

Decomposing Changes in Establishment Level Emissions with Entry and Exit*

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Abstract

This paper decomposes toxic chemical releases by US manufacturing establishments, to both the air and water, to show the relative importance of four establishment-level channels: entry, exit, reallocation between survivors, and within-establishment adjustment of emissions intensity. Using a panel of establishment-level output and chemical emissions data for US manufacturers, we decompose changes in toxic emissions into the three channels typically presented in the literature: changes in scale (output), composition (industry market share), and industry-level technique (emissions intensity). We then decompose changes due to industry-level emissions intensity into four establishment-level channels. For airborne emissions, around half of the reduction in sector-level emissions intensity is due to within-establishment reductions in emissions intensity. The other half is driven by reallocation to cleaner establishments. Onsite releases of effluents to water exhibit a similar pattern, though the relative importance of within-establishment reductions is greater. Additionally we find that within-establishment cleanup is associated with increased transfers to offsite publicly owned treatment facilities. Import competition is associated with reduced overall emissions driven largely by reallocation to cleaner establishments. The marginal effect of imports from China is improved within-establishment environmental performance.

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