Ecological Economics 93 (2013) 284–291

Contents lists available at SciVerse ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon

Analysis

# Media attention and the Toxics Release Inventory ☆

Shrawantee Saha [a,*], Robert D. Mohr [b]

[a] Department of Economics, College of Saint Benedict and Saint John's University, United States
[b] Department of Economics, University of New Hampshire, United States

ARTICLE INFO

*Article history:*
Received 14 November 2011
Received in revised form 11 May 2013
Accepted 14 May 2013
Available online 6 July 2013

*JEL Classification:*
Q51
Q52
Q53
Q58

*Keywords:*
Environmental justice
Media attention
Toxics Release Inventory

ABSTRACT

This paper explores the relationship between the print media and toxic releases in the first wave of Toxics Release Inventory (TRI) filings. It first studies the degree to which neighborhood characteristics like racial composition and income status associate with the number of newspaper articles written about a TRI establishment, controlling for the volume of toxic releases, industry and observable establishment characteristics. It follows up to study whether establishments that receive media attention reduce toxics releases more than those that do not. Neither a qualitative review of the articles nor regression results show any significant correlation between race or income and the likelihood of being included in media reports. A difference-in-difference approach shows a statistically significant decrease in the toxic releases of establishments that received media attention compared to those that did not.

© 2013 Elsevier B.V. All rights reserved.

## 1. Introduction

Since 1987, all U.S. manufacturing facilities with at least 10 employees and producing more than 500 lb of each of the 320 listed chemicals, must annually report an inventory of toxic releases to the EPA. Information about these releases is then publically disseminated through the Toxics Release Inventory (TRI). Such a requirement informs the public and allows individuals to minimize or avert exposure to toxic substances.[1] The requirement also creates negative publicity, which imposes a cost on firms and provides incentives to reduce the production of or prevent the release of toxic chemicals. This paper studies the role of the print media in generating such negative publicity. Specifically, it studies the role the media played when the TRI program was first implemented. With limited preconceived notions about the polluting behavior of facilities around the early years of TRI reporting, media responses at this time provide a rare opportunity to isolate and study the behavior of the media to new pollution news and study how TRI establishments responded to a sudden wave of media attention.

This paper takes two perspectives on the relationship between media attention and toxic releases. It first studies the degree to which neighborhood characteristics like racial composition and income associate with the number of newspaper articles written about an establishment, controlling for the volume of toxic releases, industry and observable establishment characteristics. The results will show little association between non-white neighborhoods and media reporting. The empirical analysis then uses a difference-in-difference approach to show that facilities that receive media attention reduce toxic releases dramatically more than facilities that do not. Furthermore, establishments in non-white neighborhoods are more likely to reduce releases.

The results contribute to the research on "environmental justice," the concept that environmental risks and hazards should be equitably distributed regardless of race, color or income. Prior studies on environmental justice don't incorporate the media and instead typically focus directly on the behavior of and location decisions of individuals and firms (Boer et al., 1997; Wolverton, 2009; Zimmerman, 1993). There are a number of reasons to believe that neighborhood characteristics like income or racial composition can affect the media's decision to report about a particular establishment. Choices over what to report are influenced by the preferences and worldviews of reporters, editors and the newspaper owner (Bennett, 1988; Entman and Rojecki, 2000; Groseclose and Milyo, 2005; Wilson and Gutiérrez, 1995). If reporters or editors have a liberal stand on public policy issues, they may be more likely to cover issues related to the poor and racial minorities. On the other hand, the motive of profit maximization might lead them to report less on these neighborhoods. The largest media audience

☆ We are grateful to Le Wang, Ju-Chin Huang, Reagan Baughman and two anonymous referees for useful comments. We are also thankful to Wei Shi, Steve Furnagiev, Feng Wang, Paul Tembo and Ross Neubauer for research assistance, and the library staff at the University of New Hampshire for their help in locating data and documents used in this research.

* Corresponding author. Tel.: +1 320 363 5582; fax: +1 320 363 6099.
*E-mail addresses:* ssaha@csbsju.edu (S. Saha), robert.mohr@unh.edu (R.D. Mohr).

[1] The TRI is not, however an inventory of pollution or polluting behavior. Releases by themselves do not reflect any calculable health risks for nearby residents.

0921-8009/$ – see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.ecolecon.2013.05.008

in the U.S. is white and middle-class (Larson, 2006; Shirley, 1992). Reporting about poor and minority neighborhoods may not appeal to these readers. Furthermore, the costs of reporting about toxic releases in high-income neighborhoods might be lower. If higher income neighborhoods are more vocal about their disamenities (and therefore more responsive to reporters), and lower income neighborhoods attach less weight to environmental quality, then toxic releases in higher income neighborhoods may get more attention.

To the extent that media activity is associated with neighborhood characteristics, the second objective of this paper is to explore how media activity might affect toxic releases. If media attention imposes costs, facilities have incentives to change their subsequent behaviors. Prior research on the TRI has explored numerous ways that the requirement to report releases affects firms, but to our knowledge no study has focused on the relationship between TRI-related media attention and behavior of the facilities.[2] The difference-in-difference approach used in this study aims to provide insight into this relationship. Although the results should not be interpreted causally, they do show that establishments which receive media attention behave differently from the ones that do not.

The remaining sections of this paper present a background of the TRI program and its association with environmental justice, data, measures and the empirical strategies, and results. The section on results first identifies the association between media attention and neighborhood characteristics, and then shows results on how the toxic releases of establishments with media attention differ from the releases of those establishments without media attention.

## 2. Background

The TRI program was formulated under the Emergency Planning & Community Right-To-Know Act (EPCRA) of 1986, against the backdrop of a chemical accident at Union Carbide's chemical plant in Bhopal, India in 1984. EPCRA mandates that all U.S. manufacturing facilities, with at least 10 employees and producing more than 500 lb of each of the 320 listed chemicals, must annually report to the EPA. The EPA collects this information and catalogs it for public dissemination via its TRI database.

The first wave of TRI reports, which reported about releases in 1987, was made publicly available on 19th June, 1989. Shortly thereafter, the Natural Resources Defense Council (NRDC) and the National Wildlife Federation (NWF) published two specialized reports on the "top polluters" of 1987 (Dean, 1989; Natural Resources Defense Council, 1989).[3] These publications, along with the original TRI reports, generated significant media activity including articles in major newspapers like USA TODAY, The Boston Globe, The Washington Post and The New York Times. Of the 326 facilities in our dataset that received some sort of media attention, 130 facilities come from the top 500 establishments reported in NWF's report identifying the "Toxic 500".

Reading print media stories about the first wave of TRI reports along with related articles from the same period reveals several facts that are relevant to our investigation. First, the press did express an interest in the links between pollution, citizen action groups, and socio-economic characteristics of affected populations. For example, The New York Times published a number of articles about economically disadvantaged communities affected by pollution, and about the work of grass roots activists (e.g. Suro, 1989). The head of the National Wildlife Foundation contributed editorials calling for environmentalism to "embrace the poor" (Hair, 1990). This interest is consistent with the emerging focus on environmental justice (United Church of Christ, 1987; United States General Accounting Office, 1983). It is directly relevant to our study since facilities subject to TRI reporting requirements tend to be located in minority neighborhoods and these facilities also tend to have higher toxic releases (Arora and Cason, 1999; Wolverton, 2009).[4]

Second, numerous articles indicated that the TRI findings "shocked" federal officials and surprised company executives. Event studies on the impact of the TRI reports on the financial market show that publicly traded TRI firms experienced negative abnormal returns on the day following the first TRI report (Hamilton, 1995a). The release of data was viewed as a significant problem for several large companies with multiple TRI facilities. The trade journal, *Chemical Week*, cited "non-regulatory pressures, such as local and community concerns" as driving the industry's environmental performance (Rotman, 1989: p. 66). In fact, the firms with largest negative abnormal stock returns were also the ones that reduced their toxic releases more than their industry peers (Konar and Cohen, 1997).

## 3. Data

This study uses toxic releases data from the TRI database, socio-economic characteristics from the 1990 U.S. Population Census, media attention data from the Lexis-Nexis Academic Universe database, and company level information about the TRI establishments from the Compustat North America from Standard and Poor's database. The TRI database contains detailed information about the toxic releases of all U.S. manufacturing facilities that submit toxic release reports to the TRI. There is a two-year gap between the data-reporting date and the date EPA publicly disseminates this information. The first TRI report was available on 19th June, 1989 and contained information about the 1987 toxic releases of almost 24,000 facilities. These 1987 data were later removed from the TRI database, since there was a great deal of variance in how facilities estimated the quantity of toxics released and because two chemicals, that were released in large quantities, were later removed from the list of toxic substances. Since a part of this study focuses on media response to reported releases (regardless of the accuracy of the underlying reports), the 1987 data is nonetheless appropriate.[5]

Media attention data is collected from the news archives at the Lexis-Nexis Academic Universe database, using a combination of keywords for the database search: 'Toxic Release Inventory' or 'worst polluters' or 'pollution' or 'Toxic 500' or 'National Wildlife Federation' for the time period June, 1989 to April, 1990. This search produces slightly less than 1000 returns, which we read and sorted. We identified the subset of articles that related specifically to the TRI; nearly all of these discussed specific facilities. The few articles that did not include facility-specific information typically discussed industry-wide reaction to a changing regulatory environment (discussed in the Conclusion

[2] TRI appears to affect investors through the stock market (Hamilton, 1995a; Khanna and Lisa, 1999; Khanna et al., 1998), encourage enrollment in voluntary environmental management programs (Arora and Cason, 1995, 1996; Khanna and Anton, 2002; King and Lenox, 2001) and influence the location decisions of the firms (Anderton et al., 1994; Davidson and Anderton, 2000; Sadd et al., 1999; Wolverton, 2009). Dasgupta et al. (2006) show that environmental news and a firm's awareness of such media attention are predictors for firm performance in South Korea.

[3] The second wave of TRI reports, released in April 1990, also generated substantial print media attention. Once again, an environmental advocacy group, Citizen Action, used the data to generate a filtered list of highly "polluting" facilities.

[4] This does not mean that firms with high levels of toxic releases seek out minority neighborhoods. Most studies find that the racial composition of neighborhoods does not explain firm location decisions, but that this decision is often influenced by the income status and the political mobilization of the neighborhood (e.g. Been and Gupta, 1997; Davidson and Anderton, 2000; Gamper-Rabindran, 2006; Hamilton, 1995b; Kriesel et al., 1996).

[5] These data, while no longer part of the TRI database, are still available through the EPA's Office of Pollution Prevention and Toxics library. In the portions of this paper where we study the association between media attention and changes in toxic releases, we disregard the 1987 TRI and focus on later years.

دریافت فوری ← متن کامل مقاله

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