

Study examines effectiveness of regulation in electricity markets

January 8 2015, by Victoria Ekstrom High

A study in the latest issue of the *American Economic Review* used recent state regulatory changes in electricity markets as a laboratory to evaluate which factors can contribute to a regulation causing a bigger mess than the problem it was meant to fix.

This followed in the wake of the 2008 financial crisis, when the U.S. government increased oversight of the finance and banking industries to correct the market failures that led to the collapse—spotlighting the damage that can happen when regulations don't work as they should.

"Regulations are not created equal. Instead of debating for or against 'regulation' in general, it would be more productive to figure out how to separate the good from the bad," said the author of the study, Asst. Prof. Steve Cicala from the Energy Policy Institute at Chicago. "If we know what forces make a regulation unsuccessful, then we can avoid designing new ones in a similar way."

Cicala used data on almost \$1 trillion worth of fuel deliveries to power plants to look at what happens when a power plant becomes deregulated. He found that the deregulated plants combined save about \$1 billion a year compared to those that remained regulated. This is because a lack of transparency, political influence and poorly designed reimbursement rates led the regulated plants to pursue inefficient strategies when purchasing coal.

The \$1 billion that deregulated plants save stems from paying about 12

percent less for their coal because they shop around for the best prices. Regulated plants have no incentive to shop around because their profits do not depend on how much they pay for fuel. They also are looked upon more favorably by regulators if they purchase from mines within their state, even if those mines don't sell the cheapest coal. To make matters worse, regulators have a difficult time figuring out if they are being overcharged because coal is typically purchased through confidential contracts.

Although [power plants](#) that burned natural gas were subject to the exact same regulations as the coal-fired plants, there was no drop in the price paid for gas after deregulation. Cicala attributed the difference to the fact that [natural gas](#) is sold on a transparent, open market. This prevents political influences from sneaking through and allows regulators to know when plants are paying too much.

What's different about the buying strategy of deregulated coal plant operators? Cicala dove deep into two decades of detailed, restricted-access procurement data to answer this question. First, he found that deregulated plants switch to cheaper, low-sulfur coal. This not only saves them money, but also allows them to comply with environmental regulations. On the other hand, regulated plants often comply with regulations by installing expensive "scrubber" technology, which allows them to make money from the capital improvements.

"It's ironic to hear supporters of Eastern coal complain about '[regulation](#)': they're losing business from the deregulated plants," said Cicala, a scholar at the Harris School of Public Policy.

Deregulated plants also increase purchases from out-of-state mines by about 25 percent. As mentioned, regulated plants are looked upon more favorably if they buy from in-state mines. Finally, deregulated [plants](#) purchase their coal from more productive mines ([coal](#) seams are thicker

and closer to the surface) that require about 25 percent less labor to extract from the ground and that pay 5 percent higher wages.

"Recognizing that there are failures in financial markets, health care markets, energy markets, etc., it's critical to know what makes for 'bad' regulations when designing new ones to avoid making the problem worse," Cicala said.

More information: Cicala, Steve. 2015. "When Does Regulation Distort Costs? Lessons from Fuel Procurement in US Electricity Generation." *American Economic Review*, 105(1): 411-44.

Provided by University of Chicago

Citation: Study examines effectiveness of regulation in electricity markets (2015, January 8) retrieved 5 May 2024 from <https://phys.org/news/2015-01-effectiveness-electricity.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.