From John Burton's Workers' Compensation Resources

Workers' Compensation Policy Review

Vol 7 Issue 2 March/April 2007

In This Issue:

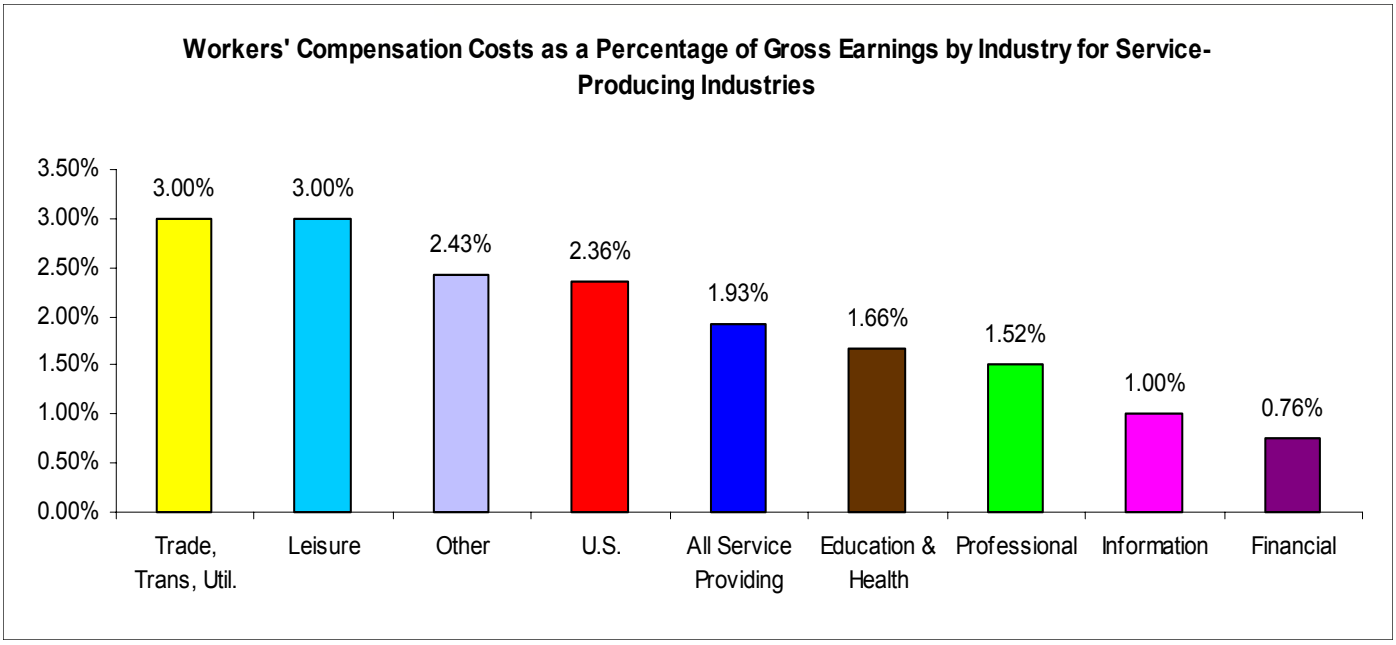
Featured Topics

This issue is being distributed in June 2007. The next issue will follow shortly.

Summary of the Contents

Workers' compensation costs vary among employers due to factors such as a firm's geographical location, industry, and union status. In the lead article, Florence Blum and John Burton analyze the Bureau of Labor Statistics data on employers' costs in 2006. As shown below, the workers' compensation costs for all employers in the private sector averaged 2.36 percent of payroll. In service-providing industries, costs averaged 1.93 percent of payroll, but the range among specific service industries was substantial, varying from 3.0 percent of payroll in trade, transportation, and utilities and 3.0 percent in leisure and hospitality to 0.76 percent of payroll in financial industries.

The treatment of wounded veterans has received considerable attention in recent months, in part because of the deficiencies in providing rehabilitation services at the Walter Reed hospital. The Veterans' Disability Compensation Program has also been criticized. A revised version of John Burton's testimony in April 2007 to The President's Commission on Care for America's Returning Wounded Warriors is included in this issue. Burton was asked to provide lessons from civilian disability programs that are applicable to the Veterans' Disability Compensation Program, and he has largely drawn on experience in workers' compensation to provide seven principles for the cash benefits in a model disability compensation system.



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Workers' Compensation Costs in 2006: Regional, Industrial, and Other Variations

by Florence Blum and John F. Burton, Jr.

The employers' costs of workers' compensation vary among industries and occupations, according to 2006 data published by the Bureau of Labor Statistics (BLS), which is part of the U.S. Department of Labor.[1] The BLS data also indicate that workers' compensation costs differ by establishment size, by union-nonunion status, and by geographical location within the United States.

The BLS data used in this article provide information on the employers' costs per hour worked for wages and salaries and for benefits (including workers' compensation and other legally required benefits). The BLS data are published every quarter, and we calculated the 2006 annual average by averaging the BLS results for March, June, September, and December of 2006.[2]

Cost Differences by Region

Workers' compensation costs as a percentage of wages and salaries are shown for the four census regions and the United States in Figure A and Table 1. (The states that comprise the four census regions are shown in the Notes to Table 1.) The Employers' workers' compensation costs are above the national average in one region, and below the national average in three regions.[3] What is perhaps surprising is the ranking of the regions, and in particular the finding that the Northeast is the region with the lowest workers' compensation costs (as a percentage of gross earnings).

The derivation of the national and regional figures shown in Figure A helps explain these findings. The BLS data used to construct Figure A are shown in Table 1. *Total remuneration* per hour worked averaged $25.36 for employers in private industry throughout the United States in 2006 (row 1).[4] The $25.36 of total remuneration includes *gross earnings* that averaged $20.38 per hour (row 2) and *benefits other than pay* that averaged $4.98 per hour (row 6).

The gross earnings figure includes wages and salaries as well as paid leave and supplemental pay. The terms *gross earnings* and *payroll* are used interchangeably in this article.

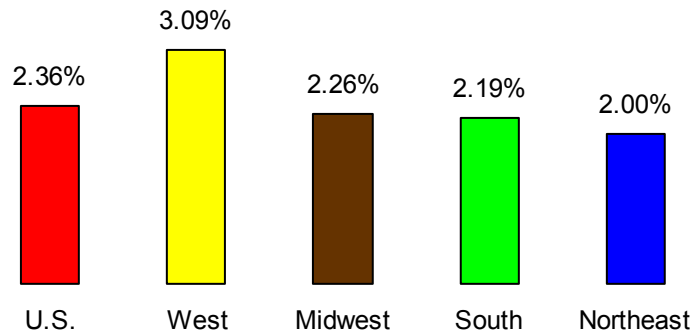
Benefits other than pay include employer contributions for insurance, retirement and savings, legally required benefits, and other benefits.[5] *Workers' compensation*, which averaged $0.48 per hour worked (row 9A), is one of the *legally required benefits* that are included in the BLS's total figure of $2.17 per hour for that category (row 9).

We used the BLS data in rows (1), (2), and (9A) of Table 1 to compute the figures listed in rows (11) and (12) of that table. For the private sector in the United States in 2006, workers' compensation expenditures ($0.48) were 1.89 percent of total remuneration ($25.36) and 2.36 percent of gross earnings (or payroll) ($20.38).

The same procedure used to calculate workers' compensation as a percentage of gross earnings (row 12 of Table 1) for the United States -- namely, to divide the workers' compensation expenditures per hour (row 9A) by gross earnings per hour (row 2) -- was used to calculate the regional results for workers' compensation as a percentage of gross earnings shown in Figure A and in row (12) of Table 1. Thus, for the Northeast, workers' compensation expenditures of $0.47 per hour were divided by gross earnings of $23.39 per hour to produce the figure of 2.00 percent -- which is workers' compensation costs as a percentage of gross earnings in the Northeast in 2006.

An alternative way to measure regional differences in workers' compensation costs is shown in Figure B.

Figure A - Workers' Compensation Costs as a Percentage of Gross Earnings by Region - 2006



Source: Table 1, Row 12.

Table 1
Workers' Compensation Costs by Census Region in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		U.S.	Northeast	South	Midwest	West
(1)	Total Remuneration	25.36	28.99	22.57	24.89	26.98
(2)	Gross Earnings	20.38	23.39	18.29	19.69	21.71
(3)	Wages and Salaries	17.91	20.25	16.28	17.26	19.12
(4)	Paid Leave	1.73	2.19	1.43	1.68	1.80
(5)	Supplemental Pay	0.74	0.95	0.58	0.75	0.79
(6)	Benefits Other Than Pay	4.98	5.60	4.28	5.19	5.27
(7)	Insurance	1.88	2.10	1.63	2.06	1.88
(8)	Retirement Benefits	0.92	1.09	0.76	1.03	0.91
(9)	Legally Required Benefits	2.17	2.42	1.89	2.11	2.49
(9A)	Workers' Compensation	(0.48)	(0.47)	(0.40)	(0.45)	(0.67)
(10)	Other Benefits	0.00	0.00	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	1.61%	1.77%	1.79%	2.48%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	2.00%	2.19%	2.26%	3.09%

Notes: See Notes for Tables 1 - 6 on page 14.
In addition, for Table 1:

The **Northeast** Census Region is comprised of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

The **South** Census Region is comprised of Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

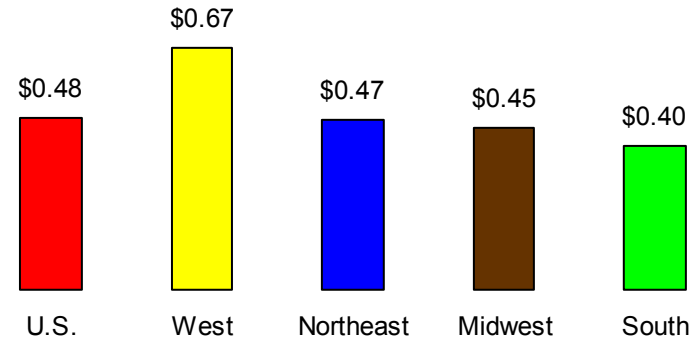
The **Midwest** Census Region is comprised of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

The **West** Census Region is comprised of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 12.

Workers' compensation is measured as costs per hour worked, as shown in row (9A) of Table 1. In contrast to the results presented in Figure A -- which indicated that the Northeast had the lowest workers' compensation costs (as a percentage of gross earnings) -- the results presented in row (9A) of Table 1 and in Figure B indicate that the Northeast's workers' compensation costs ($0.47 per hour) were greater than the Midwest's ($0.45 per hour) and the South's ($0.40 per hour) workers' compensation costs per hour worked.

Figure B - Workers' Compensation Costs Measured as Employer Expenditures per Hour Worked by Region - 2006



Source: Table 1, Row 9A.

Appendix A examines how the regions can switch their relative costs compared to the United States, depending on which measure of workers' compensation costs is used. That interregional differences in workers' compensation can vary depending on which measure of workers' compensation costs is used leads to

an obvious question: Which is the "proper" measure that should be used to compare regions in terms of their workers' compensation costs: workers' compensation costs as a percentage of gross earnings (as shown in Figure A) or workers' compensation costs per hour worked (as shown in Figure B)?

In our view, no measure of workers' compensation costs is invariably preferable for all comparisons. Rather, the choice of measurement depends on the purpose of the comparison. For example, an employer seeking a state or region with the least expensive operating environment may decide that workers' compensation costs per hour is the best measure of costs. In contrast, a policymaker concerned about adequacy of benefits may decide that workers' compensation costs as a percentage of payroll is the best measure.[6]

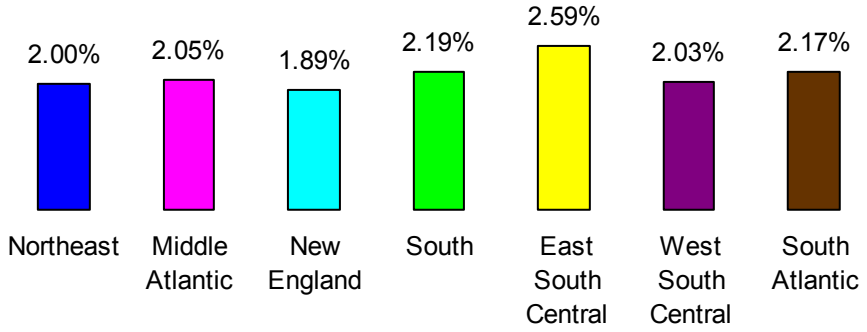
In the remainder of this article, we confine our discussion to workers' compensation costs as a percentage of gross earnings (or payroll). This format reflects the most common approach in workers' compensation studies. The reader who wishes to make comparisons in terms of workers' compensation costs per hour will be able to do so, however, because hourly cost data are also presented in all of the tables in this article.

Cost Differences by Census Division

The BLS data on the employers' costs of workers' compensation are available for the nine census divisions shown in Table 2 and in Figures C and D. The four census regions analyzed in the previous sections are composed of the nine census divisions examined in this section. (The states that comprise the nine census regions are shown in the Notes to Table 2.)

Panel A of Table 2 and Figure C provide data on the employers' costs of workers' compensation in the Northeast region and its two components (the New England and Middle Atlantic divisions) and the South region and its three components (the South Atlantic, East South Central, and West South Central divisions).

Figure C - Workers' Compensation Costs as a Percentage of Gross Earnings by the Northeast and South Census Regions and by Divisions in those Regions - 2006

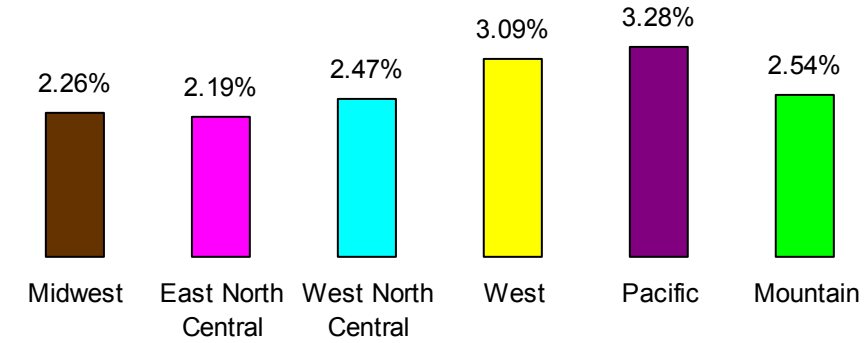


Source: Table 2, Panel A, Row 12.

One interesting result is that the census regions with the highest employers' costs as a percent of payroll (East South Central and South Atlantic) are part of the South Region and the census region with the lowest employers' costs (New England) is part of the Northeast region.

Panel B of Table 2 and Figure D provide data on the employers' costs of workers' compensation in the Midwest region and its two components (the East North Central and West North Central divisions) and the West region and its two components (the Mountain and Pacific divisions). One interesting result shown in Figure D is that workers' compensation costs as a percent of payroll are higher in both of the census divisions that are part of the West region than in either of the census divisions that are part of the Midwest region.

Figure D - Workers' Compensation Costs as a Percentage of Gross Earnings by the Midwest and West Census Regions and by the Divisions in those Regions - 2006



Source: Table 2, Panel B, Row 12.

Table 2
Workers' Compensation Costs by Census Region and Division in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

Panel A: Northeast and South Regions

		U.S.	Northeast	New England	Middle Atlantic	South	South Atlantic	East South Central	West South Central
(1)	Total Remuneration	25.36	28.99	28.27	29.30	22.57	23.74	19.68	22.14
(2)	Gross Earnings	20.38	23.39	22.95	23.58	18.29	19.29	15.70	17.99
(3)	Wages and Salaries	17.91	20.25	20.07	20.33	16.28	17.17	14.03	15.97
(4)	Paid Leave	1.73	2.19	2.06	2.25	1.43	1.55	1.14	1.40
(5)	Supplemental Pay	0.74	0.95	0.83	1.00	0.58	0.57	0.53	0.63
(6)	Benefits Other Than Pay	4.98	5.60	5.32	5.73	4.28	4.45	3.98	4.16
(7)	Insurance	1.88	2.10	1.93	2.17	1.63	1.68	1.64	1.55
(8)	Retirement Benefits	0.92	1.09	1.01	1.13	0.76	0.79	0.58	0.78
(9)	Legally Required Benefits	2.17	2.42	2.38	2.43	1.89	1.98	1.76	1.83
(9A)	Workers' Compensation	(0.48)	(0.47)	(0.43)	(0.48)	(0.40)	(0.42)	(0.41)	(0.37)
(10)	Other Benefits	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	1.61%	1.53%	1.65%	1.77%	1.76%	2.07%	1.65%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	2.00%	1.89%	2.05%	2.19%	2.17%	2.59%	2.03%

Panel B: Midwest and West Regions

		U.S.	Midwest	East North Central	West North Central	West	Mountain	Pacific
(1)	Total Remuneration	25.36	24.89	26.19	21.89	26.98	23.31	28.52
(2)	Gross Earnings	20.38	19.69	20.69	17.42	21.71	18.91	22.88
(3)	Wages and Salaries	17.91	17.26	18.08	15.39	19.12	16.84	20.08
(4)	Paid Leave	1.73	1.68	1.80	1.43	1.80	1.42	1.96
(5)	Supplemental Pay	0.74	0.75	0.82	0.60	0.79	0.66	0.84
(6)	Benefits Other Than Pay	4.98	5.19	5.51	4.47	5.27	4.40	5.64
(7)	Insurance	1.88	2.06	2.19	1.75	1.88	1.65	1.98
(8)	Retirement Benefits	0.92	1.03	1.13	0.81	0.91	0.71	0.99
(9)	Legally Required Benefits	2.17	2.11	2.19	1.92	2.49	2.05	2.67
(9A)	Workers' Compensation	(0.48)	(0.45)	(0.45)	(0.43)	(0.67)	(0.48)	(0.75)
(10)	Other Benefits	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	1.79%	1.73%	1.97%	2.48%	2.06%	2.63%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	2.26%	2.19%	2.47%	3.09%	2.54%	3.28%

Notes: See Notes for Tables 1 - 6 on page 14.
In addition, for Table 2:
The **New England** Census Division is comprised of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
The **Middle Atlantic** Census Division is comprised of New Jersey, New York, and Pennsylvania.
The **South Atlantic** Census Division is comprised of Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia.
The **East South Central** Census Division is comprised of Alabama, Kentucky, Mississippi, and Tennessee.
The **West South Central** Census Division is comprised of Arkansas, Louisiana, Oklahoma, and Texas.
The **East North Central** Census Division is comprised of Illinois, Indiana, Michigan, Ohio,and Wisconsin.
The **West North Central** Census Division is comprised of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota.
The **Mountain** Census Division is comprised of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.
The **Pacific** Census Division is comprised of Alaska, California, Hawaii, Oregon, and Washington.

Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 12.

Table 3A
Workers' Compensation Costs by Major Industry Groups in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		All Workers	All Goods-Producing	Construction	Manufacturing
(1)	Total Remuneration	25.36	29.76	28.91	29.83
(2)	Gross Earnings	20.38	22.77	22.05	22.93
(3)	Wages and Salaries	17.91	19.72	19.89	19.45
(4)	Paid Leave	1.73	1.88	1.04	2.30
(5)	Supplemental Pay	0.74	1.18	1.12	1.18
(6)	Benefits Other Than Pay	4.98	6.99	6.87	6.90
(7)	Insurance	1.88	2.66	2.12	2.90
(8)	Retirement Benefits	0.92	1.51	1.43	1.47
(9)	Legally Required Benefits	2.17	2.81	3.32	2.54
(9A)	Workers' Compensation	(0.48)	(0.88)	(1.38)	(0.62)
(10)	Other Benefits	0.00	0.00	*	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	2.97%	4.76%	2.07%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	3.88%	6.24%	2.69%

Notes: See Notes for Tables 1 - 6 on page 14.
In addition, for Table 3A: **Goods-Producing** includes mining, construction, and manufacturing. The agriculture, forestry, farming, and hunting sector is excluded.

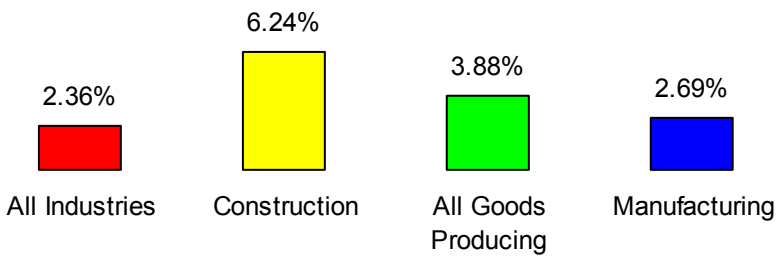
Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 11.

Among the nine census divisions included in Figures C and D, a striking and somewhat surprising result is that the two census divisions with the highest workers' compensation costs as a percent of payroll (namely the Pacific and Mountain divisions) are both in the West census region, while the census division with the lowest workers' compensation costs as a percent of payroll (namely the New England division) is in the Northeast census region. The Pacific census division is distinguished by having both the highest workers' compensation costs measured as dollars per hour worked ($0.75) and the highest workers' compensation costs as a percent of payroll (3.28 percent) among the nine census divisions (Table 2, Panels A and B, lines (9A) and (12)). A snap quiz: does the presence of California in the Pacific census division have anything to do with these results?

Cost Differences by Industry

The BLS data for 2006 also reveal that employers' costs of workers' compensation as a percentage of gross earnings vary among industries in the private sector (Figures E and F and row 12 of Tables 3A and 3B). The national average for employers' workers' compensation costs was 2.36 percent of gross earnings in 2006. (This all-industry average, in row 12 and the "all workers" column of Tables 3A and 3B, is the same as the U.S. average in Table 1.)

Figure E - Workers' Compensation Costs as a Percentage of Gross Earnings by Industry for Goods Producing Industries - 2006



Source: Table 3A, Row 12.

Table 3B
Workers' Compensation Costs by Major Industry Groups in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		All Service Providing	Trade Transportation & Utilities	Information	Financial Activities	Professional & Business Services	Education & Health Services	Leisure & Hospitality	Other Services
(1)	Total Remuneration	24.26	21.24	37.72	34.24	29.68	27.13	10.92	21.78
(2)	Gross Earnings	19.78	16.90	30.46	27.79	24.73	22.17	9.10	17.78
(3)	Wages and Salaries	17.46	15.11	25.96	23.23	21.78	19.61	8.60	15.96
(4)	Paid Leave	1.69	1.28	3.55	2.77	2.15	2.05	0.36	1.49
(5)	Supplemental Pay	0.63	0.51	0.95	1.79	0.81	0.51	0.14	0.33
(6)	Benefits Other Than Pay	4.48	4.34	7.26	6.46	4.94	4.96	1.82	4.01
(7)	Insurance	1.69	1.63	3.01	2.60	1.72	2.03	0.51	1.51
(8)	Retirement Benefits	0.78	0.76	1.54	1.58	0.86	0.77	0.10	0.56
(9)	Legally Required Benefits	2.02	1.95	2.71	2.29	2.36	2.17	1.21	1.95
(9A)	Workers' Compensation	(0.38)	(0.51)	(0.31)	(0.21)	(0.38)	(0.37)	(0.27)	(0.43)
(10)	Other Benefits	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.58%	2.39%	0.81%	0.61%	1.26%	1.35%	2.50%	1.99%
(12)	Workers' Compensation As Percentage of Gross Earnings	1.93%	3.00%	1.00%	0.76%	1.52%	1.66%	3.00%	2.43%

Notes: See Notes for Tables 1 - 6 on page 14.
In addition, for Table 3B: **Service-Providing** includes utilities; wholesale trade; transportation and warehousing; information; finance and insurance; real estate and rental and leasing; professional and technical services; management of companies and enterprises; administrative and waste services; educational services; health care and social assistance; arts, entertainment and recreation; accommodation and food services; and other services, except public administration.

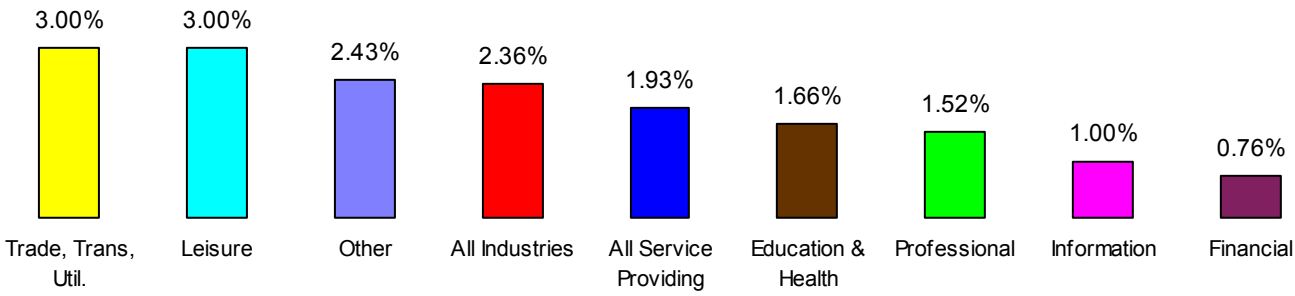
Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 11.

Workers' compensation data on industries throughout the United States can be compared at two levels of disaggregation. First, a distinction can be made between "goods-producing" industries (mining, construction, and manufacturing) and "service-providing" industries (including transportation, communication, and public utilities; wholesale and retail trade; finance, insurance, and real estate; services; and other service industries as shown in the notes to Tables 3A and 3B). In 2006, national workers' compensation costs were, on average, 3.88 percent of gross earnings (payroll) for all goods-producing industries and 1.93 percent of gross earnings (payroll) for all service-providing industries (*see* row 12 of Tables 3A and 3B and Figures E and F).

Workers' compensation data on industries can be further disaggregated to show employers' costs for specific goods-producing industries and specific service-providing industries. As shown in Figure E and Table 3A, the employers' costs of workers' compensation for all goods-producing industries was 3.88 percent of payroll, and for specific goods-producing industries ranged from 6.24 percent of payroll for the construction industry to 2.69 percent of payroll for the manufacturing industry.

In a similar manner, as shown in Figure F and Table 3B, the employers' costs of workers' compensation for all service-providing industries was 1.93 percent of payroll, and for specific service-providing industries

Figure F - Workers' Compensation Costs as a Percentage of Gross Earnings by Industry for Service-Providing Industries - 2006



Source: Table 3A and 3B, Row 12.

Table 4
Workers' Compensation Costs by Major Occupational Groups in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		All Workers	Management Professional & Related Occupations	Sales & Office Occupations	Service Occupations	Nat. Resources Construction & Maintenance Occupations	Production Transportation & Material Moving Occupations
(1)	Total Remuneration	25.36	44.99	20.17	12.47	28.56	21.54
(2)	Gross Earnings	20.38	37.16	16.32	10.14	21.69	16.43
(3)	Wages and Salaries	17.91	31.91	14.55	9.37	19.40	14.36
(4)	Paid Leave	1.73	3.80	1.30	0.56	1.39	1.30
(5)	Supplemental Pay	0.74	1.46	0.48	0.21	0.90	0.77
(6)	Benefits Other Than Pay	4.98	7.83	3.84	2.34	6.87	5.11
(7)	Insurance	1.88	2.80	1.62	0.83	2.32	2.09
(8)	Retirement Benefits	0.92	1.84	0.58	0.18	1.47	0.84
(9)	Legally Required Benefits	2.17	3.20	1.65	1.32	3.08	2.18
(9A)	Workers' Compensation	(0.48)	(0.39)	(0.25)	(0.33)	(1.20)	(0.74)
(10)	Other Benefits	0.00	0.00	0.00	*	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	0.86%	1.21%	2.67%	4.21%	3.42%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	1.04%	1.50%	3.28%	5.55%	4.49%

Notes: See Notes for Tables 1 - 6 on page 14.

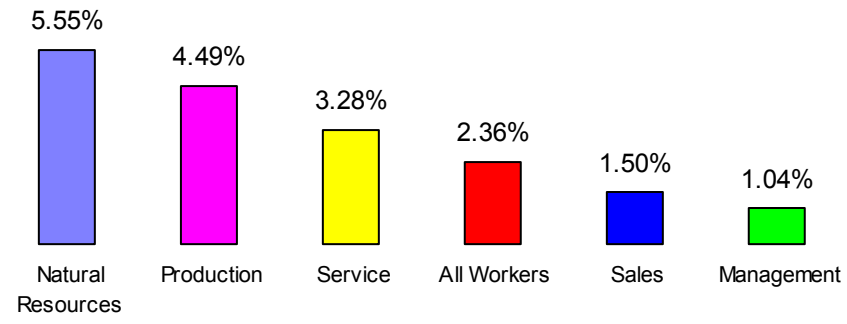
Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Table 9.

ranged from 3.00 percent of payroll for trade, transportation, and utility industries and 3.00 percent of payroll for leisure and hospitality to 0.76 percent of payroll for financial industries. There is a wide disparity of workers' compensations costs for employers within the service sector. Of particular interest, three specific service-producing industries (trade, transportation, and utilities, with workers' compensation costs at 3.00 percent of payroll; leisure, with costs at 3.00 percent of payroll; and other services, with costs at 2.43 percent of payroll) have higher workers' compensation than the average for all employers (namely 2.36 percent of payroll).

Cost Differences by Occupation

The employers' costs of workers' compensation as a percentage of payroll also vary among major occupational groups in the private sector, as shown in Figure G and in Table 4. The national average cost of employers' workers' compensation was 2.36 percent of payroll in 2006. (*See* Table 4, row 12, "All Workers" column. The U.S. average is the same in all tables in this article.) Three occupational groups had, on average, workers' compensation costs that exceeded the national average: natural resources, construction, and maintenance workers, for whom workers' compensation costs averaged 5.55 percent of payroll; production, transportation, and material moving workers, for whom workers' compensation costs averaged 4.49 percent of payroll; and service workers, for whom employers' workers' compensation costs averaged 3.28 percent of payroll. In sharp contrast, employers' workers' compensation costs for sales and office workers were, on average, only 1.50 percent of payroll, and workers in management positions had workers' compensation costs that were only 1.04 percent of payroll in 2006. (*See* Table 4, row 12 and Figure G). These substantial cost

Figure G - Workers' Compensation Costs as a Percentage of Gross Earnings by Major Occupational Group - 2006



Source: Table 4, Row 12.

Table 5
Workers' Compensation Costs by Establishment Employment Size in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		All Workers	1-49 Workers	50-99 Workers	100-499 Workers	500 or More Workers
(1)	Total Remuneration	25.36	20.34	21.55	26.20	36.10
(2)	Gross Earnings	20.38	16.76	17.24	20.90	27.57
(3)	Wages and Salaries	17.91	15.14	15.48	18.34	24.11
(4)	Paid Leave	1.73	1.08	1.22	1.80	3.16
(5)	Supplemental Pay	0.74	0.54	0.55	0.76	0.31
(6)	Benefits Other Than Pay	4.98	3.58	4.32	5.30	7.62
(7)	Insurance	1.88	1.22	1.64	2.09	3.02
(8)	Retirement Benefits	0.92	0.44	0.64	0.99	1.93
(9)	Legally Required Benefits	2.17	1.92	2.04	2.22	2.68
(9A)	Workers' Compensation	(0.48)	(0.48)	(0.54)	(0.50)	(0.43)
(10)	Other Benefits	0.00	0.00	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	2.36%	2.48%	1.89%	1.20%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	2.86%	3.10%	2.37%	1.57%

Notes: See Notes for Tables 1 - 6 on page 14.

Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 14.

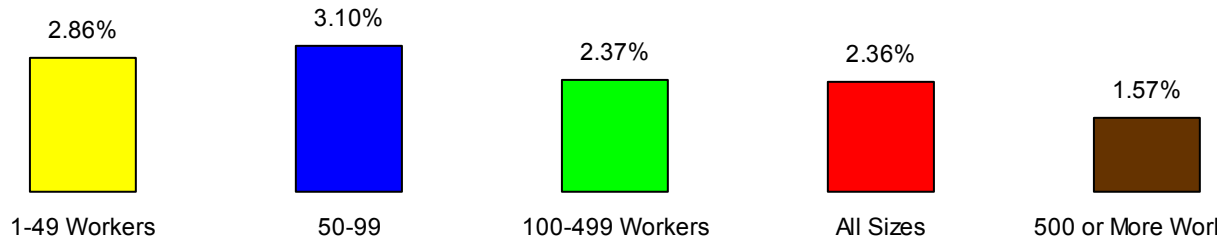
differences presumably reflect the differences in the number and severity of workplace injuries and diseases experienced by workers in these occupations.

Cost Differences by Establishment Size

An establishment is defined as an economic unit that: 1) produces goods or services at a single location (such as a factory or store) and 2) is engaged in one type of economic activity.[7] Many firms (or companies) thus consist of more than one establishment.

The BLS data on the employers' costs of workers' compensation allow comparisons among establishments of various sizes (as measured by number of employees). As shown in Figure H and in Table 5, there is a general tendency for workers' compensation costs to decline with increasing establishment size. The national average for employers' workers' compensation costs across all establishments was 2.36 percent of payroll. Those establishments with fewer than 50 employees had workers' compensation costs that, on average, were 2.86 percent of gross earnings in 2006; workers' compensation costs in establishments with 50 to 99 employees were 3.10 percent of payroll; and

Figure H - Workers' Compensation Costs as a Percentage of Gross Earnings by Establishment Employment Size - 2006



Source: Table 5, Row 12.

Table 6
Workers' Compensation Costs by Bargaining Status in 2006
for Employers in Private Industry
(In Dollars Per Hours Worked)

		All Workers	Union	Nonunion
(1)	Total Remuneration	25.36	34.88	24.24
(2)	Gross Earnings	20.38	25.44	19.78
(3)	Wages and Salaries	17.91	21.61	17.48
(4)	Paid Leave	1.73	2.67	1.61
(5)	Supplemental Pay	0.74	1.16	0.69
(6)	Benefits Other Than Pay	4.98	9.45	4.45
(7)	Insurance	1.88	3.92	1.65
(8)	Retirement Benefits	0.92	2.45	0.74
(9)	Legally Required Benefits	2.17	3.08	2.07
(9A)	Workers' Compensation	(0.48)	(0.91)	(0.43)
(10)	Other Benefits	0.00	0.00	0.00
(11)	Workers' Compensation As Percentage of Remuneration	1.89%	2.61%	1.77%
(12)	Workers' Compensation As Percentage of Gross Earnings	2.36%	3.58%	2.17%

Notes: See Notes for Tables 1 - 6 on page 14.

Source: *Employer Costs for Employee Compensation Historical Listing (Quarterly), 2004-2006 (March 29, 2007),* Tables 9 and 10.

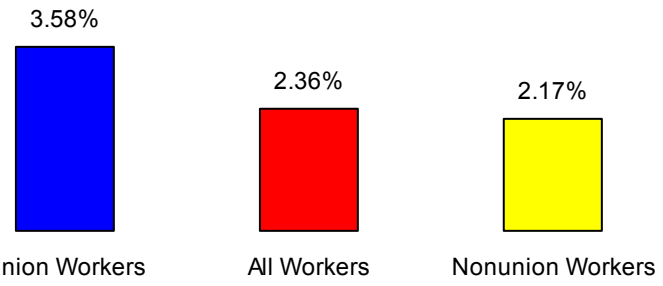
workers' compensation costs in establishments with 100 to 499 workers were 2.37 percent of payroll -- all above the national (all-establishments) average. In contrast, establishments with 500 or more workers had costs that averaged 1.57 percent of payroll -- well below the national (all-establishments) average.

Cost Differences by Bargaining Status

The employers' costs of workers' compensation as a percentage of gross earnings also vary between unionized and nonunionized workers, as shown in Figure I and in Table 6. The employers' costs of workers' compensation for unionized workers in 2006 was 3.58 percent of payroll and the comparable figure for nonunionized workers was 2.17 percent. The national average (unionized and nonunionized workers) was 2.36 percent. (*See* Table 6, row 12.)

One possible explanation for these cost differences between nonunionized and unionized workers is that unions have been more successful in organizing workers in relatively hazardous industries, such as mining, construction, and manufacturing, than they have been in organizing other industries that have relatively fewer workplace injuries and diseases. Thus, the higher costs are not due to unions, but are instead a reflection of the elevated risks of workplace injuries and diseases found in the industries that unions have organized. Another possible explanation is that unions provide information and assistance to members who are injured on the job, thus increasing the likelihood that unionized members will receive workers' compensation benefits, which in turn increases the employers' costs of workers' compensation for those workers.

Figure I - Workers' Compensation Costs as a Percentage of Gross Earnings by Bargaining Status - 2006



Source: Table 6, Row 12.

Conclusions

The employers' costs of workers' compensation measured as a percentage of payroll (or measured as costs per hour) vary systematically by region and census division, by industry group, by occupational, by establishment size, and by bargaining status. The information derived from the BLS data should be useful to firms trying to place their own workers' compensation costs in perspective and to policymakers attempting to assess the costs of the workers' compensation programs in a particular jurisdiction relative to costs elsewhere. Ideally, the BLS data will be expanded in future years to present even greater detail by industry, occupation, and (in particular) by individual states.

ENDNOTES

1. The BLS data used in this article were published in U.S. Department of Labor 2007. The national 2006 data for private industry employees, state and local employees, and all non-federal employees were analyzed in Burton 2007. The previous article analyzing regional, industrial, and other variations is Blum and Burton 2006.

2. The numbers of private sector establishments in the quarterly samples in 2006 were approximately 11,000. The number of establishments in the state and local sector was approximately 800 for each of the quarterly samples in 2006.

3. Often, two regions will be above the national average and the remaining two regions will be below the national average. However, in 2006 workers' compensation costs in one region (the West) were very high compared to the national average, while the costs in the other three regions were only moderately lower than the national average. As a result, three regions had costs below the national average and only one region had costs above the national average in 2006.

4. The BLS uses the term "total compensation" for wages and salaries plus total benefits. We have instead used the term "total remuneration," lest the references to "total compensation" and to "workers' compensation" (one of the BLS's subcategories under "total benefits") become too confusing.

5. Specifically, the gross earnings figure includes wages and salaries; paid leave (vacations, holidays, sick leave, and other leave); and supplemental pay (premium pay, shift pay, and nonproduction bonuses). The benefits other than pay figure includes insurance (life insurance, health insurance, sickness and accident insurance); retirement and savings (pensions, savings and thrift); legally required benefits (Social Security, federal unemployment, state unemployment, and workers' compensation); and other benefits (includes severance pay and supplemental unemployment benefits).

6. The latter decision reflects a judgment that, since workers' compensation benefits are generally tied to workers' preinjury wages, and thus benefits and costs ought to increase proportionately with wages, costs as a percentage of wages and salaries should be the same across states and regions.

For example, suppose that in all regions, for every 1,000 hours worked, there are work injuries that result in the loss of 50 hours of work. Also suppose that two-thirds of lost wages are replaced by workers' compensation benefits in all regions. (A two-thirds replacement rate is a commonly used measure of adequacy.)

Using the data on hourly gross earnings shown in Table 1, the total payroll in the South for 1,000 hours worked is $18,290 ($18.29 X 1,000 hours); the total amount of workers' compensation benefits is $609.67 ($18.29 X 50 hours X 2/3 replacement rate); benefits (assumed to be the same as costs for this example) as a percentage of gross earnings in the South are 3.33 percent ($609.67 divided by $18,290).

Using the data on hourly gross earnings shown in Table 1, the total wage bill in the Northeast for 1,000 hours worked is $23,390 ($23.39 X 1,000 hours); the total amount of workers' compensation benefits is $779.67 ($23.39 X 50 hours X 2/3 replacement rate); benefits (assumed to be the same as costs for this example) as a percentage of wages and salaries in the Northeast are 3.33 percent ($779.67 divided by $23,390).

7. U.S. Department of Labor, 2004, “Notes on Current Labor Statistics,” 111.

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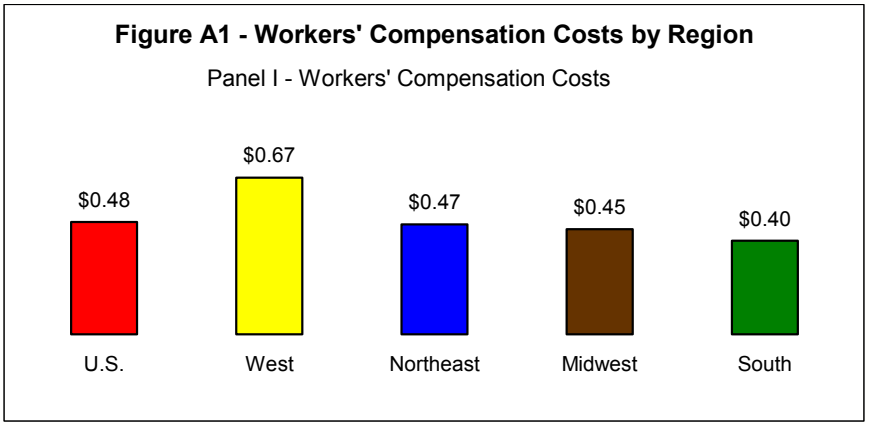
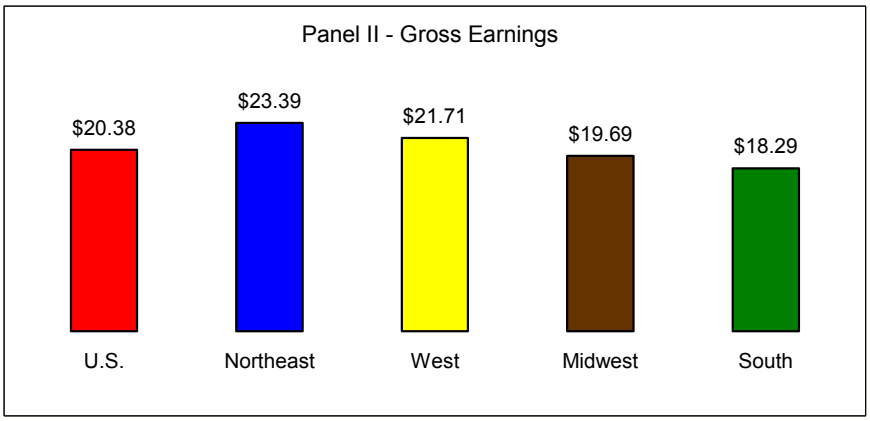
APPENDIX A

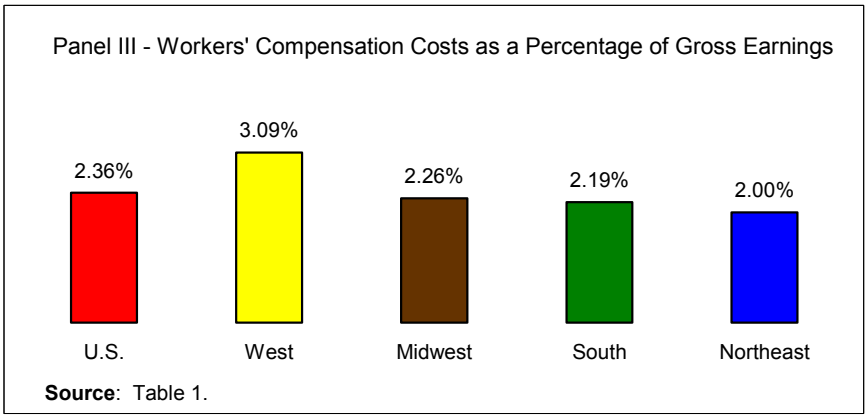
Alternative Ways to Measure Regional Differences in Workers' Compensation Costs

This appendix examines how regions can switch their relative costs compared to the United States depending on which measure of workers' compensation costs is used. The explanation is provided by a closer examination of the arithmetic procedure used in computing workers' compensation costs as a percentage of gross earnings. The workers' compensation costs per hour (row 9A of Table 1 and Appendix Figure A1: Panel I, which is the same as Figure B in the article) have to be divided by gross earnings per hour (row 2 of Table 1 and Appendix Figure A1: Panel II) in order to produce the figures on workers' compensation costs as a percentage of wages and salaries (row 12 of Table 1 and Appendix Figure A1: Panel III, which is the same as Figure A in the article). The relationships between these numerators and denominators for the four regions account for the fluctuations in rankings between Figure A and Figure B in the article.

Figure A1 - Workers' Compensation Costs by Region







Source: Table 1.

Consider the Northeast. Workers' compensation costs per hour in the Northeast ($0.47 per hour) are two percent below the national average for workers' compensation costs ($0.48 per hour). Nonetheless, in terms of workers' compensation costs per hour worked, the Northeast was second among the four census regions. Of importance is that the hourly gross earnings in the Northeast ($23.39 per hour -- row 2 of Table 1) are 15 percent more than the national average for gross earnings ($20.38 -- row 2 of Table 1). As a result of these high wages, the Northeast's workers' compensation costs as a percentage of gross earnings (2.00 percent – which is $0.47 divided by $23.39) is 0.36 percentage points less than the national average of workers' compensation costs as a percentage of gross earnings (2.36 percent -- or $0.48 divided by $20.38). And the Northeast's combination of workers' compensation costs that were less than the national average and wages that were well above the national average means that workers' compensation costs as a percent of payroll are lower in the Northeast than in the other three census regions.

Notes for Tables 1 - 6.

1. The text and all tables in this article use the term "remuneration" in place of the term "compensation" which is used by the BLS.

2. Total remuneration (row 1) = gross earnings (row 2) + benefits other than pay (row 6).

3. Gross earnings (row 2) = wages and salaries (row 3) + paid leave (row 4) + supplemental pay (row 5).

4. Benefits other than pay (row 6) = insurance (row 7) + retirement benefits (row 8) + legally required benefits (row 9) + other benefits (row 10).

5. Workers' compensation (row 9A) is one of the legally required benefits (row 9).

6. Workers' compensation as percent of remuneration (row 11) = workers' compensation (row 9A) / total remuneration (row 1).

7. Workers' compensation as percent of gross earnings (row 12) = workers' compensation (row 9A) / gross earnings (row 2).

8. Results in rows (2), (6), (11), and (12) were calculated by Florence Blum and John F. Burton, Jr.

9. Individual items may not sum to total remuneration because of rounding in BLS data.

10. * means cost per hour worked is $0.01 or less

11. The data in Tables 1-6 are annual averages of the quarterly data presented in the quarterly surveys conducted by the Bureau of Labor Statistics. We calculated the annual averages, which are not weighted to reflect changes in employment among quarters.

Lessons from Civilian Disability Systems for the Veterans' Disability Compensation Program

Revised Version of an April 23, 2007 Statement Presented to The President's Commission on Care for America's Returning Wounded Warriors

John F. Burton, Jr.

Introduction

I appreciate the opportunity to discuss the lessons from civilian disability systems that appear to be relevant for improving the compensation and rehabilitation of disabled veterans.

Overview of the Veterans' Disability Compensation Program[1]

The Veterans' Disability Compensation Program provides monthly cash benefits to veterans who are disabled due to injuries or diseases that occurred during or were aggravated by active military service. Each veteran's disability is rated using a Rating Schedule that compensates for "the average impairment of earning capacity resulting from such diseases and injuries and their residual conditions in civil occupations." The degree of the veteran's disability is rated on a scale from 10 percent to 100 percent (in increments of 10 percent). The monthly benefit depends on the veteran's disability rating and dependency status. As of December 2006, the monthly benefit for a veteran with no dependents ranged from $115 for a 10 percent rating to $712 for a 50 percent rating to $2,471 for a 100 percent rating. The monthly benefit is higher for a veteran with dependents: for example, as of December 2006, a veteran with a 50 percent disability rating with a spouse and one child received $832 per month.

Some veterans qualify for "individual unemployability" (IU) benefits when they are unable to work because of their service-connected disability, even though their disabilities according to the Rating Schedule do not reach 100 percent. IU benefits are provided when, as a result of the service-connected disability, the veteran is unable to secure substantially gainful employment, which is defined as the inability to earn more than the federal poverty level (about $10,000 a year). The veteran must have either (a) a single disability that is rated at least 60 percent or (b) a combination of disabilities that total to at least 70 percent and that include at least one disability rated at 40 percent or more. The IU monthly benefit is the same as the benefit for a veteran rated 100 percent on the Disability Rating Schedule.

About the Author

John F. Burton, Jr. was invited to present a statement to The President's Commission on Care for America's Returning Wounded Warriors at the April 23, 2007 meeting of the Commission. The Statement has been revised and expanded in part to respond to questions from the Commission's staff.

The President's Commission on Care for America's Returning Wounded Warriors is co-chaired by Robert Dole, former Senator from Kansas, and by Donna Shalala, former Secretary of Health and Human Services. The nine members of the Commission were appointed by President Bush. The mission of the commission includes *inter alia* to "evaluate the coordination, management, and adequacy of the delivery of health care, disability, traumatic injury, education, employment, and other benefits and services to returning wounded Global War on Terror service members by Federal agencies as well as by the private sector, and recommend ways to ensure that programs provide high-quality services . . ." The Commission was established by Executive Order 13426 on March 6, 2007 and is required to issue its final report by June 30, 2007 unless the Co-Chairs provide notice that an extension is necessary, in which case the final report must be issued by July 31, 2007.

John Burton is Professor Emeritus in the School of Management and Labor Relations at Rutgers University. He currently serves as a Member of the Institute of Medicine Committee on Medical Evaluation of Veterans for Disability Compensation and as Chair of the Study Panel on National Data on Workers' Compensation of the National Academy of Social Insurance. He previously served as the Chairman of the National Commission on State Workmen's Compensation Laws.

In addition to cash benefit paid on the basis of the Disability Rating Schedule or the IU provision, veterans with severe injuries may qualify for special monthly compensation (SMC) benefits, which are based on "anatomical loss or loss of use of extremities and in some cases the loss of certain bodily functions." The monthly SMC benefit depends on the severity of the injury and the veteran's dependency status. As of December 2006, the monthly SMC benefit for a veteran with no dependents ranged from $3,075 for an L rating to $7,070 for a R.2 rating. The monthly SMC benefit is higher for veterans with dependents: for example, as of December 2006, a veteran with an L rating with a spouse and one child received $3,315 per month.

In addition to these cash benefits, veterans with service-connected disabilities are eligible for a number of other benefits, including medical care, vocational rehabilitation services, automobile assistance, and clothing allowances. Eligibility for or the amount of some of these benefits depends on the severity of the service-related disease or injury.

Overview of Civilian Disability Systems

The Social Security Disability Insurance (SSDI) is the largest program providing benefits to disabled workers and their dependents. A recent report from the National Academy of Social Insurance (NASI) (Sengupta, Reno, and Burton 2006) reported that 6.5 million workers received SSDI benefits. The cash benefits for disabled workers and their dependents were $78.2 billion and Medicare paid $37.9 billion for medical care and hospital care for disabled persons under age 65.

SSDI benefits are only paid to workers who have long-term impairments that preclude any gainful work. The workers must have worked for a significant period of employment prior to their disability to be eligible for benefits. The source of the impairment does not have to be work-related.

Workers' Compensation (WC) is the next largest program providing benefits to disabled workers and their dependents. The NASI report indicated that in 2004, WC cash benefits were $29.9 billion and medical benefits were $26.1 billion.

WC benefits are paid for both short-term and long term disability, and for both partial and total disability. (Death benefits are also provided.) Workers are eligible from the first day of employment. The source of the disability must be a work-related injury or disease.

There are other civilian disability programs, including sick leave and long-term disability insurance. However, because of their importance I will limit my comments today to the SSDI and WC programs. I will focus particularly on the workers' compensation program, in part because Patricia Owens will include the SSDI program in her remarks today and in part because, unlike the SSDI program, which limits benefits to permanently and totally disabled workers, the WC program provides benefits to workers whose disabilities are permanent and partial or total. The WC program thus is similar to the current Veterans' Disability Compensation Program.

Purposes of Disability Benefits

Discerning the lessons from civilian disability systems for the Veterans' Disability Compensation Program is facilitated by use of several figures.

Figure 1 shows a simplified rendition of the permanent consequences of an injury or disease, which can be considered a model of disability.[2] A medical impairment is the anatomical loss (such as amputation of a foot) or loss of function (such as loss of motion in the wrist) that results from the injury or disease. The medical impairment results in limitations in activities of daily living (ADL) (such as the ability to lift or walk). The limitations in ADL result in work disability and in nonwork disability. Work disability can be separated into (A) a loss of earning capacity and (B) the actual loss of earnings. Nonwork disability includes the consequences of the limitations in ADL on activities outside the workplace, including social and recreational activities.

There are other models of disability and other terms for some of the concepts shown in Figure 1.[3] For example, loss of quality of life is sometimes used to describe the combination of limitations in ADL and nonwork disability.

The purpose of SSDI benefits is to replace a portion of the actual loss of earnings. There is no effort to provide compensation for any of the other permanent consequences shown in Figure 1.

The primary purpose of WC benefits is to replace a portion of actual loss of earnings. However, the National Commission on State Workmen's Compensation Laws in its 1972 *Report* made this suggestion (at page 69):

> Consideration should be given to the use of two types of benefits:
>
> *permanent partial impairment benefits*, paid to a worker solely because of a work-related impairment
>
> *permanent partial disability benefits*, paid to a worker because he has both a work-related impairment and a resultant disability.

> A worker might be eligible for both types of benefits. . . .
>
> Impairment benefits are justified because of losses an impaired worker experiences that are unrelated to lost remuneration. The impairment may, for example, have lifetime effects on the personality and normal activities of the worker. . .
>
> In contrast, the disability benefits could be based on actual wage loss or loss in wage earning capacity.

This suggestion from the National Commission essentially suggests that (using Figure 1) permanent partial disability benefits should be paid because of the consequences shown in entries IIIA (Loss of Earning Capacity) or IIIB (Actual Loss of Earnings), and that permanent partial impairment benefits should be paid because of the other consequences shown in Figures 1, namely entries I (Medical Impairment), II (Limitations in Activities of Daily Living), and IV (Nonwork Disability).

Unfortunately, most states are not explicit about which permanent consequences provide the reasons for the permanent disability benefits in their workers' compensation program. One consequence is that advocates of reform devote considerable time to arguing about the reasons for the reforms. Another consequence is that the resulting statutory enactments often are confusing and even conflicting.

Lesson One: Permanent disability compensation systems should be based on a clear statement of the purposes for the disability benefits.

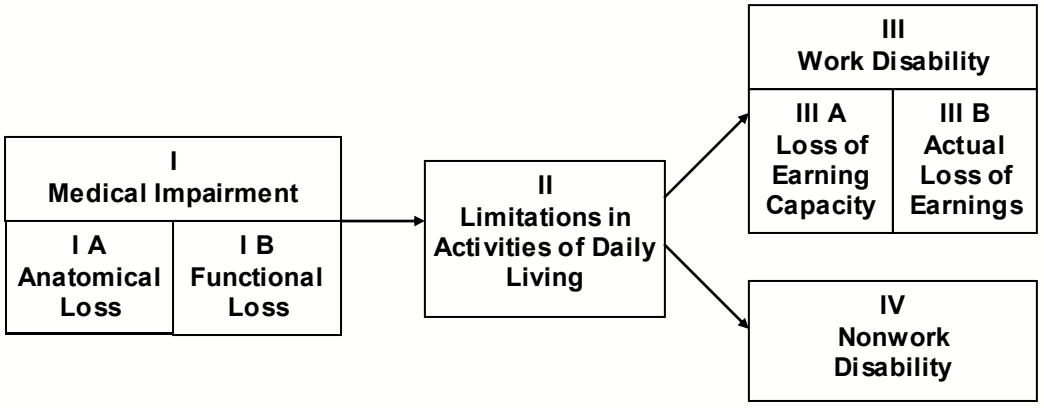
This lesson appears to be relevant for the disability benefits provided to wounded veterans. Section 4.1 of the Code of Federal Regulations appears to provide a single purpose for the Veterans Administration Rating Schedule ("the average impairment in earning capacity"), which corresponds to entry IIIA (Loss of Earning Capacity) in Figure 1. However, as previously noted, the Veterans Disability Compensation Program also provides for "individual unemployability" (UI) benefits, which are paid to veterans who have much greater earnings losses than the disability rating system predicts. The purpose of the UI benefits corresponds to entry IIIB in Figure 1. In addition, veterans with severe injuries may qualify for special monthly compensation (SMC) benefits, which are based on "anatomical loss or loss of use of extremities and in some cases the loss of certain bodily functions." The purpose of the SMC benefits appears to correspond to entry 1 (Medical Impairment) and II (Limitations in Activities of Daily Living) in Figure 1.

A clear statement of the purpose or purposes of the cash benefits provided to disabled veterans would help legislators and regulators design a cohesive program. There may legitimately be more than one purpose (as suggested by the discussion of the National Commission on State Workmen's Compensation Laws), and if so an explicit statement of the multiple purposes would be useful.

Operational Bases for Disability Benefits

It is important to distinguish between the purpose of disability benefits and the operational basis or bases for the benefits. The primary *purpose* of the disability benefits in most disability programs is to compensate for work disability generally and for actual loss of earnings specifically. However, the *operation basis or*

Figure 1
The Permanent Consequences of an Injury or Disease Resulting in Work Disability



bases for determining the amount and duration of disability benefits are measurements of the extent of the applicant's medical impairment, limitations in ADL, or loss of earning capacity.

Most disability programs are thus using impairment and/or functional limitations and/or loss of earning capacity as proxies for actual loss of earnings. The Social Security Disability Insurance program, for example, assesses the seriousness of the worker's permanent impairment and/or functional limitations to determine if the applicant is totally disabled. Most workers' compensation programs rate the extent of the applicants permanent impairments, functional limitations, and/or loss of earning capacity to determine the duration and amount of permanent disability benefits.

There are several reasons why disability compensation systems use proxies, such as the extent of the applicant's impairment, to provide benefits for which the purpose is to compensate for actual loss of earnings. The first reason is administrative convenience: it is much easier to administer a disability compensation system if benefits are based on a few relatively easy-to-assess characteristics (such as type and severity of injury) than it is to monitor the worker's actual labor market experience over an extended period of time. The second reason is that linking benefits directly to actual loss of earnings may result in disincentive effects for some beneficiaries, who may limit their extent of participation in the labor force if higher earnings result in reduced benefits. The third reason is the impossibility of determining all the causes of a person's earnings shortfall, especially over an extended period of time. Even if there were no limit on the resources devoted to monitoring a disabled person's labor market experience, the reasons for earnings shortfalls are too complex to separate out the effects of work-related (or service-related) injuries or diseases from the myriad other factors that can depress actual earnings.

Lesson Two: When the purpose of disability benefits is to compensate for actual loss of earnings, logically the operational basis or bases for the benefits can be another consequence of the injury, such as a rating of the medical impairment.

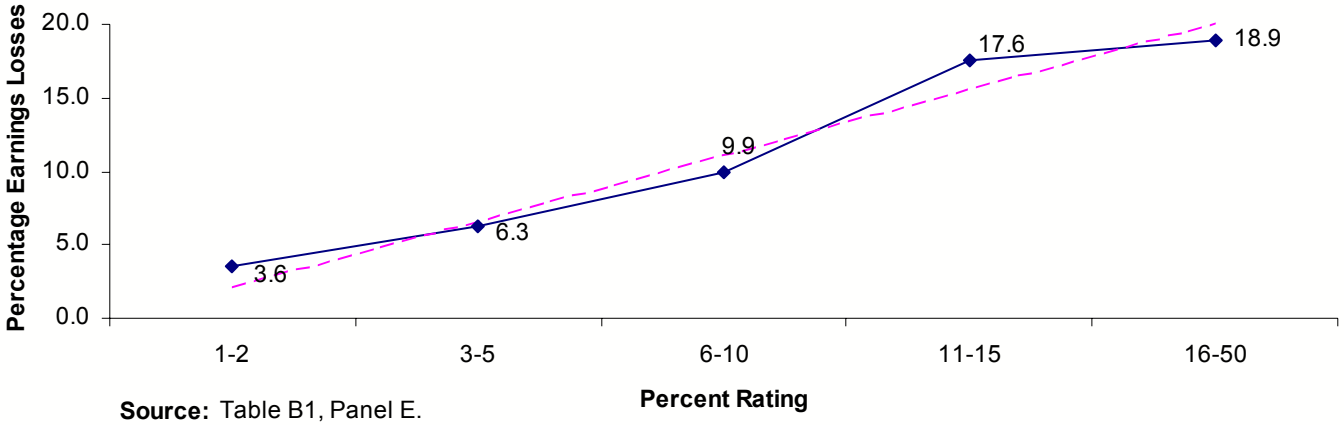
The Veterans' Disability Compensation Program in general does not link eligibility for cash benefits to a demonstration of earnings losses, and consequently the possible inducement to reduce earnings in order to qualify for benefits is muted. (There is, however, what economists term the "income effect," whereby a worker who receives benefits from the VA Disability Compensation Program decides to limit labor market activity because he or she has sufficient income from the benefits to achieve a desired standard of living.) The one exception to the statement that cash benefits are not linked to a demonstration of earnings losses is Individual Unemployability (IU) benefits, which have been growing in importance in recent years.

Evaluation of Disability Ratings Systems

The second lesson indicated that logically a proxy for work disability, such as the extent of impairment, can be used as an operational basis for benefits for which the purpose is actual loss of earnings. There is a more fundamental test of a disability system than logic, however, namely how well do the proxies for work disability predict actual loss of earnings?

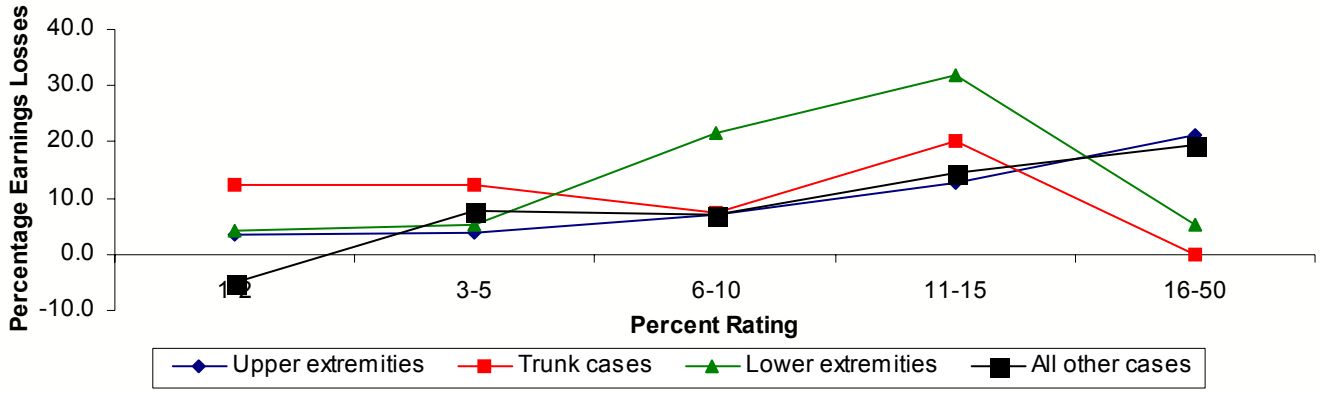
I will illustrate the application of this test with data from the Wisconsin workers' compensation program

Figure 2
Percentage Earnings Losses For All Wisconsin Workers



Source: Table B1, Panel E.

Figure 3
Percentage Earnings Losses for Wisconsin Workers with Four Types of Injuries



Source: Table B1, Panel E.

that were included in Berkowitz and Burton (1987). The data shown in Appendix Table A1 to this statement pertain to workers injured in 1968 who received permanent partial disability (PPD) benefits and who were paid benefits without litigation or the use of compromise and release (C&R) agreements. While the data are obviously dated, I use them because they can be readily adapted to the purposes of this discussion and because at the time the Wisconsin PPD benefits provided a good illustration of the difference between the operational approach and the purpose of the benefits. In 1968, while the purpose of the Wisconsin PPD benefits was to compensate for work disability, the operational approach for the benefits was to measure the extent of medical impairment and to use the rating as a proxy for work disability.

Figure 2 shows the relationship between the disability ratings and the actual loss of earnings for workers with all types of injuries that received PPD benefits in Wisconsin. The horizontal axis shows disability ratings in categories (1-2 percent, for example) and the vertical axis measures earnings losses due to work-related injuries as a percent of potential earnings. The entries in Figure 2 show the results for the workers with the various levels of disability ratings: for example, workers who had 1-2 percent permanent disability ratings on average experienced a 3.6 loss of earnings in the six years after their workplace injuries.

The data in Figure 2 can be used to explain vertical equity. *Vertical equity for ratings requires that actual wage losses increase in proportion to the increase in disability ratings.* The dashed line in Figure 2 represents an exact correspondence between disability ratings and losses (for example, an eight percent disability rating equals an eight percent earnings loss). The results indicate that at this level of aggregation (that is, workers with all types of injuries), the Wisconsin rating system did an excellent job of providing vertical equity.

The Wisconsin data on PPD benefits can also be disaggregated to show the relationship between disability ratings and the actual loss of earnings for workers with four different types of injuries. The results shown in Figure 3 can be used to explain a variant of horizontal equity. *Inter-injury horizontal equity for ratings requires that the actual wage losses for workers with the same disability ratings but different types of injuries should be the same or similar.* The results suggest there were serious problems with the Wisconsin disability rating system in terms of inter-injury horizontal equity. For example, for workers with disability ratings of 11 to 15 percent, earnings losses ranged from 31.7 percent for lower extremities to 12.8 percent for upper extremities.

Lesson Three: The accuracy of a disability rating system should be evaluated using criteria such as vertical equity and inter-injury horizontal equity. This will allow an assessment of whether the operational bases for benefits, such as medical impairment, are valid proxies for the purposes of the benefits, namely work disability.

One policy change recommended for the California workers' compensation by RAND was to periodically assess the actual earnings losses associated with workplace injuries and to determine if there were systematic overestimates or underestimates of the earnings losses associated with the disability ratings for both the system as a whole and for particular injuries or

medical conditions. This information could then be used to recalibrate the rating system.[4] A similar procedure could be adopted for the VA disability compensation program. Thus if, for example, mental disorders were found to have greater earnings losses than would be expected based on the disability ratings, the rating system could be revised. This could be done either by changing the rating system directly (so that a given level of mental impairment would now be rated at 40 percent rather than 20 percent) or indirectly by producing a set of "modifiers" (so that the medical impairment ratings for mental impairments would be multiplied by two to produce a "disability rating" used for determining the amount of benefits). This policy change could help improve the vertical equity and the inter-injury horizontal equity for the ratings in the Veteran's disability program.

The Veterans' Disability Compensation Program has a sparse history of assessing the accuracy of the disability rating system. In 1971, the VA conducted a study of the 1967 earnings of disabled veterans called the Economic Validation of the Rating Schedule (ECVAR). This study involves data even more ancient than the Wisconsin data shown in Figures 1 and 2. Moreover, to the best of my knowledge, the results of ECVAR were never used to recalibrate the Veterans Rating Schedule. Fortunately, a study is now being conducted by the Center for Naval Analysis (CNA) of the relationship between ratings in the current Rating Schedule and actual losses of earnings. The CNA results should permit an assessment of the vertical and horizontal equity of the VA Rating Schedule.

There is no meaningful test of the accuracy of the current VA Rating Schedule if a comparison is made between (1) the *ratings* produced by application of the criteria for evaluating medical conditions contained in the Rating Schedule and (2) the *average reduction in earning capacity* for disabled veterans since in practice they are the same thing. The only meaningful test is whether the ratings produced by the Rating Schedule (which are estimates of the loss of earning capacity) correspond to the actual losses of earnings for disabled veterans. This is the test that has consistently been used by researchers in the disability field.

Evaluation of Adequacy of Benefits

The primary if not sole purpose of most disability programs is to provide cash benefits that replace a portion of lost earnings. Each disability program must determine what proportion of lost earnings should be replaced in order for the program to provide benefits that are adequate, as discussed by Hunt (2004).

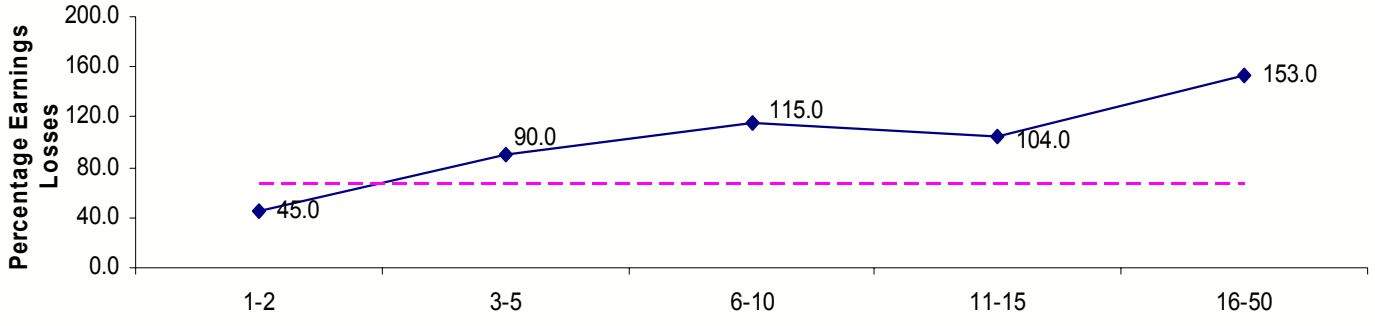
The amount of benefits considered adequate will vary among programs. The Social Security DI program arguably uses "social adequacy" as the standard for benefits, which focuses on prevention of poverty rather than replacement of a specific portion of lost wages. This can be seen in the formulas that determine the primary insurance amount (PIA) for disabled workers. The workers' average indexed monthly earnings (AIME) are determined, and then (in 2005) the PIA was 90 percent of the first $627 of AIME, plus 32 percent of the next $3,152 of AIME, plus 15 percent of the AIME over $3,779.

The adequacy standard for workers' compensation focuses on the replacement of lost earnings. The National Commission on State Workmen's Compensation Laws (1972: 15) stated a major objective for modern workers' compensation program was that "A high proportion of a disabled worker's lost earnings should be replaced by workmen's compensation benefits." The National Commission justified this relatively generous standard by noting that workers' compensation was the only social insurance program in which workers surrendered any right of value – namely the right to sue their employers for negligence – in exchange for the program's benefits. The National Commission recommended that benefits should replace at least two-thirds of lost wages, subject initially to a maximum weekly benefit that was at least 100 percent of the state's average weekly wage. This recommendation was made for temporary total disability, permanent total disability benefits, and fatality benefits. However, the National Commission did not make a specific recommendation of what constituted adequacy for permanent partial disability benefits, which constitute the most expensive type of benefit in the program. This resulted in numerous arguments over the decades about whether the test for adequate PPD benefits required the replacement of two-thirds of lost wages. The debate was largely resolved by a recent report from a Study Panel of the National Academy of Social Insurance (Hunt 2004), which generally endorsed a standard of adequacy for PPD benefits requiring that two-thirds of lost wages be replaced by the benefits.

Lesson Four: The exact meaning of adequacy of cash benefits should be specified for each disability benefit system.

The benefit amount for the Veterans' Disability Compensation Program is graduated according to the degree of the veteran's disability rated on a scale from 10 percent to 100 percent (in increments of 10 percent). The monthly benefit depends on the veteran's disability rating and dependency status. As previously noted, as of December 2006, the monthly benefit for a veteran

Figure 4
Replacement Rates (Benefits as a Percentage of Earnings Losses)
For All Wisconsin Workers



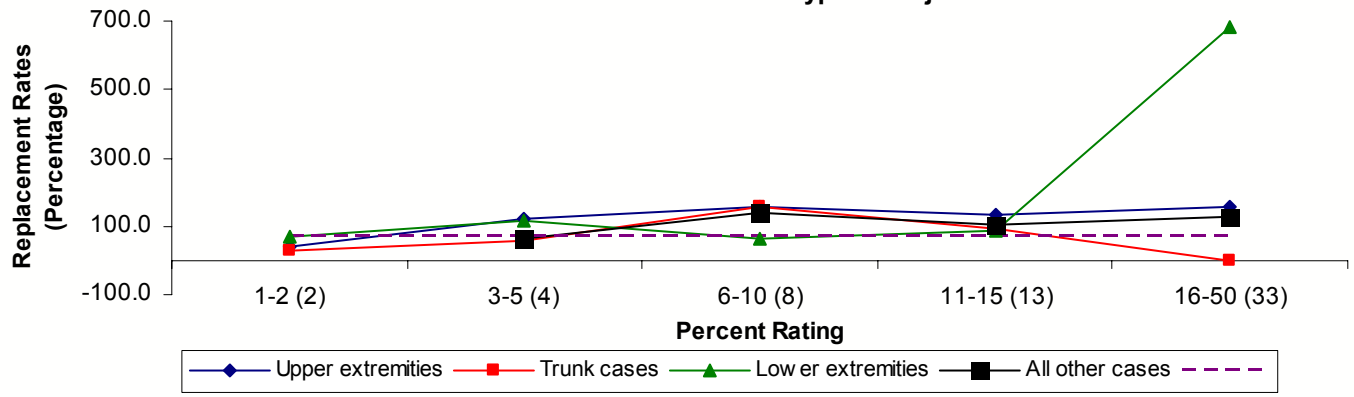
Source: Table B1, Panel G.
- - - - - 66.67 percent replacement rate

with no dependents ranged from $115 for a 10 percent rating to $712 for a 50 percent rating to $2,471 for a 100 percent rating. The monthly benefit is higher for veterans with dependents: for example, as of December 2006, a veteran with a 50 percent disability rating with a spouse and one child received $832 per month.

Are these benefits for disabled veterans adequate? The answer is unclear in part because we do not have a clear statement about the standard of adequacy for these benefits. The proportion of lost earnings that should be replaced presumably should be relatively high compared to other disability programs given the nation's gratitude to these wounded warriors. One feature of the Veterans' Disability Compensation Program that arguably complicates a determination of the adequacy standard is that a disabled veteran can hold a job without losing any of his or her disability benefits. However, most recipients of PPD benefits in workers' compensation programs can also receive wages without losing any of their benefits, so the Veterans' Program is not unique in this regard.

The answer to whether the veterans disability benefits are adequate is also unclear because there is almost no evidence on the extent of earnings losses experienced by veterans and the proportion of losses replaced by the benefits. The 1971 ECVAR Study and the ongoing CNA study can produce the evidence, but lacking an explicit statement about the appropriate measure of adequacy for the veterans' disability program, a conclusion about whether the benefits are adequate is almost impossible.

Figure 5
Replacement Rates (Benefits as a Percentage of Earnings Losses)
for Wisconsin Workers with Four Types of Injuries



Source: Table B1, Panel G.
- - - - - 66.67 percent replacement rate

The Wisconsin workers' compensation data can also be used to illustrate the application of the adequacy test. Figure 4 shows the relationship between disability ratings and replacement rate for the aggregate of four types of injuries. The replacement is the workers' compensation benefits provided in the six years after the date of injury divided by the loss of earnings experienced by the injured workers during this period. For example, for workers with disability ratings of 11 to 15 percent, workers' compensation benefits replaced 104 percent of lost earnings. As previously indicated the generally accepted standard of adequacy for workers' compensation is that the benefits should replace at least two-thirds of lost earnings. In Wisconsin, cash benefits replaced 85 percent of earnings losses for the entire sample, which clearly meets the adequacy test.

The vertical and horizontal equity tests can also be used to assess the ability of a disability system to provide benefits that replace a similar proportion of lost earnings for workers with difference types and severities of injuries. The data in Figure 5 indicate that the Wisconsin workers' compensation program did a fairly good job of vertical equity and inter-injury horizontal equity for the four lowest rating categories, but there were serous inter-injury horizontal equity problems for the highest rating category.

The results of the study of workers injured in Wisconsin in 1968, and similar studies of workers injured in California and Florida in 1968, caused me to write numerous times in the 1980s and 1990s that the permanent disability benefits in workers' compensation programs appeared to generally be adequate but to have serious equity problems.[5] However, recent studies of five states (California, New Mexico, Oregon, Washington, and Wisconsin) estimated that permanent partial disability benefits only replaced between 30 and 46 percent of earnings losses in the 10 years after workers were injured. As a result, Boden, Reville, and Biddle (2005: 60) concluded that "for many groups of injured workers, replacement rates do not approach the two-thirds benchmark for adequacy."

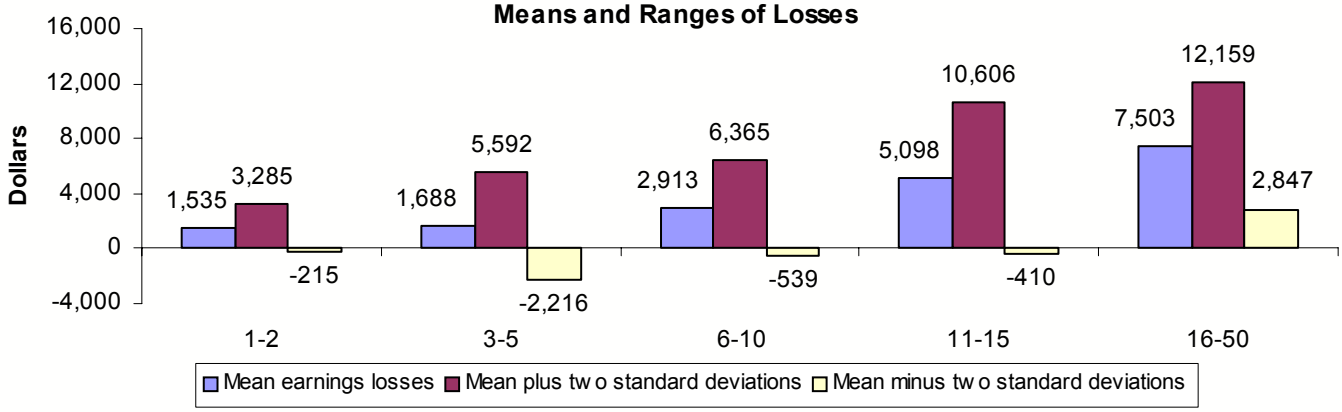
Lesson Five: Evaluations of the adequacy and equity of the benefits provided by disability systems need to be conducted on a regular basis in order to reflect current conditions in the labor market.

The implications of this lesson for the Veterans' Disability Compensation Program are evident: data pertaining to the labor market experience of veterans in 1971 are an inadequate basis for evaluating the current program. Again the ongoing CNA study should help remedy this problem.

Intra-Injury Horizontal Equity and Outliers

The preceding discussion of the virtues and deficiencies in the rating system for disabilities in the Wisconsin workers' compensation program relied on the criteria of vertical equity and inter-injury horizontal equity. *Another evaluation criterion is intra-injury horizontal equity for ratings, which requires that workers or veterans with the same disability rating and same type of injury or medical condition should experience the same or similar levels of earnings losses.* The evidence from Wisconsin in Panels C and D of Table A1, as summarized in Figure 6, indicates there are substantial variations in earnings losses for workers with injuries to the upper extremities with the same disability ratings. The entries in Figure 6 include the mean amount of earnings losses for workers in each rating category, plus the

Figure 6
Earnings Losses for Wisconsin Workers with Upper Extremity Injuries: Means and Ranges of Losses



The Range is mean plus or minus two standard deviations.

Source: Table B1, Panels C and D.

earnings losses associated with plus or minus two times the standard deviations for the earnings losses. As can be seen, the range of earnings losses contains some workers who had negative earnings losses in the six years after their injuries. Indeed, the earnings losses are only statistically significantly different than zero for workers with upper extremity injuries with ratings of 16-50 percent.

I have already stated my skepticism that any disability rating system – no matter how refined – can accurately predict the actual earnings losses resulting from medical conditions for substantial numbers of workers or veterans. There are too many factors that affect earnings in addition to the effects of injuries or diseases to expect predictions of earnings losses for individual cases to be precise. Most systems accommodate those cases where the earnings loss is much less than predicted based on the disability rating by ignoring the unexpectedly favorable labor market experience. The challenge is to deal with the other type of "outliers" – the worker or veteran who has earnings losses far in excess of the amount predicted based on the person's disability rating.

There are four possible responses to this challenge. First, the disability program can assert that in a system of social insurance (or social justice), outliers should be ignored in order to reduce administrative costs and to avoid excessive costs to the system. This is the approach used in most workers' compensation programs for the vast majority of workers with permanent disabilities.

Second, the disability program can treat every worker or veteran as an individual and determine benefits based on her or his own labor market experience. This comes close to the "wage-loss" approach (which bases the benefits solely or primarily on the worker's own labor market experience) that has been tried in several workers' compensation programs and generally rejected as unworkable and/or too expensive. The "wage-loss" approach foregoes the use of proxies as the basis for benefits, which have generally been incorporated into disability compensation systems in order to achieve administrative convenience, to avoid the incentive effects that occur if higher earnings result in reduced benefits, and to avoid the impossible task of determining the sources of earnings shortfalls in every case.

Third, the disability program may be able to identify variables that increase the accuracy of the rating system but that do not cause inappropriate incentives for beneficiaries. For example, if after controlling for the type and severity of injury, the addition of age to the disability rating system increases the accuracy of the predictions of loss of actual earnings, intra injury horizontal equity will be improved. However, whether there are such variables that improve the accuracy of the rating system is an empirical question where logic is probably a poor guide.[6]

Fourth, the disability program can use the disability rating system to determine the amount of benefits for the majority of beneficiaries, but provide a safety valve for "outliers" who have earnings losses far in excess of the amount of losses predicted by the rating system. This approach is used in some workers' compensation programs where workers with relatively low "impairment ratings" can receive additional benefits either because they are reclassified from PPD to permanent total disability (using the "odd lot" doctrine[7]) or because they are workers in a state with hybrid benefits (where workers who exhaust their benefits based on the rating schedule qualify for additional benefits because they have continuing wage losses due to their workplace injuries[8]).

The counterpart to this provision of additional benefits for extraordinary wage loss in some workers' compensation programs in the Veterans' Disability Compensation Program is the provision of "individual unemployability" (IU) benefits, which serve as the program's safety valve for those veterans who have much greater earnings losses than the disability rating system predicts. Without endorsing the specific aspects of the IU benefits in the Veterans' Disability Compensation Program, I support the general concept of a special benefit for those veterans who are significant outliers in terms of their actual earnings losses compared to their expected earnings losses. The reason is that the best of all possible disability rating systems will seriously underpredict the earnings losses of some disabled persons.

Lesson Six: A disability system should not attempt to match the amount of cash benefits to the amount of actual earnings losses due to the disability for most cases. However, where the amount of actual earnings losses due to the disability far exceeds the earnings losses predicted by the disability rating system, additional cash benefits should be provided for these aberrant cases.

Rehabilitation and Return to Work

A major goal of any disability system is to rehabilitate disabled persons and facilitate their return to work.

The Social Security DI program has had limited success in rehabilitating persons who qualify for bene-

fits. However, there are features of the program that are different than the Veterans Disability Program, which limit the applicability of lessons from that program. These non-comparable features of the SSDI program include: (1) DI beneficiaries must be permanently and totally disabled; (2) the Social Security Administration is unable to offer rehabilitation services until person establishes eligibility for benefits, which typically is at least a year after the onset of disability; and (3) DI beneficiaries are only eligible for Medicare 24 months after qualifying for DI cash benefits.

The workers' compensation program has several features that are similar to the Veterans Disability Compensation Program: (1) although most injured workers have temporary disabilities that are relatively minor, nonetheless many workers experience injuries with permanent consequences that result in partial, not total, disability; and (2) there is an integrated delivery system for cash and medical benefits that begins from the date of injury. Other features of workers' compensation programs are not comparable to the Veterans' Disability Program, including the financial incentives to carriers and employers to reemploy workers in large part because workers' compensation premiums are experience rated: lower benefits payments reduce premiums for employers and/or increase profits for carriers and employers. Since employers normally do not have their workers' compensation insurance premiums adjusted if they employ veterans with disabilities, this type of financial incentive is generally lacking.

Perhaps the experience within workers' compensation that is most applicable to the veterans programs is the apparent recent success in some states of laws promoting reemployment by providing financial incentives to employers to hire workers with disabilities. Oregon appears to be the model state in this regard with its three return-to-work programs (Maier 2003). The Employer-at-Injury Program (EAIP) provides incentives to employers to provide transitional work when the workers' claims for benefits are still open. The financial incentives include wage subsidies and financial assistance for worksite modification. The Preferred Worker Program (PWP) provides financial incentives to employers to provide employment to injured workers who are permanently disabled and unable to return to their previous job, but who nonetheless have useful workplace skills. The financial incentives include exemption from workers' compensation insurance premiums and wage subsidies. A third return-to-work program involves insurer-paid vocational assistance, such as job training, which is limited to few workers and is thus less important to understanding the Oregon record.

These Oregon return-to-work programs have been evaluated by comparing the record of workers who participated in the programs with workers who did not in terms of the proportion who returned to work and the level of wages compared to preinjury levels. The results suggest that the programs improve the labor market experience of disabled workers by a modest to moderate amount, depending on the program.

The favorable results in Oregon of re-employing disabled persons through the provision of incentives to employers appear to have been matched in some other jurisdictions.[9] I am not suggesting that the only route to improving the record of rehabilitation and reemployment of disabled workers or veterans is the provision of financial incentives to employers,[10] but my sense is that the Veterans' Administration has placed much less emphasis on this strategy than is appropriate.

Lesson Seven: The success of rehabilitation and reemployment efforts depends not just on medical and vocational rehabilitation of disabled persons, but on providing financial incentives to employers to hire persons with disabilities.

A Model Disability Compensation System

There are several principles for the cash benefits in a model disability compensation system, most of which have been identified in this statement.

First, policymakers need to decide the purpose or purposes of the cash benefits. Are the benefits solely to compensate for work disability, or should other permanent consequences provide the reason for benefits. In my view, a modern disability compensation program should recognize these other permanent consequences – whether termed nonwork disability or quality of life – as legitimate reasons for cash benefits.

Second, the operational basis for the cash benefits must be determined. The example from Wisconsin suggests that permanent impairment ratings can serve as useful proxies for actual loss of earnings. However, this finding needs to be replicated and, depending on the results, the rating formula for benefits may need to be modified by, for example, incorporating measurements of limitations in the activities of daily living into the formula. Moreover, if nonwork disability is endorsed by policymakers as an appropriate reason for cash benefits, a measurement system for this type of loss needs to be developed.

Third, and closely related to the previous point, the accuracy of the disability rating system needs to be assessed. If the purpose of the benefits is to compensate

for actual loss of earnings, does the disability rating system satisfy the horizontal equity and vertical equity tests for the relationship between the disability ratings and the losses of earnings. If not, then either modifications need to be made in the rating system or adjustment factors for benefits need to be provided for medical conditions that experience more (or less) earnings losses than the rating system predicts.

Fourth, policymakers need to decide the level of benefits that are adequate for the particular disability program. For veterans, this presumably means that adequacy will require benefits to replace a very high proportion of earnings lost because of service-connected injuries or diseases.

Fifth, the ability of the disability compensation program to provide benefits that replace lost earnings that are equitable and adequate needs to be assessed on a regular basis. If the adequacy and equity tests are not met, then adjustments in the benefits formulas need to be made.

Sixth, the benefits for most workers or veterans should be based on the ratings produced by the disability rating system and not on the individual person's actual loss of earnings. However, in those cases where the actual loss of earnings far exceeds the amount of losses predicted by the rating schedule, additional cash benefits should be provided.

Seventh, the interrelationships among the various goals of a disability system need to be recognized. For workers' compensation, one question is whether the design of the cash benefits promotes the goal of prevention of workplace injuries and diseases. This is not directly applicable to a disability system for veterans. However, for the veterans' disability program as well as other disability programs, the relationship between the cash benefits and the goal of rehabilitation and reemployment need to be recognized. While rehabilitation and reemployment programs are multi-faceted, one component warranting attention based on experience from some state workers' compensation programs is the provision of financial incentives to employers.

Adherence to these seven principles by policymakers and evaluators should produce a quality cash benefits component of a modern disability compensation system. I realize that the President's Commission on Care for America's Returning Wounded Warriors is operating under a tight schedule that will probably preclude a comprehensive use of these principles to evaluate the current Veterans' Disability Compensation Program. However, if the Commission were to endorse these or similar principles as an appropriate basis for future studies and reform of the Compensation Program, the Commission should have a lasting impact of this important component of America's programs for wounded veterans.

Appendix A

The 1987 Study of the Wisconsin Workers' Compensation Program

1. The Wisconsin Workers' Compensation Program

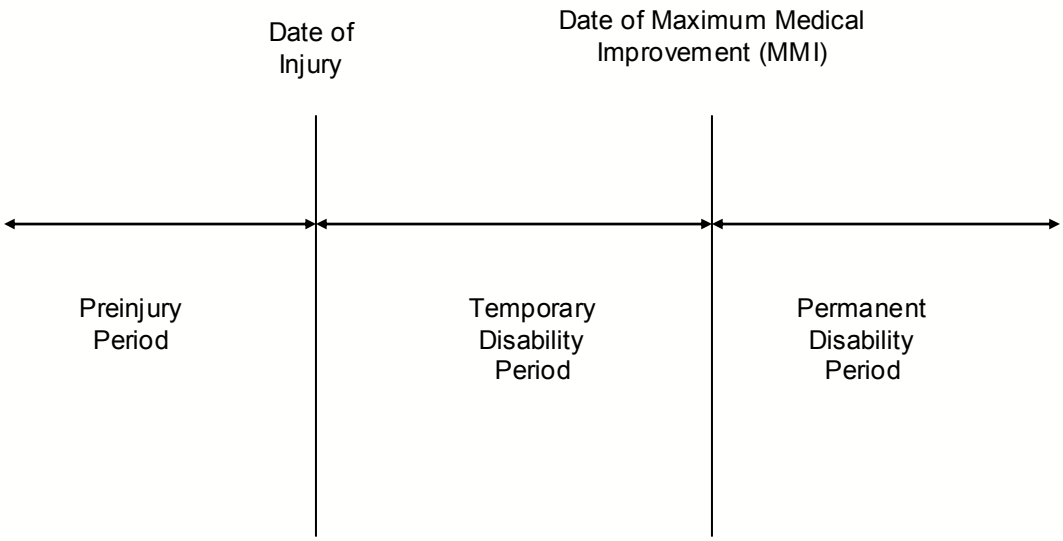
Berkowitz and Burton (1987) conducted a wage-loss study of Wisconsin, Florida, and California workers who were injured in 1968. The results for one of the two samples from Wisconsin are shown in Table A1. The sample consists of Wisconsin male workers who received permanent partial disability (PPD) benefits without a legal contest.

The system of cash benefits in Wisconsin relied on several distinctions that are found in most (although not all) state workers' compensation programs.[11] As shown in Figure A1, three time periods were relevant for determining benefits for workers who received PPD benefits. During the temporary disability period, most Wisconsin workers in the study qualified for temporary total disability (TTD) benefits. In 1968, the TTD benefits were 66 2/3 percent of the workers' preinjury wages, subject to a maximum weekly benefit. Once the worker reached the date of MMI, the TTD benefits stopped and most workers with permanent disabilities qualified for permanent partial disability (PPD) benefits.[12]

Scheduled PPD benefits were paid to workers who had an injury included in a list (or schedule) of body parts included in the Wisconsin workers' compensation statute. The statute also specified the number of weeks of PPD benefits associated with the total loss of each body part. The complete loss of an arm, for example, entitled a worker to 400 weeks of PPD benefits. A 50 percent loss of an arm meant the worker received 200 weeks of PPD benefits.

Nonscheduled PPD benefits were paid to workers who had an injury not included in the list of body parts in the statute. The seriousness of the nonscheduled injury – typically a back condition – was rated "as the nature of the injury bears to one causing permanent total disability." A 40 percent rating for the back was multiplied by 1,000 weeks to determine the duration of the PPD benefits.

Figure A1
Three Time Periods in a Workers' Compensation Case Where the Injury Has Permanent Consequences



Both scheduled and nonscheduled PPD benefits received weekly benefits that were 66 2/3 percent of the workers' preinjury weekly wages, subject to a maximum weekly benefit. As of 1968, the ratings for both the scheduled and nonscheduled PPD benefits were based on an evaluation of medical impairment, corresponding to the extent of Anatomical Loss (IA) or Functional Loss (IB) shown in Figure 1. In short, while the purpose of the Wisconsin PPD benefits was to compensate for work disability, in 1968 the operational approach for the benefits was to measure the extent of medical impairment and to use the rating as a proxy for work disability.

As discussed by Berkowitz and Burton (1987:195-97), Wisconsin began to base nonscheduled permanent partial disability (PPD) benefits on the loss of earning capacity (corresponding to consequence IIIA in Figure 1) beginning in the 1970s. Thus the results in this section probably would not be applicable to workers who receive permanent partial disability benefits from the current Wisconsin workers' compensation program.

2. Summary of the Wisconsin Results

The male Wisconsin workers who were injured in 1968 and received PPD benefits were separated into two categories. Most workers were paid benefits without litigation or use of compromise and release (C&R) agreements. These uncontested cases are shown in Table A1 (which corresponds to Table 10.1 in Berkowitz and Burton 1987). Other workers were paid benefits after a contest (litigation or use of C&R agreements). The results for the contested cases are not shown in this report. Table A1 contains seven panels of information.

Panel A. The Wisconsin uncontested cases were selected using a stratified sampling procedure that selected a higher proportion of cases in cells with fewer workers. The sample represented a total of 1,685 workers from age 20 to 59 (line 1). The sample was placed into columns based on the permanent disability ratings and into rows corresponding to ten-year age categories (lines 2 to 5) and into rows corresponding to four locations of injury (lines 6 to 9). The numbers of the various types of injuries ranged from upper extremities (1,099) to all other cases (107). The mean disability rating for the entire sample was 3.70 percent. The mean ratings varied by age (from 3.54 percent for workers age 20-29 to 3.71 percent for workers age 50-59) and by location of injury (from 2.80 percent for upper extremities to 9.62 percent for all other cases).

Panel B. The potential earnings for each worker were calculated by multiplying the worker's actual earnings in 1966-67 by his expected earnings growth ratio (EGR). The EGR was derived from the ratio of the ac-

Table A1
Wisconsin Uncontested Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating 1-2	3-5	6-10	11-15	16-50	51-100	Mean ratings	Total
Panel A	**Weighted counts of workers and mean disability ratings**							
1. Workers age 20-59	941.0	467.0	177.0	52.0	48.0		3.70	1,685.0
2. Workers age 20-29	294.0	105.5	36.0	15.0	14.0		3.54	464.5
3. Workers age 30-39	226.0	122.0	39.5	10.0	14.0		3.69	411.5
4. Workers age 40-49	219.5	140.5	53.5	11.0	13.0		3.68	437.5
5. Workers age 50-59	201.5	99.0	48.0	16.0	7.0		3.71	371.5
6. Upper extremities	785.0	192.0	82.0	20.0	20.0		2.80	1,099.0
7. Trunk cases	17.0	93.0	42.0	10.0	0.0		5.83	162.0
8. Lower extremities	120.0	150.0	34.0	9.0	4.0		3.76	317.0
9. All other cases	19.0	32.0	19.0	13.0	24.0		9.62	107.0
Panel B	**Mean potential earnings (1968-73, in dollars)†**							
1. Workers age 20-59	42,567	43,938	43,320	42,472	37,960			42,892
2. Workers age 20-29	40,144	44,412	38,743	41,693	32,671			40,829
3. Workers age 30-39	43,641	46,232	47,880	52,464	42,605			44,995
4. Workers age 40-49	45,298	44,383	48,995	48,364	41,628			45,414
5. Workers age 50-59	41,925	39,973	36,673	32,905	32,434			40,159
6. Upper extremities	42,740	44,084	41,644	39,699	35,516			42,706
7. Trunk cases	37,364	44,193	45,224	44,276				43,748
8. Lower extremities	42,497	43,123	43,355	37,036	37,720			42,670
9. All other cases	40,529	46,136	46,279	49,113	40,036			44,159
Panel C	**Mean earnings losses (1968-73, in dollars)†**							
1. Workers age 20-59	1,554	2,759 *	4,292 *	7,483 *	7,175 *			2,519 *
2. Workers age 20-29	1,714	1,890	1,337	6,627	8,757 *			2,096
3. Workers age 30-39	3,009	7,595 *	6,399 *	13,028 *	9,611 *			5,162 *
4. Workers age 40-49	2,822	954	4,647 *	4,131	4,241			2,520 *
5. Workers age 50-59	-1,694	287	4,379	7,124 *	4,586			117
6. Upper extremities	1,535	1,688	2,913	5,098	7,503 *			1,838 *
7. Trunk cases	4,583	5,417 *	3,395	8,916				5,022 *
8. Lower extremities	1,808	2,307	9,349 *	11,740	1,984			3,137 *
9. All other cases	-1,978	3,581	3,178	7,102 *	7,766 *			3,889 *
Panel D	**Standard deviation of mean earnings losses (1968-73, in dollars)†**							
1. Workers age 20-59	860	1,150	1,138	2,236	2,046			662
2. Workers age 20-29	1,482	2,057	2,987	4,479	3,398			1,237
3. Workers age 30-39	2,194	2,449	2,272	6,193	3,059			1,559
4. Workers age 40-49	1,768	1,951	1,760	5,321	5,055			1,228
5. Workers age 50-59	1,294	2,596	2,248	2,250	4,129			1,213
6. Upper extremities	875	1,952	1,726	2,754	2,328			809
7. Trunk cases	4,430	1,364	2,132	5,040				1,115
8. Lower extremities	1,639	1,160	2,351	8,283	4,188			935
9. All other cases	2,613	3,354	3,767	3,513	3,436			1,596
Panel E	**Proportional earnings losses**							
1. Workers age 20-59	0.036	0.063	0.099	0.176	0.189			0.059
2. Workers age 20-29	0.043	0.043	0.035	0.159	0.268			0.051
3. Workers age 30-39	0.069	0.164	0.134	0.248	0.226			0.115
4. Workers age 40-49	0.062	0.021	0.095	0.085	0.102			0.055
5. Workers age 50-59	-0.040	0.007	0.119	0.216	0.141			0.003
6. Upper extremities	0.036	0.038	0.070	0.128	0.211			0.043
7. Trunk cases	0.123	0.123	0.075	0.201				0.115
8. Lower extremities	0.043	0.053	0.216	0.317	0.053			0.074
9. All other cases	-0.049	0.078	0.069	0.145	0.194			0.088

Table A1 (continued)
Wisconsin Uncontested Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating 1-2	3-5	6-10	11-15	16-50	51-100	Mean ratings	Total
Panel F	**Mean benefits of legal fees (1968-73, in dollars)**							
1. Workers age 20-59	696	2,479	4,957	7,807	10,980			2,150
2. Workers age 20-29	742	2,316	5,078	8,388	12,846			2,047
3. Workers age 30-39	626	2,509	5,451	7,224	10,286			2,136
4. Workers age 40-49	706	2,316	4,999	7,360	10,327			2,201
5. Workers age 50-59	696	2,846	4,412	7,934	9,851			2,234
6. Upper extremities	593	2,057	4,503	6,716	11,641			1,453
7. Trunk cases	1,288	3,141	5,371	8,410				3,850
8. Lower extremities	1,261	2,636	5,803	10,254	13,537			2,809
9. All other cases	842	2,348	4,485	7,326	10,003			4,782
Panel G	**Replacement rates: benefits as proportion of earnings losses**							
1. Workers age 20-59	0.45	0.90	1.15	1.04	1.53			0.85
2. Workers age 20-29	0.43	1.23	3.80	1.27	1.47			0.98
3. Workers age 30-39	0.21	0.33	0.85	0.55	1.07			0.41
4. Workers age 40-49	0.25	2.43	1.08	1.78	2.44			0.87
5. Workers age 50-59	a	9.91	1.01	1.11	2.15			19.11
6. Upper extremities	0.39	1.22	1.55	1.32	1.55			0.79
7. Trunk cases	0.28	0.58	1.58	0.94				0.77
8. Lower extremities	0.70	1.14	0.62	0.87	6.82			0.90
9. All other cases	a	0.66	1.41	1.03	1.29			1.23

* Significant at the .05 level.
† 1968 present value dollars discounted at 6 percent.
a. The replacement rate is not shown because the mean earnings loss estimate is negative.

tual earnings in 1968-73 to the actual earnings in 1966-67 of workers in the control group, as shown in Social Security earnings records.

The *control group* workers were matched to the injured Wisconsin workers in the sample on the basis of each worker's sex, age in 1968, and level of actual earnings in 1966-67. The potential earnings in Panel B correspond to the potential earnings in Figure A2 calculated for the six years between 1968 and 1973 and represent the estimate of what the workers in the sample would have earned if they had not been injured in 1968. The mean potential earnings for all workers in the sample were $42,892. (All dollar figures in Table A1 are in 1968 dollars.) For workers with injuries to the upper extremity rated at 1-2 percent, the mean potential earnings were $42,740.

Panel C. The actual earnings for each worker from 1968 to 1973 were determined based on Social Security earnings records. The actual earnings used to calculate the results in Panel C correspond to the actual earnings shown in Figure A2. The actual earnings were subtracted from the potential earnings to determine the earnings losses shown in Panel C. The mean earnings losses for all workers in the sample were $2,519. For workers with injuries to the upper extremity rated at 1-2 percent, the mean earnings losses were $1,535. Of interest, there are two entries in Panel C in which the mean earnings losses are negative: the mean actual earnings exceeded the mean potential earnings for workers in those categories.

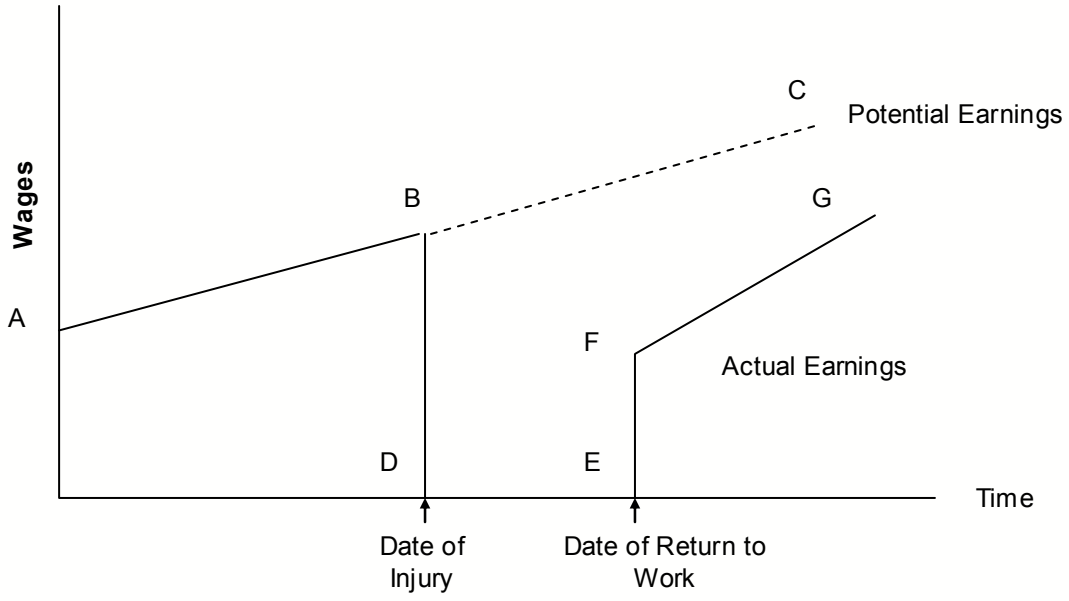
Panel D. The earnings losses varied significantly for workers in the sample of Wisconsin workers. The standard deviations (a measure of dispersion) of the mean earnings losses are shown in Panel D. The standard deviation for all workers in the sample was $662. The mean for all workers was $2,519. The ratio of the standard deviation to the mean is low enough that we can be 95 percent certain that the mean earnings losses for all workers in the sample were greater than zero. The significance at the .05 level of significance is shown by the asterisk by the $2,519 entry in Panel C. In contrast, the standard deviation for workers with injuries to the upper extremity rated at 1-2 percent was $875, and so we cannot be 95 percent certain that the mean earnings losses of $1,535 were greater than zero. A perusal of Panel C shows that a number of entries are not significant.

Panel E. The proportional earnings losses are shown in Panel E. These figures represent the mean earnings losses in Panel C divided by the mean potential earnings in Panel B. The proportional earnings loss for all workers in the sample was 0.059 ($2,519 divided by $42,892), which means that all workers had earnings losses that were 5.9 percent of potential earnings. For workers with injuries to the upper extremities rated at 1-2 percent, the proportional earnings loss was 0.036 ($1,535 divided by $42,740), which means that the earnings losses for workers with this type of injury were 3.6 percent of potential earnings.

Panel F. The mean workers' compensation benefits net of legal fees are shown in Panel F. These include all temporary disability benefits as well as permanent partial disability benefits received between 1968 and 1973. The mean benefits for all workers in the sample were $2,150. For workers with injuries to the upper extremity rated at 1-2 percent, the mean benefits net of legal fees were $593.

Panel G. The replacement rates are shown in Panel G. The replacement rates are the mean benefits net of legal fees received by the Wisconsin workers between 1968 and 1973 (Panel F) divided by the mean earnings losses for these workers during those six years (Panel C). For all workers in the sample, the replacement rate was 0.85 ($2,150 divided by $2,519), which means these workers received benefits that replaced 85 percent of their earnings losses. For workers with injuries to the upper extremity rated at 1-2 percent, the replacement rate was 0.39 ($875 divided by $1,535), which means these workers received benefits that replaced 39 percent of their earnings losses. A perusal of Panel G indicates there were great variations in replacement rates, ranging from 21 percent for workers age 30-39 with injuries rated at 1-2 percent to 991 percent for workers age 50-59 with injures rated at 3-5 percent. There were also two entries (shown in Panel G with "a") where the workers in the category received workers' compensation benefits but on average had no earnings losses.

Figure A2
Actual Losses of Earnings for a Worker with a Permanent Disability



Appendix B
Seven 'Principles' for Successful Return to Work

Institute for Work & Health
Toronto, Canada
March, 2007

Introduction: These principles have been developed from a systematic review of the literature completed in 2004 by Franche, which includes both quantitative studies (Franche et al., 2005) and qualitative studies (MacEachen et al., 2006) and from other current research on return to work. The review focused on three outcomes: duration of work disability, costs of work disability, and quality of life of workers. Overall the review found that workplace-based return-to-work interventions have positive impacts on duration and costs of work disability. However, only weak evidence was found to support that these interventions had a positive impact on workers' quality of life, suggesting the need for more research in this area. The seven principles are based on what is known to date and may change as new research evidence becomes available.

1. The workplace has a strong commitment to health and safety which is demonstrated by the behaviours of the workplace parties.

2. The employer makes an offer of modified work (also known as work accommodation) to injured/ill workers so they can return early and safely to work activities suitable to their abilities.

3. RTW planners ensure that the plan supports the returning worker without disadvantaging co-workers and supervisors.

4. Supervisors are trained in work disability prevention and included in RTW planning.

5. The employer makes an early and considerate contact with injured/ill workers.

6. Someone has the responsibility to coordinate RTW.

7. Employers and health care providers communicate with each other about the workplace demands as needed, and with the worker's consent.

ENDNOTES

1. This section is largely based on material in Institute of Medicine (2007).

2. Burton (2005:70-79) provides an extended discussion of the permanent consequences of injuries and diseases.

3. Additional discussion of a model of disability is included in Chapter 3 of Institute of Medicine (2007).

4. The implications of periodically recalibrating the rating schedule based on empirical studies of actual wage loss are discussed in Reville et al. (2005:90-95).

5. For example, Berkowitz and Burton (1972: 382) concluded that "*Adequacy* was not a major problem as of 1968, the date when the workers in the three states in our wage-loss study were injured. The major failing we have documented is the lack of *equity* of the permanent partial disability benefits."

6. The age adjustments in the California workers' compensation program are discussed by Reville et al. (2005:62-66). The baseline age is 39 and individuals receive higher permanent partial disability ratings if they are older than 39 and lower ratings if they are younger. The adjustments are presumably based on an assumption that older persons find it more difficult to adapt to permanent disabilities than do younger persons with equally severe impairments. However, when workers were placed into four age categories, the youngest workers (the 18- to 29-year olds) had the highest proportional earnings losses in the three years after their injuries.

7. The "odd lot" doctrine is discussed by Larson and Larson (2006: Chapter 83) and by Willborn et al. (2007: 970-74).

8. The hybrid approach to permanent partial disability benefits is discussed by Burton (2005:92-93). States that recently used or currently use the hybrid approach for permanent partial disability benefits include Connecticut, Texas, and Florida. Section 15(3)(v) of the New York workers' compensation law also utilizes the hybrid approach for a limited number of permanent partial disability cases.

9. A study of five states by Reville et al (2001) concluded that states with re-employment incentive programs have superior return-to work results. Bogyo (2007) reports success in British Columbia with incentives for employers such as paying for training-on-the job programs, wage subsidies, and workplace modifications.

10. The Institute for Work & Health (2007) has identified *Seven 'Principles' for Successful Return to Work,* which are included in Appendix B to this Statement.

11. An extended discussion of the various approaches to cash benefits in workers' compensation programs is included in Burton (2005).

12. A limited number of Wisconsin workers qualified for permanent total disability (PTD) benefits. However, the number of PTD cases was so small that the workers were not included in the study.

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WORKERS' COMPENSATION POLICY REVIEW is published by Workers' Disability Income Systems, Inc., 56 Primrose Circle, Princeton, NJ 08540-9416, tel 732-274-0600/ fax 732-274-0678 or editor@workerscompresources.com. Editorial inquiries should be directed to John F. Burton, Jr., Editor; or Florence Blum, Production Coordinator, at 56 Primrose Circle, Princeton, NJ 08540-9416 732-274-0600; fax 732-274-0678; email: editor@workerscompresources.com.