ZEW policy brief

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// Dr. Eline Schoonjans (ZEW)

Better Safe than Sorry? Toxic Waste Management after Union Elections

U.S. manufacturing facilities generate approximately 30 billion pounds of hazardous waste annually, 10% of which is released into the environment. The negative economic and health impacts of such toxic chemicals are significant (Currie et al., 2015; Aguilar-Gomez et al., 2022). It is therefore crucial to understand the factors which influence the production, release, and treatment of toxic waste and its resulting pollution.

Unions are designed to advocate for workers' health and safety, but their impact on toxic waste management remains unclear. This study investigates how union elections affect the balance between workplace safety and environmental sustainability. Union election wins lead to a significant increase in air pollution and the release of toxic waste and to a significant decrease in waste treatment (e.g. recycling and energy recovery) at facility sites. Even though unionised facilities engage more often in innovative pollution prevention activities, these efforts are insufficient to offset the increased release of toxic waste. Unionised facilities prioritise worker safety by limiting the handling of hazardous waste, but this occurs at the expense of environmental sustainability.

POLICY RECOMMENDATIONS

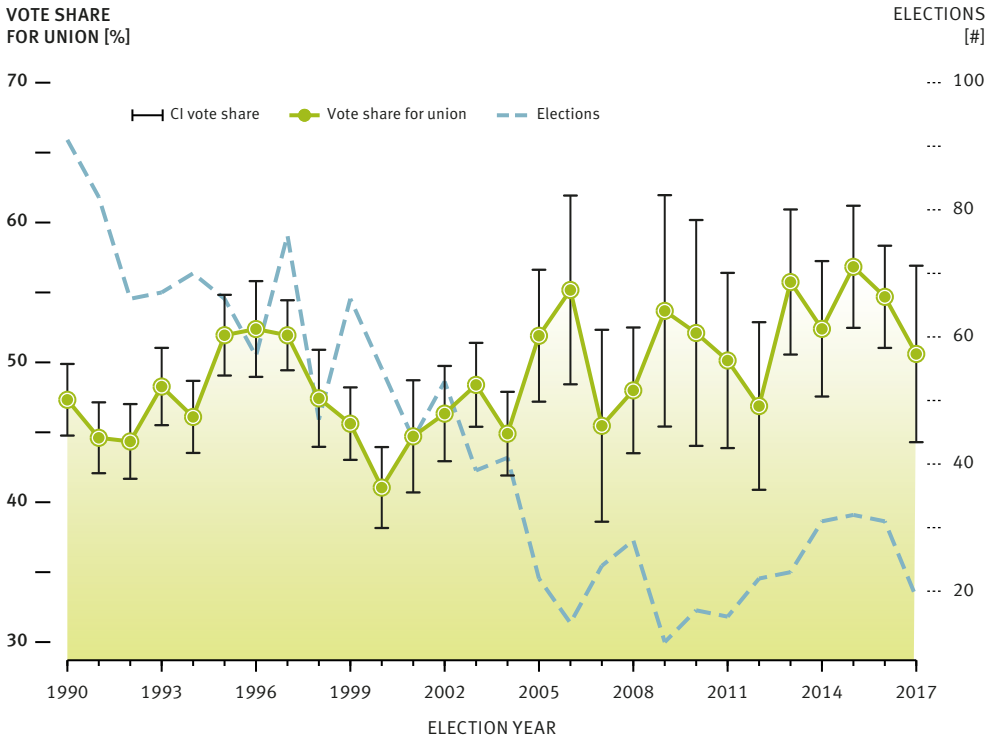
- **Strengthen Green Workplace Safety Standards:** Develop regulations that improve worker safety in waste-treatment jobs while maintaining strict environmental protections.
- **Enhance Collaboration Between Unions and Environmental Agencies:** Foster partnerships to ensure that worker safety concerns align with sustainability goals.
- **Promote Waste Prevention Training:** Equip workers with skills to safely engage in waste reduction activities, reducing reliance on methods for handling hazardous waste
- **Conduct Targeted Interventions in At-Risk Industries:** Implement stricter oversight in industries where unionization strongly influences toxic waste management practices.
- **Incentivise Green Innovation:** Provide financial and technical support to expand pollution prevention efforts and mitigate the release of toxic waste.

UNION POWER HAS DIMINISHED IN THE LAST DECADES

In the last 30 years, the number of union elections have declined

Over the past few decades, the power of unions in the US has significantly weakened due to legislative changes, globalization, and shifts in labour market dynamics. Employer opposition, unfair labour practices, and right-to-work policies have limited unions' bargaining power (Ferguson, 2008; Hofmann and Schoonjans, 2023; Kallas et al., 2023). As a result, union representation and membership have steadily declined.

FIGURE 1: NUMBER OF UNION ELECTIONS AND VOTE SHARES BY ELECTION YEAR



Note: This figure shows trends in union elections from 1990 until 2017, certified by the NLRB and matched to the TRI data. The dashed line represents the number of elections certified by year. The line with dots depicts the average vote share in each year, and the gray vertical lines indicate the 95% confidence interval for the average vote share.

UNIONS' MIXED TRACK RECORD ON ENVIRONMENTAL PROTECTION

Do unions prioritise environmental concerns?

Unions engage in collective bargaining for worker wages, job security, and safety. While they have historically supported environmental regulations to reduce pollution, examples of recent negotiation topics show that primary concerns for worker safety and well-being can come at the cost of environmental protection. In 2023, for example, the Teamsters Union bargained for air conditioning in all UPS vehicles, but not for a switch to low-emission vehicles (UPS, 2023).

THE RELEASE OF TOXIC WASTE AND INCREASE OF POLLUTION

After union election wins, manufacturing facilities see increases in the release of toxic waste and air pollution. Compared to non-unionised facilities, unionised facilities increase toxic releases by 14.7 percentage points. This increase in toxic releases also leads to a substantially worse Air Quality Index in a five-mile radius of the affected facility.

Air, land, and water pollution increase by 15 percentage points

WORKER SAFETY INCREASES, (BUT) WASTE TREATMENT DECREASES

Workers who are represented by collective bargaining unions prioritise their safety by taking measures to avoid the handling of hazardous waste. Unionised facilities report lower levels of on-site waste treatment. Recycling, energy recovery, and other treatment method rates drop by 59.3 percentage points. Unionised facilities also report less catastrophic release of toxic waste, which often occurs during waste treatment practices.

Recycling, energy recovery and other toxic waste treatment methods decrease

UNIONS' EFFECT ON WASTE MANAGEMENT VARIES IN DIFFERENT CONTEXTS

The impact of union election wins on facilities' waste management practices is more pronounced in states without right-to-work laws for service model union, for non-heavy industries, and for less toxic chemicals.

UNIONISED FACILITIES INVEST IN MULTI-WIN OUTCOMES

Union election wins increase facilities' engagement in pollution prevention activities during the production phase, thus reducing generated waste. This alleviates the facility's need to treat the toxic waste after production without increasing its release into the environment. However, these improved and innovative product and process designs are insufficient to counteract the decrease in toxic waste releases in unionised facilities. Therefore, toxic waste releases and air pollution still increase.

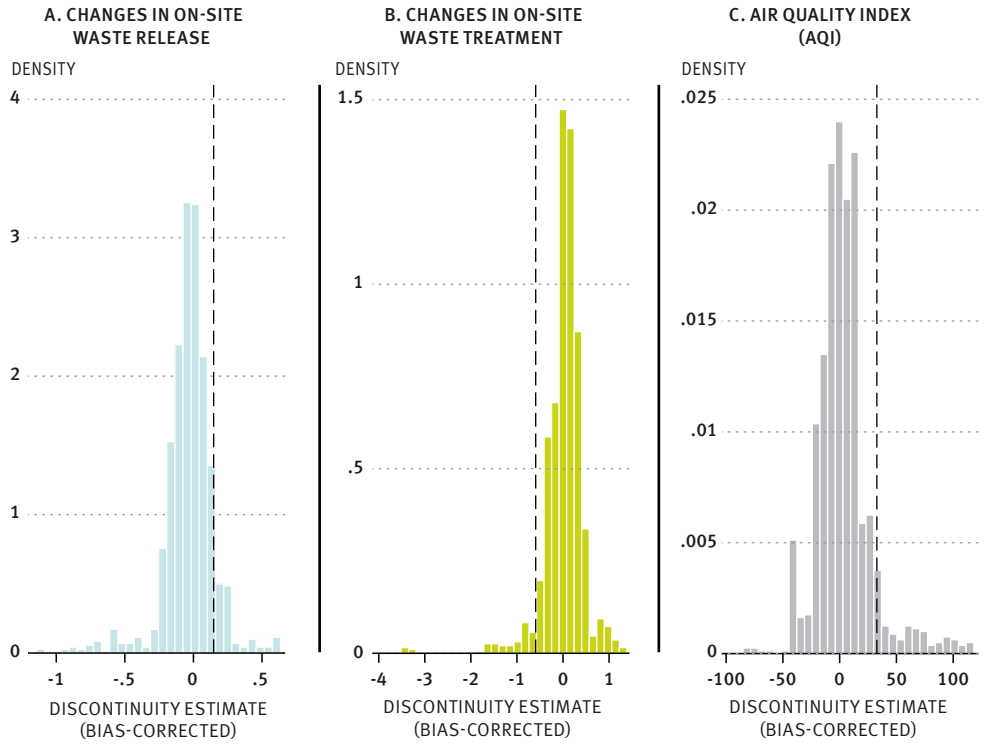
Unionised facilities engage more often in innovative pollution prevention

REGRESSION DISCONTINUITY DESIGN AS A NOVEL METHODOLOGICAL APPROACH

The implemented regression discontinuity design identifies the causal effect of union elections on facilities' toxic waste management and the resulting environmental performance. The design compares close-call union elections that are comparable in all aspects except for their outcome. The results and interpretations apply to all union elections in U.S. manufacturing facilities between 1990 and 2020.

An elaborate methodology allows for causal interpretation

FIGURE 2: THE TRUE UNION EFFECT COMPARED TO PLACEBO FALSIFICATIONS



Note: These histograms show the distribution of the discontinuity estimates from placebo tests with artificial cutoffs for union election wins between 20 % and 80 % of the vote share. The dashed vertical line represents the true discontinuity estimate of the union effect on toxic waste management and pollution.

POLICY INTERVENTIONS ARE NEEDED TO BALANCE WORKER SAFETY AND ENVIRONMENTAL PROTECTION

Unionization plays a crucial role in improving worker safety, yet it inadvertently increases toxic waste emissions. Policymakers must implement strategies that integrate workplace safety with environmental sustainability, ensuring a future where both workers and communities are protected from hazardous waste exposure.

Unions prioritise worker safety over broader environmental concerns

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Authors: Dr. Eline Schoonjans (ZEW)

Publisher: ZEW – Leibniz Centre for European Economic Research
L 7, 1 · 68161 Mannheim · Germany · info@zew.de · www.zew.de/en · x.com/zew_en

President: Prof. Achim Wambach, PhD · Managing Director: Claudia von Schuttenbach

Editorial responsibility: Pascal Ausäderer · presse@zew.de

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