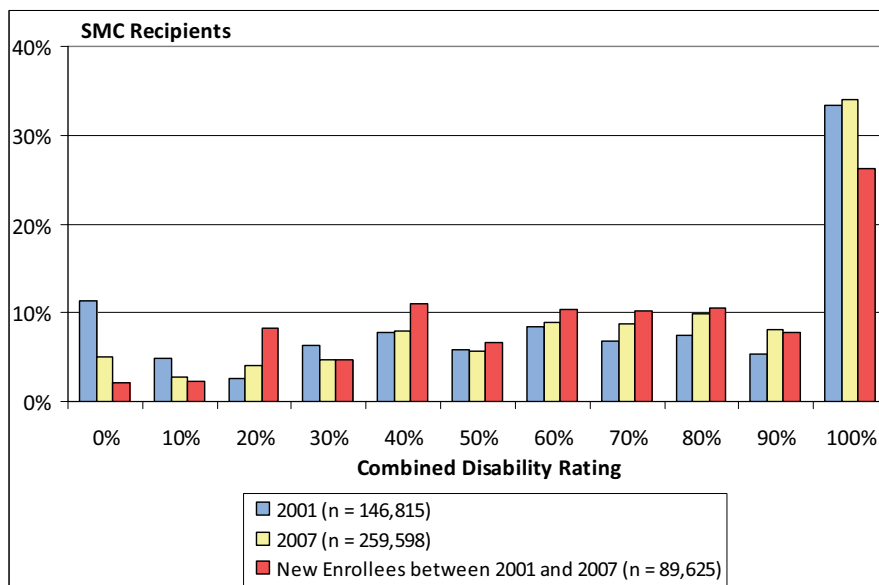
Figure V-1 through Figure V-3 displays the distribution of service-connected disabled veterans by CDD and group (SMC, IU, and other veterans).

Figure V-1. Non-SMC and non-IU SCD Veterans by Combined Degree of Disability, as of September 2001 and September 2007, and New Enrollees Between 2001 and 2007



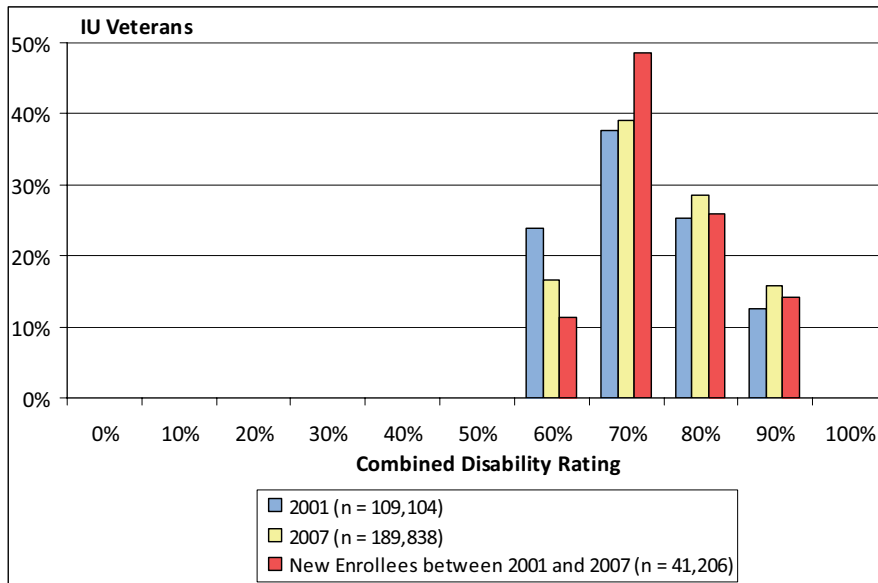
Source: C&P Master Record data, September 2001 and September 2007.

Figure V-2. SCD Veterans Receiving SMC by Combined Degree of Disability, as of September 2001 and September 2007, and New Enrollees Between 2001 and 2007



Source: C&P Master Record data, September 2001 and September 2007.

Figure V-3. SCD Veterans with IU Rating, by Combined Degree of Disability, as of September 2001 and September 2007, and New SCD Enrollees Between 2001 and 2007



Source: C&P Master Record data, September 2001 and September 2007.

Age. The largest group of veterans receiving disability compensation in 2001 was the 45 to 55 age group (25.9 percent). However, in 2007, the 55 to 65 age group was the highest (30.9 percent). The percentage of total number of veterans in the 55 to 65 age group increased from 17.2 percent in 2001 to 30.9 percent in 2007, while the percentages for all the other age groups declined. As can be seen in Table V-3, similar age-distribution trends occurred for the SMC and IU groups.

Table V-3. Age Profile of SCD Veterans, as of September 2001 and September 2007

Age Category	SMC Veterans		IU Veterans		Others		Total	
	2001	2007	2001	2007	2001	2007	2001	2007
<34	2.6%	1.6%	1.9%	1.6%	8.5%	8.7%	7.8%	7.5%
35-45	9.2%	5.2%	7.1%	6.0%	12.9%	13.2%	12.3%	11.9%
45-55	24.1%	12.6%	27.2%	12.8%	25.9%	19.4%	25.9%	18.3%
55-65	18.9%	44.5%	20.2%	41.8%	16.9%	28.4%	17.2%	30.9%
65-75	20.6%	17.2%	17.4%	13.2%	13.9%	11.5%	14.5%	12.2%
75+	24.6%	18.9%	26.3%	24.7%	21.9%	18.8%	22.3%	19.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Number of Veterans (in thousands)								
	146.8	259.6	109.1	189.8	2,060.9	2,178.4	2,316.8	2,627.9

Source: C&P Master Record data, September 2001 and September 2007.

This trend was reflected in the age distribution of new enrollees in that the 55 to 64 age group had the largest percentage of new enrollees as shown in the Table V-4 below. However, there was a higher percentage of total number of new enrollees in the 34 and under age group when compared to the total number of veterans in this age group. About eighteen (18.4) percent of veterans who enrolled between 2001 and 2007 were younger than 35 years of age (see Table V-4) compared to the 7.5 percent of those receiving disability compensation in 2007 (see Table V-3).

Table V-4. Age Profile of New SCD Enrollees Between 2001 and 2007

Age Category	SMC Veterans	IU Veterans	Others	Total
<34	3.4%	4.5%	21.3%	18.4%
35-45	5.9%	7.1%	16.3%	14.6%
45-55	10.9%	10.2%	19.4%	17.9%
55-65	58.3%	50.0%	25.3%	30.4%
65-75	14.4%	9.2%	8.0%	8.8%
75+	7.1%	19.0%	9.7%	9.9%
Total	100.0%	100.0%	100.0%	100.0%
Total Number of Veterans	89,625	41,206	645,663	776,494

Source: C&P Master Record data, September 2001 and September 2007.

Years of Service. More than one-half (57.2 percent) of veterans receiving disability payments in 2007 served five years or less in military service. In 2001, the corresponding number was nearly three-quarters (70.6 percent). (See Table V-5.) The statistics suggest that new enrollees between 2001 and 2007 served less time in the military than individuals who received disability compensation in 2007 (72.3 percent as shown in Table V-6 to 57.2 percent as shown in Table V-5, respectively).

Table V-5. Years of Service Profile of SCD Veterans, as of September 2001 and September 2007

Years of Service	SMC Veterans		IU Veterans		Others		Total	
	2001	2007	2001	2007	2001	2007	2001	2007
1 year or less	13.7%	11.7%	12.2%	13.7%	11.8%	11.2%	11.9%	11.4%
2 - 3 years	40.4%	22.4%	45.1%	29.0%	39.4%	21.3%	39.7%	21.9%
4 - 5 years	17.1%	19.6%	18.1%	23.7%	19.2%	24.4%	19.0%	23.9%
6 - 10 years	8.8%	11.4%	8.8%	12.2%	9.2%	13.0%	9.2%	12.8%
11 - 20 years	12.5%	20.6%	10.7%	14.8%	12.1%	18.2%	12.0%	18.2%
20 or more years	7.5%	14.3%	5.1%	6.5%	8.2%	11.9%	8.1%	11.7%
Total %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Veterans (in thousands)	146.8	196.4	109.1	137.8	2,060.6	1,718.5	2,316.5	2,052.6

Source: C&P Master Record data, September 2001 and September 2007.

Table V-6. Years of Service Profile of New SCD Enrollees Between 2001 and 2007

Years of Service	SMC Veterans	IU Veterans	Others	Total
1 year or less	8.8%	13.1%	12.7%	12.3%
2 - 3 years	49.6%	54.6%	35.6%	38.3%
4 - 5 years	16.5%	18.3%	22.7%	21.7%
6 - 10 years	7.2%	6.4%	10.6%	10.0%
11 - 20 years	8.1%	5.2%	8.9%	8.6%
20 or more years	9.8%	2.4%	9.4%	9.1%
Total (%)	100.0%	100.0%	100.0%	100.0%
Total Veterans	80,573	39,419	569,673	689,665

Source: C&P Master Record data, September 2001 and September 2007.

Gender. The percentage of female service-connected veterans increased from 5.5 percent in 2001 to 7.3 percent in 2007. A higher percentage of veterans receiving SMC were female in 2001 (10.7 percent) compared to IU veterans (5 percent) or other veterans (7.1 percent). Almost 10 percent (9.6 percent) of the SCD veterans were female among individuals who enrolled between 2001 and 2007.

Table V-7. Gender Profile of SCD Veterans, as of September 2001 and September 2007

Gender	SMC Veterans		IU Veterans		Others		Total	
	2001	2007	2001	2007	2001	2007	2001	2007
Male	86.8%	89.3%	96.3%	95.0%	95.0%	92.9%	94.5%	92.7%
Female	13.2%	10.7%	3.7%	5.0%	5.0%	7.1%	5.5%	7.3%
Total (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Veterans	146,815	259,598	109,104	189,838	2,060,893	2,178,413	2,316,812	2,627,849

Source: C&P Master Record data, September 2001 and September 2007.

Table V-8. Gender Profile of New SCD Enrollees between 2001 and 2007

Gender	SMC Veterans	IU Veterans	Others	Total
Male	90.9%	94.3%	90.1%	90.4%
Female	9.1%	5.7%	9.9%	9.6%
Total Number of Veterans	89,625	41,206	645,663	776,494

Source: C&P Master Record data, September 2001 and September 2007.

Body Systems/Disability Conditions. We present the disability condition of SCD veterans in three separate groups because each group composition differs from the others. First, we present the body system based on the primary diagnostic code of SCD veterans who were not SMC recipients and who did not have an IU rating. As shown in Table V-9, the most prevalent body system of primary diagnosis was Musculoskeletal; however, over the 2001-2007 period, the percentage of SCD veterans in that primary body system decreased from 47 percent in 2001 to 45 percent in 2007. Moreover, the percentage of new enrollees between 2001 and 2007 in the Musculoskeletal body system was only 39.2 percent.

Further examination of the table reveals that the percentage of veterans with post-traumatic stress disorder (PTSD) as their primary disability increased significantly. As of September 2001, only 6 percent of SCD veterans had PTSD compared to 18 percent of the new enrollees between 2001 and 2007.

Table V-9. Profile of SCD Veterans, as of September 2001 and September 2007 by Body System of Primary Diagnostic Code – Veterans not Receiving SMC and not with an IU Rating

Body System	2001	2007	New Enrollees 2001 - 2007
Musculoskeletal	47.2%	45.3%	39.2%
Ear & Other Senses	1.3%	1.2%	0.7%
PTSD	6.0%	9.5%	17.9%
Endocrine	0.3%	0.2%	0.2%
Cardiovascular	4.6%	4.8%	5.3%
Other Mental	7.4%	5.8%	3.4%
Digestive	5.0%	3.9%	2.0%
Neurological	1.3%	1.4%	1.3%
Skin	0.1%	0.2%	0.2%
Genitourinary	0.5%	0.5%	0.5%
Gynecological	6.0%	4.8%	2.7%
Eye	1.5%	3.8%	8.4%
Infectious Disease	5.0%	4.6%	3.4%
Respiratory	9.1%	7.3%	4.5%
Dental	0.2%	0.2%	0.2%
Hemic & Lymphatic	4.4%	6.5%	10.3%
Total	100.0%	100.0%	100.0%
Total Number of Veterans	2,060,893	2,178,413	645,663

Source: C&P Master Record data, September 2001 and September 2007.

We also tabulated the top 20 conditions based on the six diagnostic codes available in the C&P Master Record data. While Table V-9 presents the distribution of veterans by their primary diagnosis, Table V-10 provides a list of the top 20 diagnoses for 2001, 2007, and new enrollees (2001-2007). The numbers are ranked in descending order in the new enrollees columns, from the highest number of cases to the lowest. Then, the rank order for the top 20 conditions are presented for 2001 and 2007. In 2001 there were about 6 million separate cases for 2.3 million veterans compared to about 8

million cases for 2.6 million veterans in 2007. On average, veterans had 2.6 SCDs in 2001 compared to 3.0 SCDs in 2007.

Table V-10. Top 20 Conditions

Diagnostic Code ⁱ	2001			2007			New Enrollees 2001 - 2007		
	Rank	Frequency	Percent	Rank	Frequency	Percent	Rank	Frequency	Percent
6260	7	162,404	2.7%	2	400,080	5.0%	1	214,716	8.3%
6100	1	299,974	5.0%	1	432,939	5.4%	2	171,357	6.6%
7913				8	250,009	3.1%	3	143,330	5.5%
9411	9	144,786	2.4%	5	274,701	3.4%	4	112,564	4.4%
5237	6	174,436	2.9%	7	250,231	3.1%	5	89,346	3.5%
5010	5	198,226	3.3%	4	280,246	3.5%	6	84,974	3.3%
5299	3	251,008	4.2%	3	291,972	3.7%	7	81,388	3.1%
7101	8	146,724	2.4%	10	197,158	2.5%	8	62,419	2.4%
7805	2	284,213	4.7%	6	269,118	3.4%	9	52,012	2.0%
5260				18	79,475	1.0%	10	50,382	1.9%
5271	18	75,158	1.2%	14	116,471	1.5%	11	45,762	1.8%
8520				17	87,665	1.1%	12	45,664	1.8%
5242							13	45,555	1.8%
5243	11	139,986	2.3%	11	168,865	2.1%	14	43,969	1.7%
5024							15	42,529	1.6%
5003	10	140,247	2.3%	12	160,703	2.0%	16	41,723	1.6%
5257	4	227,424	3.8%	9	226,438	2.8%	17	35,147	1.4%
7804	17	75,997	1.3%	15	107,706	1.3%	18	32,219	1.2%
5201							19	31,891	1.2%
8515							20	29,713	1.1%
7336	12	123,343	2.1%	13	119,199	1.5%			
7800	13	93,736	1.6%	16	97,235	1.2%			
7806	20	61,577	1.0%	19	78,919	1.0%			
5284	19	64,564	1.1%	20	77,314	1.0%			
7899	14	84,370	1.4%						
9400	15	81,589	1.4%						
5240	16	81,153	1.3%						
Top 20 Conditions		2,910,915	48.4%		3,966,444	49.6%		1,456,660	56.3%
All Conditions		6,014,754	100.0%		7,992,544	100.0%		2,585,363	100.0%
Total # of Veterans		2,316,789			2,627,838			776,492	
# of SCD per veteran		2.60			3.04			3.33	

Source: C&P Master Record data, September 2001 and September 2007.

Individual Unemployability. Table V-11 shows the distribution of the IU rated veterans by sub-body system or primary diagnostic code. One number that stands out in the following table is that 47 percent of new IU enrollees had a primary disability of PTSD between 2001 and 2007.

ⁱ Complete list of diagnostic codes and descriptions can be found in Appendix N.

Table V-11. Profile of SCD Veterans, as of September 2001 and September 2007 by Body System – Veterans with an IU Rating

Diagnostic Codes	Description	2001	2007	New Enrollees 2001 - 2007
9411	Post-traumatic Stress Disorder	22.9%	31.5%	46.9%
6100-6299	Ear and Other Sense Organs	1.7%	3.3%	5.5%
9434	Major Depressive Disorder	2.3%	3.7%	4.7%
7101-7199	Diseases of the Arteries and Veins	3.4%	3.5%	4.4%
7005	Arteriosclerotic Heart Disease	4.7%	3.4%	4.0%
6300-6899	Infectious Diseases, Immune Disorders and Nutritional Deficiencies, Respiratory System	4.8%	3.8%	3.9%
5243	Intervertebral disc syndrome	12.1%	8.8%	3.2%
7900-7999	Endocrine System	1.3%	1.6%	3.2%
9421-9599 (excl. 9434)	Somatoform and Mood Disorders (excludes Major Depressive Disorder)	1.9%	2.6%	2.8%
5235-5242	Spine (excludes 5243)	3.8%	4.5%	2.7%
8000-8199	Organic Diseases of the Central Nervous	3.5%	3.0%	2.2%
8205-8799	Cranial and Peripheral Nerves	1.9%	2.0%	1.9%
5000-5025	Acute, Subacute, or Chronic Diseases	6.2%	4.5%	1.7%
7000-7099	Diseases of the Heart (excludes 7005)	2.9%	2.1%	1.7%
9400-9410, 9412-9417	Anxiety and Dissociative Disorders (excludes Post-traumatic Stress Disorder)	3.8%	2.9%	1.7%
9201-9299	Mental Disorders	2.5%	2.3%	1.5%
7500-7599	Genitourinary System	0.9%	1.0%	1.4%
7200-7599	Digestive and Genitourinary System	2.9%	2.0%	1.1%
5250-5284	Hip and thigh, Knee and Leg, Ankle, Shortening of Lower Extremity, the Foot	2.8%	2.7%	1.0%
5051-5099	Prosthetic Implants	13.6%	11.0%	4.2%
5104-5230	Amputations, Loss of Use, Flail Shoulder, Non-union and Mal union, and Limitation of Motion	1.0%	0.9%	0.5%
5296-5299	Loss of part of Skull, Removal of Ribs and Coccyx	1.8%	1.7%	0.6%
5301-5399	Muscle Injuries	2.8%	2.0%	0.2%
6000-6099	Diseases of the Eye	0.7%	0.6%	0.6%
7610-7699	Gynecological Conditions and Breast Disorders	0.0%	0.0%	0.0%
7700-7899	Hemic and Lymphatic Systems and Skin	1.4%	1.2%	0.7%
8910-8999	Epilepsies	1.5%	0.9%	0.3%
9300-9399	Delirium, Dementia, Amnestic and Other Cognitive Disorders	1.5%	1.0%	0.5%
Total %)		100.0%	100.0%	100.0%
Total Veterans with an IU Rating		109,104	189,838	41,206

Source: C&P Master Record data, September 2001 and September 2007.

Table V-12. Profile of SMC Recipients by Primary Body System, as of September 2001 and September 2007

Body System	2001	2007	New Enrollees 2001 - 2007
Skin	2.1%	11.5%	24.0%
Ear & Other Senses	11.0%	15.3%	20.9%
Neurological/Other Mental	4.0%	7.9%	9.8%
Endocrine	24.3%	16.8%	8.3%
Cardiovascular	9.8%	7.3%	6.3%
Infectious Disease	11.3%	7.0%	3.8%
PTSD	2.9%	3.4%	3.7%
Musculoskeletal	11.5%	6.5%	3.6%
Respiratory	4.8%	4.9%	3.3%
Gynecological	12.0%	6.4%	2.7%
Hemic & Lymphatic	1.6%	1.5%	1.0%
Genitourinary	0.8%	0.8%	0.7%
Eye	0.7%	0.8%	0.7%
Digestive	0.3%	0.3%	0.2%
Dental	0.0%	0.0%	0.0%
Total (%)	100.0%	100.0%	100.0%
Total	146,814	259,598	89,625

Source: C&P Master Record data, September 2001 and September 2007.

SMC Type. As of September 2007, almost three-quarters (72.7 percent) of the SMC awards were for the SMC (K) award (see Table V-13). SMC (S) Housebound award recipients made up 12.1 percent of the total SMC awards, followed by the SMC (L) awards (5.4 percent).

We present the profile of the SMC (K) recipients by CDD in Table V-14. The remaining SMC awards with the exception of SMC (Q) were for 100% CDD. SMC (Q) is not an active award and has not been awarded since 1968. As the table shows, the percentage of veterans with SMC (Q) has been declining over the years.

Table V-13. Profile of SMC Recipients by Type, as of September 2001 and September 2007

SMC	2001	2007	New Enrollees 2001 - 2007
SMC (K)	63.9%	72.7%	86.0%
SMC (S)	9.2%	12.1%	9.2%
SMC (L)	6.3%	5.4%	2.9%
SMC (M) (N) (O) (P))	4.6%	2.7%	1.0%
SMC (R.1)	4%	2.2%	0.6%
SMC (R.2)	1.4%	0.8%	0.2%
SMC (Q)	10.6%	4.2%	0.0%
Total (%)	100.0%	100.0%	100.0%
Total Number of Veterans	146,803	259,561	89,616

Source: C&P Master Record data, September 2001 and September 2007.

Table V-14. Profile of SMC (K) Recipients by Combined Degree of Disability, as of September 2001 and September 2007

CDD	2001	2007	New Enrollees 2001 - 2007
0%	3.4%	2.1%	2.4%
10%	6.3%	3.5%	2.6%
20%	3.9%	5.6%	9.6%
30%	9.6%	6.4%	5.5%
40%	12.1%	10.9%	12.8%
50%	9.1%	7.8%	7.6%
60%	13.1%	12.1%	12.1%
70%	10.6%	12.1%	11.9%
80%	11.5%	13.6%	12.3%
90%	8.2%	11.1%	9.0%
100%	12.2%	15.0%	14.2%
Total (%)	100.0%	100.0%	100.0%
Total Number of Veterans	93,854	188,747	77,070

Source: C&P Master Record data, September 2001 and September 2007.

Comparison of Service-Connected Disabled Veterans to Non-Service-Connected Veterans

The study team analyzed the NSV 2001 data comparing the characteristics of the service-connected disabled veterans to non-service-connected veterans. The NSV 2001 data includes 20,048 interviews completed with veterans. Survey data were weighted to represent the 25.2 million non-institutionalized veteran population in 2000.

As shown in Table V-15, about three-fourths of the total of 25.2 million veterans in 2000 were released from active duty (RAD) prior to 1980. About 32 percent of all veterans identified themselves as having a “disabling condition.” Among those with a disabling condition, 43.1 percent stated that their disability was service-connected. Twenty-one percent of non-service-connected veterans stated that they have a disabling condition. Although 3.5 million veterans identified themselves as having a service-related disability condition, only 2.5 million veterans stated that they have a service-connected disability rating and only 2.2 million veterans indicated that they receive a disability compensation payment from VA. For the tables presented in the rest of this section, a service-connected veteran is defined as an individual who indicated either receiving a VA disability compensation payment or having a service-connected disability. Note that the total estimated numbers in the NSV 2001 data may differ from VA administrative records for several reasons such as survey errors and differences in time frame. The VA administrative records are usually provided for a given point in time such as the end of a fiscal year. In contrast, the NSV (self-reported) survey respondents may provide their status based on the year before the date of the interview.

It is likely that some veterans were not sure about the type of payment they receive and failed to differentiate between two types of VA payments—disability compensation and

the non-service-connected disability pension. For these reasons we excluded from our analysis those records with inconsistent information (for example, individuals who indicated they receive disability compensation but also indicated they do not have a disability rating).

Table V-15. Selected Characteristics of the 2001 National Survey of Veterans Respondents

Status	Number	Percentage
Released from Active Duty		
1979 and earlier	18,480,507	73.3%
1980 and later	6,423,218	25.5%
Missing	292,311	1.2%
Total	25,196,036	100.0%
Has disabling condition		
Yes	8,089,003	32.1%
No	17,107,033	67.9%
Total	25,196,036	100.0%
Type of disability		
Service-connected	3,488,191	43.1%
Non service-connected	4,600,812	56.9%
Total	8,089,003	100.0%
Veteran status defined for this study		
SC-disabled	2,783,989	39.3%
Non-SC disabled	4,299,454	60.7%
Total	7,083,443	100.0%

Source: EconSys Study Team analysis of the 2001 National Survey of Veterans data.

For the analysis of the NSV data for this study we determined the veterans as disabled or not disabled using the following logic:

1. Service-connected disabled veterans: In receipt of VA disability payments or have a service-connected disability rating.
2. Non-service-connected disabled veterans: Have a disability condition but not in receipt of VA disability payments.
3. Not disabled veterans: veterans who are not service-connected disabled or who are not service-connected for a disability.

If a survey respondent provided inconsistent information, we excluded that veteran from the analysis. Table V-16 shows that about 1.7 million veterans have a missing/unknown status. According to our definition, about 11 percent of the 2000 veteran population has service-connected disabilities, compared to 17 percent of the 2000 veteran population with non service connected disabilities. In our earnings analysis, we do not have any information on the disability status of the non service-connected veterans. However the NSV data provides sufficient information to compare the characteristics of SCD veterans with those of non SCD veterans.

About 21 percent of the non service-connected veterans have a disability condition. Along with the disability status, our analysis also compared two groups of veterans: (1) veterans who were released from active duty prior to 1980 and (2) veterans who were released after 1980.

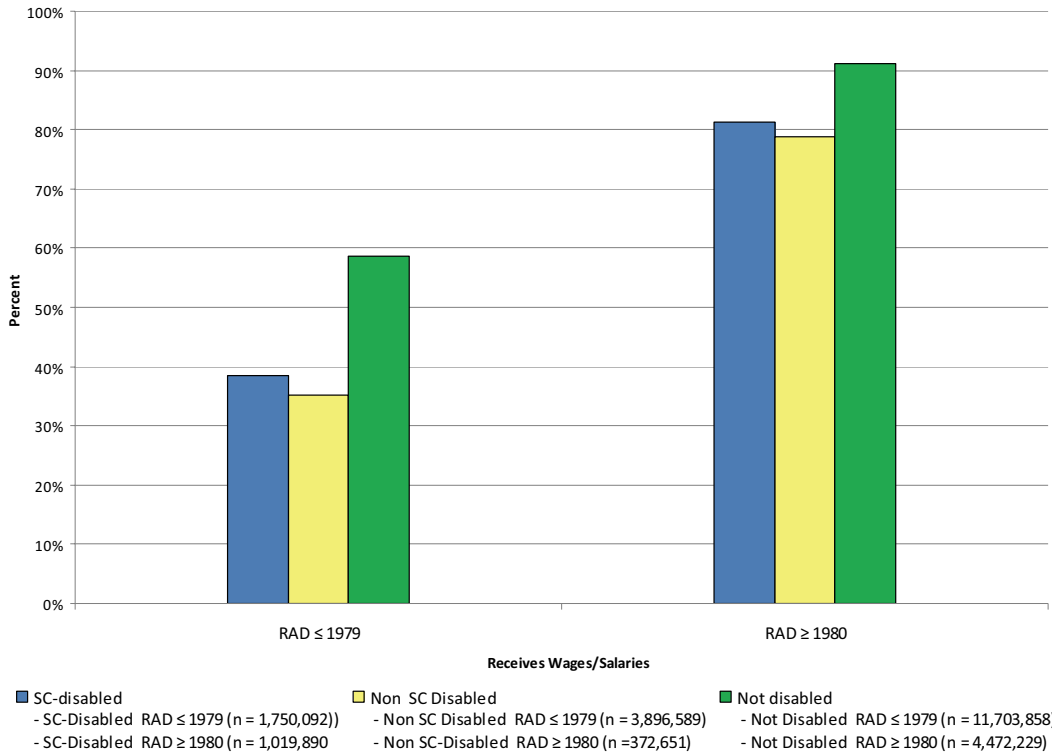
Table V-16. Veterans by Disability Status, NSV 2001

Veterans by Status	Number	Percentage
Service-connected disabled	2,783,989	11.0%
Non service-connected veterans	20,706,375	82.2%
Disabled	4,299,454	17.1%
Not disabled	16,406,922	65.1%
Missing/Unknown status	1,705,672	6.8%
TOTAL	25,196,036	100.0%

Source: EconSys Study Team analysis of the 2001 National Survey of Veterans data.

The NSV 2001 does not include data on the amount of earnings the veteran may have but includes a question on whether the veteran receives income from wages, salaries, or employment income. About 39 percent of the SCD veterans who were released from active duty prior to 1980 had earnings compared to 35 percent of non-SCD *disabled* veterans (see Figure V-4). Among the RAD post 1980 veterans, the percentage of SCD veterans with earnings is similar to the percentage for non-SCD disabled veterans: 81 percent and 79 percent, respectively. (Note that Appendix D includes detailed tabulations using the NSV data.) About 91 percent of RAD post-1980 veterans with no disability condition have earnings while only 59 percent of pre 1980 RAD with no disability have earnings.

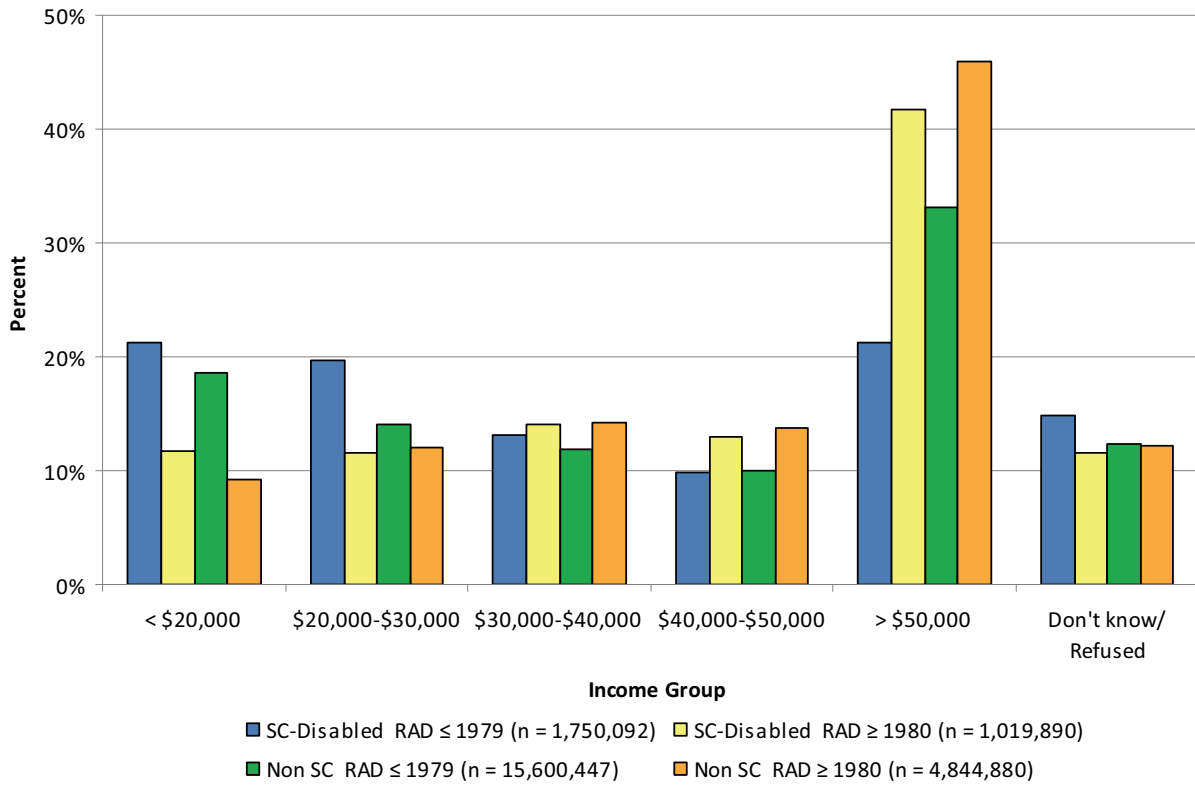
Figure V-4. “Do you receive income from wages, salaries, or other employment income?” by Veteran Disability Status and Release from Active Duty Date – 2001 NSV Data



Source: EconSys Study Team Analysis of the 2001 National Survey of Veterans data.

Figure V-5 shows that the family income distribution for the RAD pre-1980 veterans differs from that of RAD post-1980 veterans. About 45 percent of RAD post-1980 veterans have family incomes over \$50,000, compared to 32 percent for RAD pre-1980 veterans. The difference between the family income levels is also prevalent if we look at SCD and non-SCD veterans separately for the two RAD groups. Among the SCD veterans about 21 percent of RAD pre-1980 veterans have family incomes above \$50,000 compared to 42 percent for the RAD post-1980 SCD veterans. Note that between 11 and 15 percent of veterans in each group refused to answer this question.

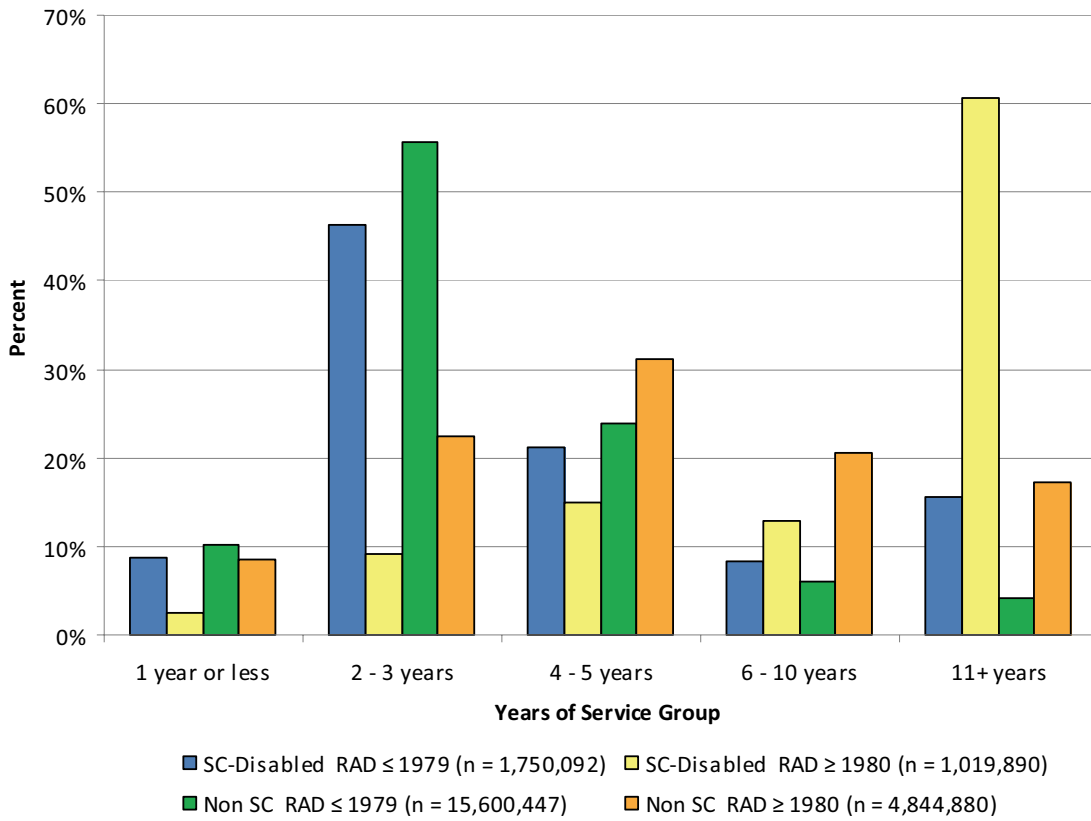
Figure V-5. “What was your total family income for 2000, before taxes and deductions” by Veteran Disability Status and Release from Active Duty Date – 2001 NSV data



Source: EconSys Study Team Analysis of the 2001 National Survey of Veterans data.

The difference in length of years of service varies significantly between post-1980 RAD veterans and pre-1980 RAD veterans (see Figure V-6). For example, 60 percent of SCD post-1980 RAD veterans served in the military more than 10 years, compared with 15 percent of SCD pre-1980 RAD veterans. In contrast, among the non-SCD veterans, 22 percent of post-1980 RAD veterans served 2-3 years compared to 56 percent of pre-1980 RAD veterans.

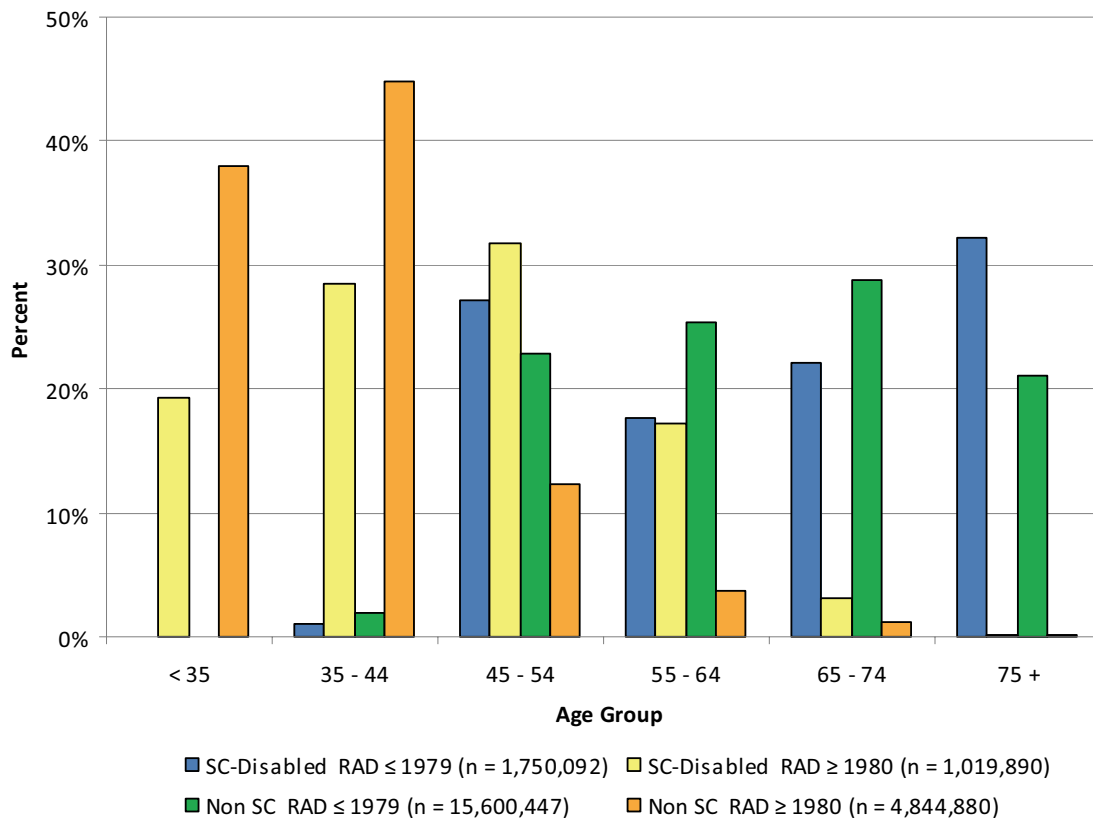
Figure V-6. Length of Years of Service in Military by Veteran Disability Status and Release from Active Duty Date – 2001 NSV data



Source: EconSys Study Team Analysis of the 2001 National Survey of Veterans data.

Among the post-1980 RAD veterans, in comparison to the non-SCD veterans, SCD veterans were older—20 percent of SCD veterans were over 54 years of age, compared with only 5 percent of non-SCD veterans (see Figure V-7).

Figure V-7. Age Distribution by Veteran Disability Status and Release from Active Duty Date – 2001 NSV data



Source: EconSys Study Team analysis of the 2001 National Survey of Veterans data.

VI. LOSS OF EARNINGS METHODOLOGY

The objectives of analyzing loss of earnings for veterans with service-connected disabilities (SCD) are to develop findings and recommendations with respect to:

- The appropriate level of compensation for loss of earnings and
- The appropriate standard or standards for determining whether injuries/disease or combination of injuries/diseases have caused a veteran loss of earnings.

To achieve these objectives, the EconSys Study Team set out to examine two key aspects of the current disability system:

- Measuring the extent to which the existing rating system accurately predicts loss of earnings and
- Measuring the extent to which the existing disability compensation system compensates for the loss of earnings.

Our analysis of earnings focuses mostly on veterans who receive regular schedular disability compensation benefits and excludes veterans who receive total compensation benefits based on Individual Unemployability (IU) designation or receive Special Monthly Compensation (SMC) payments. The principle objective of regular schedular payments is to compensate for average loss of earnings capacity. SMC payments are not intended for that purpose. The IU rating process is based on individual evaluations of lost earnings and not on average impairment of earnings capacity.

Overview of the Analysis and Description of the Data

We used a comparison group approach for the analysis, comparing earnings of service-connected (SC) veterans who receive disability compensation with earnings of veterans who do not receive disability compensation. The samples of veterans used for analysis in this report consisted of two groups:

- A demographically matched sample of 432,947 veterans released from active duty between 1980 and 2005, who were not receiving VA disability payments.⁸⁶ These serve as a comparison group for assessing earnings capacity. This sample was weighted to represent the larger full population of 6,533,754 veterans not receiving compensation for service-connected disabilities, who were released from active duty after 1980.
- Selected data on the 1,062,809 veterans who were receiving disability compensation for service-connected disabilities as of December 2005⁸⁷ who were released from active duty 1980 or later.

⁸⁶ The EconSys Study Team used the Defense Manpower Data Center (DMDC) data originally extracted for the Veterans' Disability Benefits Commission (VDBC) 2007 study.

⁸⁷ The same veterans data extract was used here as that in the study conducted for the VDBC 2007 Study. The veteran records were matched against Social Security Administration (SSA) earnings records at the more detailed diagnostic code groupings.

Earnings data for veterans (in cells containing 10 or more to prevent possible identification of individuals) for 1951 through 2006 were provided by the Social Security Administration (SSA). The timeframe allowed for this study did not permit analysis of the lifetime earnings of veterans from 1951 through 2006. We also received data for approximately 1.6 million additional veterans with service-connected disabilities who were released from active duty before 1980. For a variety of reasons detailed elsewhere in this report (see Pre-1980 Compared to Post-1980 Data section) these records were not included in the bulk of the analysis.

Cell-Based Variables

Each SCD veteran in any given cell has in common the identical combined degree of disability (CDD) and primary diagnosis. Cell members also are organized by age group and education (at the time they entered military service), although there is additional variation between cells by age and education that can be used in the analysis. All cell members are in the same age group (for example, 18 to 34), and the exact mean age is known for everyone in that cell. Hence, two different cells in the same 18 to 34 age group can have different mean ages. This provides a non-categorical variable that can be used in the analyses.⁸⁸ Additional pieces of information are available—although not universally—such as the percentage of cell members who were officers at the time of release from active duty.

For each micro-community or cell, we identified the following potentially relevant and reliable data:

- Primary diagnostic code groupings or conditions or aggregated code group for veterans receiving VA disability payments.⁸⁹
- CDD, from 10% to 100% in 10% incremental steps, or non-SCD indicator for veterans not receiving VA compensation (except that 0% is acceptable for veterans receiving SMC (K)).
- Mean age and age group.
- Number of veterans in the cell.
- Number of veterans in the cell with earnings reported to the Social Security Administration in each year from 1951 through 2006.
- Mean earnings associated with the SSA reports from 1951 through 2006.
- Mean years of education (as of when they entered the military).

⁸⁸ Testing used mean age compared to using age categories. Because age does not have a linear relationship with employment rates or earnings levels, we used curve-fitting techniques to determine the best fit.

⁸⁹ A number of infrequent primary diagnoses had insufficient observations for SSA to provide earnings data at the demographics data level (such as age group, education, and gender). For those diagnoses, we aggregated similar codes also with small numbers until we obtained cells that were sufficiently large (a level of aggregation between body system and diagnostic code). This resulted in reducing the number of diagnostic codes from over 700 to 240. Appendix A lists the diagnostic groups.

- Gender indicator (percentage of cell members that are male).
- Percentage of cell members who were officers when they left active duty.

Additional data were available although not always consistent or credible. The factors listed here are the focus of our analytical efforts. Where both categorical and numerical equivalents (such as those for education) were available, we tested both to determine which provided the better statistical explaining power. Rather than showing the many iterations used, we show just the ultimate human capital model formulation, which reflects the results of those tests and different iterations.

Basic Dimensions of the Population

Table VI-1 shows the distribution of veterans in our database by age. Numbers shown are the population estimates for veterans who left military service in 1980 or later. In the case of SCD veterans, our database includes cells that contain from 10 to 61,324 veterans (cell size) before weighting.

Table VI-1. Age Distribution of Veterans with and without Service-Connected Disabilities (Released from Active Duty in 1980 or later)

Age Group	Non-SCD ⁱ		SCD		All	
	Number	Percent	Number	Percent	Number	Percent
Under 35	936,901	14.3	165,953	15.6	1,102,854	14.5
35 to 44	1,708,673	26.2	290,055	27.3	1,998,728	26.3
45 to 54	2,190,720	33.5	352,010	33.1	2,542,730	33.5
55 to 64	1,246,696	19.1	195,820	18.4	1,442,516	19.0
65 or Older	450,763	6.9	58,971	5.5	509,734	6.7
Total	6,533,754 ⁱⁱ	100.0	1,062,809	100.0	7,596,563	100.0

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and 1980-2005 DMDC data.

ⁱ Based on a sample of 432,947 veterans who were not receiving VA disability compensation as of December 31, 2005.

ⁱⁱ Numbers do not add up exactly to 6,533,754 due to weights applied to non-SCD sample.

For the sample of non-SCD veterans, cells contain from 10 to 8,808 veterans each before weighting. The non-SCD sample of 432,947 represents a larger population of 6,533,754 veterans who were not receiving VA disability compensation as of December 31, 2005. We weighted the non-SCD sample numbers to obtain the numbers shown in the table.

Table VI-2 shows means for key demographic and human capital factors in our analysis, by SCD status and CDD rating excluding veterans with IU or receiving any kind of SMC. Wherever you see marked differences in any of these factors by SCD status or CDD rating, you can expect to see earnings-related differences as well. For example, we know that the percentage of veterans who were officers is associated with higher earnings capacity. We would expect this to be reflected in some way when contrasting the earnings of veterans in the 90% CDD rating group (15 percent officers) with those in the 100% rating group (8.6 percent officers). While it is a well documented fact that

education is related to earnings, we do not see dramatic differences in education at different levels of CDD. Even so, we would expect to see education effects when comparing different CDD rating groups (for example, between veterans with 90% CDD ratings, who have an average educational attainment of 12.8 years and veterans with 100% CDD ratings, who have an average educational attainment of 12.3 years). Age differences may also play a role in explaining earnings differences between those in the oldest CDD group (90% CDD, with an average age of 51.9) and those in the youngest CDD group (20% CDD, averaging 45.3 years).

Table VI-2. Selected Means for Key Factors by SCD Status and Combined Degree of Disability, Excluding IU and SMC

CDD	Percent Male	Percent Officers	Mean Education	Mean Age	Percent with 2006 Earnings	Mean Years in Military	Percent of Adult Life in Military	Mean Number of SC Disability Ratings
10%	87.6% 314,823	11.5% 314,823	12.5 314,823	45.4 314,823	82.6% 314,823	9.6 303,568	34.1% 303,568	1.0 303,568
20%	87.3% 187,223	11.2% 187,203	12.5 187,203	45.3 187,223	82.0% 187,223	10.3 176,872	37.2% 176,872	1.7 176,872
30%	86.1% 144,944	11.6% 144,944	12.5 144,944	45.8 144,944	80.8% 144,944	11.3 133,837	40.5% 133,837	2.4 133,837
40%	85.7% 113,303	10.9% 113,291	12.5 113,291	46.0 113,303	79.1% 113,303	11.6 102,650	41.7% 102,650	3.0 102,650
50%	84.2% 61,757	11.2% 61,741	12.5 61,741	46.4 61,757	75.0% 61,757	11.9 52,142	42.6% 52,142	3.7 52,142
60%	84.6% 54,558	11.1% 54,543	12.5 54,543	47.1 54,558	73.0% 54,558	12.3 45,221	43.6% 45,221	3.8 45,221
70%	84.9% 29,981	11.6% 29,960	12.6 29,960	47.8 29,981	69.2% 29,981	12.9 22,007	45.3% 22,007	4.4 22,007
80%	85.0% 17,176	12.6% 17,164	12.6 17,164	49.2 17,176	66.0% 17,176	13.7 10,647	47.9% 10,647	5.1 10,647
90%	88.4% 6,366	15.0% 6,355	12.8 6,355	51.9 6,366	61.7% 6,366	14.7 2,523	50.3% 2,523	5.6 2,523
100%	84.0% 30,187	8.6% 30,059	12.3 30,059	48.9 30,187	21.7% 30,187	8.1 23,730	25.9% 23,730	2.2 23,730
Total	86.5% 960,318	11.3% 960,083	12.5 960,083	46.0 960,318	78.0% 960,318	10.6 873,197	37.9% 873,197	2.1 873,197
Non-SCD	86.0% 6,533,754	13.2% 6,533,754	12.6 6,533,754	49.6 6,533,754	76.2% 6,533,754	n/a ⁱ n/a	n/a n/a	0.0 6,533,754

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and SSA earnings match.

ⁱ Data not available for non-SCD sample

We can also see how some of these factors tend to track together. Individuals who were the oldest, most educated, most military-tenured, and had the highest number of SCDs were veterans in the 90% CDD rating group.⁹⁰ These combined factors play a strong role in explaining why earnings for veterans at the 90% rating level are not as low as we would otherwise expect based on rating alone.⁹¹

Table VI-3 shows earnings, estimated benefits, and VA compensation by SCD status and CDD. The average earnings, estimated benefits, and average VA compensation are not just for those with earnings but for all veterans in the cell. The number of earners (veterans with earnings recorded by SSA) is less than the number of veterans in cells. The employment rate (“Percent with 2006 Earnings”) is obtained by dividing the number of earners by the number of veterans in the cell (for example, from the 10% CDD row, $259951/314823 = .826$, or 82.6 percent). Average compensation is the average monthly compensation multiplied by 12 (months). The amount shown is the average amount paid for the groups indicated, not adjusted for any tax advantage. For computing the last column (Earnings & Benefits Plus VA Compensation), however, VA compensation has 16.0 percent added to adjust for the tax equivalency of VA compensation payments since they are not taxed. Because earnings are taxed and VA compensation is not, a \$1,000 VA compensation payment is equivalent to \$1,160 in taxable earnings.⁹²

⁹⁰ For non-IU and non-SMC veterans, the original summary variable that captured the average number of service-connected disabilities for each cell included disabilities with 0% ratings. We recomputed the number of service-connected disabilities to include only those that were rated at least 10% (except that we included cases with 0% CDDs for SMC (K)). Even before recoding this variable, however, there was a strong correlation between earnings and the number of service-connected disabilities.

⁹¹ This is further augmented by our finding that many in the 90% CDD category have ratings that have been artificially increased based on the way multiple disability ratings are combined.

⁹² We used the average federal income tax rate of 12.6 percent of earnings based on IRS preliminary 2006 returns (Table 2, in <http://www.irs.gov/pub/irs-soi/06in02etr.xls>). We used an average state income tax rate estimated at 9/33 of the federal rate, or 3.4. Adding these together, the total estimated income tax rate is 16.0 percent.

Table VI-3. Earnings, Estimated Benefits, and VA Compensation by SCD Status and CDD Rating, Excluding IU and SMC

CDD	2006 Earners	Percent with 2006 Earnings	2006 Cell Average Earnings	Estimated Benefits	Earnings Plus Benefits	Average VA Comp	Earnings & Benefits Plus VA Comp
10%	\$43,537	82.6%	\$35,949	\$13,746	\$47,483	\$1,344	\$49,042
	259,951	314,823	314,823	314,823	314,823	314,823	314,823
20%	\$43,118	82.0%	\$35,363	\$13,693	\$46,777	\$2,616	\$49,811
	153,550	187,223	187,223	187,223	187,223	187,223	187,223
30%	\$43,017	80.8%	\$34,762	\$13,449	\$45,832	\$4,589	\$51,155
	117,127	144,944	144,944	144,944	144,944	144,944	144,944
40%	\$42,282	79.1%	\$33,458	\$13,408	\$44,271	\$6,608	\$51,937
	89,658	113,303	113,303	113,303	113,303	113,303	113,303
50%	\$41,170	75.0%	\$30,884	\$13,132	\$40,981	\$9,294	\$51,762
	46,327	61,757	61,757	61,757	61,757	61,757	61,757
60%	\$40,896	73.0%	\$29,852	\$13,106	\$39,665	\$11,720	\$53,260
	39,824	54,558	54,558	54,558	54,558	54,558	54,558
70%	\$40,546	69.2%	\$28,058	\$12,821	\$37,221	\$14,512	\$54,055
	20,747	29,981	29,981	29,981	29,981	29,981	29,981
80%	\$40,647	66.0%	\$26,827	\$12,628	\$35,521	\$16,700	\$54,893
	11,336	17,176	17,176	17,176	17,176	17,176	17,176
90%	\$39,723	61.7%	\$24,491	\$11,886	\$32,335	\$18,572	\$53,879
	3,925	6,366	6,366	6,366	6,366	6,366	6,366
100%	\$23,730	21.7%	\$5,142	\$6,926	\$7,087	\$29,600	\$41,423
	6,541	30,187	30,187	30,187	30,187	30,187	30,187
All SCD	\$42,613	78.0%	\$33,236	\$13,300	\$43,950	\$5,492	\$50,321
	748,986	960,318	960,318	960,318	960,318	960,318	960,318
Non-SCD	\$41,936	76.2%	\$31,971	\$13,849	\$42,719		
	4,981,216	6,533,754	6,533,754	6,533,754	6,533,754		

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and SSA earnings match.

Analytical Framework and Overview

Methods for measuring loss of earnings vary from the simple to the more sophisticated. At the simplest level, one can compare the earnings of veterans with SCDs to the earnings of veterans without service-connected disabilities (non-SCD). To do this in a valid manner, it is necessary to ensure that the groups being compared are comparable, apart from the fact that one group is receiving VA disability compensation and the other is not.

An ideal way to conduct such an analysis would be to use cohorts of veterans who entered the service at the same time—carefully matching on gender, marital status, age, education, rank achieved at the point of time when a given SCD occurred, the nature of SCD itself (for veterans with SCDs), and other factors that might otherwise account for earnings differences. We would then compare the careers and earnings of the two parts of the cohort in the years following the occurrence of the SCD.

Gathering detailed cohort-based data for the current study was precluded by a number of factors including the amount of time allotted for this study.

Because the VA Disability Compensation Program is unique in many respects (for example, other disability compensation systems do not pay benefits for life for all beneficiaries with partial disabilities), it is difficult to find studies that use methods that would be useful for the current study including looking at other studies that used a human capital model to measure economic losses due to disability.⁹³

The human capital approach attempts to model productivity, measured by employment and earnings, as a function of individual attributes including age, education, occupation, health status, and other related factors. Applying this model to veterans, service-connected disabilities are considered “shocks” that negatively affect earnings capacity.

A key difference between the data available for this study and other studies is that other studies use data for individuals, while this study can only use data for groups of individuals (referred to as cells). This difference means that we cannot analyze our data in the same way. Rather than having veterans with binary indicators of employment, we have cells or micro-communities, members of which include both employed and unemployed veterans. Hence, we analyze cell employment rates, which can be done using straightforward regression.

Method Used

Multiple regression analysis was selected as the most efficient method because it allowed us to control for a number of factors simultaneously and to isolate and measure the impact of disability ratings on earnings. With a sufficient number of controls, we attempted to achieve the advantages of cohort analysis statistically, if not in fact.

The general approach was to measure and control for the effects of human capital differences on earnings to the extent that useful measures of human capital are available. Stating this in general terms, we used a representative sample of non-SCD veterans to build a human capital model of earnings. This is one of several comparison groups we used ultimately. We then applied the results of the non-SCD regression to the population of veterans with SCDs to determine the level of earnings *expected* for them if they did not have service-connected disabilities. We then looked at subsets of the SCD population to determine differences between actual and expected earnings by age, CDD, and diagnostic code of the primary disability (the disability with the highest rating).

Explanatory or Control Variables

In order to isolate the effects of the disability type and rating, it was necessary to control for other factors such as the age and gender of the veteran. Explanatory

⁹³ The human capital model has been used for more than 20 years to measure economic losses due to disability for injured workers who receive workers' compensation benefits. A 1987 study of the Wisconsin workers' compensation program is discussed in Appendix A of *A 21st Century System for Evaluating Veterans for Disability Benefits*, an IOM study published in 2007. A survey of recent uses of the human capital model to analyze earnings losses of injured workers is: Boden, L., Revile, R., & Biddle, J., (2005) "The Adequacy of Workers' Compensation Benefits" In K. Roberts (ed). *Workplace Injuries and Diseases: Prevention and Compensation*, W.E. Upjohn Institute for Employment Research.

variables used in the analysis were age, gender, education, and officer status, measured as follows:

- **Age** — Mean age of veterans in each cell. For some tabular presentations, we grouped age as follows: Under Age 35, Age 35-44, Age 45-54, Age 55-64, Age 65-74, and Age 75+. For the multivariate analysis used to predict expected earnings, we excluded retirement age veterans (age 65 and older) and used mean age.
- **Gender** — The percentage of the cell that is male.
- **Education** — The mean number of years of education in each cell, where 12 means a high school diploma, 16 means a 4-year college degree, and so forth with in-between values indicating either some college (for example, 12.3), or associate degree (14), or graduate school (> 16.0). Education is as of the time that the veteran entered the military.
- **Officer** — The percentage of cell members who were officers when they left active duty. The premise here is that a person who becomes an officer has superior human capital at the time he or she entered the service. Also, this person is more likely to acquire marketable skills upon leaving the military.

It would also be useful to control for other factors that might be related to earnings such as subsequent education, time in the service, marital status, and rank at the time of release from active duty. Unfortunately, we do not always have reliable and current information for both SCD and non-SCD veterans. For example, the only measure of education we have available shows veterans' education at the time they entered the military and this only for veterans who were released from active duty after 1980.

Any additional education these veterans acquired in the ensuing years would certainly affect earnings capacity, but that information was not available to us. Even so, we can use pre-military service education as a starting point. What we have is limited in the breadth and depth of human capital measures available, but it is useful as a statistical factor in explaining at least part of earnings differences observed. As shown in Table VI-4, non-SCD and SCD populations are well matched by age and with respect to education upon entry into the military.

Table VI-4. Mean Education by SCD Status and Age

Age Group	Non-SCD Veterans		SCD Veterans	
	Years of Education	Number of Veterans	Years of Education	Number of Veterans
Under 35	12.1	820,910	12.1	160,761
35 to 44	12.0	1,497,135	12.1	267,807
45 to 54	12.4	1,919,504	12.4	314,467
55 to 64	13.3	1,092,352	13.3	168,812
65 to 74	14.3	368,737	14.3	45,412
Over 74	15.7	26,221	15.7	2,824
Total	12.6	5,724,858	12.5	960,083

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and 1980-2005 DMDC data.

The available information on marital status for non-SCD and SCD veterans was not usable. As shown in Table VI-5, marital rates for SCD veterans are listed as much higher than for non-SCD veterans. This is because rates for non-SCD veterans are from when they first entered the military while SCD rates are more current. We also suspect that there are errors in the data and we have no means of verifying the data in any way that could render it useful or reliable for study purposes. In any case, without reliable current data for both non-SCD and SCD veterans, we could not use the percent married variable in the analysis.

Table VI-5. Married Rates by SCD Status and Age

Age Group	Non-SCD Veterans		SCD Veterans	
	Percent Married	Number of Veterans	Percent Married	Number of Veterans
Under 35	6.1%	820,910	27.1%	157,974
35 to 44	7.7%	1,497,135	36.6%	265,223
45 to 54	20.1%	1,919,504	44.3%	310,867
55 to 64	10.0%	1,091,307	45.8%	164,345
65 to 74	1.7%	358,449	41.8%	38,408
Over 74	3.9%	2,050	51.5%	1,713
Total	11.7%	5,689,354	39.4%	938,530

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and 1980-2005 DMDC data.

We have dependent status for SCD veterans who are rated 30% or higher but not for those rated less than 30% and not for the comparison group. Hence, dependent status was not viable for us, either.

Another factor that could be used to explain variation in earnings is gender of the veterans. For reasons that transcend the scope of this study, women, on average, earn less than men. Differences in the gender composition between study groups (cells) will affect the expected earnings level. Table VI-6 shows the distribution of gender by age groups, using the percentage male as the indicator. Note that the age distribution reflects that women comprise an increasing percentage of service members in more recent years. This is shown by the fact that the percentage of males varies directly with age group. In the oldest age group of non-SCD veterans, 95.1 percent were male. The percentage of males declines in each younger age group and reaches a low of 76.4 percent among non-SCD veterans under age 35.

Table VI-6. Percent Male by SCD Status and Age

Age Group	Non-SCD Veterans		SCD Veterans	
	Percent Male	Number of Veterans	Percent Male	Number of Veterans
Under 35	76.4%	820,910	77.0%	160,761
35 to 44	81.3%	1,497,135	84.6%	267,807
45 to 54	86.0%	1,919,504	87.2%	314,483
55 to 64	95.2%	1,092,352	94.1%	168,941
65 to 74	98.2%	368,737	96.9%	45,465
Over 74	95.1%	26,221	87.1%	2,861
Total	86.0%	5,724,858	86.5%	960,318

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and 1980-2005 DMDC data.

Another variable used for our analysis is whether the veteran was an officer at the time of release from active duty. On average, former officers served longer, achieved more in-service education and other training, and therefore earned more upon leaving the military, controlling for other factors. Table VI-7 shows the distribution of former officers by age in our database.

Table VI-7. Percent Former Officers by SCD Status and Age

Age Group	Non-SCD Veterans		SCD Veterans	
	Percent Officers	Number of Veterans	Percent Officers	Number of Veterans
Under 35	3.5%	820,910	2.1%	160,761
35 to 44	4.7%	1,497,135	3.7%	267,807
45 to 54	10.7%	1,919,504	10.1%	314,483
55 to 64	25.7%	1,092,352	25.2%	168,941
65 to 74	43.5%	368,737	41.7%	45,465
Over 74	69.7%	26,221	68.4%	2,861
Total	13.3%	5,724,858	11.3%	960,318

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and 1980-2005 DMDC data.

While the distribution of officer/non-officer is fairly close by age, former officers are nonetheless slightly more highly represented in the non-SCD veteran population than in the SCD population. From a human capital standpoint, in cases where earnings differences are slight, controlling for the percentage of former officers can make the difference when determining whether observed earnings differences are due to the SCD or due to underlying differences in human capital.

We illustrate the importance of using the percentage of former officers as a control variable by looking at their representation in the SCD population, by combined degree of disability, shown in Table VI-8, which also shows annual 2006 SSA earnings, earnings plus estimated benefits, and earnings (with estimated benefits) plus annual VA compensation.

Table VI-8. Earnings, Estimated Benefits, and VA Compensation--Percent of Veterans who were Officers by Combined Degree of Disabilityⁱ

CDD	Percent Officer	Number of Veterans	2006 Earnings	Earnings Plus Benefits	Earnings & Benefits Plus VA Compensation
Non-SCD	13.2%	6,533,754	\$31,971	\$42,719	n/a
10%	11.5%	314,823	\$35,949	\$47,483	\$48,827
20%	11.2%	187,203	\$35,363	\$46,777	\$49,393
30%	11.6%	144,944	\$34,762	\$45,832	\$50,421
40%	10.9%	113,291	\$33,458	\$44,271	\$50,879
50%	11.2%	61,741	\$30,884	\$40,981	\$50,275
60%	11.1%	54,543	\$29,852	\$39,665	\$51,385
70%	11.6%	29,960	\$28,058	\$37,221	\$51,733
80%	12.6%	17,164	\$26,827	\$35,521	\$52,221
90%	15.0%	6,355	\$24,491	\$32,335	\$50,907
100%	8.6%	30,059	\$5,142	\$7,087	\$36,687
Total SCD	11.3%	960,083	\$33,236	\$43,950	\$49,442

Source: EconSys Study Team analysis of December 2005 C&P Master Record data and SSA earnings match.

ⁱ Table excludes veterans who were rated as IU or who are receiving SMC.

Only 8.6 percent of veterans at the 100% CDD level were officers, while the percentage of non-SCD veterans who were officers is 13.2 percent. If we did not control for officer status, then we might erroneously conclude that all earnings losses associated with the 100% CDD rating were due to the rating alone. In looking at earnings for the 100% rating group, at least part of the reason earnings for 100% rated veterans was so low would be because that group contains fewer officers. By the same token, the fact that 15 percent of veterans rated at 90% were officers might explain in part why average earnings are not considerably lower than indicated.

By controlling for the human capital effects of officer status, we can statistically attribute at least part of the differences we observe to the difference in the percentage of officers in the different subgroups. If we divide veterans into two groups, above average and below average concentration of former officers, those in the higher officer concentration group averaged about \$12,000 more in annual earnings than those in the lower group.

Time in Service

It is possible that some of the differences we observe—particularly when actual earnings are higher than expected—are attributable to underlying differences in human capital for which we do not have adequate or complete measures. One such measure, as an example, is the length of the veteran’s military service. We have this information for approximately 90 percent of the veterans with service-connected disabilities, but we do not have this information for any of the non-SCD population. All other factors held constant, length of service could be a significant measure of human capital on a par with “job experience.” We know that there are significant variations in average military service time by IU and SMC (K) status as well as by CDD (although we cannot explain “why” without delving much more deeply into individual ratings data).

Without having parallel military service and earnings data for non-SCD veterans, however, it is difficult to fully assess the role of the length of military service in explaining earnings differences. Table VI-9 shows the average number of years in service (YIS) for those veterans for whom we have complete information by SCD status and CDD. Data on years in service could be acquired from the Defense Manpower Data Center (DMDC) given more time.

Table VI-9. Average Years in Service by SCD Status and CDD Rating

CDD	Non-IU and Non-SMC		IU		SMC (K)	
	Years in Service	Number of Veterans	Years in Service	Number of Veterans	Years in Service	Number of Veterans
0%	n/a		n/a		10.7	282
10%	9.6	303,568	n/a		13.4	888
20%	10.3	176,872	n/a		15.1	1,125
30%	11.3	133,837	n/a		13.5	1,838
40%	11.6	102,650	n/a		15.0	1,991
50%	11.9	52,142	n/a		15.3	1,409
60%	12.3	45,221	7.5	4,481	13.7	1,936
70%	12.9	22,007	10.7	6,278	12.7	2,344
80%	13.7	10,647	11.5	5,947	12.6	2,568
90%	14.7	2,523	13.3	2,828	12.8	2,336
100%	8.1	23,730	n/a		12.0	1,912
Combined	10.6	873,197	10.6	19,534	13.4	18,629

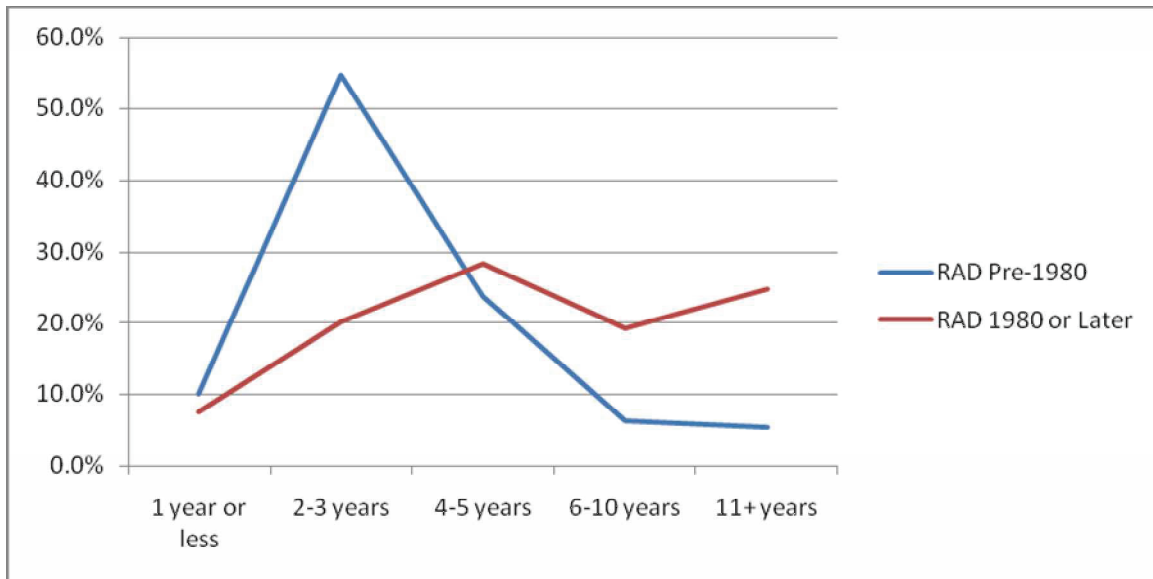
Source: EconSys Study Team analysis of December 2005 C&P Master Record data.

For the vast majority of veterans with service-connected disabilities (those without IU or receiving SMC) from 10% to 90% CDD, a significant correlation occurs between the number of years in the military and disability rating. Simply being in the military longer increases the probability that the member will incur a disability that can be connected to military service. To be truly useful for the earnings loss study, however, we would need to factor in how long ago the veteran left the service (released from active duty (RAD) as well as comparable information for non-SCD veterans (which was not available for this study). We do not have RAD or YIS data for non-SCD veterans in our earnings database.

However, we were able to use the 2001 National Survey of Veterans (NSV) database—which does not have sufficiently detailed information to permit analysis of earnings losses by diagnostic code—to contrast years of military service from several different perspectives.

For pre- and post-1980 RAD veterans, for example, Figure VI-1 contrasts the length of military service for the two different veteran populations. In this data, both non-SCD and SCD veterans are included. Adding together the first two age groups, about 65.5 percent of veterans released from active duty before 1980—comprising large numbers of veterans who served during times of the military draft—served an average of two to three years or less (9.9 percent who served one year or less plus 54.6 percent who served two to three years). In contrast, among veterans released 1980 or later, 72.4 percent served four years or longer.

Figure VI-1. Length of Military Service by Age Group: Released from Active Duty (Pre-1980 and 1980 or Later)



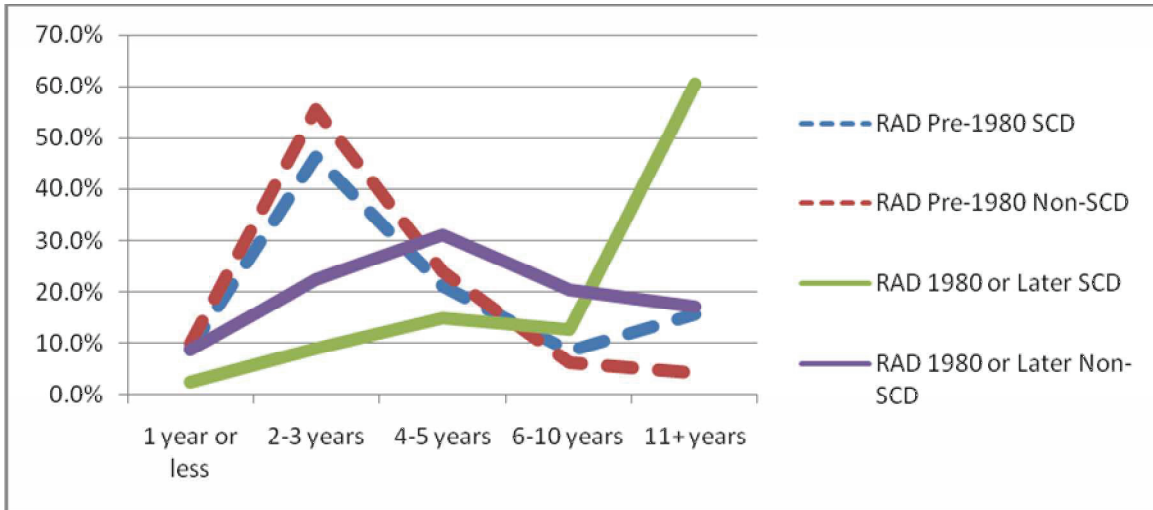
Source: 2001 National Survey of Veterans data.

As a result, the differences in the amount of human capital experience derived from military experience are quite large. This can account for very large differences in expected earnings when contrasting the two very different groups of veterans.

We also used NSV data to contrast the length of military service for veterans with and without service-connected disabilities. Figure VI-2 contrasts the length of military service for veterans with and without SCDs both for the pre-1980 and post-1980 veteran populations.

The dashed lines show the military service length for pre-1980 RAD veterans. The solid lines show service length for veterans released 1980 or later. There are no startling differences in the pre-1980 RAD veterans but there are among those released 1980 or later. Among post-1980 veterans *without* service-connected disabilities, over 60 percent served five years or less. Among those *with* service-connected disabilities, over 60 percent served 11 years or longer. This is a tremendous difference on this very important measure of human capital.

Figure VI-2. Length of Military Service by Service Era, SCD Status, and Age Group



Source: 2001 National Survey of Veterans data.

Because we did not have data on the length of military service for the non-SCD veteran sample, we were limited in our ability to control for length of military service when analyzing SCD and non-SCD veterans together. Looking only at the SCD group however, controlling for age and RAD, we performed regression analysis to measure the extent to which earnings differences are predicted by time in service—as measured by the percentage of the veteran’s adult’s life (as of the end of 2005) that was spent in the military. Among veterans with service-connected disabilities—controlling for age, education, gender, officer status, and disability rating—each additional 10 percentage points increase in the amount of military service adds \$1,469 in earnings.

Table VI-10 repeats the years in service information from the earlier table, pairing it with the average percentage of adult life the comprising subgroups have spent in the military. Adult life was computed as current age minus 18 because that is the age at which military service can begin. Based on the regression results, all other things remaining constant, we would expect for the earnings of the 60% rating group (which has spent 44 percent of its adult life in the military, on average) to earn approximately \$1,469 more than veterans in the 10% rating group (which has spent 34 percent of its adult life in the military, on average). While there is nothing practical we can do with this information at this juncture, it does open the possibility that whenever we see earnings differences we cannot otherwise account for, that at least some of the differences might be attributable to human capital factors for which we cannot control using the data made available for this study.

Table VI-10. Average Years in Service and Percent of Adult Life in Military for SCD Veterans not Rated IU or Receiving SMC

CDD	Years in Service	Percent of Adult Life in Military
10%	9.6	34%
20%	10.3	37%
30%	11.3	40%
40%	11.6	42%
50%	11.9	43%
60%	12.3	44%
70%	12.9	45%
80%	13.7	48%
90%	14.7	50%
100%	8.1	26%

Source: EconSys Study Team analysis of December 2005 C&P Master Record data.

Other Human Capital Differences

While we believe that the measures developed and standards used for this study provide a useful picture of earnings losses relative to disability level and type, we were not able to completely control for individual factors that might account for some of the earnings differences we observed. If these attributes are not related to disability type, CDD level, or the number of service-connected disabilities, then the effects should average out and not have an impact on any specific conclusions or suggestions. If attributes do vary by disability type, number, and level, however, then this could lead us to incorrectly conclude that there are no earnings losses for some disabilities, when in fact there are, or the reverse.

Refinements to the methods used here could be accomplished by obtaining additional human capital data that more fully accounts for individual earnings differences. Possible sources of information that could assist in these refinements include maximum education attained (to date, rather than at the time of enlistment), performance measures such as Armed Forces Qualifying Test (AFQT) scores, and information on in-service training and certifications. The AFQT, in particular, serves as a sort of Scholastic Aptitude Test (SAT) for all service members. Studies have found strong correlations between AFQT scores and other measures of achievement including earnings. AFQT has been cited in a number of studies as a definitive way to control for human capital differences (Tyler, 2003; Warner and Pleeter, 2001).⁹⁴ If merged with earnings data (for example, as average AFQT score for units of analysis in the study) such scores might provide better human capital control than the education information available in DMDC's data on former service members.

⁹⁴ Tyler, J., (2003). Economic benefits of the GED: Lessons from recent research. *Review of Educational Research*, 369-403.
Warner, J. & Pleeter, S., (2001). The personal discount rate: Evidence from military downsizing programs. *The American Economic Review*, 91(1), 33-53.

Pre-1980 Compared to Post-1980 Data

The study team has nearly complete data on earnings and other information only for veterans who were released from active duty after 1980. Defense Manpower Data Center (DMDC) information is considered inaccurate for veterans released from active duty prior to 1980. For non-SCD veterans released prior to 1980, we do not have SSA earnings data, and we had to rely upon Current Population Survey (CPS) data⁹⁵ to identify service-connected and non service-connected veterans and their earnings. The unreliability of self-reported income is well documented in the literature, and the discrepancies between actual incidence of service-connected disabilities from VA records indicates that self-reported SCD in CPS is likewise unreliable.

Unreliability of Self-Reported Earnings

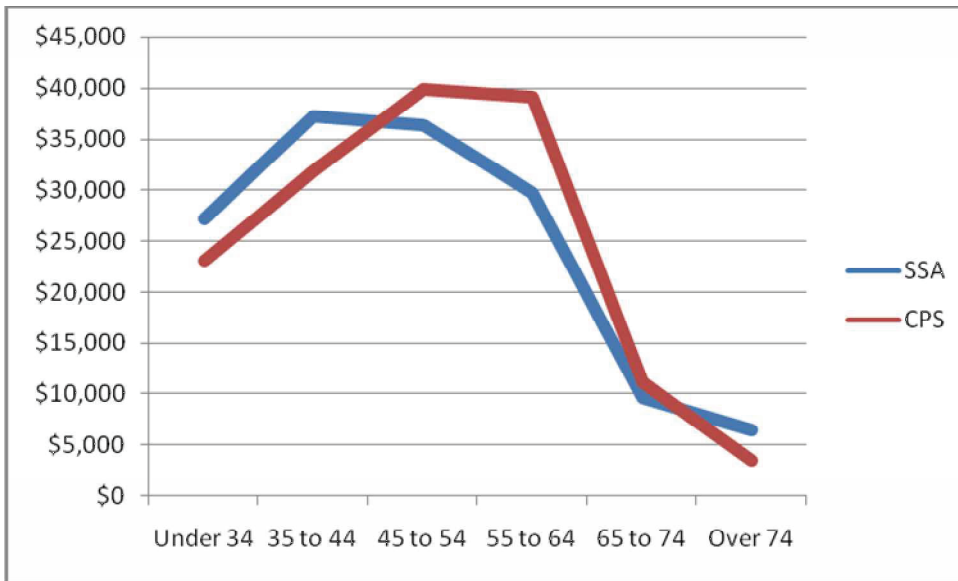
A careful examination and comparison of CPS data with SSA earnings showed that the actual designation of service-connection and actual earnings are quite different from the self-reported information, and that combining the two in the same analyses would produce distorted results. Hence, data limitations prevent us from including the pre-1980 RAD population, both SCD and non-SCD, in any reliable way.⁹⁶

Figure VI-3 compares veterans' earnings data from SSA and CPS. Variation occurs for several reasons. The most important reason is the fact that all CPS data is self-reported—both veteran service-connected disability status and earnings, whereas SSA data comes from VA records of disability compensation payments and reports by employers on which FICA taxes are based. The inherent unreliability of self-reported information offsets the fact that its availability might otherwise expand our ability to study veterans released from active duty before 1980.

⁹⁵ CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. It is the primary source of information on the labor force characteristics of the U.S. population including earnings.

⁹⁶ The 20007 CNA Corporation study conducted for the Veterans' Disability Benefits Commission used the pre-1980 veteran population and CPS data for earnings comparisons. Our analysis of their data indicates that if they had limited their analysis to veterans released from active duty 1980 or later, and had not relied upon CPS data for purposes of comparison, their results would have been quite different and consistent with the findings presented in this report.

Figure VI-3. SSA Compared to CPS Veterans' Earnings by Age

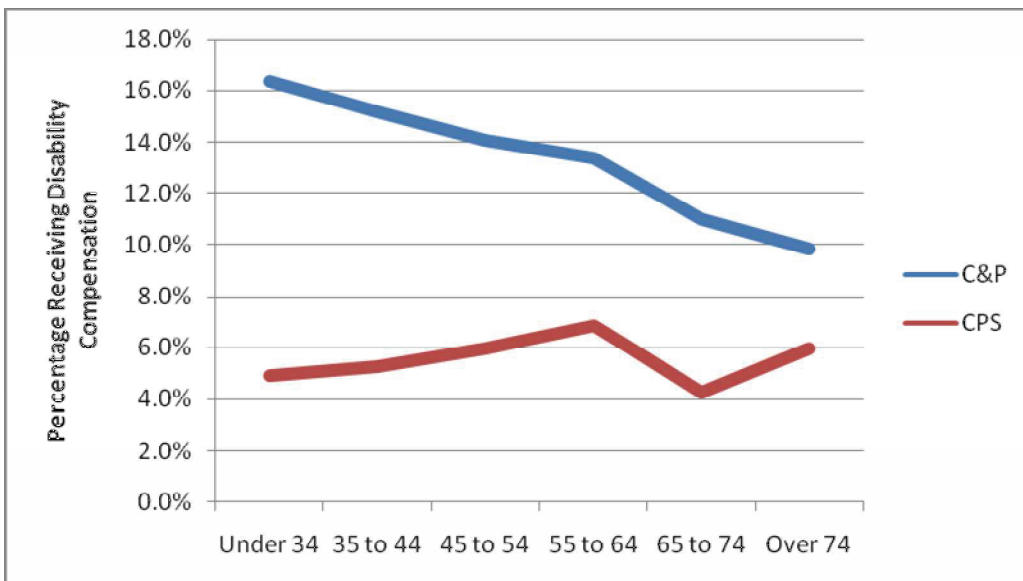


Source: EconSys Study Team analysis of December 2005 C&P Master Record data and SSA earnings match.

Unreliability of Self-Reported Service-Connected Disability Status

Self-reports of SCD status are *not* accurate in the CPS data. Figure VI-4 shows the age-specific rates of SCD status for the CPS data compared to SCD status derived from VA’s own records.

Figure VI-4. Proportion of Veterans Receiving VA Disability Compensation as reported by VA and CPS

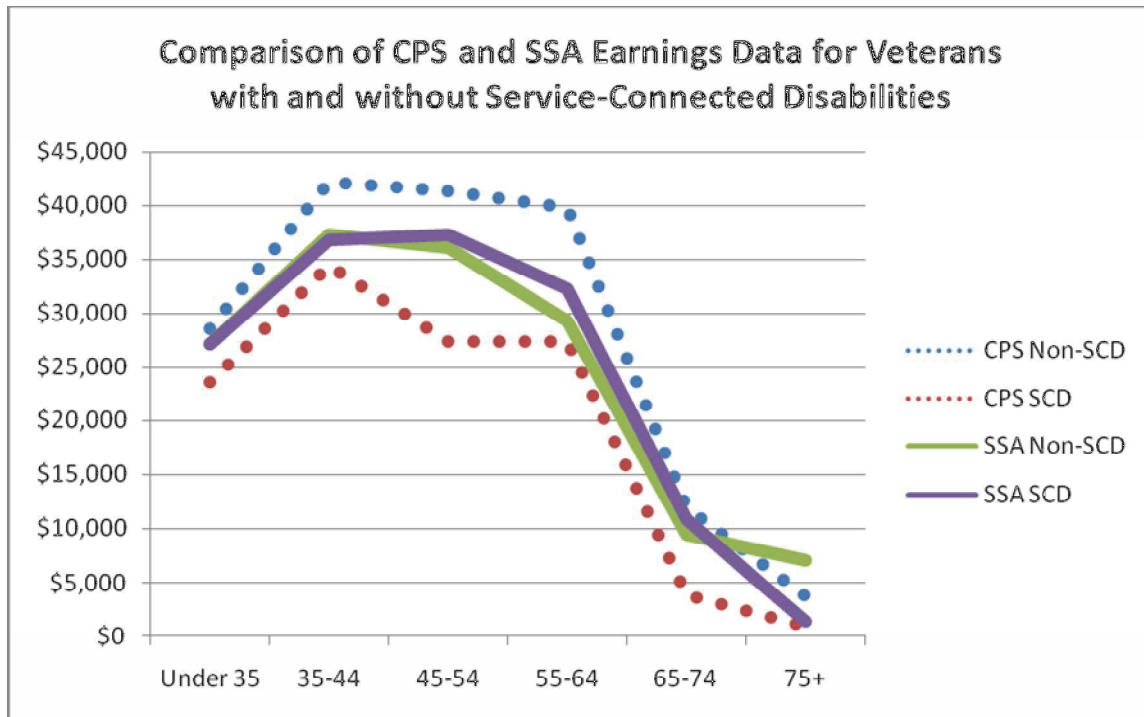


Source: September 2007 C&P Master Record data and CPS data extracted from the March, 2007 CPS Supplement.

Combined Effect of Unreliability of Self-Reported Earnings and Self-Reported Service-Connected Status

Comparing the self-reported and actual earnings for veterans classified by actual and self-reported service-connected disability status illustrates the magnitude of the problem. Applying SCD rates from both sources to the underlying earnings data shows huge earnings gaps in the self-reported CPS data as contrasted with relatively smaller earnings gaps in the actual SSA/DMDC data, as shown in Figure VI-5.

Figure VI-5. Comparison of CPS and SSA Earnings Data for Veterans Based on Official SSA/DMDC Data Compared to Self-Reported SCD Status



Source: EconSys Study Team analysis of December 2005 C&P Master Record data and SSA earnings match. CPS data extracted from the March 2007 CPS Supplement.

These gaps also support the argument against using CPS data to supplement data from DMDC and SSA. The latter data set includes complete information only for veterans RAD 1980 or later; it also contains data (albeit more limited in scope) on veterans with service-connected disabilities released from active duty before 1980. To balance the data set for RAD before 1980, we would need data for non-SCD veterans released from active duty before 1980.

The March 2007 CPS supplement does not contain an adequate indicator of a RAD date. There is a service-era indicator that includes World War II (WWII), Korea, Vietnam, and “Other Service.” While using the WWII, Korea, and Vietnam service-era indicators as a pre-1980 indicator would provide pre-1980 veterans, the “Other Service” category is not

a guarantee that the veterans were post-1980. The “Other Service” category might well include veterans from before WWII, from the time period between WWII and Korea, from between Korea and Vietnam, and between Vietnam and 1980.

Alternatively, we could use age as an indicator (for example, age 40). However, this possibly would exclude longer-term veterans who are career military service members—commissioned officers and otherwise—who left the service after a career in the military, possibly well after 1980. As is suggested by the analysis of time-in-service (using data from NSV and earnings data acquired for this study), we know that the length of military service is dramatically different for pre- and post-1980 veterans as well as that the length of military service is an important human capital factor in determining expected earnings (and there, a valuable statistical control when trying to determine whether or not service-connected disabilities are associated with earnings losses). Combining the different populations without properly controlling for variations in military service length would distort any conclusions drawn.

Finally, using only a portion of the CPS data to supplement SSA/DMDC data would exaggerate any earnings losses we might detect in the higher age brackets. Note that in Figure VI-5, SSA data shows that at some ages, non-SCD veterans earn less than veterans with service-connected disabilities.⁹⁷ Using CPS data, non-SCD earnings are above those of veterans with service-connected disabilities at every age. This could dramatically affect any conclusions we might reach with respect to earnings losses.

Likewise when we examined the rating system, it revealed significant changes over the years, many of which result from the expanded list of presumptions of service-connection to a number of conditions. Other changes that occurred included the introduction of post-traumatic stress disorder (PTSD) as a diagnosis in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) in 1980.⁹⁸ The result is that the SCD population of 2006⁹⁹ is quite different from the SCD population before 1980. This further exacerbates the problem of combining the two into the same analysis.

This still leaves open, however, the question of current ratings for veterans who left the service before 1980. Given the recent expansion of presumptions and the long onset time for some disabilities—occurring decades after a veteran leaves the military—we still confront the possibility that omitting pre-1980 RAD veterans potentially omits a significant portion of the veteran population. This is true and unavoidable. The basic fact is that we do not have complete data for pre-1980 veterans (for example, we are missing education, which is a key human capital variable).

⁹⁷ We should note that many of these non-intuitive differences disappear when controlling for disability type and rating. However there are arguably sound reasons why veterans rated below 50% might earn more than comparable non SCD veterans, not the least of which is their considerably longer lengths of military service, as shown in Figure VI-1 and Figure VI-2.

⁹⁸ PTSD and Compensation, *IOM Study*, p. 49.

⁹⁹ 2006 was selected as the most recent year for which SSA had complete earnings (at the time data was obtained, many tax returns for 2007 had still not been filed). We selected 2006 to minimize the chances that we might misidentify someone as unemployed for purposes of the analysis.

The key issue is whether we have in our population of post-1980 veterans a sufficient population of similarly aged veterans with the same diagnostic conditions as the pre-1980 veterans. In order to measure the effects of any given disability on earnings we require these elements. While we cannot assert that the post-1980 population has the same distribution of diagnoses as the pre-1980 population, we are not convinced that our post-1980 population is entirely lacking these elements to the extent that it makes it impossible, or even difficult, to properly measure the impact of those diagnoses on earnings.

Moreover, it is important to realize that many pre-1980 veterans are past the age of retirement. For those who are past the age of retirement, we would not be able to assess the impact of specific disabilities on earnings in any case. We may be “missing” many veterans who served in Vietnam in the 1960s and early 1970s who have not yet filed claims for SCDs.

We examined the full list of diagnostic codes available to us to determine whether there are codes for which we have pre-1980 veterans but no post-1980 veterans. While there are eight diagnostic codes for which we have only post-1980 veterans, we have none for which we have only pre-1980 veterans. Our examination of the full list supports the idea that we can do justice to the full range of diagnostic codes using only post-1980 veterans’ data. It is these veterans and future SCD veterans on whom decisionmakers will focus its policies and actions in the future; the earlier era veterans are in the later years of their lives and should not drive policy for the future.

Where this might have an impact is on the assessment of overall equity in the rating and compensation system. Because such a large portion of pre-1980 veterans are beyond retirement, we cannot assess the impact of disability on their earnings.

NSV Indicators of Greater Earnings Capacity

In order to better understand possible differences between pre-1980 and post-1980 population groups that might affect earnings loss results, we analyzed selected variables from the 2001 National Survey of Veterans. In addition to years of military service discussed previously, variables of interest and available in the 2001 NSV data include age distribution, disabilities limiting work, health status, and employment status. Presence of disability and poor health lead to diminished earnings capacity. In analyzing the pre-1980 and post-1980 populations only the 45-54 and 55-64 age groups have significant overlap, as shown in Table VI-11.

Table VI-11. Age Distribution in the 2001 National Survey of Veterans Data

Age Category	SCD Veterans		All Veterans	
	Pre-1980	Post-1980	Pre-1980	Post-1980
<35	0.0%	19.3%	0.0%	34.7%
35-44	1.1%	28.5%	1.8%	41.9%
45-54	27.1%	31.7%	23.3%	15.7%
55-64	17.6%	17.2%	24.6%	6.1%
65-74	22.0%	3.1%	28.2%	1.5%
75+	32.2%	0.1%	22.2%	0.2%
Total	100%	100%	100%	100%

Source: 2001 National Survey of Veterans data.

The pre-1980 group has a minimal presence of veterans in the under 35 age category while the post-1980 group has a minimal presence of veterans in the age 65 and older category. Hence, we are left with the 45-54 and 55-64 age groups to make direct comparisons between pre-1980 and post-1980 groups for the other variables of interest listed above, as shown in Table VI-12.

Table VI-12. Health and Disability Status of Veterans with Service-Connected Disabilities from the National Survey of Veterans

Age Category	Poor Health		Disabilities Limit Work Most or All of the Time		Employment Income	
	Pre-1980	Post-1980	Pre-1980	Post-1980	Pre-1980	Post-1980
45-54	21.3%	13.3%	32.6%	19.7%	56.8%	75.5%
55-64	25.5%	14.3%	34.8%	19.2%	17.3%	52.5%

Source: 2001 National Survey of Veterans.

In response to NSV questions, veterans indicated whether they considered the general state of their health to be poor, good, very good, or excellent. Veterans also indicated the degree to which disabilities limited their work and whether or not they received employment income. The data in the table clearly show the SCD veterans in the post-1980 group reflect greater earnings capacity in terms of better health, less limitation from disabilities in their work most or all of the time, and receipt of employment income.

Selection of Comparison Groups

In this study, we use a standard statistical method (regression analysis) to measure earnings losses by calculating the expected earnings for different groups of veterans based on their human capital, as best we can measure it using data provided to us. A key question was whom or what to use as the comparison group.

Without any doubt, it is important to use veterans who were as similar as possible to the SCD population except for their SCD status. Our main analysis uses non-SCD

veterans as the comparison group. Both SCD and non-SCD populations are roughly similar across a number of important data dimensions as described above under “Description of the Data.” Their expected earnings, therefore, provides the best standard for measuring earnings losses. An overriding concern in conducting the analyses in this way was to ensure that any inferences we might draw would not be based upon differences in the populations. Using regression analysis to a large extent controls for differences in group characteristics and has accomplished this purpose.

Our analysis revealed earnings differences between non-SCD and SCD veterans that suggest that there are human capital differences between the two populations, particularly the length of military service. As shown earlier in this chapter, over 60 percent of veterans with SCDs served 11 years or longer while over 80 percent of non-SCD veterans served 10 years or less.

As a result, non-SCD veterans earn slightly less than SCD veterans, on average, even when including veterans at all CDD ratings. Non-SCD veterans under the age of 65 had average 2006 earnings of \$44,977. All SCD veterans, also under age 65, regardless of disability rating, averaged \$45,585. This includes a relatively small number of veterans rated at 100% (whose average 2006 earnings were only \$7,368) excluding the IU and SMC cases. Average 2006 earnings for veterans rated at 10% were \$49,295—over \$4,000 more than the non-SCD group.

This apparent anomaly can be partially explained by the fact that the comparison group includes veterans with non service-connected disabilities. Veterans with non service-connected disabilities should be in the comparison group as they reflect the general population of veterans who acquire disabilities as they age. Examples are arthritis and diabetes, which are common in the general population. Approximately 21 percent of non-SCD veterans from the 2001 NSV report that they have a disability (25 percent of pre-1980 veterans, and 8 percent of veterans released 1980 or later). There is no compelling reason to exclude non-SCD veterans who have acquired these conditions from our comparison group nor do we have the data to do so.

The lack of service connection does not change the basic fact that those disabilities can have an impact on earnings. Because we have no information about the nature or severity of those disabilities or how they might affect earnings capacity, however, we cannot begin to estimate the extent to which they might affect earnings levels nor were we asked to for this study.

Typical veterans who do not have service-connected disabilities but who have a normal distribution of non service-connected disabilities are essential for this study. Veterans with service-connected disabilities also have disabilities that are not service connected. Therefore, it is important to include such veterans in the comparison group so that we do not mistakenly attribute more earnings losses to the service-connected disabilities than actually exist. For the purpose of this study, it is essential to isolate and measure the impact of **just the service-connected disabilities**. Only by including a comparison group that is not 100% non-disabled can we ensure that this comparison is accurate and that our comparison group serves its full purpose—that is, a projection of what SCD

veterans *would have been earning* in the absence of service-connected disabilities, not in the absence of all disabilities.

Another key point is that many SCDs have little or no impact on earnings capacity, particularly at low rating levels. According to our analysis, the hearing condition tinnitus, for example, has no effect on earnings capacity. Tinnitus is among the top ten diagnostic codes for most frequent disability conditions for SCD veterans.

However, these factors likely do not explain all of the difference for the higher earnings of SCD veterans compared to the comparison non-SCD group. On the whole, we believe that the SCD group has additional human capital characteristics that are unavailable to us that would otherwise explain the difference. One data element not available for this study that could help control for human capital differences, particularly of a cognitive nature, is the AFQT score.

To better control for human capital differences, we selected as an additional comparison group the SCD population that has a combined degree of disability of 10%. We know from the analysis of earnings that the population of SCD veterans rated at 10% for CDD has higher average earnings than non-SCD veterans. To the extent possible, we controlled for some of the human capital differences that might explain the difference. We performed certain analyses using the 10% CDD veterans as the comparison group as well as using the non-SCD veteran group. Since we know that horizontal inequity exists across different service-connected disability diagnoses, we can assess those differences to the extent that we observe relative earnings losses among veterans with specific primary diagnoses, relative to the 10% CDD group. That is, our analysis suggests that the 10% CDD group on the whole does not experience earnings losses. This group therefore can possibly serve as the comparison group, allowing us to better detect diagnoses that are associated with earnings losses. As shown later, we did not choose one comparison group over the other. Both are useful and instructive. Where appropriate, we show the results of both, using both to better bracket recommendations about possible revisions to the rating system.

What Is the Correct Dependent Variable?

In attempting to assess the question of the impact of disability upon earnings, there were several possible measures of earnings to consider. Measures we considered included:

- 2006 Earnings (provided by SSA) — earnings of only those employed and earnings averaged across all cell members (employed and not employed)
- An average of 2006 and earlier year earnings (to compensate for instability in the employment rate)
- Earnings plus estimated earnings-based benefits¹⁰⁰

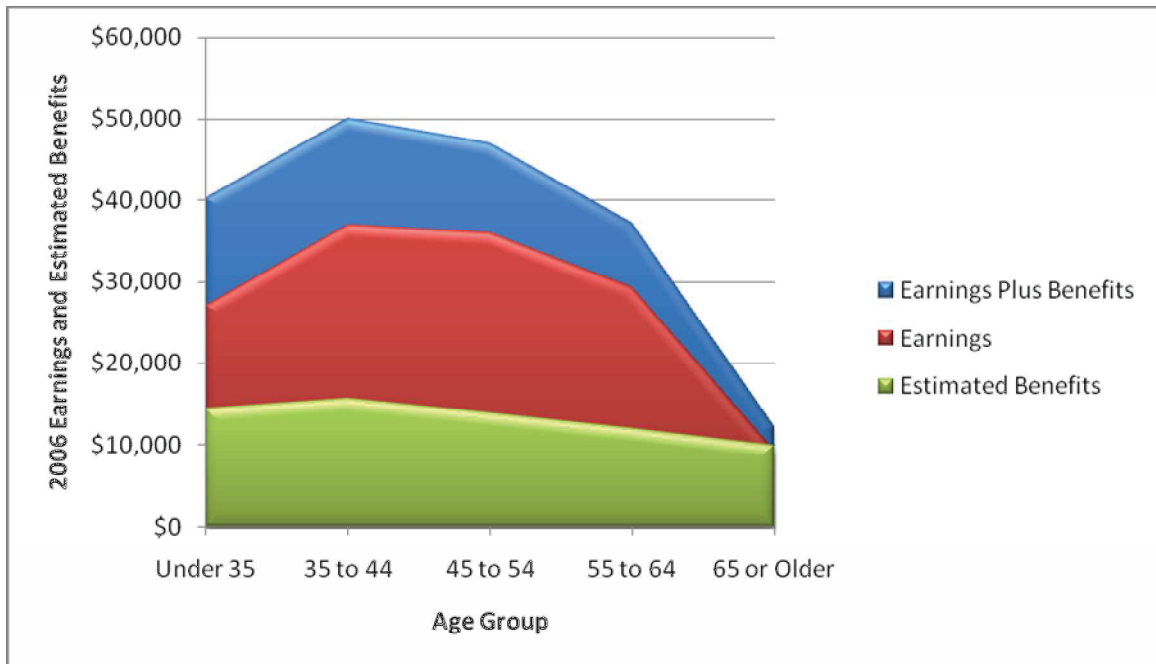
¹⁰⁰ CNAC's study for the VDBC included estimates of earnings-based benefits.

- Present value of lifetime earnings (plus earnings-based benefits)
- Earnings plus VA compensation (for measuring horizontal and vertical equity of the VA Disability Compensation Program)

Earnings Data Alone. We considered using only earnings data without adding estimated earnings-based benefits. The only actual data we have are earnings data provided by SSA. Benefits data must be estimated based on the amount of earnings and assumptions about the distribution of veterans by age and employer type. Because benefits are not actually part of the data we received from SSA, we need to ensure that any variation we might attribute or otherwise attempt to explain in our analysis was not introduced in any way that might affect the results. In this view, we would rely completely on the actual earnings data from SSA.

Earnings Plus Employer-Provided Benefits. Employer-provided benefits are a significant proportion of total compensation, as shown in Figure VI-6, and ultimately affect the amount of disposable income available for living expenses and investments for retirement. Consider, for example, a non-SCD veteran compared to a veteran with a SCD rated at 100% that prevents the latter from working. If an SCD veteran is to generate retirement income above and beyond disability benefits and social security, then he or she has to divert some of the VA disability compensation into investments for retirement. Such investments represent a reduction in otherwise available disposable income.

For a non-SCD veteran, the employer contribution portion of such investments represents expenditures that employed veterans do not need to make. For purposes of comparison, it is arguably appropriate to include employer contributions to retirement plans as *de facto* income, since they effectively increase the otherwise available disposable income of non-SCD veterans. This difference between non-SCD veterans and SCD veterans affects any conclusions we might draw about whether VA benefits adequately compensate for lost earnings and thus how generous the VA disability benefits should be. We should also point out that we do not have data on actual benefits provided and include only average estimates of benefits based on the base earnings of veterans in a given cell.

Figure VI-6. 2006 Earnings and Estimated Benefits by Age for All Veterans in Study

Source: 2006 earnings data provided by the Social Security Administration. Benefits were estimated using Tables 5 and 6 (pp. 27-28) from CNAC's final report to the Veterans' Disability Benefits Commission. Estimates include all veterans in our data set.

Benefit levels are not a simple linear proportion of earnings. They vary by age and by earnings levels. As a result, they affect the relative distribution of earnings at different ages and earning levels. In estimating the effects of disability type and rating level on earnings, the decision of whether to include benefits does not materially affect most of the analysis results. However, it does affect the exact dollar amounts, and, in very close cases—when a dollar amount is relatively low, it also possibly can affect whether the analysis detects an earnings loss. Hence, whether to include benefits is an important consideration that needs to be weighed carefully.

Employment and Earnings. We also considered whether to use a two-stage analysis—first analyzing the effects of service-connected disabilities on employment rate and then analyzing the effects on earnings among earners only, as opposed to earnings averaged across all veterans (employed and not employed) in analytical cells. As the preceding section shows, these are distinct effects. Ultimately, however, the question is what a two-stage analysis would provide for decisionmakers in their decision-making process.

The language of the enabling legislation historically governing the VA Disability Compensation Program focuses on the average effects of service-connected disabilities on earnings. Hence, it seemed important to put the main focus on the overall average effects of disability on earnings except in the face of overwhelming evidence that dividing veterans into earners and non-earners might provide a more effective compensation system for veterans. Our analysis did not find such evidence. While we did find separate and distinct employment and earnings effects, controlling for

employment rate does not “remove” the earnings effects. Even among earners, where we see earnings losses, they essentially mirror employment rate reductions. It would be useful and instructive to carry this to the next level by determining the extent to which service-connected disabilities affect the part-time/full-time employability of veterans, but that level of data was not available to us.

Had the effect been nearly exclusively through employment rate rather than there being separate earnings effects, then it might make sense to recommend that VA revise its rating system to better reflect the employability of veterans with service-connected disabilities. In presenting the results of our analysis, we present employment rates alongside average earnings losses.

Multi-year Data. We also considered whether it might be useful to take the average earnings over several years (three or five years, for example), rather than a single year’s earnings. Doing so might compensate for the volatility of earnings due to changes in employment and other factors. On the other hand, averaging earnings would introduce additional complexities and even errors in assumptions. Earnings for SCD veterans who have been receiving VA compensation for less than the averaged period could then include earnings levels that occurred before the SCD rating and possibly before the disability occurred.

For example, consider the results if we were to take average earnings over a five-year period. Five-year earnings for veterans whose disabilities did not fully manifest until three years prior presumably would include pre-disability earnings. This would introduce a distortion leading to underestimated earnings losses.

Using three or five years’ worth of earnings and employment data would complicate the process methodologically as well and arguably would reduce the sensitivity of this key variable by removing meaningful variation (on top of inflating earnings estimates for SCD veterans). To the extent that employment and earnings vary from year to year, this very volatility is useful in our analysis in that it can detect factors unrelated to the disability and beyond direct measurement for this study. Our data set is large enough that such variation is more useful than harmful, and there is no need to smooth the earnings data by a process that is somewhat artificial and possibly capable of masking earnings losses.

Moreover, because we are using cell-based data rather than individual-based data, we are already using earnings averages. Each cell with earnings data contains data for at least ten veterans. To the extent that earnings data varies within cells for individuals over a three- or five-year period, it already varies in our data set by virtue of having multiple veterans within cells without introducing additional complexities. Averaging earnings over several years would also complicate the calculation of mean age and the placement of cell occupants into age groups, particularly at the margins. This is especially troublesome for veterans at important boundary ages—such as age 18, when five years of prior earnings data would be questionable or at age 65, when we might be co-mingling retirement with non-retirement periods. For the latter, we are already

doing that to a certain extent, since we do not have an indicator for retirement. We chose to not further compound the complexities.

Lifetime Earnings Losses. If instead of analyzing data from a single year, the analysis examined the present value of lifetime earnings, it would be important to include benefits in the calculation. As those benefits for non-SCD veterans largely represent investments towards retirement and health care, a measure of both earnings and benefits become our only means of being able to compare and contrast non-SCD and SCD veterans throughout their projected life expectancies. Accumulated earnings-based benefits effectively are a proxy for direct measurement of retirement income, just as VA compensation might be considered a proxy for retirement income after reaching the age of 65, since VA compensation is for life and does not stop at retirement. This study does not include an analysis of lifetime earnings because of the same complexities associated with multi-year earnings and study time constraints.

Earnings and Benefits plus VA Disability Benefits. Looking at earnings losses without VA compensation (by disability type and level) provides a picture of the horizontal and vertical equity of the rating system. This analysis assesses the degree to which earnings losses occur and how those earnings losses vary with respect to disability type and rating level.

The final dependent variable—earnings plus VA compensation—is essential for purposes of analyzing the adequacy and the equity of the VA disability benefits. Actual earnings of the SCD veterans are added to their VA disability benefits, and the totals are compared to expected earnings (that is, earnings that each group of SCD veterans would have achieved had the disability not occurred). This lets us assess the degree to which VA benefits compensate for earnings losses associated with different types of disability and rating levels.