**A4.4**

***Title: Event Study Analysis to Establish Capitalization Effects for Publicly Traded Corporations Reporting Fatal Injury Events Related to Chemicals***

Authors: **Keane P**, Biddle E

Introduction: Companies using chemicals in the course of business operations are required to submit a hazard control plan to the U.S. Environmental Protection Agency. This plan reports information on injury experience, including fatal injury experience. The surveillance system RMP*Info was queried to determine all publicly traded corporations for which daily changes in stock price were also reported. The purpose of this study was to determine the effect of fatalities on capitalization effects (change in stock prices).

Methods: All publicly traded corporations that reported fatal injuries to the RMP*Info database and that were also included in a standard database of stock price formed the study population (n = 27). Event study analysis, a standard method for determining capitalization effects, using Eventus was conducted on this population to determine abnormal returns on the days immediately following the event. Cross-sectional and time-series measures of dependency were adjusted to determine returns in excess of expected price.

Results: Negative abnormal returns (stock prices decreased) to a group of corporations reporting fatal injury events were found for the first 2 days following the event; were marginal on days 3 and 4; and greater (stock prices increased) than expected on day 5. However, the results were not significant, with p values consistently > .10. Given the heterogeneity of the variables (degree of capitalization, analyst coverage, corporation size, property damage, number of employees involved in each incident), this was expected and largely a function of the characteristics of the reporting system and the study population.

Conclusions: Abnormal returns to the study group were associated with a low probability of causal relationship with the public disclosure of events. Future studies should be designed to control or match variables by event characteristics. This effort represents the first study to analyze the effects of fatal occupational injury events from chemical hazards on stock prices.

Session: **A5.0**

***Title: Assessing the Safety Experience in Mining***

Moderator: Linda McWilliams

**A5.1**

***Title: The Burden of Fatal Occupational Injuries in the U.S. Mining Industry, 1992–2002***

Authors: **Biddle E**, Keane P

Introduction: Historically, mining has been one of the most hazardous industries, with more than 150 miners dying annually from occupational injuries. Understanding the economic burden of these fatalities is important to setting broad occupational safety and health research priorities. Cost estimates provide additional information about how fatal injuries affect society and hence can improve injury prevention and control program planning, policy analysis, evaluation, and advocacy. This study estimates the total, mean, and median societal costs by worker and case characteristic for the mining industry from 1992–2002.

Methods: Mining fatal occupational injuries data are from the Bureau of Labor Statistics Census of Fatal Occupational Injury (CFOI). This system compiles data from all 50 States (excluding New York City) and the District of Columbia using multiple sources for decedents of any age for the mining industry. The cost to society of workplace fatalities in the mining industry was estimated using the cost-of-illness approach, which combines direct and indirect costs to yield an overall impact of an occupational fatal injury on the Gross Domestic Product.

Results: Over the 11-year study period, 1,721 occupational fatalities occurred in mining and accounted for a total cost of $1.8 billion and a mean cost of just over $1million per incident. Mining reported fewer fatalities and lower total costs compared to other industry divisions during this study period. However, the industry demonstrated a relatively high mean cost of an occupational fatal injury—second only to fatalities occurring in Public Administration. By major industry group, oil and gas extraction had the highest total and mean costs; coal mining was second.

Conclusions: Consistent with findings on the number and rate of fatalities in mining, cost estimates from this study suggest that research to prevent fatal occupational injuries in mining should be a high priority.

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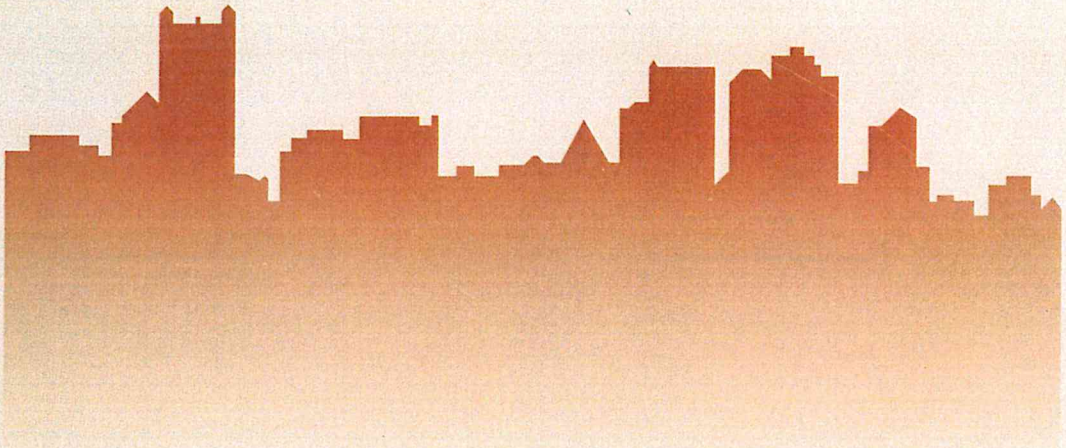

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