**Appendix:**

*Index of Expected Workers’ Compensation Benefits*

This index is designed to represent the generosity of workers’ compensation benefits at the state level. Each state law consists of numerous parameters that specify the benefit duration and amount depending on the injury type (temporary total, permanent partial, permanent total, or death), the worker’s pre-injury earnings, and in many instances, the status of the worker’s spouse and dependents. In order to represent the expected benefits in a simple and meaningful way, an expected net present-value is constructed for an “average” worker. This is done by assigning a probability to each injury type, and then computing the stream of indemnity payments associated with each injury. The probabilities are used as the weights to combine the streams of payments, forming a scalar that represents the net present-value of expected benefits. Permanent total disabilities are combined with fatalities since they are very rare and similar in monetary value to fatality benefits. (For instance, in the early sixties, a mere 0.1 percent of all injuries resulted in permanent total disability according to the February 1962, *Monthly Labor Review*.)

The “average” worker was assumed to have a wife and two dependent children, ages 8 and 10. In death cases, where widowed spouses were entitled to benefits, the widow(er) was assumed to live for 30 additional years. It was further assumed that the “average” worker in each state earned the national average manufacturing wage. The discounting of payment streams was done at an interest rate of 5 percent. While lump-sum payments have become rare in the modern era, state statutes that specifically address converting payments to lump-sums usually call for discounting at 4, 5, or 6 percent interest.

Temporary total disabilities enter the index through an assumed 5 week (35 day) injury. Permanent partial disabilities are represented by the loss of a hand. Where states make a distinction, the “major” hand is assumed. This value is adjusted since complete hand loss is more severe than the typical permanent partial injury. Some states allow for payment of both temporary total and permanent partial benefits during the initial weeks of a permanent partial injury when a worker is initially recovering. The benefit measure also incorporates delayed payments due to waiting periods and retroactive payments. In most situations the weekly benefit is a function of the worker’s gross-wages. However, for cases where benefits were based on “after-tax” or “spendable” earnings, then effective tax rates for the average worker were assumed to be 15 percent (for 1970-2000), 10 percent (for 1950-1969) and 5 percent (for years prior to 1950).

Benefit values are given on an annual basis. Parameters of the laws that determine these benefits (maximum weekly payments, minimum weekly payments, etc.) come from two primary sources. First, the US Chamber of Commerce published “Analysis of Workmen’s Compensation Laws” bi-annually between 1948 and 1968, and annually thereafter. Second, for earlier years, information was gathered either directly from state session laws or from periodic summaries published in the *Monthly Labor Review*. The injury probabilities come from the National Safety Council and are published in *Accident Facts* (for years 1921-1998) and *Injury Facts* (for years 1999-2000).

The assumptions pertaining to the “average” worker are ostensibly valid and are similar to those found used in the work of Fishback and Kantor. The national average wage is utilized (in lieu of a state average wage) in part so that variation in the index is driven by differences in the state benefit parameters, and it is done in part to avoid excess endogeneity with state average wages which are used as an explanatory variable.

*Unionization Index*

Unionization is measured as membership as a percentage of total non-agricultural employment. The index provides a value for each state for each year. However, state-specific percentages are not available in all years. For this reason, the unobserved years between observations are determined by interpolation. The interpolation procedure is slightly more sophisticated than straight-line interpolation since information on unionization at the national level is available for all years in the study. Specifically, this is done by forming the ratio of each state’s percentage of union workers to the national average. Straight-line interpolation is then done for these ratios, and for missing years the state’s percentage is estimated by multiplying the interpolated ratio by the national average for that year. Thus, this measure replaces missing values, but the changes from year-to-year move in proportion to the national average.[[1]](#footnote-1) The national average values for all of the United States are reported in Troy and Sheflin (1984) for 1929 through 1983, and by the Bureau of Labor for 1983 through 2000. The state-specific values are reported in 1939 and 1952 by Troy (1957) and in 1964, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1983, 1998, 1999, and 2000 by the Directory of US Labor Organizations, Bureau of National Affairs, or Bureau of Labor Statistics.

**Figure A1.**

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In contrast, to Figure 1 in the text, Figure A1 above allows the injury probabilities to vary by year. From this perspective benefits peaked closer to 1980. The difference in the figures appears because of the declining likelihood of death and permanent disability in the modern era.

**Figure A2. Relative Benefits: (1930 vs. 2000)**

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Real benefits improved relative to real earnings across the nation between 1930 and 2000. All states are above the 45 degree line (not shown here) implying that benefits represent a higher proportion of earnings in 2000 than in 1930. Some states clearly advanced more than others. (States higher on the vertical axis were relatively more generous in 2000. States higher on the horizontal axis were relatively more generous in 1930.) States like Vermont, Rhode Island and Delaware are notably more generous than in the past, while Arizona, Idaho, and Massachusetts are consistent in their relative generosity.

**Figure A3. Relative Benefits: (1930 vs. 1970)**

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Figure A3 provides a look at how states ranked prior to the surge in benefits that occurred during the mid- and late-1970s. In 1970, most states – all but 14 – were providing lower benefits relative to real earnings compared with their 1930 levels. The exceptions (including most of New England, Oregon, Washington D.C., Wisconsin, Michigan, and Pennsylvania) raised statutory benefits enough to keep up with inflation. Yet the majority of states placed little attention on maintaining the relative generosity of benefits. Mandated benefits were typically established as fixed dollar amounts within state statutes, so decisions by the state legislatures not to change nominal benefit levels meant an effective decrease in real benefit levels.

**Figure A4. Relative Benefits: (1970 vs. 2000)**

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Figure A4 compares 1970 to 2000. There are dramatic increases in the generosity in nearly all states.[[2]](#footnote-2) However, as more states raise benefits, there is a shake up in the relative “rankings” as well. Oregon continues to be remarkably generous, but nine of the top ten most generous states from 1970 fell out of the top ten in 2000. There is shake-up at the bottom as well. Only six of the ten least generous in 1970 remained in that bottom quintile in 2000.[[3]](#footnote-3) This shuffling of the generosity rankings means that states did not merely decide to increase their benefits by the same percentages. Instead, states’ revisited the proverbial drawing board. In the early 1970s, all states received the same national “recommendations,” yet their responses varied considerably both in generosity and the timeliness of their updated mandates.

**Figure A5. Standard Deviation of Benefits: (1930-2000)**



Figures A5 and A6 demonstrate the variation in benefits across all states. The standard deviation of benefits rose until the mid-1970s before declining in the 1980s. However, the coefficient of variation (shown below in A6) illustrates that by 2000, there was actually less variation in benefits across states than in any year since 1930. This is consistent with the hypothesis that federal interventions force states to adopt “one-size-fits-all” policies.

**Figure A6. Coefficient of Variation for Benefits: (1930-2000)**

**Table A1 The National Commission on State Workmen’s Compensation Laws:**

**Summary of the Essential Recommendations from the 1972 Report**

**Compulsory Coverage**:

* *Workmen’s compensation should be compulsory and no waivers should be permitted.*

**No Occupational or Numerical Exemptions**:

* *Employers should not be exempted from workmen’s compensation because of the number of their employees.*
* *Coverage for farm-workers should be adopted in two stages: Agricultural employers with annual payrolls over $1,000 should provide coverage by July 1, 1973. Farm-workers should be covered on the same basis as all other employees by July 1, 1975.*
* *All household workers and all casual workers should be covered at least to the extent that they are covered by Social Security by July 1, 1975.*
* *Workmen’s compensation coverage should be mandatory for all government employees.*
* *There should be no exemptions for any class of employees, such as professional athletes or employees of charitable organizations.*

**Full Coverage of Work-Related Diseases**:

* *All States should provide full coverage of work-related diseases.*

**Full Medical and Physical Rehabilitation Services without Arbitrary Limits**:

* *There should be no statutory limits of time or dollar amount for medical care or rehabilitation services for any work-related impairment.*
* *The right to medical and physical rehabilitation benefits should not terminate by the mere passage of time.*

**Employee’s Choice of Jurisdiction for Filing Interstate Claims**:

* *All employees or their survivors should be given the choice of filing a workmen’s compensation claim in the State where the injury or death occurred, or where the employment was principally localized, or where the employee was hired.*

**Adequate Weekly Cash Benefits for Temporary Total, Permanent Total, and Death** **Cases**:

* *Temporary total disability benefits, permanent total disability benefits, and death benefits should each be at least two-thirds of the worker’s gross weekly wage, subject to the State’s maximum weekly benefits.*
* *The maximum weekly benefit for temporary total disability, permanent total disability, and death should each be at least two-thirds of the State’s average weekly wage by July 1, 1973. The maximum should be at least 100 percent of the State’s average weekly wage by July 1, 1975.*
* *The definition of permanent disability used in most states should be retained. However, in those few states which permit the payment of permanent total disability benefits to workers who retain substantial earning capacity, the Commission’s benefit proposals should apply only to those cases which meet the test of permanent total disability used in most states.*

**No Arbitrary Limits on Duration or Sum of Benefits**:

* *Total disability benefits should be paid for the duration of the worker’s disability, or for life, without limitations as to dollar amount or time.*
* *Death benefits should be paid to a widow or widower for life or until remarriage. In the event of remarriage two years’ benefits should be paid in lump-sum to the widow or widower. Benefits for a dependent child should continue at least until the child reaches 18, or beyond if actually dependent, or until at least 25 if enrolled as a full-time student at an accredited educational institution.*

1. For instance, suppose state *S* has a union percentage that is 75 percent of the national average in 1976 and 85 percent of the national average in 1978. The unionization is known nationally in 1977, but not for state *S*. The interpolated value for state S in 1977 will be 80 percent of the national average (this is the average of 75 and 85). This will generally not be the same as simply averaging the state *S* values from 1976 and 1978. [↑](#footnote-ref-1)
2. All states except Arizona became relatively more generous. (If a 45 degree line was included in this scatter plot, then only Arizona would be below it.) [↑](#footnote-ref-2)
3. Of 1970’s top twenty, only 11 remained in the top twenty most generous in 2000. Of 1970’s bottom twenty states, a remarkable 8 states left the bottom twenty in 2000. [↑](#footnote-ref-3)