

ANALYSIS

A general equilibrium analysis of the insurance bonding
approach to pollution threats

John Merrifield *

*College of Business, University of Texas at San Antonio, COB-UTSA DT Campus, 501 West Durango Boulevard, San Antonio,
TX 78207, USA*

Received 30 April 2001; received in revised form 24 September 2001; accepted 23 October 2001

Abstract

This paper sheds additional light on the important issue of toxic accidental releases, or spills. The pollution control literature contains relatively little discussion of accidental releases. Even risk assessments are more about the risks to the public of predictable continuous emissions than about the risk of major accidents. Because spills of stored and transported chemicals are not continuous, or even inevitable, analogs of economic incentive approaches like emissions fees and transferable pollution allowances are inappropriate. Allowances are inappropriate because potential spills are often too harmful to allow, and a fee large enough to pay for clean-up and damages is beyond the means of many potential sources. The accidental release threat suggests an approach analogous to automobile liability insurance. Since a car can do more damage than most people can afford to pay for, states mandate insurance to ensure financial responsibility. Some potential sources of harmful spills are already required to demonstrate financial responsibility, and more could be. Insurance is one option for meeting financial responsibility requirements; in many cases, the only viable option. To develop testable hypotheses and determine where traditional partial equilibrium analyses would probably be misleading, the paper compares a very basic insurance bonding approach to the traditional command-and-control approach in a general equilibrium setting. That allows a comparison of effectiveness, and impacts on output levels, prices, and factor returns. © 2002 Elsevier Science B.V. All rights reserved.

Keywords: Spills; Continuous emissions; Command-and-control; Incentives; Insurance; Liability; Risk; Sensitivity analysis; Elasticity

“The greatest [political] risk is not that a [gov-
ernment] program will perform poorly, but that
a scandal will erupt. Scandals are front-page
news, while routine failure is ignored.”

Vice President Al Gore.¹

* Tel.: +1-210-458-2519; fax: +1-210-458-2515.

E-mail address: jmerrifield@utsa.edu (J. Merrifield).

¹ Sarason, S. 1996. Revisiting the Culture of the School and the Problem of Change. Teachers College Press, p. 346.

1. Introduction

Spills, leaks, and improper disposal practices (hereafter, just ‘spills’) often make big head lines.² Articles about routine emissions appear in the back pages. In contrast, economists have given the headline-grabbing accidental release of toxic chemicals comparatively little attention. And there is an extensive literature on the policy options for routine, more-or-less continuous emissions.

Just as they dominate continuous emission policies, command-and-control (CaC) approaches aimed at minimizing scandals dominate the accidental releases policies. And there are many general reasons why there is usually a strong initial bias in favor of CaC approaches. Perhaps foremost among the sources of bias is that every citizen knows that the government can mandate and prohibit, but few have thought about incentive approaches. Most citizens expect a CaC approach. The authorities may be aware of policy options other than new constraints on behavior, but the incentives to adopt alternatives to the expected CaC approach are usually quite weak. CaC rules confer additional power that legislators and their administrators gladly accept. Noll (1996) described why much good advice “will appear to political actors as ridiculously impractical.” For example, legislators lean towards highly prescriptive legislation to avoid transferring power to the executive branch.

In addition, a combination of economic illiteracy and perceived symbolism arouses some vocal opposition to market-based approaches. I have heard leaders of environmental organizations characterize emission fees as schemes that sell pollution rights with no environmental benefits because ‘big corporations’ will barely notice the cost, and thus not change their behavior. Some even equate marketable

emission allowances with selling the right to commit crimes, including murder.³

The pro-CaC bias appears to be especially strong for catastrophic spills. Zeckhauser (1996) says that “large concentrated losses get substantially overweighted.” Such “risks create reputational externalities;” another name for politically damaging scandals.

Biases persist, and inertia is a major factor, but market-based alternatives are getting harder to dismiss. The major shortcomings of CaC approaches are becoming more widely known. However, because of inertia, reforms were typically incremental policy additions rather than policy overhauls. For example, market-based policies were slowly grafted onto the CaC core of the air quality policy (Merrifield, 1990).

Since bias is becoming a smaller problem than inertia, the outlook for market-based approaches is better as an initial response than as a CaC replacement. For example, a major overhaul of the Clean Air Act is not on the policy horizon, but market-based approaches are under serious consideration for the initial policy response to global warming concerns, and fear of stratospheric ozone depletion.

This article aims to accelerate the entry of market-based policy options into the spills’ policy debate, and to improve the quality of that debate. It does so in two parts. The first three sections provide an informal overview of the many political and institutional obstacles to greater use of Insurance Bonding Approaches (IBA). Section 2 is a theoretical comparison of CaC and IBA. Section 3 is a literature review and it describes the policy setting. The remainder of the article provides a formal overview of general differences in the economic impacts of the IBA and CaC approaches. Because no model can address all of the issues raised in the first three sections, the second half of the article neglects some of the issues raised in first half. Section 4 outlines the general equilibrium model. A comparative static analysis

² Examples: (1) The Exxon Valdez Oil Spill; (2) The April 11, 1996 train crash-induced chemical spill in Alberton, Montana; (3) The July 1, 1997 train collision and chemical spill near Rossville, Kansas. Smaller spills make local headlines. A careless motorist caused a gasoline spill that threatened aquifers near San Antonio, Texas.

³ The commentators included an academic colleague who published the allegation in the campus newspaper. I did not save the clipping, or the environmental newsletters that made similar comparisons.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات