

The book has a sad footnote. Dr. Greenough passed away suddenly just before the book went to press. He would be proud of the final product, which will stand as a legacy to this pioneer of private pensions.

Benefits, Costs, and Cycles in Workers' Compensation edited by Phillip S. Borba and David Appel, (Kluwer Academic Publishers, 1990).

Reviewer: Barry D. Smith, Ph.D., Department Head, Department of Finance, Insurance, and Real Estate, New Mexico State University.

This is an important book for anyone interested in the complex issues facing the country's workers' compensation system. The book is composed of seven papers written by distinguished members of both the academic and non-academic community. The preface is somewhat vague on the origin of these works, but it appears they were presented as part of a Conference on Economic Issues in Workers' Compensation Insurance, convened by the National Council on Compensation Insurance, sometime in the early eighties. An exact date is not given.

While all seven papers are high quality, scholarly pieces, they fall into two distinct camps. Three of the papers ("Heterogeneity Bias in the Estimation of the Determinants of Workers' Compensation Loss Distributions," by John D. Worrall and Richard J. Butler; "Premium and Loss Cycles in Workers' Compensation," by Richard J. Butler and John D. Worrall; and "Discounted Cash-Flow Ratemaking Models in Property-Liability Insurance," by J. David Cummins) are traditional, scholarly research papers in which economic models and/or research methodologies are described, tested or critiqued. The other four papers are more in the form of essays covering provocative issues in the workers' compensation arena ("Have Increases in Workers' Compensation Benefits Paid for Themselves?" by Michael J. Moore and W. Kip Viscusi; "Workers' Compensation Disability Benefits During Retirement Years: Proper and Present Role," by C. Arthur Williams and Peter C. Young; "Rehabilitation and Workers' Compensation: Incompatible or Inseparable?" by Monroe Berkowitz; and "Mostly on Monday: Is Workers' Compensation Covering Off-The-Job Injuries?" by Robert S. Smith). Incorporating a nearly even number of each type of paper is a major strength of this book because it broadens the audience to include both academicians and non-academicians.

I found the four essay-type pieces particularly fascinating because of the common thread running through all four. In each case, the authors analyze and critique what are commonly believed to be fundamental principles or assumptions underlying the workers' compensation system. This makes for provocative and enlightening reading.

Moore and Viscusi critique the idea that increases in state-mandated benefits automatically increase the cost of providing workers' compensation benefits, a concept assumed by corporate America. Their analysis from the

late seventies and early eighties indicates that benefit enhancements as reflected by premium increases, are more than offset by wage differentials, i.e., wage offsets more than pay for the benefit increases. Unfortunately, their study only goes through 1982. An update of this work through the end of the decade, when the workers' compensation system has been subject to so much turbulence and controversy, would strengthen their results.

The Williams and Young article addresses the question of whether disability benefits should be lifetime in duration, extending beyond normal retirement age. They present pros and cons and discuss state statutes that have been enacted to address this issue. In conclusion, they state that while in theory benefits should not extend beyond a specified expected retirement age, in reality, a legislator would be committing political suicide in attempting to change a statute of this type. More moderate, compromise alternatives are presented in the conclusion.

The other two essays also address commonly-held assumptions, that workers' compensation and rehabilitation services fit hand-in-glove with each other, and that only work-related injuries are compensable by the system. The rehabilitation article by Berkowitz is especially enlightening. He provides strong evidence that the inseparable tie between workers' compensation and rehabilitation services is weakening as time passes, particularly as private industry replaces public entities in providing these benefits. Rehabilitation services will only survive if they can be justified in a cost/benefit environment. He states in his conclusion on page 110, "What is significant is that rehabilitation has now become an expense that must be controlled. It is no longer a public service available to the worker and his employer without charge."

Smith shows that significantly more accidents, especially those like sprains and strains which do not demand immediate treatment, are reported on Mondays and after holidays than on the other days of the week. The research methodology used to test the theory that non-occupational injuries are included in workers' compensation loss payments is quite interesting. In addition, he estimates the extent of these inflated claims, but finds they represent only two percent of total compensation paid for the types of injuries included in his study.

Of the three more academically-oriented articles, I found the work by Cummins to be the most important. He presents a clear, concise description and comparison of the two discounted cash-flow ratemaking models currently in use in workers' compensation insurance. For anyone wishing to gain a clear understanding of these models as well as the strengths and weaknesses of each approach, this article is must reading. He also provides a concise introduction describing the evolution leading to the use of these two models, and at the end explains further enhancements which may develop in the future.

The premium and loss cycle article by Butler and Worrall is important to anyone interested in the cyclical behavior of the insurance industry. The article is very detailed, perhaps unnecessarily, especially with the inclusion

of the final ten pages entitled "The Cycles Revisited," which adds little to the results. Their findings that workers compensation cycles are state-specific is very insightful, however, and has important regulatory and ratemaking implications.

The other article in the book on heterogeneity bias by Worrall and Butler, has the most limited audience. This paper provides fundamental information for anyone doing research involving workers' compensation loss data. Their purpose is to improve the research performed in the workers' compensation area and thus "help stimulate further research into how heterogeneity affects our ability to forecast workers' compensation cost" as they state in their conclusion on page 41.

Overall, this book is very readable and thought-provoking, and with the exception of the cycles article, includes excellent conclusions which crystallize the purpose, findings, and implications of the research. (The cycles article has no conclusions section.) The book is a significant addition to the literature in the workers' compensation area.

Financial Models of Insurance Solvency, edited by J. David Cummins and Richard A. Derrig. (Huebner International Series On Risk, Insurance, And Economic Security, Kluwer Academic Publishers, 1989), 363 pages.

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Financial Models Of Insurance Solvency, edited by J. David Cummins and Richard A. Derrig, is Volume II of the Proceedings of the First International Conference on Insurer Solvency which was held in 1986 at the Wharton School, University of Pennsylvania. This volume is a collection of eleven papers that fall into two groups. The first group consists of papers that adopt an essentially actuarial or statistical approach to solvency modelling. The emphasis is on cash flow analysis that incorporates investment income, inflation, taxation, and other economic variables. Most of these variables were modelled as stochastic processes. Whereas traditional definitions of insolvency involve static ratios, liquidation, and book value of assets below the book value of liabilities, these cash flow models describe insolvency as a situation in which the present value of cash outflows exceeds the present value of cash inflows and the market value of liabilities exceeds the market value of assets on an ongoing basis. The second group consists of papers that use asset pricing models, capital structure theory, and the economic theory of agency in financial economics to analyze various aspects of insurer solvency. In contrast to the actuarial models that treat capital as exogenous, the financial models assume capital is determined in the financial markets of the economy. Similarly, the actuarial models treat the price of the product as determined by the actuary

