

UNREASONABLE RISK: THE FAILURE TO BAN ASBESTOS AND THE FUTURE OF TOXIC SUBSTANCES REGULATION

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Every day, Americans are exposed to hundreds of chemicals in the air we breathe, the water we drink, and the products we use. The vast majority of these chemicals have never been tested for safety. Many have been shown to cause serious health harms, ranging from cancer to autoimmune illness to IQ loss. They also have disproportionate effects on some of the most vulnerable populations in our society, such as children, minorities, and industrial workers.

The law that is supposed to protect Americans from dangerous chemical exposures—the Toxic Substances Control Act (“TSCA”)—was long considered a dead letter after the Environmental Protection Agency (“EPA”) failed to ban asbestos, an extremely hazardous carcinogen. The agency issued a ban in 1989, but it was struck down by the U.S. Court of Appeals for the Fifth Circuit in Corrosion Proof Fittings v. EPA. Following the Fifth Circuit decision in 1991, the agency never again sought to exercise its authority under TSCA to prohibit the use of a chemical already on the market.

For the next several decades, EPA officials, environmental groups, and members of Congress debated the reasons that EPA’s asbestos regulation did not survive judicial review and whether TSCA should be amended in response. According to certain agency staff and some environmental organizations, TSCA’s requirement that EPA perform a cost-benefit analysis to justify the asbestos ban made it impossible for the regulation to stand up to judicial scrutiny. As a result, when Congress had a once in a generation opportunity to amend TSCA in 2016, Democrats made removal of cost-benefit analysis from determinations about whether a substance poses an unreasonable risk their top priority in negotiations with Republicans. To earn Republican support for changing the law, Democrats agreed to expand federal preemption of state toxic chemical controls, which had been a major goal of the chemical industry.

Yet a historical examination of the asbestos episode reveals that the accepted story of EPA’s failure is wrong. Archival documents, many of which have never been viewed by those outside EPA, demonstrate that it was not cost-benefit considerations that doomed the asbestos regulation. Instead, disagreements with the Office of Management and Budget over whether EPA or the Occupational Safety and Health Administration should address asbestos and EPA’s refusal to fully quantify harms and monetize benefits were largely responsible for the problems with issuing the regulation and marshalling enough evidence to withstand judicial review. In fact, EPA could have justified the ban on cost-benefit grounds if the agency had quantified and monetized the benefits using information available to it.

This Article makes several arguments based on how science and economics were used—and misused—to justify the asbestos ban. The first is that Democrats in Congress struck the wrong bargain with Republicans in the 2016 amendments to TSCA and failed to fix the underlying problems with toxics regulation. As a result, the same challenges that plagued the asbestos ban have continued to frustrate EPA efforts since Congress amended the law. Other methodological approaches for deciding when to regulate require similar informational inputs, expertise, and value judgments. This Article therefore suggests that environmental scholarship

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and advocacy should focus greater attention on how underlying analytical assumptions shape all methods for deciding whether or not to regulate. Finally, and more poignantly, this Article serves as an example of why accurate, well-sourced history is essential for understanding how administrative agencies function and what lessons we should draw from their successes and failures. Had Democrats been aware of what actually transpired within EPA and the executive branch, they would have been much better equipped to enact meaningful TSCA reform.

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INTRODUCTION

Baby powder has long been a staple in homes across America and around the world. The iconic image of a newborn doused in the fine white substance helped its maker, Johnson & Johnson, promote itself as a wholesome, trusted brand.¹ Though baby powder sales are just a small part of Johnson & Johnson's

1. See Tiffany Hsu & Roni Caryn Rabin, *Johnson & Johnson to End Talc-Based Baby Powder Sales in North America*, N.Y. TIMES (May 19, 2020), <https://perma.cc/D6RW-YPMQ>.

yearly profits, consumer faith in the product helped propel the company to the top of the Fortune 500 list for decades.²

That public trust was shattered in 2019 as U.S. government tests revealed the presence of asbestos in Johnson & Johnson's baby powder.³ Asbestos is a known carcinogen, and those exposed to the substance can develop a number of serious health issues, including mesothelioma, lung cancer, and asbestosis.⁴ The government findings prompted Johnson & Johnson to swiftly issue a voluntary recall of baby powder before discontinuing its production of the product altogether.⁵

The discovery contributed to renewed questions about why the U.S. has not banned asbestos, as 70 other countries have done.⁶ Asbestos is a naturally occurring mineral fiber that has been used in a variety of manufacturing, construction, and commercial settings since industrialization.⁷ For over a century, medical professionals have suspected that asbestos exposure could lead to harmful health effects.⁸ Evidence of an increased cancer risk among U.S. asbestos workers began to emerge in the 1930s,⁹ and by the 1960s, there was widespread scientific consensus that asbestos could cause cancer, mesothelioma, and asbestosis.¹⁰ Low estimates of the U.S. death toll from asbestos exposure over the course of the 20th century place the number of fatalities at approximately 300,000,¹¹ though these numbers are almost certainly conservative given challenges in data collection.¹² Recent scientific studies estimate that asbestos expo-

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2. See *The Weekly, Episode 14: 'v. Johnson & Johnson'*, N.Y. TIMES (Oct. 4, 2019), <https://perma.cc/DBX8-KUAG> (discussing recent lawsuits over asbestos in baby powder).
 3. See Tiffany Hsu & Roni Caryn Rabin, *Johnson & Johnson Recalls Baby Powder Over Asbestos Worry*, N.Y. TIMES (Oct. 18, 2019), <https://perma.cc/J869-NW5B>; *The Weekly, supra* note 2. On litigation over possible asbestos in Johnson & Johnson baby powder, see Roni Caryn Rabin & Tiffany Hsu, *Johnson & Johnson Feared Baby Powder's Possible Asbestos Link for Years*, N.Y. TIMES, (Dec. 15, 2018), <https://perma.cc/F8RJ-XUVE>.
 4. See ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW AND SOCIETY 678 (3d ed. 2004).
 5. See Hsu & Rabin, *supra* note 1.
 6. See Owen Dyer, *Johnson & Johnson Recalls Its Baby Powder after FDA Finds Asbestos in Sample*, BMJ, Oct. 21, 2019, at 1.
 7. See *Learn about Asbestos*, EPA, <https://perma.cc/KR72-V28H>.
 8. See PETER BARTTRIP, BEYOND THE FACTORY GATES: ASBESTOS AND HEALTH IN TWENTIETH CENTURY AMERICA 2 (2006).
 9. See ROBERT PROCTOR, CANCER WARS: HOW POLITICS SHAPES WHAT WE KNOW AND DON'T KNOW ABOUT CANCER 114 (1995).
 10. See *id.* at 116.
 11. See *id.* at 121–22.
 12. On how such issues may undercount asbestos deaths, see Harvey J. Hilaski & Chao Ling Wang, *How Valid Are Estimates of Occupational Illness?*, MONTHLY LABOR REV., Aug. 1982, at 27, 32–33.

sure kills more than 40,000 people annually in the U.S.¹³ This is comparable to the number of people who die every year from car accidents,¹⁴ firearms,¹⁵ or opioid overdoses.¹⁶

The Toxic Substances Control Act (“TSCA”),¹⁷ originally passed in 1976, is the federal law that regulates chemicals like asbestos.¹⁸ When it was enacted, TSCA distinguished between “new” chemicals not yet on the market and “existing” chemicals already in use. The former had to undergo Environmental Protection Agency (“EPA”) review before they could be introduced into commerce, while the latter were simply allowed to remain on the market without any safety testing.¹⁹ The vast majority of chemicals in use today—tens of thousands—were already on the market in 1976 and thus exempted from any required safety testing under the law, including asbestos.²⁰ Under TSCA’s section 6, EPA could only restrict or ban existing chemicals if the agency found that they posed an “unreasonable risk” to human health or the environment.²¹ The statute did not define what constituted an “unreasonable risk,” though it did require EPA to consider a chemical’s health and environmental effects and the economic consequences of restrictions before regulating it.²²

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13. See GBD Results Tool, INST. HEALTH METRICS & EVALUATION, <https://perma.cc/5QNE-6Z72> (Entering “Risk Factor” for GBD Estimate, “Occupational exposure to asbestos” for Risk, “Mesothelioma,” “Asbestosis,” “Tracheal, bronchus, and lung cancer,” and “Ovarian cancer” for Cause, and “2019” for Year) (compiling data on all asbestos deaths caused by occupational exposure for 2019 that led to mesothelioma, asbestosis, tracheal, and ovarian cancer).
 14. See U.S. DEP’T OF TRANSP., TRAFFIC SAFETY FACTS: RESEARCH NOTE 1 (Oct. 2020), <https://perma.cc/VH2R-W4QX> (stating that 36,096 Americans died in vehicle crashes in 2019).
 15. See Nat’l Ctr. for Health Stat., *FastStats: All Injuries*, CTR. DISEASE CONTROL, <https://perma.cc/8DD2-VV75> (finding 39,707 U.S. firearm fatalities in 2019).
 16. See Christine L. Mattson et al., *Trends and Geographic Patterns in Drug and Synthetic Opioid Overdose Deaths – United States, 2013–2019*, 70 MORBIDITY AND MORTALITY WEEKLY REP. 202, 203 (2021) (finding 49,860 opioid overdoses in 2019).
 17. 15 U.S.C. §§ 2601–2629.
 18. TSCA does not govern regulation of pesticides, drugs, tobacco, food, cosmetics, and firearms, which are controlled by other statutes. See LINDA-JO SCHIEROW, CONG. RSCH. SERV., RL31905, THE TOXIC SUBSTANCES CONTROL ACT (TSCA): A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 1, <https://perma.cc/BA8G-HEAD> (2013).
 19. See Richard Denison, *EPA’s New Chemicals Program: TSCA Dealt EPA a Very Poor Hand*, ENV’T DEF. FUND BLOG (Apr. 16, 2019), <https://perma.cc/7DMF-43DA>.
 20. See *id.*
 21. Toxic Substances Control Act of 1976, Pub. L. No. 94-469, 90 Stat. 2003 (codified at 15 U.S.C. §§ 2601–2629) [hereinafter Toxic Substances Control Act of 1976], § 2605(a) (providing that the Administrator can regulate an existing chemical upon finding that it “presents or will present an unreasonable risk of injury to health or the environment”).
 22. *Id.* § 2605(c)(1)(A)–(D). In fact, most U.S. laws that deal with chemical regulation do not set any guidelines for what constitutes an acceptable level of risk. See Alon Rosenthal et al., *Legislating Acceptable Cancer Risk from Exposure to Toxic Chemicals*, 19 ECOLOGY L.Q. 269,

The dangers of asbestos were widely known at the time of TSCA's enactment, prompting EPA to use the chemical as a "test case" for regulating harmful substances under section 6.²³ In 1989, ten years after EPA first issued an advanced notice of proposed rulemaking on asbestos, the agency finalized a regulation implementing a total ban on all but the most essential uses of the chemical.²⁴ Manufacturers swiftly challenged the rule in court, arguing that EPA violated TSCA's cost consideration requirements²⁵ and rulemaking procedures.²⁶

To the shock of the agency, medical professionals, and environmental groups,²⁷ in 1991 the U.S. Court of Appeals for the Fifth Circuit unanimously vacated the asbestos regulation in *Corrosion Proof Fittings v. EPA*.²⁸ The court struck down the ban primarily because of flaws in EPA's assessment of whether the avoided health harms from asbestos exposure justified the regulation's costs. EPA's decision not to quantify and monetize a large number of health benefits received particularly sharp criticism from the court.²⁹ Asserting that unquantified benefits should not be used as a "trump card allowing EPA to justify any cost calculus, no matter how high," the Fifth Circuit held that EPA had violated TSCA's mandate to "weigh the costs of its actions" before regulating.³⁰ It also found that EPA had violated the statute's requirement to issue the "least

273 (1992) (explaining that there are no guidelines in U.S. laws that set "a universally acceptable or unacceptable numerical level of risk for use in regulatory decisions").

23. See Interview by Jody A. Roberts & Kavita D. Hardy with Mark A. Greenwood, former Assistant Gen. Couns. for Pesticides and Toxic Substances and Dir., Office of Pollution Prevention and Toxics, EPA, at Ropes & Gray, LLP, Washington, D.C., Oral History Transcript 0644, at 8 (Feb. 26, 2010) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA) [hereinafter Greenwood Interview] ("[Asbestos] was, kind of, going to be the test case of how TSCA can do things.").
24. See Asbestos; Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions, 54 Fed. Reg. 29460 (July 12, 1989) (to be codified at 40 C.F.R. pt. 763) [hereinafter 1989 Asbestos Rule].
25. See *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1207 (5th Cir. 1991) (noting that petitioners claimed EPA's ban was "not promulgated on the basis of substantial evidence" because of insufficient consideration of the costs of the ban compared to other regulatory alternatives).
26. See *id.* at 1211 ("The petitioners allege that the EPA's rulemaking procedure was flawed.").
27. *Appeals Court Overturns EPA Ban on Asbestos*, THE BALT. SUN, OCT. 22, 1991, at 7A (noting an EPA spokesman was at a loss for words in the wake of the decision, and quoting an asbestos researcher at Massachusetts General Hospital as stating that "[t]his ruling flies in the face of scientific reason"); Michael Weisskopf, *Court Voids EPA Ban on Asbestos: Agency Criticized for Ignoring Costs*, WASH. POST, Oct. 22, 1991, at A19; Greenwood Interview, *supra* note 23, at 8 ("It was pretty clearly the case that it should have been banned.").
28. See *Corrosion Proof Fittings*, 947 F.2d. at 1211, 1215 (remanding the rule to EPA for procedural defects and because EPA failed to articulate a "reasoned basis" for the rule).
29. See *id.* at 1212–13.
30. *Id.* at 1219 ("Unquantified benefits can, at times, permissibly tip the balance in close cases. They cannot, however, be used to effect a wholesale shift on the balance beam. Such a use

burdensome” regulation by not assessing the costs and benefits of any alternatives to a ban.³¹

Following *Corrosion Proof Fittings*, EPA did not reissue the asbestos regulation and never again attempted to ban a chemical under section 6.³² According to some agency experts, environmental groups, elected officials, and legal scholars, EPA’s inability to prohibit the use of a substance “as obviously harmful as asbestos” revealed that TSCA was irredeemably flawed.³³ They argued that EPA had spent a decade developing an extensive analysis to support the ban, and if this was not enough to convince a court that the benefits of the regulation outweighed its costs,³⁴ then EPA had no hope of regulating other existing chemicals.³⁵

In the aftermath of the court’s decision, members of Congress and environmental groups called for amending the statute to give EPA greater authority to regulate toxic substances like asbestos. However, until recently, advocates for reform were unable to secure Republican support for new legislation.³⁶ That

makes a mockery of the requirements of TSCA that the EPA weigh the costs of its actions before it chooses the least burdensome alternative.”).

31. *Id.* at 1216–17 (finding that EPA violated TSCA by only comparing the benefits of a total ban on certain asbestos uses against its continued unregulated use, rather than “calculating how many lives a less burdensome regulation would save, and at what cost. . . [I]n order to impose a regulation at the top of the hierarchy—a total ban of asbestos—the EPA must show not only that its proposed action reduces the risk of the product to an adequate level, but also that the actions Congress identified as less burdensome also would not do the job”).
32. See Lauren Trevisan, *Human Health and the Environment Can’t Wait for Reform: Current Opportunities for the Federal Government and States to Address Chemical Risks Under the Toxic Substances Control Act*, 61 AM. U.L. REV. 385, 401 (2011) (“The long-term result of this decision, however, is that EPA has since never used its section 6 authority to successfully ban a chemical.”).
33. See Cristin Dale Mustillo, *Persistently Present, Inconsistently Regulated: The Story of Asbestos and the Case for a New Approach Toward the Command and Control Regulation of Toxics*, 2013 MICH. ST. L. REV. 257, 279 (2013) (“The loss of the *Corrosion Proof Fittings* case, and thus the inability to ban a toxin as obviously harmful as asbestos, is considered to be one of TSCA’s failures.”).
34. See *Oversight Hearing on the Federal Toxic Substances Control Act: Joint Hearing before the Subcomm. on Superfund, Toxics, and Env’t Health and the Comm. on Env’t and Pub. Works & the S. Comm. on Env’t and Pub. Works*, 111th Cong. 173 (2009) [hereinafter “*Oversight Hearing on the Federal Toxic Substances Control Act*”] (statement of Sen. Max Baucus, Member, Subcomm. on Superfund, Toxics, and Env’t Health of the S. Comm. on Env’t and Pub. Works) (“[I]n spite of everything we know about the hazards of asbestos, in spite of a 10-year analysis and a 45,000-page record produced by EPA, the Agency was precluded from moving forward with an asbestos ban under a Court interpretation of TSCA.”).
35. See Greenwood Interview, *supra* note 23, at 8–9.
36. Before 2016, TSCA was the only major environmental statute that had not been updated since its enactment. See U.S. S. Comm. on Env’t and Pub. Works, *Bicameral, Bipartisan Deal Reached on TSCA Reform* (May 20, 2016) (statement of Sen. Jim Inhofe, Chairman, S. Comm. on Env’t and Pub. Works), <https://perma.cc/F3JT-L95M>; Ian Urbina, *Think Those Chemicals Have Been Tested?*, N.Y. TIMES (Apr. 13, 2013), <https://perma.cc/RZR4-7HG2>.

changed as progressive states sought to implement their own restrictions on toxic substances. By the 2010s, there were more than 1,100 laws addressing chemical harms at the state level, including bans on flame retardants, phthalates, and numerous other chemicals.³⁷ Because manufacturers cannot easily change their products to meet different requirements,³⁸ state-level chemical regulations had a cascading impact across the country as companies reformulated their products to meet the most stringent state standards.³⁹ Republicans in Congress subsequently came under pressure from the chemical industry to create preemptive, uniform federal regulations to replace these “ill-conceived” state laws.⁴⁰

Following protracted negotiations between Democrats and Republicans, Congress finally amended TSCA in 2016 with bipartisan support in both the House and Senate.⁴¹ It was the first time Congress had amended a major piece of environmental legislation in twenty years, and the first time TSCA itself had been amended since its original passage in 1976.⁴² The deal thus represented a once-in-a-generation opportunity to address toxic chemicals and environmental pollution more broadly.

The accepted wisdom about how cost-benefit analysis doomed EPA’s asbestos ban led Democrats to lobby for one of the biggest changes to TSCA: a new requirement prohibiting the agency from considering “costs or other nonrisk factors” when determining whether a chemical poses an “unreasonable

37. See Charles Franklin & Allison Reynolds, *TSCA Reform and Preemption: A Walk on the Third Rail*, 27 NAT. RES. & ENV'T 14, 17 (2012).

38. See *id.*

39. See Sharon Lerner, *Toxic “Reform” Law Will Gut State Rules on Dangerous Chemicals*, THE INTERCEPT (Jan. 11, 2016), <https://perma.cc/Z4YE-R5DH> (“Maine’s law [the Kid Safe Product Act] turned out to be more than just a local triumph . . . the ban on BPA [bisphenol A] nudged the whole country away from using that chemical. Rather than just changing how it made products sold in Maine, the giant toymaker Hasbro wound up removing BPA from all its products.”); *State Environmental Officials Call on Congress to Respect States’ Role in Chemical Safety*, VERMONT DIGGER (May 20, 2016), <https://perma.cc/J7U7-H26K> (“Far from leading to a patchwork quilt of competing regulations, state leadership on toxics has a demonstrated track record of spurring national agreements with manufacturers, or paving the way for federal legislation.”).

40. *Assessing the Effectiveness of U.S. Chemical Safety Laws*, Hearing before the Subcomm. on Superfund, Toxics and Env’t Health of the Comm. on Env’t and Pub. Works, 112th Cong. 72 (2011) (statement of Cal Dooley, President and CEO, American Chemistry Council).

41. See Jason Plautz, *The Senate Finally Passed Chemical Safety Reform. Here’s How They Did It*, ATLANTIC (Dec. 18, 2015), <https://perma.cc/YQ2P-79F8>.

42. The last major amendments were to the Clean Air Act in 1990 and the Safe Drinking Water Act in 1996. See *The Frank R. Lautenberg Chemical Safety for the 21st Century Act: Hearing on S. 697 Before the Comm. on the Env’t and Pub. Works*, 114th Cong. 86–87 (2015) [hereinafter *Hearing on the Lautenberg Act*] (statement of Ken Cook, President and Co-Founder, Environmental Working Group). On Congress’s lack of environmental lawmaking since the 1990s, see Richard Lazarus, *Environmental Law Without Congress*, 30 J. LAND USE & ENV’T L. 15, 15–16 (2014).

risk” of harm.⁴³ Under this new requirement, EPA is supposed to ascertain the reasonableness of risk to human health and the environment through a process called a “risk evaluation.”⁴⁴ The agency can only consider costs and benefits at a subsequent “risk management” stage added in the 2016 amendments, which is when the agency decides how to control the substance if it poses an unreasonable risk.⁴⁵

To earn Republican support for these changes to section 6 and other reforms in the law, Democrats agreed to sweeping preemption of state toxic chemical controls.⁴⁶ The revised statute stipulates that “when a chemical has undergone a risk evaluation and [is] determined to pose no unreasonable risk, any state chemical management action to restrict or regulate the substance is

43. 15 U.S.C. § 2605(c)(1)–(d)(2). Congress did amend other provisions of the law, such as the new chemical review program, which are not the subject of this Article. See Bridget DiCosmo, *EPA Issues First New Chemical Safety Reviews Under Reformed TSCA Law*, INSIDE EPA (July 25, 2016), <https://perma.cc/7DZX-RN2A>.

44. Richard Denison, *TSCA Reform Legislation: Consideration of Costs and Other Non-risk Factors*, ENV'T DEF. FUND BLOG (May 20, 2015), <https://perma.cc/MWY7-G963> (explaining that the Lautenberg Act “retains the term ‘unreasonable risk’ as its safety standard but, in defining the standard, explicitly precludes EPA from considering costs and other non-risk factors in making safety determinations”).

45. See EPA, *Risk Management for Existing Chemicals Under TSCA*, <https://perma.cc/SYL8-X25A>; 15 U.S.C. § 2605(c)(2)(A)(i)–(iv).

46. While the 2016 amendments did include other reforms, the removal of cost-benefit consideration under section 6 was one of the key changes sought by lead Democrat negotiators and major environmental groups, as well as EPA officials. See, e.g., Rena Steinzor, *The New TSCA: Balanced Compromise or Business as Usual?*, BLOOMBERG L. (Dec. 29, 2017), <https://perma.cc/BS9J-J5UP> (“One of the biggest victories scored by the Environmental Defense Fund (EDF) in its negotiations with chemical industry leaders was a provision that prohibits the consideration of costs during risk assessments of existing chemicals. Of course, industry got plenty in return, from the continuation of the cost-preoccupied ‘unreasonable risk’ standard for rule-writing to preemption of more aggressive state regulation of substances that the EPA is evaluating.”). See also Bridget DiCosmo, *Vitter Drops TSCA Reform Pact After Boxer Releases Confidential Draft Plan*, INSIDE EPA (Sep. 19, 2014), <https://perma.cc/RH3Y-6RGN> (describing a counter proposal by Senator Boxer that would not have included any preemption of state toxics controls while strengthening EPA’s authority to restrict chemicals simply on finding that they “harm” human health or the environment); Bridget DiCosmo, *Democrats’ TSCA Bill Aims To Preserve States’ Role, Boost Safety Standard*, INSIDE EPA (Mar. 12, 2015), <https://perma.cc/KE8F-8B3H> (proposing compromise language changing how EPA determines unreasonable risk without reference to costs and benefits while including some preemption of state law); Bridget DiCosmo, *EPA Eyes Senate TSCA Reform Bill Fixes But Questions State Preemption*, INSIDE EPA (Mar. 18, 2015), <https://perma.cc/N8F2-SXX5> (explaining that EPA officials sought to persuade Congress to drop cost-benefit considerations from unreasonable risk determinations as part of the reform efforts, while informing Congress that the administration wanted to see certain changes to the preemption provisions to find a compromise on section 6 reform). See generally Bridget DiCosmo, *EPW Democrats Tout Compromise on Amended TSCA Reform Bill*, 22 INSIDE EPA (Apr. 28, 2015), <https://perma.cc/EM83-EJ8A>.

preempted.”⁴⁷ Described as “the most contentious issue of the negotiations as well as the most important linchpin in the final deal,”⁴⁸ the preemption provision led some Democrats and environmental groups to oppose the bill, as numerous states had long set far more stringent standards than EPA.⁴⁹ Despite this significant concession, many members of Congress and advocates were hopeful that the amended statute would improve toxic substances regulation.⁵⁰

However, a close historical analysis of the 1989 asbestos ban’s failure suggests that Democrats struck the wrong bargain in the 2016 amendments to section 6 and did not address the underlying problems that led to EPA’s challenges in justifying the regulation. Using internal EPA documents from the National Archives and Records Administration in Washington, D.C.,⁵¹ this article shows that the agency’s difficulties with regulating asbestos were not caused by the statute’s requirement to consider costs and benefits when determining whether a substance posed an unreasonable risk.⁵² These materials have never been analyzed by scholars before, with several sets released for the first time in response to Freedom of Information Act requests made by the author.

First, EPA records demonstrate that other factors were responsible for the long, arduous process of issuing the rule, not a 10-year scientific and economic analysis. The primary source of delay was interference by the Office of Management and Budget (“OMB”), which prevented EPA from moving forward with the ban after extensive lobbying by the asbestos industry. OMB subsequently forced EPA to refer asbestos to the Occupational Safety and Health Administration (“OSHA”) for regulation instead, arguing that TSCA required EPA to do so. As OMB read the law, EPA should regulate chemicals under TSCA only when other federal laws or agencies could not address their risks. The 1976 law’s trial-like process for promulgating rules also contributed to the extensive delays. While these cumbersome procedures were fixed in the 2016 amendments,⁵³ the question of whether TSCA should function as a gap-filling

47. 126 CONG. REC. S3521 (daily ed. June 7, 2016) (statement of Sen. Inhofe).

48. *Id.*

49. *See, e.g., id.* at S3519 (statement of Sen. Gillibrand); Andy Igrejas, *Weak Tea in a Chipped Cup: Why the New Vitter-Udall Legislation Isn't Just "Not Good Enough." It's Not Good.*, SAFER CHEMS., HEALTHY FAMILIES (Mar. 11, 2015), <https://perma.cc/B4HK-A9HT>.

50. *See* Charles W. Schmidt, *TSCA 2.0: A New Era in Chemical Risk Management*, 124 ENV'T HEALTH PERSP. 182, 184 (2016).

51. The National Archives and Records Administration is the main archival repository for federal government documents and contains historical records from EPA and other administrative agencies. *See What is the National Archives and Records Administration?*, NAT'L ARCHIVES, <https://perma.cc/ZZ56-MJ2C>.

52. *See* Sheldon Krinsky, *The Unsteady State and Inertia of Chemical Regulation Under the US Toxic Substances Control Act*, PLOS BIOLOGY, Dec. 18, 2017, at 7–8.

53. *See* 15 U.S.C. § 2605(c)(3) (requiring EPA to follow the standard informal rulemaking procedures under the Administrative Procedure Act, in contrast to the earlier law that imposed additional requirements of public hearings).

statute and only address exposures not covered by other federal laws or agencies was left unresolved.

Second, EPA's failure to justify the regulation on cost-benefit grounds was largely a problem of its own making. EPA's internal records reveal that the agency, in fact, would have been able to show that the ban's benefits outweighed its costs if it had fully quantified and monetized health benefits. Instead, EPA officials ignored risks to the general population, excluded known health harms, and assumed that personal protective equipment would reduce worker exposures—against the judgment of many agency experts. As a result, they vastly underestimated the number of lives that would be saved by a ban. Officials then refused to place a monetary value on the small number of averted cancer deaths that were ultimately quantified, even though standard valuation techniques at the time would have shown that the benefits from saving these lives outweighed the costs of the rule. It was thus the narrow scope of EPA's analysis and officials' philosophical opposition to cost-benefit analysis that made the ban's costs appear to dwarf its health benefits.

These challenges in promulgating the asbestos ban—whether to regulate under TSCA or other federal laws and how extensively to assess chemical harms—are not unique features of cost-benefit analysis. Risk evaluations also require EPA to decide what exposure routes to examine, what populations should be included, and whether protective equipment can adequately safeguard workers. By making the methodology of cost-benefit analysis the key focus of the 2016 amendments to section 6, Congress left EPA vulnerable to these same analytical issues and value judgments when determining whether a chemical should be regulated.

Nor are risk evaluations insulated from political interference by industry. The Trump Administration, which was tasked with implementing the 2016 amendments, manipulated risk evaluations in ways that paralleled many of the problems with the 1989 asbestos ban in order to find that toxic chemicals do not pose an unreasonable risk. Because of TSCA reform, states could now be preempted from restricting use of these chemicals, leaving Americans unprotected.⁵⁴ The compromise between Congressional Republicans and Democrats to amend the law in exchange for state preemption was thus not only misguided—it has given the chemical industry a way of obstructing toxic chemical controls at all levels of government.

Despite making the case that EPA could have justified the asbestos ban on cost-benefit grounds, this Article does not contend that toxics regulations are only warranted if the quantified, monetized benefits of restrictions outweigh

54. See Maria Hegsted, *Fearing Preemption, Litigants Ask Court to Reject EPA's Dioxane Remand*, INSIDE TSCA (July 12, 2021), <https://perma.cc/7WVS-EZLS>; Diana DiGangi, *Industry Eyes Potential for First-Time TSCA Preemption Under Biden*, INSIDE TSCA (Mar. 31, 2021), <https://perma.cc/27N9-RWG9>.

their costs. Nor does it advance the normative claim that cost-benefit analysis should be our preferred method for deciding when to regulate environmental pollutants. The Article does suggest, however, that the demonization of cost-benefit methods and the inaccurate account of the asbestos ban failure did incredible harm. It allowed Americans to be continually exposed to asbestos and other toxic chemicals as EPA sat on the sidelines waiting for Congress to “fix” the legislation. Blaming the method also obscured the actual reasons EPA prepared such a poor analysis in support of the ban, disadvantaging Democrats in negotiations with Republicans over TSCA reform. Ideally, the 2016 amendments would have created an approach to toxic chemical regulation that put the onus on industry to show that the economic benefits of using a chemical outweigh its health harms, a burden-shifting approach adopted in Europe that has had much greater success.⁵⁵ But in the absence of such far-reaching reforms, Congress should have at least amended TSCA to prevent EPA from conducting unduly narrow assessments of toxic chemical risks, regardless of the methodology the agency adopted.

This Article proceeds in four parts. Part I describes the importance of the failed asbestos ban to the campaign for TSCA reform over the last several decades and how it subsequently influenced the 2016 amendments to the law. Part II uses archival documents to show that the commonly accepted wisdom about why EPA struggled to promulgate the ban is wrong. The process was not lengthy and difficult because of years spent developing a scientific and economic basis for the regulation. Rather, EPA’s challenges in promulgating and justifying the ban primarily resulted from OMB’s interference in the rulemaking on behalf of the asbestos industry and EPA officials’ resistance to using cost-benefit methods. Part III examines how these challenges led EPA to put forward a flawed cost-benefit analysis and describes how EPA could have shown that the benefits of the ban outweighed its costs if it had better quantified and monetized avoided cancer deaths. Part IV then argues that Democrats struck an ill-fated compromise in the 2016 amendments because they traded preemption of strong state toxics regulations without addressing the actual problems that beset the 1989 asbestos ban. During the Trump Administration, EPA was thus able to avoid making unreasonable risk findings by ignoring exposures under the purview of other laws and inadequately quantifying harmful health effects for a host of toxic chemicals, which could prevent their control by the federal government as well as states. Part IV concludes by examining how many of these problems have continued during the Biden Administration as it seeks to ban asbestos for the second time in U.S. history, and offers several

55. See Ágnes Botos et al., *Industrial Chemical Regulation in the European Union and the United States: A Comparison of REACH and the Amended TSCA*, 22 J. RISK RSCH. 1187, 1192–1194 (2019) (explaining that the U.S. did not “put the burden on the industry” to collect information and assess risks, costs, and benefits as the EU program requires).

recommendations for how EPA can improve its justifications for toxic substance controls going forward.

I. REFORMING THE TOXIC SUBSTANCES CONTROL ACT

The bipartisan 2016 amendments to TSCA were a remarkable achievement given the current political polarization over environmental issues. Reforming TSCA required a unique confluence of momentum from environmental organizations, which have devoted increasing attention to the dangers of chemical substances, and industry, which feared the growing number of state toxic chemical regulations.

The competing environmental and industry pressures were each important in shaping the final structure of the reforms. For environmental groups, one of the most important parts of the statute to amend was section 6, which granted EPA authority to regulate or ban harmful chemical substances already on the market. In pressing for changes to this portion of the law, myths about why EPA's asbestos ban had failed to survive judicial review strongly influenced the way environmental organizations lobbied Congress to rewrite the law. These myths were 1) that EPA spent 10 years developing a scientific and economic basis for the ban on asbestos, and yet still could not defend it on cost-benefit grounds, 2) that the Fifth Circuit opinion in *Corrosion Proof Fittings* imposed an infeasible analytic burden on the agency, making it impossible for EPA to revise the rule, and 3) that because EPA could not defend its asbestos regulation using a cost-benefit analysis, it was necessary to remove the statute's requirement to consider costs and benefits when determining whether a substance poses an "unreasonable risk."⁵⁶ For industry, it was crucial to facilitate a "cohesive approach" to chemical regulation⁵⁷ by preventing states from more stringently controlling toxic substances.

This part explores how these two impulses shaped the 2016 TSCA amendments to section 6. Before assessing the historical evidence for why EPA actually struggled to promulgate the regulation and the Fifth Circuit's review of the rule—addressed in Parts II and III—it is essential to first have a clear understanding of how the asbestos episode played such an important role in TSCA reform and what lawmakers thought they were fixing in the 2016 amendments. To that end, section A examines the ways in which EPA's unsuccessful asbestos ban permeated debates about how to reform TSCA's provisions governing existing chemicals. Section B explains the key amendments to section 6 and how they were expected to strengthen existing chemical regulation.

56. See *infra* Part I.A.

57. *Hearing on the Lautenberg Act*, *supra* note 42, at 238 (Letter from National Association of Chemical Distributors to Senators Inhofe, Udall, and Vitter (Mar. 17, 2015)). See also *id.* at 239 (Letter from International Fragrance Association North America to Senators Inhofe, Udall, and Vitter (Mar. 17, 2015)) (praising the final Lautenberg Act amendments to TSCA for reasserting federal control over toxics regulation).

Finally, section C describes the major compromise in the legislation over federal preemption of state toxic substance controls should EPA find that a chemical does not pose an unreasonable risk under section 6.

A. The Influence of EPA's Failed Asbestos Regulation on TSCA Reform

EPA's 1989 asbestos regulation played a central role in calls for TSCA reform for more than two decades. Government officials and environmental organizations repeatedly expressed concern that the failed asbestos ban revealed fundamental flaws in the way the statute instructed EPA to regulate toxic substances. As a result, Congress returned over and over to the events surrounding the asbestos episode to advocate for specific reforms to the legislation. These Congressional discussions, however, were based on a series of assumptions about why EPA struggled to promulgate the regulation, why the court invalidated the asbestos ban, and why EPA subsequently took no further action to control asbestos or other harmful substances.

Immediately following the Fifth Circuit's ruling in 1991, members of Congress expressed concern that *Corrosion Proof Fittings* would seriously hinder EPA's authority to regulate toxic substances.⁵⁸ EPA officials initially told Congress that the asbestos ban was "not a dead issue" and that they expected to revisit the rule in light of the opinion.⁵⁹ But with little progress from the agency, the Senate Committee on Environment and Public Works convened a series of hearings in 1994 on why TSCA had not lived up to its potential,

58. *See Implementation of the Toxic Substances Control Act: Hearing Before the Subcomm. on Toxic Substances, Env't Oversight, Rsch. and Dev. of the S. Comm. on Env't and Pub. Works*, 102d Cong. 26 (1992) [hereinafter *Implementation of the Toxic Substances Control Act*] (statement of Sen. Joseph Lieberman) ("The recent Fifth Circuit Court decision in *Corrosion Proof Fittings v. EPA*, which vacates the EPA ban on asbestos, may seriously impact EPA's section 6(a) authority to regulate existing toxic substances. Despite the acknowledged danger of asbestos, the Fifth Circuit held that the EPA failed to adequately consider the comparative safety of substitutes, the economic impact of a ban, and the possibility of less burdensome alternatives. I am concerned that this decision may make the Agency less willing or less able to properly regulate dangerous substances which are already on the market like lead."). *See also How Safe Is Safe Enough? Risk Assessment and the Regulatory Process, Hearing Before the H. Comm. on Sci., Space and Tech.*, 103d Cong. 69 (1993) [hereinafter *How Safe Is Safe Enough? Hearing*] (Report of the Carnegie Commission, Risk and the Environment Improving Regulatory Decision Making) ("The asbestos decision has provoked considerable debate, and fingers have been pointed in several directions. Regardless of whether the statute, the courts, the agency, or others should be faulted in this case, it is unsettling that that EPA could not satisfy TSCA's requirements for promulgating a single rule after a decade's effort. The case raises numerous questions, including whether the executive branch should encourage Congress to revise this legislation, and under what circumstances the agency should devote such a vast amount of time and resources to a single substance at the expense of many other pressing issues in its jurisdiction.").

59. *Implementation of the Toxic Substances Control Act*, *supra* note 58, at 33 (statement of Linda J. Fisher, Assistant Adm'r, Off. of Prevention, Pesticides and Toxic Substances, EPA).

becoming "EPA's biggest underachiever."⁶⁰ In testimony during these hearings, EPA officials began to claim that two key problems led to the agency's failure to ban asbestos and would prevent EPA from regulating other existing chemicals in the future. First, they argued that the court's opinion set an unrealistically high evidentiary bar for EPA to demonstrate that a chemical posed an unreasonable risk of harm.⁶¹ Second, they stated that it would be impossible for the agency to meet "the court's interpretation of least burdensome alternative" using cost-benefit analysis.⁶² Legislators, scientists, and environmental advocates concluded that Congress would need to directly respond to the *Corrosion Proof Fittings* decision or risk tying EPA's hands completely for other toxic chemicals.⁶³

At Congress's request, the Government Accountability Office ("GAO") published a detailed assessment of EPA's ability to regulate toxic chemicals.⁶⁴ The report focused on the agency's failure to ban asbestos and the implications of the Fifth Circuit's opinion for proper implementation of TSCA.⁶⁵ EPA officials told the GAO that given "the court decision in the asbestos case, EPA most likely will not attempt to issue regulations under section 6 for comprehensive bans or restrictions on chemicals."⁶⁶ According to EPA, the requirement to

60. *Reauthorization of the Toxic Substances Control Act, Hearings before the Subcomm. on Toxic Substances, Resch. and Dev. of the S. Comm. on Env't and Pub. Works*, 103d Cong. 3 (1994) [hereinafter *Reauthorization of the Toxic Substances Control Act*] (statement of Rep. Michael L. Synar).

61. *See id.* at 16 (statement of Peter Guerrero, Dir., Env't Protection Issues, General Accounting Office) ("The EPA believes that TSCA's standards of evidence are very high, and the courts have in fact confirmed that view in the recent asbestos case. In this instance, the EPA felt that it had considerable scientific evidence of the serious health effects of asbestos, but despite this, it was still unsuccessful in convincing the court that it had met the standards of evidence required under the Act.")

62. *Id.* at 7 (statement of Lynn R. Goldman, Assistant Adm'r, Off. of Prevention, Pesticides and Toxic Substances, EPA).

63. *See id.* at 45 (statement of Rep. Michael L. Synar) (arguing that Congress must "address the issues raised by the U.S. Court of Appeals for the Fifth Circuit's decision in the Asbestos case, or else risk having an unworkable program for existing chemicals under section 6"). *See also id.* at 64 (statement of Ellen Silbergeld, Senior Toxicologist, Env't Def. Fund) (arguing that the *Corrosion Proof Fitting* interpretation of the substantial evidence standard and least burdensome requirement, as well as their conclusion that determinations of unreasonable risk require cost-benefit analysis, have made TSCA unworkable).

64. The hearings were held in the summer of 1994; the report was published in September that same year. The GAO prepared the analysis at the behest of Senator Harry Reid, then Chairman of the Subcommittee on Toxic Substances, Research and Development, and Congressman Mike Synar, then Chairman of Environment, Energy, and Natural Resources Subcommittee. *See U.S. GOV'T ACCOUNTABILITY OFF., GAO/RCED-94-103, TOXIC SUBSTANCES CONTROL ACT: LEGISLATIVE CHANGES COULD MAKE THE ACT MORE EFFECTIVE* (1994) [hereinafter *GAO 1994 TSCA REPORT*].

65. *See id.* at 20.

66. *Id.* at 21.

consider costs and benefits when determining unreasonable risk prevented the agency from acting to regulate toxics “because the costs can be extensive and the full range of benefits may be difficult to document.”⁶⁷ The GAO subsequently placed TSCA reform on its “high-risk list of items needing attention” from Congress.⁶⁸

When serious efforts to amend the statute began during the early years of the Obama Administration, the failed asbestos ban again loomed over the proceedings.⁶⁹ Proponents of reform, notably Senator Frank Lautenberg, pushed to draft legislation that would remedy the supposed problems stemming from the *Corrosion Proof Fittings* decision.⁷⁰ Numerous versions of the bill therefore struck the “least burdensome” requirement and eliminated cost-benefit considerations from determining the reasonableness of risk.⁷¹ Officials in the Obama

67. *Id.* at 3 (GAO specifically cites to the asbestos failure in making this claim: “Although EPA had considerable evidence of serious health problems and spent several years developing a rule to phase out the use of nearly all products containing asbestos, the Fifth Circuit Court of Appeals decided in 1991 that the agency had issued the rule on the basis of insufficient evidence.”).

68. *Prioritizing Chemicals for Safety Determination: Hearing Before the Subcomm. on Com., Trade, and Consumer Prot. of the H. Comm. on Energy and Com.*, 111th Cong. 23 (2009) (statement of Steve Owens, Assistant Admin’r, Off. of Prevention, Pesticides and Toxic Substances, EPA) (“The problems with TSCA are so significant that the GAO has put TSCA on its high-risk list of items needing attention.”).

69. *See, e.g., id.* at 17 (statement of Rep. Janice D. Schakowsky, Vice Chair, Subcomm. on Com., Trade, and Consumer Prot. of the H. Comm. on Energy and Com.) (“Today’s hearing will provide important insight into how TSCA can be amended so that the EPA does have the authority to immediately restrict or ban the use of chemicals like asbestos that we already know poses substantial risk to the public safety. I think a lot of people are surprised that it isn’t banned already.”); *Oversight Hearing on the Federal Toxic Substances Control Act*, *supra* note 34, at 173 (statement of Rep. Max Baucus, Member, Subcomm. on Superfund, Toxics, and Env’t Health of the S. Comm. on Env’t and Pub. Works) (“[I]n spite of everything we know about the hazards of asbestos, in spite of a 10-year analysis and a 45,000-page record produced by EPA, the Agency was precluded from moving forward with an asbestos ban under a Court interpretation of TSCA.”); *Revisiting the Toxic Substances Control Act of 1976*, *Subcomm. on Com., Trade, and Consumer Protection of the H. Comm. on Energy and Com.*, 111th Congress 119 (2009) (“Many proponents of TSCA reform point to one specific case (*Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991)) as proof that TSCA does not provide EPA sufficient authority to manage risks.”).

70. The earliest versions of reform bills would have implemented an entirely new section 6 that put the onus on industry to show that chemicals were safe. *See* Safe Chemicals Act of 2010, S. 3209, 111th Cong. § 7 (2010) (replacing section 6 entirely with a requirement for industry to show toxic chemicals are sufficiently safe for use, and eliminating judicial review of EPA’s determination that a manufacturer has not met this burden).

71. *See, e.g.,* Safe Chemicals Act of 2013, S. 696, 113th Cong. § 6(d)(v)(F) (2013) (striking section 6 through subpart D and inserting a new safety determination procedure that focused only on health and environmental effects and outright prohibited use of the chemical 18 months after such a determination, with a few exceptions); *TSCA Modernization Act of 2015: Hearing Before the Subcomm. on Env’t and the Econ. of the H. Comm. on Energy and Com.*,

Administration EPA also viewed the removal of formal cost-benefit balancing from risk determinations as a crucial part of revising TSCA.⁷² Environmental groups similarly backed changes to cost considerations, asserting that they would address the problems that “prevented EPA from banning asbestos.”⁷³

As Congressional support coalesced in 2015 around a compromise bill to amend the law, EPA’s failure to ban asbestos became a rallying cry among Democrats and Republicans who sought to establish a new process for determining when and how to regulate toxic chemicals.⁷⁴ Environmental groups lobbied extensively for Congress to replace the law’s “burdensome cost-benefit safety standard—which prevented EPA from banning asbestos—with a pure, health-based safety standard.”⁷⁵ In a joint op-ed backing the reform effort, Gina McCarthy, EPA Administrator under President Barack Obama, and William Reilly, EPA Administrator under President George H.W. Bush, identified asbestos as “the poster child for the failure of the T.S.C.A., sparking bipartisan support to strengthen the law,” and supported an amendment that would remove “roadblocks like the cost-benefit analysis that had paralyzed the agency’s actions on asbestos.”⁷⁶ Echoing these sentiments, President Obama cited the asbestos ban failure as the key impetus for reform at the signing ceremony for the reformed legislation.⁷⁷

114th Cong. 66–72 (2015) (statement of Andy Igrejas, Dir., Safer Chemicals, Healthy Families) (praising the proposed bill for striking “the least-burdensome requirement, which was an issue in the asbestos decision” and removing cost-benefit considerations from the risk evaluation stage).

72. Note that this did not necessarily mean no consideration of cost. These concerns were rooted in the *Corrosion Proof Fittings* case. See *TSCA Modernization Act of 2015*, *supra* note 71, at 26 (statement of Hon. James Jones, Assistant Adm’r, Off. of Chemical Safety and Pollution Prevention, EPA) (arguing that formal cost-benefit analysis for toxic chemicals “is a very challenging thing to do because the risks that we are looking at are often not quantifiable but the costs almost always are, and what we got out of the Corrosion Proof case was a finding that the Agency had to numerically determine that those benefits literally numerically were larger than the costs, which creates—you end up with a cost-biased standard, which has been one of the problems that we have had”).
73. Tina Sigurdson & Alex Formuzis, *At Stake in the Senate TSCA Fight: The Fate of Asbestos*, ENV’T WORKING GROUP (Mar. 17, 2015), <https://perma.cc/8ZEA-4FNH>. See also Richard Denison, *Legislating a Toxic Problem the Old-Fashioned Way*, HILL (Nov. 13, 2013), <https://perma.cc/74YP-72TA>.
74. See *Hearing on the Lautenberg Act*, *supra* note 42, at 15 (statement from Sen. Tom Udall) (“I think we all agree: TSCA is fatally flawed. It has failed to ban even asbestos.”). See also *id.* at 78 (Republican Sen. Boozman, in questioning over the bill, sought to affirm that it would “allow the EPA to make asbestos and similar things and other concerning chemicals a high priority” by removing the least burdensome requirement.).
75. *Id.* at 162 (statement of Richard A. Denison, Lead Senior Scientist, Env’t. Def. Fund).
76. Gina McCarthy & William K. Reilly, *Asbestos Kills Nearly 40,000 Americans a Year. Ban It.*, N.Y. TIMES (Oct. 15, 2019), <https://perma.cc/U59L-2973>.
77. See *id.*

Assumptions about the role of cost-benefit analysis in preventing EPA from regulating asbestos thus permeated debates about TSCA reform following the 1991 *Corrosion Proof Fittings* decision. As the next section shows, these beliefs shaped how Congress changed the law in the hopes of empowering EPA to better regulate toxic chemicals.

B. *The 2016 Lautenberg Act Amendments to TSCA Section 6*

The 2016 amendments, known as the Lautenberg Act, made several changes to how EPA evaluates the risks from existing chemicals and considers the costs and benefits of chemical regulation in response to the failed asbestos ban.⁷⁸ These statutory revisions focused on section 6 of TSCA, which governs how EPA should determine if a chemical currently in use is dangerous and, if so, how to regulate it.⁷⁹

The 1976 law instructed EPA to regulate existing chemicals that EPA found to pose an “unreasonable risk” using the “least burdensome” restrictions, considering the health and environmental benefits of regulation as well as the economic consequences.⁸⁰ The revised statute now requires EPA to evaluate whether a chemical already in use poses an unreasonable risk solely using scientific evidence of health and environmental impacts, without any consideration of costs, benefits or other “nonrisk” factors.⁸¹ It also struck the “least burdensome” language from the law.⁸²

These revisions to the statute in the 2016 amendments were a direct response to the perceived evidentiary burdens on the agency following the Fifth Circuit’s decision in *Corrosion Proof Fittings*. The House Report accompanying the final bill explicitly states that these changes were made so EPA could “take broader regulatory action to protect against unreasonable risks from asbestos.

78. See 162 CONG. REC. S3516 (daily ed. June 7, 2016) (Detailed Analysis and Additional Views of Democratic Members on the Motion to Concur in the House Amendment to the Senate Amendment to the Bill H.R. 2576) (“The Frank R. Lautenberg Chemical Safety for the 21st Century Act clearly rejects the regulatory approach and framework that led to the failed asbestos ban and phase-out rule of 1989 in *Corrosion Proof Fittings v. EPA* 947 F.2d 1201 (5th Cir. 1991).”).

79. See 15 U.S.C. § 2605.

80. Toxic Substances Control Act of 1976, *supra* note 21, § 6(a)–(c) (requiring the Administrator to regulate chemical substances “to the extent necessary to protect adequately against such risk using the least burdensome requirements”).

81. 15 U.S.C. § 2605(b); 162 CONG. REC. S3513 (daily ed. June 7, 2016) (statement of Sen. Thomas Udall) (explaining that while the old law required EPA to “consider the costs and benefits of regulation when studying the safety of chemicals,” EPA must now “consider only the health and environmental impacts of a chemical. If they demonstrate a risk, EPA will have to regulate”).

82. *Id.*

The Committee expects this legislation to enable that regulatory action.”⁸³ The Senate Report accompanying the bill similarly noted that the revisions were intended to respond to *Corrosion Proof Fittings* by eliminating the consideration of costs and benefits when determining whether a risk was unreasonable.⁸⁴

Once EPA finds that a chemical poses an “unreasonable risk” during a risk evaluation, it must now impose restrictions on the chemical’s use “to the extent necessary so that the chemical substance or mixture no longer presents such risk.”⁸⁵ However, the agency must still consider the costs and benefits of various regulatory options when deciding *how* to limit exposure.⁸⁶ The new law puts in place a multifactorial process to guide the agency in deciding how stringently to regulate. EPA must assess 1) the effects of the chemical on health and the magnitude of human exposure, 2) the effects of the chemical substance on the environment and the magnitude of environmental exposure, 3) the benefits of the chemical for various uses, and 4) the reasonably ascertainable economic consequences of the rule.⁸⁷ In determining the economic consequences of the rule, EPA is instructed to consider a subset of three factors: 1) the likely effect of the rule on the national economy, small businesses, technological innovation, the environment, and public health, 2) the costs and benefits of the regulatory actions proposed, and 3) the cost effectiveness of the regulatory actions proposed.⁸⁸

Despite bipartisan support for these reforms to section 6, a number of Democrats were concerned that the bill did not go far enough to remedy the problems caused by *Corrosion Proof Fittings*.⁸⁹ For instance, several Senators feared that leaving in place the vague language of “unreasonable risk” could continue to pose problems for EPA action under TSCA.⁹⁰ The revised statute

83. H.R. REP. NO. 114-76, at 28 (2015).

84. See S. REP. NO. 114-67, at 4 (2015) (discussing *Corrosion Proof Fittings* and EPA’s failure to regulate under section 6 following its failed asbestos ban and arguing that “EPA’s application of the ‘unreasonable risk’ standard for regulatory action has been hampered by the statutory language itself, which suggests that cost and benefit considerations must be applied to the Agency’s decisions on the health and environmental risks posed by a chemical substance”).

85. 15 U.S.C. § 2605(a). Added as part of the 2016 Lautenberg Act amendments to TSCA, this requirement departs from the original text of TSCA, which directed EPA “to protect adequately against [unreasonable] risk using the least burdensome requirements.” See Toxic Substances Control Act of 1976, *supra* note 21, § 6(a).

86. See 15 U.S.C. § 2605(a).

87. See *id.* § 2605(c)(2)(A)(i)–(iv).

88. See *id.* § 2605(c)(2)(A)(iv)(I)–(III).

89. See S. REP. NO. 114-67, at 37 (2015) (Minority Views of Sens. Boxer, Cardin, Sanders, Gillibrand, and Markey on S. 697, as reported by the Env’t. and Pub. Works Comm.).

90. *Id.* Several representatives and environmental organizations had lobbied to replace unreasonable risk with “reasonable certainty of no harm,” which was viewed as a more stringent safety standard. See *Hearing on the Lautenberg Act*, *supra* note 42, at 87.

still does not define the term, only specifying that “cost or other nonrisk factors” cannot determine reasonableness.⁹¹

C. Federal Preemption of State Toxics Regulation

The original 1976 statute had a preemption provision that prevented states from controlling chemicals that were subject to federal regulation in most circumstances.⁹² But importantly, the law allowed states to completely prohibit a chemical’s use regardless of the type of controls EPA imposed.⁹³ It also provided states the option to seek a waiver from EPA to regulate more stringently so long as they did not unduly burden interstate commerce.⁹⁴

Given these exceptions to preemption and EPA’s general lack of attention to controlling existing chemicals after *Corrosion Proof Fittings*, the issue only took on renewed importance as the chemical industry pressed for more robust preemption in the 2016 amendments.⁹⁵ At the time, “thirty-eight states had enacted at least one statute that regulated the manufacture, distribution, labeling, or use of chemicals and the products containing specific substances.”⁹⁶ These included chemicals like flame retardants, which are carcinogenic, and bisphenol A (“BPA”), an endocrine disruptor.⁹⁷ As discussed previously, industry began pressing for broad, preemptive national legislation during the Obama Administration in response to these state initiatives, which opened the door for bipartisan negotiations on the 2016 amendments.⁹⁸

However, Congressional representatives from states with robust regulatory programs initially balked at placing all authority for toxic chemical controls at EPA.⁹⁹ For example, Senator Barbara Boxer, whose home state of California

91. Timothy Malloy, *The Unreasonable Risk of TSCA Reform: Caught Between a Rock and a Hard Place*, LEGALPLANET (Mar. 20, 2015), <https://perma.cc/3HH4-4Z74> (questioning how EPA will determine what is an “unreasonable risk” under the amended law when the term “essentially calls for balancing the harm of the substance to society against the cost to society of restricting or prohibiting its use”).

92. See Toxic Substances Control Act of 1976, *supra* note 21, § 2617.

93. See *id.* § 2617(a)(2)(B)(iii).

94. See *id.* § 2617(b).

95. See David R. Sheaffer, *TSCA Reform, Preemption, and Manufacturer Influence: Does the New Law Hang States Out to Dry?* 11 (2017) (Unpublished J.D. seminar paper, Michigan State University) (noting that prior to the 2016 amendments, the 1976 law’s preemption provisions were unused).

96. *Id.* at 12.

97. See *id.*

98. See Press Release, Am. Chem. Council, ACC Welcomes Frank R. Lautenberg Chemical Safety for the 21st Century Act (Mar. 10, 2015), <https://perma.cc/3M3Y-BRD3> (praising the bill for offering the “predictability, consistency and certainty that manufacturers and the national marketplace need, while also strengthening oversight and providing consumers with more confidence in the safety of chemicals”).

99. See Sheaffer, *supra* note 95, at 16–17.

had one of the strongest state toxics regulatory programs, called the proposed legislation “worse than the existing statute” because of its “aggressive preemption of state law.”¹⁰⁰ An early draft bill backed by the chemical industry would have preempted any state action as soon as EPA began a study of a high priority chemical, even though the 1976 law only preempted state regulation after federal standards were put in place.¹⁰¹ It would have also restricted state co-enforcement of federal standards,¹⁰² and some feared the preemption provisions could apply beyond state toxics regulations to other environmental laws such as clean air and water statutes.¹⁰³

Opposition to the proposed preemption provisions was so significant that the bill’s sponsors eventually hammered out new language to forge a compromise with Senators and Representatives from states with extensive toxics regulations, though some Democrats still declined to vote for the bill over this issue.¹⁰⁴ The final legislation removed a provision that would have prevented states from issuing new regulations for toxic chemicals as soon as EPA began to study their risks, avoiding a situation where EPA might be studying a chemical for years while preventing states from implementing any restrictions.¹⁰⁵ The drafters also agreed to maintain the original 1976 law’s exceptions to federal preemption for states that received waivers from the federal government.¹⁰⁶ In addition, the law grandfathered in state restrictions that were enacted before its passage, preserving the work states had done to date on a host of toxic compounds.¹⁰⁷ Finally, it afforded states more authority as co-enforcers of federal

100. *Hearing on the Lautenberg Act*, *supra* note 42, at 10 (statement of Sen. Barbara Boxer) (noting that the following groups opposed the initial bill for these and other reasons: 1) State Attorneys General from California, Massachusetts, New York, Iowa, Maine, Maryland, Oregon, Washington, 2) Breast Cancer Fund, 3) Asbestos Disease Awareness Organization, 4) Trevor’s Trek Foundation, 5) Environmental Working Group, 6) EarthJustice, 7) Safer Chemicals, Healthy Families, 8) Association of Women’s Health, Obstetric and Neonatal Nurses, 9) American Nurses Association, 10) Physicians for Social Responsibility, 11) United Steelworkers).

101. *See id.* at 79, 83, 105.

102. *See id.* at 59.

103. *See id.* at 179 (remarks from Att’y General Brian Frosh of Maryland) (asserting that the preemption provision would have a “serious impact” on state pollution control efforts).

104. *See* 162 CONG. REC. S3519 (daily ed. June 7, 2016).

105. *See* S. REP. NO. 114–67, at 5 (2015). *See also* 162 CONG. REC. S3511 (June 7, 2016) (statement by Sen. Barbara Boxer) (explaining that “when EPA announces the chemicals they are studying, the States still have up to a year and a half to take action on these particular chemicals to avoid preemption until the EPA takes final action . . . [f]or chemicals that industry has asked EPA to study, we made sure that States are not preempted until EPA issues a final restriction on the chemical”).

106. *See id.* at 5–6. *See also* Toxic Substances Control Act of 1976, *supra* note 21, § 2617.

107. *See* 162 Cong. Rec. S3511 (daily ed. June 7, 2016) (statement by Sen. Barbara Boxer) (“State or local restrictions on a chemical that were in place before April 22, 2016, will not be preempted.”).

regulations and specified that the preemption provisions did not apply to other types of state environmental laws.¹⁰⁸

While these concessions did lessen the preemptive effects of TSCA reform, the statute still places states at the mercy of EPA in several important respects. If EPA finds that a chemical use does *not* pose an unreasonable risk, states are then prohibited from taking any action on that same use.¹⁰⁹ This is true even if EPA determines that a substance is highly hazardous but finds that some particular uses do not pose an unreasonable risk.¹¹⁰

The compromise likely appeared palatable to Congressional Democrats and many environmental advocates because of their faith in the amendments' science-only, health-based standard for determining unreasonable risk.¹¹¹ After all, if it was primarily cost-benefit analysis that doomed the agency's ability to regulate existing chemicals—an assumption that clearly permeated TSCA reform—then fixing that aspect of the law along with other issues like cumbersome procedures, poor data collection, and insufficient resources would seem worth the tradeoff.¹¹² Yet the science of risk assessment is not divorced from important social, political, and ethical value judgments, nor is it immune from manipulations intended to minimize toxic chemical risks.¹¹³ By exaggerating what can be determined through scientific research, agencies can avoid accountability for decisions that are actually based on other factors.¹¹⁴ And as the

108. See 15 U.S.C. § 2617(d)(1)(A)(iii)–(iv).

109. See *id.* § 2617(a)(1)(B).

110. See 162 CONG. REC. S3520–21 (daily ed. June 7, 2016) (Sen. Inhofe, in responding to a hypothetical scenario where an EPA risk management rule only restricted some conditions of use, explained that states would be preempted from taking action as to the unregulated conditions of use).

111. See *id.* at S3513 (statement of Sen. Tom Udall) (“Today, the old law requires that the EPA consider the costs and benefits of regulation when studying the safety of chemicals. Very soon, EPA will have to consider only the health and environmental impacts of a chemical. If they demonstrate a risk, EPA will have to regulate.”).

112. See *id.* at S3512 (statement of Sen. Barbara Boxer) (stating in support of the final bill “even the standard for evaluating whether a chemical is dangerous is far better than in the old TSCA. The bill requires EPA to evaluate chemicals based on risks, not costs, and considers the impact on vulnerable populations. This is really critical. The old law was useless. So all of these fixes make this bill better than current Federal law.”).

113. The assumption that scientific studies can be translated in a straightforward, value-free way to the regulatory process has been dismantled by a plethora of science studies scholars and historians of science. See *generally* SHEILA JASANOFF, *THE FIFTH BRANCH: SCIENCE ADVISERS AS POLICYMAKERS* 232 (1998) (discussing how decisions about acceptable levels of risk typically involve social and political values, even though scientific advisory committees are often the ones tasked with setting unreasonable risk standards).

114. Scholars have noted that this issue has been especially problematic in the toxics context. See, e.g., Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1617 (1995) (arguing that failures in toxics regulation “are at least partly attributable to a pervasive ‘science charade,’ where agencies exaggerate the contributions made by science in setting toxic standards in order to avoid accountability for the underlying policy decisions”).

next Part shows, it was disagreements over other such factors that ultimately doomed EPA's asbestos regulation.

II. DEBUNKING MYTHS ABOUT THE ASBESTOS REGULATION

One of the most pernicious myths about EPA's 1989 asbestos ban is that the agency spent ten years and enormous resources developing a scientific and economic basis for the rulemaking.¹¹⁵ If a "10-year analysis" was not enough to justify banning one of the most dangerous substances on the market,¹¹⁶ then it seemed EPA had no hope of regulating other existing chemicals.¹¹⁷

This Part uses original EPA source material from the National Archives and Records Administration in Washington, D.C., to argue that this characterization of the agency's challenges in promulgating the regulation is highly misleading, if not outright false. As noted, these materials have never been analyzed in the academic literature before, with several sets released for the first time through Freedom of Information Act requests. They include agency memoranda, private correspondence, meeting notes, and technical data.

Internal EPA records reveal that there were three primary factors that contributed to delays in issuing the rule and difficulties in developing sufficient evidence for a ban. These were 1) the statute's lengthy procedural requirements, 2) OMB's insistence that EPA refer asbestos to OSHA for regulation, and 3) EPA officials' opposition to using cost-benefit methods to quantify and monetize the health benefits of the rule. The role of these problems in development of the rule suggests that removing cost-benefit considerations from determining what constitutes an unreasonable risk will not help EPA more quickly and stringently regulate toxic chemicals.

The agency's struggles to promulgate the rule in the face of TSCA's lengthy procedural requirements and political interference are discussed in section A. Section B then examines OMB's obstruction of the rulemaking, re-

115. See, e.g., GAO 1994 TSCA REPORT, *supra* note 64, at 3 (stating that although EPA had "considerable evidence" of the health harms from asbestos and spent many years developing the rule, "the Fifth Circuit Court of Appeals decided in 1991 that the agency had issued the rule on the basis of insufficient evidence"). See also *How Safe Is Safe Enough? Hearing*, *supra* note 58, at 57 ("Regardless of whether the statute, the courts, the agency, or others should be faulted in this case, it is unsettling that that EPA could not satisfy TSCA's requirements for promulgating a single rule after a decade's effort.").

116. *Oversight Hearing on the Federal Toxic Substances Control Act*, *supra* note 34, at 173 (statement of Sen. Max Baucus) ("[I]n spite of everything we know about the hazards of asbestos, in spite of a 10-year analysis and a 45,000-page record produced by EPA, the Agency was precluded from moving forward with an asbestos ban under a Court interpretation of TSCA.").

117. See Greenwood Interview, *supra* note 23, at 8 ("[W]hen the rule blew up because of the legal issues, [. . .] the office was completely demoralized. There were people who really weren't the same after that, because they had worked almost ten years on something they felt desperately was important, and the office did too. Suddenly, it was taken away.").

vealing how OMB tried to prevent EPA action by forcing the agency to refer asbestos to OSHA for regulation. These two issues—the statute’s cumbersome procedures and OSHA’s temporary usurpation of asbestos regulation—were largely responsible for the long delay in promulgating the ban, rather than extensive time spent developing an evidentiary record through cost-benefit analysis. In fact, as discussed in section C, EPA officials were deeply skeptical about the value of performing a cost-benefit analysis at all. Their subsequent battle with OMB over using cost-benefit methods contributed to the impasse over issuing the rule. While congressional intervention eventually allowed EPA to move forward with the regulation, EPA’s philosophical objections to monetizing health benefits and the Reagan Administration’s politicization of the methodology set the agency up to provide an unconvincing record in support of the ban.

A. TSCA’s False Start: Procedural and Political Delays

At the time EPA began work on the asbestos regulation in the late 1970s, considerable scientific research existed about the chemical’s dangers.¹¹⁸ And EPA officials, in part recognizing the precedent-setting nature of the rulemaking, devoted significant personnel and resources to amassing evidence of the substance’s health effects.¹¹⁹ The agency developed a health dataset that spanned decades of study, providing a link between asbestos exposure and cancer that was “among the strongest ever seen.”¹²⁰

But although it is important to acknowledge the substantial effort involved in collecting and analyzing scientific data for the regulation alongside extensive analyses of substitutes, it is simply not the case that EPA spent ten years doing this work. After EPA issued an advanced notice of proposed rulemaking in 1979,¹²¹ political machinations and procedural roadblocks—not technical research—prevented EPA from finalizing the ban until a decade later.

President Reagan’s election to the White House in 1980 and his administration’s attempts to restrict environmental regulations were a decisive factor in

118. See Mark R. Powell, *The 1983–84 Suspensions of EDB under FIFRA and the 1989 Asbestos Ban and Phaseout Rule under TSCA: Two Case Studies in EPA’s Use of Science* 16 (Res. for the Future, Research Paper No. 97-06, 1997) (explaining that scientific evidence of asbestos-related cancers had emerged as early as 1907; studies expanded considerably after a 1964 landmark paper on high rates of mesothelioma and other cancers in New York City insulation workers exposed to asbestos).

119. See Greenwood Interview, *supra* note 23, at 8.

120. Powell, *supra* note 118, at 16, 23.

121. See Commercial and Industrial Use of Asbestos Fibers and Consumer Products Containing Asbestos; Statement of Policy on Coordination of Regulatory Activities, 44 Fed. Reg. 60056 (Oct. 17, 1979).

delaying issuance of the asbestos regulation.¹²² Reagan, who had campaigned against government overreach, adopted a strong anti-regulatory policy on environmental pollution.¹²³ During the early years of his administration, Ann Gorsuch served as EPA Administrator and filled agency positions with staff from regulated industries.¹²⁴

Under the direction of Administrator Gorsuch and other Reagan appointees, EPA halted efforts to regulate asbestos. Instead, from 1981 through 1983, the agency attempted to reach a voluntary agreement with the asbestos industry to phase out the substance.¹²⁵ As a result, the only serious progress EPA appears to have made under Gorsuch's tenure occurred in 1982, when the agency used its authority under TSCA's section 8 to gather data on asbestos manufacturing, employee exposure, and disposal in order to inform its assessments of the "risks and benefits" of regulation.¹²⁶

After Gorsuch was forced to resign amid mounting scandals, William Ruckelshaus took over the agency¹²⁷ and brought in John "Jack" Moore, a toxicologist by training, to head the office's toxics and pesticide programs.¹²⁸ It was only then, in late 1983, that momentum began to build around proposing an asbestos regulation. The following spring, EPA was ready to propose two separate rules that together would ban nearly all uses of asbestos.¹²⁹

122. See Interview by Jody A. Roberts & Kavita D. Hardy with James V. Aidala, Assoc. Assistant Adm'r, Off. of Prevention, Pesticides and Toxics, EPA, at Bergeson & Campbell P.C., Washington, D.C., Oral History Transcript No. 0660, at 6 (May 20, 2010) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA) ("If [James E.] Carter [Jr.] had been reelected, you had another four years to find your feet. But when Reagan came in, it was . . . it wasn't just, like, 'stop doing that.' It was a real, initially, a real anti-EPA push.").

123. See Leif Fredrickson et al., *History of US Presidential Assaults on Modern Environmental Health Protection*, 108 AM. J. PUB. HEALTH S95, S96 (2018).

124. See Brady Dennis & Chris Mooney, *Neil Gorsuch's Mother Once Ran the EPA. It Didn't Go Well*, WASH. POST (Feb. 1, 2017), <https://perma.cc/5GKW-YR6H>.

125. See Letter from Congressman John Dingell to Lee M. Thomas, EPA Administrator (Sept. 26, 1988) at 1 (on file in Folder "Chairman John D. Dingell," Asbestos/General FY/1989, National Archives Identifier: 72052296, Box 1 of 7, National Archives).

126. EPA, Asbestos: Manufacturing, Processing, Importation, and Distribution, in Commerce Prohibitions (n.d., likely spring 1984) at 6-7 (on file in Folder "March 2 - 30, 1984," Controlled and Major Correspondence of Assistant Administrator John Moore, c. 10/1983 - c. 8/1988, National Archives Identifier: 76018974 [hereinafter Moore Papers, National Archives Identifier: 76018974], Box 2 of 13, National Archives).

127. See Fredrickson et al., *supra* note 123, at S97-S98.

128. See Powell, *supra* note 118, at 29, 33 (noting that Moore became a key decision-maker in promulgating the ban).

129. See Memorandum from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to the Administrator, EPA, Subject: Notice of Proposed Rulemaking Banning Certain Uses of Asbestos—Action Memorandum (Mar. 21, 1984) at 2-3 (on file in Folder "March 2 - 30, 1984," Moore Papers, National Archives Identifier: 76018974, Box 2

To proceed with the rulemakings, however, EPA needed to receive clearance from OMB. Shortly after taking office, President Reagan had issued Executive Order 12,291, which required agencies to complete a “regulatory impact analysis” for all “major” rules.¹³⁰ As part of this analysis, agencies were expected to assess a rule’s costs and benefits.¹³¹ Crucially, the order gave OMB authority to review the agency’s analysis and prevent issuance of the regulation if it concluded that the benefits did not outweigh the costs. In compliance with this directive, in the spring and summer of 1984 EPA submitted its two asbestos regulations for OMB review.¹³² The agency hoped to publish the first rule by that summer.¹³³ Had EPA been able to propose these rules after the 60-day OMB review process detailed in Executive Order 12,291,¹³⁴ there is no reason to believe that its promulgation timeline would have been out of line with other major environmental regulations.¹³⁵

of 13, National Archives) [hereinafter Memorandum from John A. Moore to the Administrator].

130. Exec. Order No. 12,291 § 3, 3 C.F.R. 127, 128–30 (1981) (defining a major rule as one that led to “1) [a]n annual effect on the economy of \$100 million or more; 2) [a] major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or 3) [s]ignificant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets”).
131. See Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2278 (2001).
132. See Administrator’s Status Briefing on Asbestos (May 10, 1984) (on file in Folder “May 1–18, 1984”, Moore Papers, National Archives Identifier: 76018974, Box 3 of 13, National Archives).
133. See Letter from John A. Moore, Assistant Adm’r, Off. of Pesticides and Toxic Substances, to John D. Wynkoop, Dir. of Water and Water Pollution Control, City of Wichita Water Dep’t, (May 24, 1984) (on file in Folder “May 18–31, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 3 of 13, National Archives).
134. See Exec. Order No. 12,291 § 3(e)(2), 3 C.F.R. 127, 128–30 (1981). The executive order provides that agencies may not issue the rule until OMB concludes its review, and OMB frequently used this power to delay rules during the Reagan Administration. See Robert V. Percival, *Rediscovering the Limits of the Regulatory Review Authority of the Office of Management and Budget*, 17 ENV’T L. REP. NEWS & ANALYSIS 10017, 10020 (1987) (finding that EPA frequently missed statutory deadlines during the Reagan Administration because of the OMB’s extended review under 12,291).
135. See Anne Joseph O’Connell, *Agency Rulemaking and Political Transitions*, 105 NW. U. L. REV. 471, 513 (2011) (providing an empirical analysis of regulatory timelines and noting that EPA rules typically take nearly two years between the notice of proposed rulemaking and publication of the final rule; this timeline does not include preparation to issue the notice of proposed rulemaking). Empirical work on the entire lifecycle for EPA rules indicates that the time necessary to prepare a notice of proposed rulemaking can be nearly twice as long as the time between a notice of proposed rulemaking and publication of a final rule, which would also be consistent with the timeline for the asbestos rule. See Wendy E. Wagner, Katherine Barnes & Lisa Peters, *Rulemaking in the Shade: An Empirical Study of EPA’s Air Toxic Emission Standards*, 63 ADMIN. L. REV. 99, 144 n.150, 145 (2011) (analyzing the

OMB officials became adamantly opposed to issuing a ban on asbestos after receiving EPA's regulatory impact analysis in March of 1984 due to lobbying by the asbestos industry. As detailed *infra* in Parts II.B and II.C, OMB informed EPA that the chemical was more appropriately managed through OSHA standards rather than an outright ban. OMB then held EPA's regulation past the 60-day review period specified under Executive Order 12,291 and refused to send the rule back to the agency for further work or release it for publication in the Federal Register.¹³⁶

Officially, OMB claimed EPA had voluntarily withdrawn the rule "on legal grounds,"¹³⁷ offering a dubious legal interpretation of TSCA that gave EPA no discretion on when to refer toxic substances to other agencies for regulation.¹³⁸ But informally, OMB told EPA that the regulation was being held up because it did not consider the ban to be "cost-effective."¹³⁹ Then, in September of 1984, it made clear to EPA staff that "OMB does not intend to release the rule."¹⁴⁰

OMB's refusal to release the rules prevented EPA from moving forward with any work on asbestos regulation for nearly two years. The agency was able to resume the process only after Congressional investigations into OMB's actions led to significant political pressure on the Reagan Administration to allow

length of the entire "life cycle" for ninety EPA rules that are typical examples of pollution control standards promulgated by EPA).

136. See Administrator's Status Briefing on Asbestos (Aug. 17, 1984) at 1 (on file in Folder "August 1-20, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives); Memorandum from Jim Davis, Special Assistant, Off. of Pesticides and Toxic Substances, to Don Clay, Dir., Off. of Toxic Substances, Subject: Ad Hoc Group on Asbestos (July 3, 1984) (on file in Folder "July 2-13, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives).
137. Letter from Robert P. Bedell, Deputy Adm'r, Off. of Info. and Regul. Affs., to A. James Barnes, Acting Deputy Adm'r, EPA (Mar. 1985) at 1 (on file in Folder "July 13-23, 1985," Moore Papers, National Archives Identifier: 76018974, Box 8 of 13, National Archives) [hereinafter Letter from Robert P. Bedell].
138. Section 9's plain language appeared to give EPA the ultimate authority and discretion over when to make such referrals. See Toxic Substances Control Act of 1976, *supra* note 21, § 2608(a)-(b) (stating that EPA could make such referrals if "in the Administrator's discretion" toxic chemicals risks could be sufficiently reduced by other agencies; the same phrase occurs when discussing the agency's decision to regulate under TSCA or other environmental laws).
139. Memorandum from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to the Adm'r, EPA, Subject: Status of Proposed Asbestos Rules (Aug. 29, 1984) (on file in Folder "August 21-31, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives).
140. Memorandum from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to the Administrator, EPA, Subject: Status of Proposed Asbestos Rules, (Sept. 12, 1984) (on file in Folder "September 4-22, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives).

EPA to proceed with a rulemaking.¹⁴¹ Once OMB relented, EPA appears to have spent only a few months preparing a new, single rule before publishing it in the Federal Register on January 29, 1986.¹⁴²

After proposing the new regulation, EPA struggled to finalize the rule in a timely manner given the procedural requirements of the statute. Unlike most agency rules that must follow the notice-and-comment process under the Administrative Procedure Act (“APA”),¹⁴³ the 1976 statute contained language stipulating that EPA should also “provide an opportunity for an informal hearing.”¹⁴⁴ Any interested person was allowed to orally present evidence concerning the rule at the hearing.¹⁴⁵ Furthermore, the statute specified that if the Administrator found there were “disputed issues of material fact,” EPA must allow “cross-examination” to resolve the matter.¹⁴⁶

The agency’s legal advisors at the time did not believe the above provisions required a trial-type hearing or much departure from the typical notice-and-comment requirements of the APA.¹⁴⁷ However, EPA officials wanted to be

141. See discussion *infra* Part II.B. OMB’s interference with EPA’s asbestos regulation led to significant controversy in Congress over the lawfulness of Executive Order 12,291. See, e.g., *OMB Review of EPA Regulations: Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. on Energy and Com.*, 99th Cong. 2 (1986) (“The asbestos case that was examined by the subcommittee last year discloses very clearly how OMB is distorting public rulemaking procedures. It shows that OMB’s claim of noninterference is just a sham, because that was a concrete case where OMB worked actively behind the scenes to sabotage a public and open process.”). See also *id.* at 5 (“In 1985, the Subcommittee’s hearing and report on EPA’s asbestos regulations chronicled OMB’s secret and heavy-handed interference with two draft proposed EPA rules designed to protect workers, consumers, and the general public against the cancer risks posed by ongoing asbestos production, use, and disposal. The report concluded that OMB’s interference in EPA’s asbestos rulemakings pursuant to Executive Order 12291 constituted an unlawful abuse of power, and it underscored the inadequacy of OMB’s policies governing the disclosure of communications with outside parties and agency officials.”).

142. See Asbestos; Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation, and Processing Prohibitions, 51 Fed. Reg. 3738 (Jan. 29, 1986) (to be codified at 40 C.F.R. pt. 763). See also Philip Shabecoff, *E.P.A. Proposes Plan to Curb Asbestos*, N.Y. TIMES, Jan. 24, 1986, at A12 (noting that “[t]he environmental agency first proposed regulating asbestos in 1979. Regulations like those in the program proposed today were drafted two years ago. Promulgation of the regulations were delayed, however, in large part because of a variety of objections by the White House Office of Management and Budget”).

143. See 5 U.S.C. § 553.

144. Toxic Substances Control Act of 1976, *supra* note 21, § 2605(c)(2)(C).

145. See *id.* § 2605(c)(3)(A)(i).

146. *Id.* at § 2605(c)(3)(A)(ii).

147. See Legal Support Document for Proposed Procedures for Rulemaking under Section 6 of the Toxic Substances Control Act, 42 Fed. Reg. 20640 (Apr. 21, 1977) at 3–4 (on file in Folder “Support Document”, Regulations, Standards, and Guidelines Files Relating to Section 6 Docket Rulemaking under the Toxic Substances Control Act (TSCA), 1983–1990, National Archives Identifier: 6863764, Box 1 of 7, National Archives).

sure they fully complied with any additional obligations under TSCA to avoid having the rule struck down on procedural grounds.¹⁴⁸ As a result, EPA held lengthy agency hearings in which 25 groups gave oral testimony and EPA officials made themselves available for nine days of cross-examination.¹⁴⁹

Although the rule may have benefitted from the extensive public engagement, it took EPA nearly three years to complete the process of oral hearings, public comment, and further rule revision.¹⁵⁰ These lengthy procedures underscore the inaccuracy of depicting EPA's delay in regulating asbestos as simply the result of extensive scientific study and expert analysis. Together with the earlier attempt to reach a voluntary agreement with industry under Administrator Gorsuch and OMB's refusal to release the regulation, they consumed nearly seven of the ten years between the initial advanced notice of proposed rulemaking and finalization of the rule. Accounting for these issues demonstrates that scientific and technical work was not a major hindrance to promulgating the rule in a timely fashion, as many have claimed.

B. OMB Interference in the Asbestos Regulation

EPA's decision to reinitiate work on the asbestos rulemakings after the resignation of Administrator Gorsuch in 1983 prompted a backlash among industry groups and the Canadian government, as the province of Quebec owned a considerable stake in asbestos companies.¹⁵¹ After EPA submitted its proposed rulemakings to OMB in 1984, the Asbestos Information Association, a trade group representing asbestos manufacturers, began privately lobbying

148. At the time, the Asbestos Information Association had accused EPA of not sufficiently disclosing the costs and benefits of the rule as required by TSCA. EPA subsequently made numerous concessions to the Association during the comment period of the rulemaking, such as allowing extensive questioning and cross-examination of agency officials and health experts. See Draft Letter from Lee M. Thomas, Adm'r, EPA, to Edward W. Warren, Kirkland & Ellis, (Feb. 11, 1987) at 1-2 (on file in Folder "February 1-27, 1987," Moore Papers, National Archives Identifier: 76018974, Box 12 of 13, National Archives).

149. See Letter from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to Sen. Alan J. Dixon (Dec. 31, 1987) at 1 (on file in Folder "Honorable Alan J. Dixon," Asbestos/General FY/1989, National Archives Identifier: 72052296, Box 1 of 7, National Archives).

150. See Letter from Lee M. Thomas, Adm'r, EPA, to Rep. John Dingell (Nov. 21, 1989) at 1 (on file in Folder "Chairman John D. Dingell," Asbestos/General FY/1989, National Archives Identifier: 72052296, Box 1 of 7, National Archives) (noting that the public comment period on the additional documents submitted in support of the regulation closed on October 18, 1988).

151. See Memorandum from John A. Moore to the Administrator, *supra* note 129, at 5.

OMB officials to stop EPA from regulating the chemical.¹⁵² The Canadian embassy embarked on a similar campaign shortly thereafter.¹⁵³

The Asbestos Information Association, in meetings with both OMB and EPA, adopted a two-pronged attack on EPA's asbestos regulation. First, it asserted that it was more appropriate for OSHA to adopt workplace safety standards rather than allow EPA to completely ban the chemical.¹⁵⁴ Second, it claimed that any remaining residual health effects from asbestos not covered by workplace controls "cannot reasonably be considered *per se* unreasonable risks," as other occupational risks from accidents, radiation exposure, and other hazards were far higher.¹⁵⁵ Workplace regulations would therefore be sufficient to control any unreasonable risks from asbestos use, rendering action under TSCA unnecessary.

OMB officials, who had already developed a reputation for interfering with environmental rulemakings through Executive Order 12,291, latched onto the argument that OSHA workplace controls could alleviate any need for EPA to act.¹⁵⁶ Along with the asbestos industry, they argued that the 1976 statute required EPA to refer chemicals to other agencies for regulation if the risks could be sufficiently reduced under other federal laws.¹⁵⁷

Congress had directly addressed the relationship between TSCA and other statutes in the 1976 legislation, recognizing that many chemicals might fall under the jurisdictions of other laws because of their presence in the workplace, air, water, cosmetics, and so forth. Section 9 of TSCA specified that if EPA concluded that a chemical posed an unreasonable risk of harm and subse-

152. See *EPA's Asbestos Regulations, Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. on Energy and Com.*, 99th Cong. 233 (1985) [hereinafter *Hearing on EPA's Asbestos Regulations*] (listing a series of letters and phone conversations between the Asbestos Information Association and OMB officials after EPA submitted the first of its two rulemakings for review per Exec. Order No. 12,291).

153. See *id.* at 234–35 (noting meetings between Canadian diplomats and OMB officials about the asbestos rulemakings).

154. See Letter from Edward W. Warren, Kirkland & Ellis, to John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA (May 14, 1984), at 2 (on file in Folder "July 2–13, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives) (writing on behalf of the Asbestos Information Association and describing arguments against the asbestos regulation made to OMB and EPA in the spring of 1984).

155. *Id.* at 3.

156. See *Hearing on EPA's Asbestos Regulations, supra* note 152, at 2 (describing Congress's concern from 1981 to 1984 that OMB was improperly influencing and obstructing EPA's regulations).

157. See Letter from Robert P. Bedell, *supra* note 137, at 4 ("Section 9 does not allow EPA to disregard the referral mechanism on its own conclusion that comprehensive, unilateral regulatory action by EPA would be 'most effective' . . . Congress decided that TSCA is a 'gap-filling' statute and that other agencies have primary regulatory jurisdiction for risks within their respective authorities. Under the law, therefore, EPA must submit such matters to those other agencies.").

quently determined “in the Administrator’s *discretion*” that another agency could sufficiently reduce the risk, “the Administrator shall submit to the agency which administers such law a report which describes such risk.”¹⁵⁸ The agency receiving the report was then supposed to make a finding about whether it could address the risk and inform EPA of its determination. Should the other agency decide to take action against the identified risk, EPA was prohibited from issuing its own regulation.¹⁵⁹

The plain language of the statute thus gave EPA discretion to refer a chemical to other agencies for regulation. Once EPA did so, however, the other agency would have discretion about whether to move forward with a rulemaking or refer the chemical back to EPA. This was the legal understanding of EPA and OSHA at the time EPA developed its asbestos ban.¹⁶⁰

However, after lobbying by the asbestos industry, OMB officials insisted that EPA must first allow OSHA to address the issue of asbestos exposure through workplace controls.¹⁶¹ They pushed OSHA to develop a new rule that would reduce permissible exposures for workers¹⁶² through use of personal protective equipment.¹⁶³ OMB then told EPA that if its rule intended to similarly target workplace exposures, OSHA would be the proper agency to regulate asbestos, not EPA.¹⁶⁴

Under pressure from OMB and political appointees within EPA, in early 1985 EPA’s General Counsel agreed to write a new memorandum reinterpreting section 9 to support referring a chemical to other agencies with jurisdic-

158. Toxic Substances Control Act of 1976, *supra* note 21, § 2608(a)(1) (emphasis added).

159. *See id.* § 2608(a)(2).

160. EPA officials had consulted with OSHA through a federal task force on asbestos on numerous occasions during the regulation’s development. On EPA’s legal understanding of its authority, *see* Memorandum: Minutes of Meeting between the Office of Toxic Substances (OTS) and the Office of Management and Budget (OMB) Staff Concerning OTS Asbestos Program (Mar. 26, 1984) at 2 (on file in Folder “May 1–18, 1984”, Moore Papers, National Archives Identifier: 76018974, Box 3 of 13, National Archives).

161. *See id.* *See also* EPA Office of Policy, Planning and Evaluation, Memorandum: Role of EPA versus Role of OSHA in Controlling Risks due to Workplace Exposure (Apr. 12, 1984) (on file in Folder “May 1–18, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 3 of 13, National Archives) (advocating for EPA’s continued involvement because OSHA was prevented from banning chemicals when substitutes were not feasible).

162. *See* Administrator’s Status Briefing on Asbestos, *supra* note 136.

163. There were numerous problems with using personal protective equipment to guard against asbestos exposures, as well as questions about whether OSHA could reduce risks as dramatically as EPA given its statutory requirements to consider economic feasibility. *See Hearing on EPA’s Asbestos Regulations*, *supra* note 152, at 276 (submitting into the record an internal EPA memorandum that acknowledged wearing personal protective equipment was infeasible for many workers and did not sufficiently reduce exposure even when worn).

164. *See* Letter from Robert P. Bedell, *supra* note 137, at 4.

tion over a chemical's risks.¹⁶⁵ The Acting Deputy Administrator at EPA then issued a press release stating that EPA intended to refer asbestos to OSHA because it was "mandated" by section 9.¹⁶⁶ EPA and OSHA subsequently negotiated a "memorandum of understanding" stating the responsibilities of each agency for toxics regulation and EPA's intent to refer asbestos controls to OSHA under section 9 of TSCA.¹⁶⁷ This was despite the fact that OSHA had a very poor track record on asbestos protections and other carcinogenic chemicals since the mid-1970s.¹⁶⁸

The ramifications of EPA and OMB's dispute over section 9 were enormous. By holding the rule hostage and refusing to let the agency revise it on "legal grounds," OMB was in effect exercising "veto power over proposed regulations."¹⁶⁹ OMB's construal of section 9 was especially galling given its inconsistency with the plain statutory language, TSCA's legislative history, and EPA's prior legal interpretations of the provision.¹⁷⁰ It was also of dubious constitutionality, as Congress had given EPA the authority to interpret TSCA, not OMB.¹⁷¹

165. The General Counsel did so under the direction of political appointees at the agency. *See Hearing on EPA's Asbestos Regulations, supra* note 152, at 390 ("EPA completely reversed its view as to its authority and function under Section 9 in a broad policy statement issued by A. James Barnes on February 1, 1985 just after William Ruckelshaus left his post as EPA Administrator."). *See also id.* at 396 (describing a memorandum OMB sent to the acting administrator of EPA, which stated that section 9 required a referral, shortly before EPA reversed its position).

166. *Id.* at 391.

167. Letter from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to Robert Rowland, Assistant Sec'y, OSHA (Feb. 6, 1985) at 1 (on file in Folder "February 1-11, 1985," Moore Papers, National Archives Identifier: 76018974, Box 6 of 13, National Archives).

168. EPA's section 9 referral prompted criticism from Congress and state governments. *See, e.g.,* Letter from Larry C. Holcomb, Exec. Sec'y, Mich. Toxic Substances Control Comm'n, to Lee M. Thomas, EPA Adm'r (Mar. 11, 1985) at 1 (on file in Folder "March 25-30, 1985," Moore Papers, National Archives Identifier: 76018974, Box 7 of 13, National Archives). Note that OSHA also had to contend with challenges in meeting the "significant risk" threshold following the infamous benzene case in the Supreme Court. *See Indus. Union Dep't v. Am. Petroleum Inst.*, 448 U.S. 607, 639 (1980).

169. Letter from J. Clarence [Terry] Davis, Exec. Vice President, to John A. Moore, Assistant Adm'r, Off of Pesticides and Toxic Substances, EPA (Dec. 12, 1983) (on file in Folder "October 14 - December 30, 1983," Moore Papers, National Archives Identifier: 76018974, Box 1 of 13, National Archives) (noting that he retained faith in the civil servants working at the agency).

170. *See Hearing on EPA's Asbestos Regulations, supra* note 152, at 1-2 (statement of Rep. Dingell) (finding it galling that EPA's "new interpretation of section 9 was apparently inspired in some divine fashion during meetings with OMB officials").

171. *See id.* at 375 ("But this case raises even deeper concerns that relate to whether or not the Congress or the Executive branch shall exercise policy authority as to which agency shall weigh the standards in law which determine the manner of its application. This choice is a policy matter which rests with the Congress and not with the Executive Branch."). Similar

Though EPA was eventually able to move forward with its asbestos ban, OMB's dispute with EPA over how to interpret TSCA's referral requirements demonstrates how a hostile administration was able to use the prospect of controls through other agencies or laws to prevent regulation under TSCA.¹⁷² Furthermore, OMB's initial refusal to defer to EPA's interpretation of section 9 and insistence on proceeding first through OSHA impacted EPA's ability to justify the ban on cost-benefit grounds, as discussed in Part III.A. These tactics also previewed many of the issues that arose under the Trump Administration's implementation of the 2016 amendments, which are explored more fully in Part IV.

C. EPA and OMB's Battle over Cost-Benefit Analysis

While the 1976 version of TSCA did contain language instructing EPA to consider the costs and benefits of regulating, it did not explicitly require the agency to conduct a formal cost-benefit analysis before regulating a toxic substance.¹⁷³ Reagan's Executive Order 12,291, however, was crystal clear on the matter. It required all "major" agency rules, defined as those with more than \$100 million in annual economic effects, to include a regulatory impact analysis assessing the costs and benefits of the rule.¹⁷⁴

At the time EPA officials began drafting the asbestos regulation, many of those in charge of the rulemaking were opposed to allowing cost-benefit analysis to play a large role in environmental regulation.¹⁷⁵ For example, the head of EPA's Office of Pesticides and Toxic Substances, Jack Moore, argued to his superiors that:

constitutional concerns were raised about the Trump Executive Order 13,771. *See A Debate Over President Trump's "One-In-Two-Out" Executive Order*, REG. REV. (June 26, 2017), <https://perma.cc/6EQ6-YG55>. *See also* Plaintiffs' Motion for Summary Judgment at 38–39, *Pub. Citizen, Inc. v. Trump*, 297 F. Supp. 3d 6 (D.D.C. 2018) (case ultimately dismissed for lack of standing) (arguing that "Executive Order 13771 directs these defendants to exercise their authority in ways that are contrary to the Constitution and their governing statutes, and that violate the bar against agency action that is arbitrary, capricious, or contrary to law").

172. It is worth noting that the issue of OMB overruling EPA on environmental regulations has also arisen in administrations considered more predisposed to environmental protection. *See, e.g.*, Lisa Heinzerling, *Inside EPA: A Former Insider's Reflections on the Relationship Between the Obama EPA and the Obama White House*, 31 PACE ENV'T L. REV. 325 (2014) (describing a tense relationship between OMB and EPA during the Obama Administration).

173. *See* Toxic Substances Control Act of 1976, *supra* note 21, § 2605(a); *id.* at § 2605(c)(1)(A)–(D).

174. Exec. Order No. 12,291, 46 Fed. Reg. 13193 (Feb. 19, 1981).

175. At the time, there was considerable debate about how EPA should balance costs against "risk reduction" and the degree to which this should take the form of cost-benefit analysis. *See* James L. Regens, Thomas M. Dietz & Robert W. Rycroft, *Risk Assessment in the Policy-Making Process: Environmental Health and Safety Protection*, 43 PUB. ADMIN. REV. 137, 142 (1983).

[T]he role of economic analyses in decision making needs to be put into the right prospective [sic]. It is shortsighted to imply that economic considerations determine the regulatory decision. Although they may aid in decision making and in some statutes are actually called for, they are not the only consideration.¹⁷⁶

Moore also believed that such an approach was inconsistent with TSCA, which in his view prioritized reducing risks to health and the environment over costs to industry.¹⁷⁷

EPA therefore sought to determine that asbestos posed an “unreasonable risk” largely based on data about cancer rates following inhalation of asbestos fibers,¹⁷⁸ emphasizing that this determination was “based on sounder science than many of our risk predictions for other chemicals.”¹⁷⁹ In addition, the agency pointed to two key factors that it believed made the substance worthy of restrictions: 1) the fact that asbestos posed dangers throughout its “life cycle,” meaning from manufacture through consumer use and disposal, and 2) the fact that substitute products were readily available for many asbestos uses, meaning the “benefits to society” from asbestos “are small.”¹⁸⁰

Rather than engage in explicit balancing between the health harms and compliance expenses, EPA then calculated the “cost effectiveness” of an asbestos ban.¹⁸¹ As EPA staff then understood the term, a cost-effective management approach assumed the desirability of a regulatory action and “does not weigh risks against benefits, or monetize benefits; it only looks for the least-cost

176. Memorandum from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to Milton Russell, Assistant Adm'r for Poly, Planning, and Evaluation, EPA, Subject: Risk Assessment – Risk Management Report (Sept. 27, 1984) at 1 (on file in Folder “September 24–30, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 5 of 13, National Archives).

177. *See id.* at 2 (arguing that “cost per risk avoided” should not be the primary determinate of how to regulate under TSCA).

178. *See* EPA, Asbestos: Manufacturing, Processing, Importation, and Distribution, in Commerce Prohibitions (n.d., likely spring 1984) at 32, 53 (on file in Folder “March 2–30, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 2 of 13, National Archives) [hereinafter EPA, Asbestos Draft Rule, Mar. 1984] (finding the health risks “substantially outweigh the costs to consumers and the asbestos industries from the proposed regulation”).

179. This was largely because much of the data came from studies of human exposure, rather than relying on extrapolations from animal studies. *See* Talking Points, EPA’s Comprehensive Strategy Will Reduce Risks from Asbestos (Aug. 26, 1985) at “Talking Points for Flip-Chart No. 4” (on file in Folder “August 9–31, 1985,” Moore Papers, National Archives Identifier: 76018974, Box 9 of 13, National Archives). It also marshalled extensive data on the lack of similar harms from substitute materials. *See id.* at “Talking Points for Flip-Chart No. 6.”

180. EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 7.

181. EPA, Asbestos: Proposed Mining and Import Restrictions (undated) at 54 (on file in Folder “June 1–29, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 3 of 13, National Archives) [hereinafter EPA, Asbestos Draft Rule, June 1984].

path to achieve a given goal, such as the achievement of a protective standard.”¹⁸² To determine the cost-effectiveness of its asbestos ban, EPA calculated the cost for avoiding each incidence of cancer, which EPA determined to be \$0.83 million for both rules.¹⁸³

EPA’s decision not to undertake a formal cost-benefit assessment—which would have involved placing a monetary value on lives saved—launched a tense battle with OMB officials. They asserted that EPA’s refusal to weigh the costs and benefits of the regulation had violated Reagan’s Executive Order 12,291¹⁸⁴ as well as TSCA, which they read as requiring cost-benefit analysis.¹⁸⁵ OMB told EPA to revisit its regulatory impact analysis and more extensively assess the costs and benefits of a ban.¹⁸⁶

EPA career staff tried to contest the Reagan Administration’s position that TSCA’s language on economic costs required formal cost-benefit balancing over many months during the summer and fall of 1984. They believed that TSCA called instead for “risk-benefit balancing” that took into account potential costs but not explicitly “dollars per life saved.”¹⁸⁷ However, with OMB holding the rules hostage and pressuring EPA to refer regulation to OSHA, staff in EPA’s Office of Pesticides and Toxic Substances eventually went back to the drawing board and sought to pull together a cost-benefit analysis that would satisfy OMB officials.

EPA’s subsequent attempt to undertake a more formal cost-benefit analysis revealed several fundamental disagreements between the agency and OMB over three methodological issues. These were 1) whether and to what extent to discount future benefits, 2) whether EPA should assess the costs and benefits of asbestos use overall or break down its analysis into particular uses of the substance, and 3) whether to place a monetary value on human life and health benefits.

182. EPA, Draft Report on Risk Assessment and Risk Management (Sept. 12, 1984) at 26 (on file in Folder “September 24–30, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 5 of 13, National Archives).

183. Note that EPA only examined the cost per cancer case avoided for a ban. *See* Administrator’s Status Briefing on Asbestos, *supra* note 136, at 4.

184. *See* Letter from Robert P. Bedell, *supra* note 137, at 2. EPA did submit a regulatory impact analysis but opted to simply calculate the number of cancer cases avoided rather than seek to monetize benefits. *See* Memorandum from John A. Moore to the Administrator, *supra* note 129, at 3.

185. *See* Letter from Robert P. Bedell, *supra* note 137, at 2–3.

186. *See id.* at 5.

187. Note from Dick to Jack [John A. Moore] (Sept. 18, 1984) at 1 (on file in Folder “September 24–30, 1984,” Moore Papers, National Archives Identifier: 76018974, Box 5 of 13, National Archives) (describing his and other career staff concerns about the Reagan Administration’s approach to risk management).

The first issue, discounting, is a common challenge in assessing the benefits of a regulation that will have effects far into the future.¹⁸⁸ The technique reduces the value of future benefits when monetizing them in today's present dollars, under the assumption that people more highly value receiving money today than next year, or twenty years from now.¹⁸⁹ When conducting its initial cost-benefit analysis, EPA chose not to discount any benefits of the rule.¹⁹⁰ Career staff at the agency felt doing so "would represent a dramatic departure from past EPA practice, would have major implications for the Agency's carcinogen policies, and would greatly diminish projected benefits of the proposed asbestos rules."¹⁹¹ OMB strongly disagreed, believing that it would be inconsistent to discount future costs—which the agency had done—and not do the same for benefits.¹⁹² It suggested EPA should discount future benefits from avoided cancer cases using a 10 percent rate, which would significantly reduce the expected benefits of a regulation.¹⁹³ OMB justified this number by claiming that 10 percent was "the rate used most frequently in 'investment' decisions."¹⁹⁴ It appears to be the first time such a high discount rate was proposed to calculate the costs and benefits of an environmental regulation.¹⁹⁵

The second area of disagreement between the two agencies concerned EPA's decision to make an overall determination of the rule's costs and benefits rather than breaking down cancer risks by product type. From a health and data perspective, it seemed to make little sense for EPA to isolate risks by different uses, as exposures were likely to be cumulative throughout the chemical's life cycle. OMB, however, argued that EPA should "disaggregate the costs, benefits, and cost-effectiveness" associated with about 30 or so different "uses" it had identified.¹⁹⁶ According to OMB, this was required by the statute and revealed that EPA did not have enough evidence to show an unreasonable risk for a multitude of different uses.¹⁹⁷ OMB argued these separate analyses might lead EPA to find that substitute products posed greater hazards than asbestos, par-

188. See RICHARD L. REVESZ & MICHAEL A. LIVERMORE, *RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH* 95 (2008); FRANK ACKERMAN & LISA HEINZERLING, *PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING* 61 (2010).

189. See ACKERMAN & HEINZERLING, *supra* note 188, at 61.

190. See *Hearing on EPA's Asbestos Regulations*, *supra* note 152, at 24.

191. *Id.* at 25.

192. See Letter from Robert P. Bedell, *supra* note 137, at 7.

193. See *id.*

194. Letter from Sen. Daniel Patrick Moynihan to David A. Stockman, Dir., OMB (Dec. 13, 1984), at 1 (on file in Folder "January 23–30, 1985," Moore Papers, National Archives Identifier: 76018974, Box 6 of 13, National Archives).

195. See *id.* at 1–2.

196. Letter from Robert P. Bedell, *supra* note 137, at 1–3.

197. See *id.* at 3 (citing to language in TSCA requiring EPA to consider "the benefits of such substance or mixture for various uses and the availability of substitutes for such uses" per

ticularly replacing asbestos in automobile brakes, which OMB claimed could lead to a rise in car accidents that would far outstrip the benefits from reduced cancer rates.¹⁹⁸ However, to undertake such an extensive analysis on 30 different uses would require enormous information, research, and agency resources, as well as data from industry that EPA lacked.

The third, and perhaps most major, issue concerned what benefits EPA should monetize and whether, once EPA had done so, the rule's benefits would justify its costs. EPA officials at the Office of Pesticides and Toxic Substances were philosophically opposed to putting a monetary value on human well-being. They sharply disputed the Reagan appointees' emphasis on monetizing health risks, arguing that EPA could not adequately represent risks "for any adverse effect, including cancer" with "some simple number."¹⁹⁹ EPA staff therefore did not believe that the agency should try to place a value on life itself. Instead, they felt EPA should only calculate the dollar value of already monetized benefits from avoided cancer cases, such as the costs of hospital treatments and lost wages.²⁰⁰

OMB officials, on the other hand, did not appreciate the difficulty of monetizing health and environmental benefits from toxics regulations.²⁰¹ They asserted that if the asbestos regulation were truly warranted, EPA should be able to demonstrate that monetized benefits outweighed monetized costs. OMB based this argument on a comparison between EPA's cost-benefit analysis for the asbestos regulation and a cost-benefit analysis completed for a recently promulgated regulation of lead in gasoline.²⁰² The lead rule was one of the only environmental regulations to pass a cost-benefit test during the Reagan Administration and was used as a cudgel in OMB's critiques of EPA's cost-benefit analysis for the asbestos rule. While the cost-benefit analysis for the lead rule showed it would produce \$34.7 billion in net benefits, EPA's asbestos

section 6(c)(1)(C)). It is certainly debatable whether this provision requires a breakdown of costs and benefits by use.

198. *See id.*

199. EPA, DRAFT REPORT ON RISK ASSESSMENT AND RISK MANAGEMENT 5 (Sept. 12, 1984), (on file in Folder "September 24–30, 1984," Moore Papers, National Archives Identifier: 76018974, Box 5 of 13, National Archives) (quote is in marginalia notes from EPA career staff). This opposition appears to have included both career staff and some, but not all, political appointees, such as Jack Moore.

200. *See* EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 54–55 (noting that many of these patients died quickly, which would have further decreased the value of these benefits).

201. *See generally* Bruce P. Lanphear, *The Impact of Toxins on the Developing Brain*, 36 ANN. REV. PUB. HEALTH 211, 216 (2015) (discussing the challenges of quantifying harms from toxic chemicals on neurodevelopmental outcomes and noting that "[t]he shape of the dose–response relationship is not well established for many toxins").

202. *See* Letter from Robert P. Bedell, *supra* note 137, at 2.

ban appeared to yield \$2.319 billion in net costs based on the agency's initial calculations.²⁰³

Yet the sole reason EPA successfully justified the lead rule on monetized cost-benefit grounds was because that regulation produced significant benefits from reduced car maintenance, which alone outweighed the increased compliance costs to industry.²⁰⁴ Despite lead's known, widespread health harms, EPA could only monetize certain health effects in children based on population-wide scientific analyses of children's blood lead levels.²⁰⁵ If EPA had been forced to rely solely on these monetized health benefits, the lead regulation would not have passed muster with OMB.²⁰⁶

EPA and OMB were thus at a complete impasse over what role cost-benefit analysis should play in toxics regulation. The stalemate between the two agencies was broken only as a result of Congressional intervention. When Congress enacted TSCA many hoped that asbestos would be one of the first chemicals regulated under the law, and OMB's refusal to allow EPA to issue the asbestos regulations prompted Representative John Dingell to launch an investigation into the matter.²⁰⁷ He informed OMB officials that members of Congress had become alarmed that an "inappropriate" debate concerning EPA's asbestos regulations was "raging within the administration" and requested documentation of all OMB discussions with interested parties and other governmental agencies about the rulemaking.²⁰⁸

Based on a review of agency documents, staff interviews, and Congressional hearings, the House Subcommittee on Oversight and Investigations within the Energy and Commerce Committee concluded that OMB had used the section 9 referral process as pretext in order to block the rule over concerns about its costs to industry.²⁰⁹ The Subcommittee accused the Reagan Administration of engaging in a "constitutionally subversive review process" that violated TSCA, the APA, and Congressional intent, prevented meaningful

203. *See id.*

204. *See* EPA OFF. OF POLICY ANALYSIS, COSTS AND BENEFITS OF REDUCING LEAD IN GASOLINE 5 summary tbl. 1 (1984), <https://perma.cc/CGB4-SR2Z>.

205. *See id.* at V.12, V.20–V.24.

206. *See id.* at Executive Summary.

207. Letter from Rep. John Dingell to William D. Ruckelshaus, Adm'r, EPA (July 9, 1984) at 1 (on file in Folder "August 1–20, 1984," Moore Papers, National Archives Identifier: 76018974, Box 4 of 13, National Archives).

208. *Id.*

209. *See* STAFF OF H. COMM. ON ENERGY AND COM., SUBCOMM. ON OVERSIGHT AND INVESTIGATIONS, 99TH CONG., EPA'S ASBESTOS REGULATIONS: REPORT ON A CASE STUDY ON OMB INTERFERENCE IN AGENCY RULEMAKING 26–27 (Comm. Print 1985) [hereinafter EPA's Asbestos Regulations: Case Study of OMB Interference] (noting that discussions between OMB and EPA officials on section 9 devolved into conversations about "OMB's continued reservations about the proposed regulations on economic grounds").

judicial review, and provided a secret inside track for industry to influence environmental regulations.²¹⁰

In addition to raising concerns about OMB's decision to overrule EPA's interpretation of section 9's referral mechanism, the Congressional representatives strongly disagreed with OMB's assertion that TSCA required EPA to engage in formal balancing of costs and benefits.²¹¹ The legislative history of the 1976 law supported their position, as Congress had opted not to adopt a version of the law that would have required a formal economic impact statement.²¹² As stated in the House Committee Report accompanying TSCA in 1976:

The balancing process described above does not require a formal benefit-cost analysis under which a monetary value is assigned to the risks associated with a substance and to the cost to society of proposed regulatory action on the availability of such benefits. Because a monetary value often cannot be assigned to a benefit or cost, such an analysis would not be very useful.²¹³

Congressional representatives also criticized the specific requirements OMB placed on EPA's analysis, notably using "net monetary benefits as a mechanistic decision rule,"²¹⁴ monetizing the value of human life,²¹⁵ and discounting future benefits.²¹⁶ They were especially appalled by OMB's recommended 10 percent discount rate.²¹⁷ Fearing that such discounting would prevent the agency from regulating many toxic substances like carcinogens with long latency periods, they recommended "that the Agency reject the use of discounting over the latency period of diseases caused by chronic hazards."²¹⁸

The Congressional investigation renewed the battle within the Reagan Administration over whether EPA could move forward with an asbestos rulemaking. After publication of an official House Report on the controversy, EPA's Office of General Counsel, Office of Pesticides and Toxic Substances, and Office of Policy, Planning, and Evaluation together drafted a legal memorandum concluding that OMB's assessment of section 9 was wrong, using many of the same arguments laid out by the House Subcommittee on Oversight. The

210. *Id.* at 102, 108, 119.

211. *See id.* at 70.

212. *See id.* at 75.

213. H. R. REP. 94-1341, at 14 (1976).

214. EPA's Asbestos Regulations: Case Study of OMB Interference, *supra* note 209, at 86.

215. *See id.* at 77 ("OMB's attempt to place a monetary value on human life raises fundamental moral questions . . . [and] underscores one of the inherent flaws of formal cost-benefit analysis.")

216. *See id.* at 78.

217. *See id.* at 78-79.

218. *Id.* at 82.

memo argued that EPA did have discretion to withhold referral to other agencies and should do so in the case of asbestos.²¹⁹ As Congressman Dingell continued to accuse OMB of interference and demanded to see all its communications with EPA, particularly about the costs and benefits of issuing the rule,²²⁰ OMB bowed to pressure and gave EPA permission to move forward with regulation of asbestos.²²¹

Yet Congressional support for EPA's decision not to pursue a formal cost-benefit analysis may have set the agency up to provide an insufficient evidentiary basis for the regulation by understating its actual health benefits.²²² As detailed below in Part III, EPA pursued the worst of both worlds once it finally received clearance from OMB to proceed with the rulemaking. It produced a cost-benefit assessment that extensively documented the compliance costs to industry but did little to quantify and monetize the true benefits of the rule. In doing so, EPA ceded the tool to a deregulatory administration bent on manipulating cost-benefit analysis to restrict environmental protections.

III. THE COSTS AND BENEFITS OF AN ASBESTOS BAN

When EPA finally proposed its asbestos ban in 1986, it was clear that past exposure to the substance led to severe health consequences. Scientists estimated that between 3,300 and 12,000 cancer cases occurred every year because of asbestos use, nearly all of them fatal.²²³ An additional 65,000 people were then suffering from asbestosis, a serious lung disorder that significantly dimin-

219. See Letter from Lee M. Thomas, Adm'r, EPA, to Rep. John Dingell (Oct. 31, 1985) (on file in Folder "November 1–14, 1985," Moore Papers, National Archives Identifier: 76018974, Box 10 of 13, National Archives).

220. See Letter from Rep. John Dingell to Lee M. Thomas, Adm'r, EPA (Oct. 23, 1985) at 2–3 (on file in Folder "November 1–14, 1985," Moore Papers, National Archives Identifier: 76018974, Box 10 of 13, National Archives).

221. See Memorandum from John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, to the Adm'r, EPA, Subject: Proposed Rule to Ban Certain Asbestos Products and Phase Out the Mining and Importation of Asbestos, (Jan. 22, 1986) (on file in Folder "January 2–31, 1986," Moore Papers, National Archives Identifier: 76018974, Box 10 of 13, National Archives) (stating that the asbestos ban finished the review process with the Office of Management and Budget and requesting that the EPA administrator issue the proposed rule).

222. EPA has made similar strategic errors in more recent cases involving cost-benefit analysis, notably *Michigan v. EPA*, 576 U.S. 743 (2015). See Catherine Sharkey, *Cutting in on the Chevron Two-Step*, 86 *FORDHAM L. REV.* 2359, 2419–20 (2018) (discussing EPA's decision not to consider costs as part of its threshold decision to regulate under the Clean Air Act, leading the Supreme Court in 2015 to vacate its regulation in *Michigan v. EPA*).

223. See Asbestos; Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation, and Processing Prohibitions, 51 *Fed. Reg.* 3738, 3738 (Jan. 29, 1986) (to be codified at 40 C.F.R. pt. 763).

ished quality of life and shortened life expectancy.²²⁴ These effects, and the scientific research connecting them to asbestos use, were not in serious dispute among officials at EPA and OMB nor in the broader public health community.²²⁵

At issue instead was whether these health impacts warranted a ban on asbestos use and what information EPA needed to support a ban. As explained in Part II.C, EPA strenuously disagreed with OMB about using cost-benefit analysis to justify an asbestos ban. It objected to placing a monetary value on human life for philosophical reasons and believed that TSCA did not require the agency to engage in formal cost-benefit analysis.²²⁶ The views of many members of Congress, and the legislative history of the 1976 act, bolstered EPA officials' commitment to this reading of the law. As a result, staff in the Office of Pesticides and Toxic Substances made a series of analytical decisions in preparing the evidentiary record for the ban that dramatically understated its benefits and hurt the agency's position in subsequent litigation over the rule. Although the Fifth Circuit decision in *Corrosion Proof Fittings v. EPA* was fraught with problematic language about how EPA should conduct cost-benefit analyses for toxics regulations, the court did identify important flaws and mistakes that EPA could have rectified in the first instance or on reconsideration of the rule.

Using archival documents and data available to EPA at the time it promulgated the asbestos regulation, this Part demonstrates that EPA would have been able to justify the ban on cost-benefit grounds had the agency fully quantified and monetized the expected benefits. It nevertheless argues that the *Corrosion Proof Fittings* case illustrates certain perils of judicial review of agency actions, particularly when evaluating rules based on highly technical information. Despite these problems with the court's opinion, EPA could have reissued the rule with a revised cost-benefit analysis that would have shown net benefits from the regulation. The reason EPA did not do so was more a product of politics, both internal and external to the agency, than any fundamental issue with using cost-benefit methods to justify the ban.

Section A examines EPA's economic analysis in support of the asbestos ban to highlight numerous ways in which EPA could have better quantified and monetized the health benefits of its regulation to show net benefits. While

224. *See id.*

225. See Gerald Markowitz & David Rosner, "Unleashed on an Unsuspecting World": The Asbestos Information Association and Its Role in Perpetuating a National Epidemic, 106 AM. J. PUB. HEALTH 834, 835 (2016) (noting that by the 1970s, there was an extensive scientific literature showing asbestos could cause "asbestosis, lung cancer, and mesothelioma," though the Asbestos Information Association sought to cast doubt on this research to prevent asbestos regulations). *See also* Paul D. Carrington, *Asbestos Lessons: The Unattended Consequences of Asbestos Litigation*, 26 REV. LITIGATION 584, 588-90 (2007) (explaining that the harmful health effects from asbestos were widely known by the 1970s, leading to thousands of asbestos tort lawsuits each year by the mid-1980s).

226. *See supra* Part II.C.

further quantification of harms would have involved some additional analysis, these efforts would have been fairly minimal. And in other cases, such as placing a monetary value on lives saved, it was EPA's philosophical objections that stood in the way of a more robust analysis, not the need to perform extensive technical work. Section B then turns to the *Corrosion Proof Fittings* case, examining what the court got right and wrong about EPA's consideration of the costs and benefits of the rulemaking. Section C assesses the aftermath of the Fifth Circuit decision and the available evidence for why EPA did not revisit the rule, which demonstrate that political considerations were largely responsible for EPA's decision not to reissue the asbestos ban. Arguments about the inherent flaws in the statute or the Fifth Circuit's interpretation of TSCA instead became a convenient cover for the actual reasons EPA did not seek to exercise its authority under section 6.

A. EPA's Analysis in Support of the Rule

The EPA Office of Pesticides and Toxic Substances' opposition to assessing the costs and benefits of chemical regulations led to several serious problems in the agency's approach to the analysis. These were 1) EPA's decision not to quantify all the expected harms, notably excluding risks to certain populations as well as from certain uses, 2) EPA's refusal to monetize the harms that it did quantify, and 3) EPA's selection of a short timeline over which to assess the ban's benefits. As the analysis below demonstrates, fixing these issues would have allowed the agency to justify the ban on cost-benefit grounds. Additional challenges, such as new OSHA workplace standards and industry's voluntary phaseout of asbestos, eventually complicated EPA's attempt to revise its cost-benefit analysis. However, even with these difficulties, EPA would have been able to justify its ban had the agency sought to fully quantify and monetize the benefits of its regulation.

There were several ways in which EPA could have better quantified and monetized the benefits of banning asbestos based on information readily available to the agency. In numerous instances, EPA opted not to quantify certain health outcomes despite having data that would have allowed it to do so, often without clear explanation as to why. For instance, it initially chose to quantify mortality only from lung cancer and mesothelioma, excluding excess mortality from asbestosis and other cancers, because "lung cancer and mesothelioma appear to present the greatest threats to human health at current exposure levels."²²⁷ Quantifying the additional cancers, however, would have raised the death total by at least 10–20 percent.²²⁸

227. EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 18.

228. *See id.* at 33.

The agency also only assessed the risks of asbestos to small worker populations in a subset of industrial uses.²²⁹ Most of the calculations therefore did not quantify deaths from non-occupational exposures, which were initially estimated to occur at a rate of 1 in 100,000 in urban settings.²³⁰ That risk resulted from exposure to asbestos throughout the life cycle of its use, including during construction work, releases from automobile brake pads, and disposal.²³¹ Millions of Americans faced some risk as a result of these activities, particularly those that lived in proximity to asbestos mines or in urban areas.²³² EPA's decision not to include these deaths significantly lowered the expected number of cancers that might be avoided. By the 1980s, about 70 percent of the total U.S. population lived in urban areas.²³³ Given a population of 250 million, 1,750 non-worker deaths would be averted according to EPA's data, almost an equivalent number to EPA's quantified total for workers, which came to 2,279.²³⁴ Yet the agency did not include risks to the general population in its calculations.²³⁵

Even among worker populations, internal agency documents reveal that EPA declined to quantify additional deaths from those involved in certain manufacturing practices.²³⁶ Nor did EPA include some types of workers, such as maintenance staff, who were likely to come into contact with asbestos even if their jobs did not directly involve the substance.²³⁷ Finally, EPA did not quantify benefits from avoiding future asbestos removal and disposal, finding the estimates too "speculative."²³⁸

Most problematically, EPA's analysis placed no monetary value on the lives saved by the ban. Instead, EPA simply provided the quantified number of avoided deaths from lung cancer and mesothelioma in the limited worker popu-

229. See EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 39–42 (only quantifying worker exposures for several specific industrial uses, such as cement-sheet production and manufacture of friction materials). See also *id.* at 44 (noting that EPA excluded consumer and non-occupational exposures and did not include "all workers whose occupation causes them to come in contact with asbestos products. For example, the estimates do not include occupational exposures during repair, removal, and disposal of asbestos products other than friction products and cloth").

230. See EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 32.

231. See EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 36.

232. See *id.* at 37.

233. See ROGER AUCH, JANIS TAYLOR & WILLIAM ACEVEDO, U.S. GEOLOGICAL SURVEY, URBAN GROWTH IN AMERICAN CITIES: GLIMPSES OF U.S. URBANIZATION 2 (Jan. 2004), <https://perma.cc/X7MN-VWNM>.

234. See Administrator's Status Briefing on Asbestos, *supra* note 136, at 4.

235. See *id.*

236. See EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 45.

237. See EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 32.

238. *Id.* at 47.

lations described above.²³⁹ In contrast to the asbestos rule, most of the other environmental regulations developed during this same period monetized benefits from averted health harms.²⁴⁰ EPA records note that the agency also did not attempt to assign any value to pain and suffering, lost leisure, or other damages typically valued in tort cases at the time.²⁴¹ The only monetized benefits included in the analysis were those that already had a price tag, such as the costs of hospital treatments for cancer and lost wages from time out of work.²⁴²

EPA's other major misstep was its selection of a short time period to assess the effects of a ban. When it initially drafted its regulations, EPA decided to evaluate the effects from 1985 through the year 2000. Archived agency records reveal that EPA's reason for choosing this period was the agency's belief that those years would be "when the rule would have the most impact."²⁴³ However, assessing the ban in this way prevented EPA from accurately comparing a world with continued asbestos use from one without the toxic substance. For instance, had EPA selected a 30- or 40-year period, it could have examined a scenario in which companies continued business as usual, leading to thousands of additional cancers from continued asbestos use over decades. Even EPA itself acknowledged that its short timeline underestimated harms from continued asbestos use, noting that "[w]ithout regulatory action, manufacture of asbestos products may continue beyond that date."²⁴⁴ By only quantifying cancer cases during the rule's implementation, EPA thus further understated the benefits of a ban.

Fixing these issues in 1984, when EPA first developed its asbestos ban, would have allowed the agency to justify the ban on cost-benefit grounds.²⁴⁵ And it could have done so with information from the agency's own internal records as well as data available to EPA while it was developing the rule. The calculations below demonstrate how changes in the populations considered in

239. *See id.* at 55 (finding the first part of the regulation would prevent about 1,065 deaths); EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 43–44 (finding the second part of the regulation would prevent an additional 1,214 deaths).

240. *See* EPA OFF. OF POL'Y PLANNING AND EVALUATION, EPA'S USE OF BENEFIT-COST ANALYSIS, 1981-1986 S-2 (Aug. 1987) (acknowledging that most of the analyses that monetized benefits were for air and water pollution regulations, which had better data and analytic techniques to estimate exposures). EPA monetized avoided deaths or other health harms for some of these regulations. *See id.* at b-2 (valuing reduction in mortality from National Ambient Air Quality Standards for particulate matter); *see id.* at c-2 (valuing reductions in mortality from a New Source Review regulation that would reduce particulate matter); *see id.* at f-2 (valuing health benefits from reductions of lead in gasoline).

241. *See* EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 47.

242. *See* EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 54–55 (noting that many of these patients died quickly, which would have further decreased the value of these benefits).

243. Memorandum from John A. Moore to the Administrator, *supra* note 129, at 3.

244. EPA, Asbestos Draft Rule, June 1984, *supra* note 181, at 41.

245. *See infra* notes 251–255 and accompanying text.

the analysis as well as placing a value on lives lost would have shown net benefits from the ban.²⁴⁶

To begin with the 1984 proposed rule, EPA initially estimated that the costs of the two regulations implementing the asbestos phaseout would total approximately \$1.9 billion using a 10 percent discount rate.²⁴⁷ Therefore, the cost of the regulations with a more appropriate 3 percent discount rate over the 15-year implementation period would have been about \$5.8 billion.²⁴⁸ The health benefits were 2,279 fewer fatalities from cancer resulting from asbestos exposure during the 15 years it would take to phase out asbestos.²⁴⁹ As asbestos diseases typically take years to develop, we should conservatively estimate that the benefits of the phaseout would only begin 15 years after the rule is in place.²⁵⁰ To monetize the benefits over time, the most straightforward approach would be to divide the number of total cancer cases over a 30-year window, discounting each based on the year they appear. For instance, using EPA's number of 2,279 cancer fatalities, we would assume about 76 cases a year for a period of 30 years.²⁵¹

The first important step EPA could have taken to better justify the ban would be to further quantify additional asbestos-related deaths. It should have done so in two ways: by incorporating fatalities from diseases other than lung

246. These are the author's calculations based on internal data from the Office of Pesticides and Toxic Substances archived at the National Archives and Records Administration.

247. See Administrator's Status Briefing on Asbestos, *supra* note 136, at 4. EPA records do not explicitly state what discount rate it used in its initial calculation of this number, but it is extremely likely the agency used a high 10 percent discount rate, as this was the rate EPA used when it finally proposed the rule in 1986 for the same total costs of \$1.9 billion. See Asbestos; Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation, and Processing Prohibitions, 51 Fed. Reg. 3738, 3748 (Jan. 29, 1986) (to be codified at 40 C.F.R. pt. 763).

248. As discussed *infra* in this section, EPA eventually used both three and seven percent to discount the costs and raw number of lives saved in the final rule. The three percent rate is a standard metric and lower bound for environmental cost-benefit analyses. See OFF. OF MGMT. & BUDGET, CIRCULAR A-4: REGULATORY ANALYSIS 34 (2003), <https://perma.cc/S7RF-6GNS>.

249. See Administrator's Status Briefing on Asbestos, *supra* note 136, at 4.

250. See U.S. DEP'T OF HEALTH AND HUM. SERV., ATSDR CASE STUDIES IN ENVIRONMENTAL MEDICINE: ASBESTOS TOXICITY 66 (2014) (explaining that the latency period for asbestos diseases can range from 10 to 40 years).

251. The net present value of the lives saved equals the sum of the monetized benefits from averted cancer deaths for each year over a 30-year timespan, discounted from the year they occur. The benefits for each year in the 30 year timespan can be calculated using the following equation:

$$\frac{\text{Value of a Statistical Life} \times \left(\frac{\text{Total Cancer Deaths}}{\text{30 Year Time Span}} \right)}{(1 + \text{Discount Rate})^{\text{Years Elapsed}}}$$

cancer and mesothelioma among workers and by including harms to the broader U.S. population. As noted above, EPA had data indicating that fatalities from other occupationally induced diseases would have added an additional 10–20 percent to the total lives lost. Factoring in harms to the general population would have further raised this total by another few thousand deaths, as the vast majority of asbestos-linked cancers were fatal. These changes alone would have nearly doubled the number of expected deaths from cancer to about 4,400.

EPA could have then valued each life saved at \$3.7 million in 1982 dollars; this was the average of the recommended range in EPA's first guidelines for regulatory impact analyses published in December 1983.²⁵² Using a discount rate of 3 percent, which was the rate EPA selected in the final rule,²⁵³ the monetized benefits would have approached \$7.5 billion, outweighing the expected total costs of the regulation at \$5.8 billion. Even using a discount rate of 10 percent, which was OMB's controversial recommendation at the time EPA first proposed the ban, the monetized benefits would have totaled \$1.4 billion, only slightly below its costs at \$1.9 billion. Furthermore, these calculations do not include other benefits of the ban beyond lives saved from certain asbestos-related cancers, which would have further bolstered EPA's justification for eliminating the chemical from use.²⁵⁴

This exercise shows that cost-benefit methods, used appropriately, were not a true barrier to regulating asbestos with the information and assumptions used at the time EPA prepared the asbestos rulemaking.²⁵⁵ The most significant obstacle to EPA's ability to justify the rule on cost-benefit grounds was instead OMB's decision to strong-arm EPA into referring asbestos to OSHA for regulation. As OMB held EPA's asbestos ban hostage, OSHA implemented new

252. See EPA, GUIDELINES FOR PERFORMING REGULATORY IMPACT ANALYSIS M9 (Dec. 1983) ("If mortality is to be valued directly, a range of values can be used to determine the sensitivity of the results to alternative values. Recent studies that measure how much people need to be compensated to incur small risks provide a means for selecting such values. For example, many of these studies examine the relationship between risks in the workplace, which typically range between 1 in 100,000 and 1 in 1,000 on an annual basis, and wages. They have found that annual wages are between about \$4 and \$70 higher for jobs with 1 in 100,000 greater risk. This translates into a value for a statistical life of roughly \$400,000 to \$7,000,000 (in 1982 dollars).").

253. See 1989 Asbestos Rule, *supra* note 24, at 29491.

254. These benefits included reductions in pain and suffering, for instance. See EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 55.

255. Some economists have blamed discounting for EPA's failure to regulate asbestos, but as shown here, a proper rate and better quantified cancer fatalities would have allowed the ban to be justified on cost-benefit grounds. However, it is also worth noting that one way to get around the discounting problem for regulating carcinogens like asbestos would be to use "contingent valuation techniques" that ask how much one would be willing to pay to reduce the risk of dying thirty years in the future. See Maureen L. Cropper & Paul R. Portney, *Discounting and the Evaluation of Lifesaving Programs*, 3 J. RISK & UNCERTAINTY 369, 376–78 (1990).

workplace standards that ostensibly reduced the risks from asbestos exposure by lowering the maximum exposure levels for workers.²⁵⁶ According to OSHA, the new restrictions would dramatically lessen the number of expected cancer cases from occupational exposure to asbestos, especially for firefighters, construction employees, and service workers.²⁵⁷

Much of the supposed decrease was not expected to come from limiting exposure to the chemical but from the use of personal protective equipment, which was a departure from prior workplace controls on toxics that sought to prevent chemical releases.²⁵⁸ The use of personal protective equipment raised substantial risks of noncompliance, especially given the fact that nearly two-thirds of exposed workers were employed in facilities that were not subject to OSHA inspections because of their small size.²⁵⁹ It would thus be all too easy for a company not to provide such protection to its workers, even assuming that the equipment functioned as intended. For these reasons, EPA believed that OSHA's new standards would not adequately reduce risks from exposure.²⁶⁰ Nor would OSHA's regulation protect the general population, including families of asbestos workers who might be exposed to the fibers from an employee's clothing and shoes.²⁶¹

Yet with OSHA regulations taken into account, EPA estimated that only 1,325 cancer cases would now occur from asbestos products made over the next 15 years, the approximate time period over which asbestos would be phased

256. See Occupational Safety and Health Admin., Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite, 51 Fed. Reg. 37002 (Oct. 17, 1986) (to be codified at 29 C.F.R. pts. 1910, 1926).

257. See Memorandum from Michael Shapiro, Dir., Econ. and Tech. Division, EPA, to John A. Moore, Assistant Adm'r, Off. of Pesticides and Toxic Substances, EPA, Subject: Response to AIA [Asbestos Information Association] Letter to Lee Thomas, Adm'r, EPA (n.d., likely February 1985), at Attachment B, Asbestos Related Cancer Cases by Population Category (on file in Folder "February 25, 1985", Moore Papers, National Archives Identifier: 76018974, Box 6 of 13, National Archives).

258. See EPA's Comprehensive Strategy Will Reduce Risks from Asbestos (Aug. 26, 1985) at "Talking Points for Flip-Chart No. 7" at 2 (on file in Folder "August 9-31, 1985," Moore Papers, National Archives Identifier: 76018974, Box 9 of 13, National Archives) (showing that OSHA's rule was then estimated to halve the number of avoided deaths from EPA's asbestos ban). On the expected use of personal protective equipment to meet OSHA's standard, see Occupational Safety and Health Administration, Occupational Exposure to Asbestos, 49 Fed. Reg. 14116, 14124-25 (Apr. 10, 1984) (to be codified at 29 C.F.R. pt. 1910) (stating in the proposed rule that industry had persuaded OSHA that respirators could adequately protect workers from asbestos exposure, even though this was a departure from the traditional "hierarchy" of controls).

259. See *id.*

260. See *id.* at "Talking Points for Flip-Chart No. 3" and "Talking Points for Flip-Chart No. 7".

261. It also continued to claim that safe substitutes existed. See *id.* at "Five Points Compel EPA's strategy".

out.²⁶² These numbers did not account for the risk of poor compliance with OSHA regulations.²⁶³ EPA's asbestos regulation would prevent 1,000 of these cancer cases, less than half the number of avoided fatalities in the agency's original proposed rulemakings.²⁶⁴

That said, there were still ways EPA could have successfully justified the rule on cost-benefit grounds using new and better data on general population exposures that became available to the agency after OSHA developed its workplace standards. Emerging evidence from the National Academy of Sciences suggested populations in urban areas had a lifetime risk of cancer from asbestos of up to 7 in 100,000, considerably higher than earlier estimates.²⁶⁵ With an estimated 70 percent of the U.S. population living in urban environments,²⁶⁶ and most of these cancers leading to death within 2 years,²⁶⁷ this would have increased the quantified cancer fatalities by a factor of 10. Nevertheless, EPA still opted not to quantify any benefits to the general public, nor did it quantify any excess mortality from asbestosis and other cancers that would raise the death toll by 10–20 percent, as in the prior proposed rule.²⁶⁸

Had the agency also quantified the risk to the general public and placed a value on these avoided deaths, the total monetized benefits of the rule would have exceeded \$20 billion using a 3 percent discount rate. Even applying OMB's 10 percent discount rate, the benefits would have reached nearly \$4.5 billion. Both of these numbers far outstripped the total costs of the rule.²⁶⁹

262. See EPA, Asbestos; Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation and Processing Prohibitions (Jan. 22, 1986) at 5 (on file in Folder "January 2–31, 1986," Moore Papers, National Archives Identifier: 76018974, Box 10 of 13, National Archives). This number would have been almost twice as high without OSHA's rule. See *id.* at 40.

263. EPA acknowledged this issue in the proposed rule. See *id.* at 10.

264. See *id.* at 40.

265. See *id.* at 41. The National Academy of Sciences report on non-occupational exposures was published in 1984 and estimated non-occupational risks of developing lung cancer and mesothelioma. Part of the reason the agency may have been anxious about using these numbers to quantify cancer deaths is that the National Academy of Sciences stated these numbers should not be taken to be "definitive estimates" but instead used "qualitatively" because of uncertainties in the exposure data. Nevertheless, given their conclusion that "[s]ome deaths from mesothelioma and lung cancer will probably result from current and past levels of exposure to asbestos in ambient air," it was certainly within EPA's discretion to estimate potential benefits of regulating asbestos using this data. NAT'L ACAD. SCI., ASBESTIFORM FIBERS: NONOCCUPATIONAL HEALTH RISKS 3, 211 (1984).

266. See Auch et al., *supra* note 233, at 2.

267. See Memorandum from John A. Moore, Assistant Adm'r of Pesticides and Toxic Substances, to the Administrator, EPA, Subject: Proposed Rule to Ban Certain Asbestos Products and Phase Out the Mining and Importation of Asbestos (Jan. 22, 1986) at 18 (on file in Folder "January 2–31, 1986," Moore Papers, National Archives Identifier: 76018974, Box 10 of 13, National Archives).

268. See *id.* at 23.

269. See *id.* at 112.

The agency's estimates of avoided cancer fatalities dropped even further when it ultimately issued the regulation in 1989, as during the many years of the rule's development several major products containing asbestos stopped being used in the U.S.²⁷⁰ In the 1989 analysis, EPA expected the regulation to avoid just 120–202 cancer cases through the end of the phaseout in the year 2000. The lower number of 120 represented EPA's attempt to "discount" the number of cancer cases from the time the exposure occurred to make them comparable to the discounted costs.²⁷¹ This made little analytic sense, however, given that discounting is a tool to understand the monetized value of future benefits.²⁷² The costs, by comparison, totaled about \$450 million, assuming a three percent discount rate and a slight yearly decline in the price of substitutes.²⁷³ But again, if EPA had simply monetized the value of those 202 avoided deaths and discounted the total using a 3 percent rate, the benefits would have come to approximately \$330 million, nearly comparable to the costs. Further quantifying cancer deaths, such as from other exposed populations or by assuming minimal use of personal protective equipment despite OSHA's new standards, would have shown net benefits from the regulation.²⁷⁴

At every stage of the asbestos regulation's rollout, then, EPA could have better quantified and monetized the health benefits of a ban to demonstrate that the value of avoided cancer deaths outweighed the costs.²⁷⁵ The Office of Pesticides and Toxic Substances' ideological objections to cost-benefit balancing were what stood in the way of justifying the rule on cost-benefit grounds, not an inherent inability to do the analysis. While OMB's insistence on using an enormously high discount rate and deference to the asbestos industry clearly contributed to EPA's resistance to using cost-benefit methods, this reexamina-

270. See 1989 Asbestos Rule, *supra* note 24, at 29486.

271. *Id.* at 29507.

272. See OFF. OF MGMT. & BUDGET, CIRCULAR A-4, *supra* note 248, at 31 (explaining that discounting allows agencies to compare costs and benefits that occur during different time periods). For EPA's final cost-benefit analysis, see EPA, REGULATORY IMPACT ANALYSIS OF CONTROLS ON ASBESTOS AND ASBESTOS PRODUCTS, FINAL REPORT II-18 (1989) (explaining how EPA calculated benefits from the rule).

273. See 1989 Asbestos Rule, *supra* note 24, at 29468.

274. Commentators on the final rule criticized EPA's assumption that OSHA's standards for personal protective equipment would be largely followed and result in reduced exposure. See *id.* at 29474.

275. The agency's refusal to place a value on lives saved or further quantify fatalities led to a significantly lopsided projection of the ban's consequences, with news articles noting the enormous sums spent to avoid a seemingly small number of cancers. See, e.g., Barbara Rosewicz, *EPA, In Sweeping Move, Intends to Ban Most Remaining Uses of Asbestos by 1997*, WALL ST. J. July 7, 1989, at B4 ("The EPA estimated that the ban will cost almost \$460 million over 13 years . . . and that it will prevent at least 200 cancer deaths over that period. But toxicologist Ellen Silbergeld of the Environmental Defense Fund, which has sued the EPA over asbestos issues, said at least 10 times more lives are likely to be saved than the agency estimated.").

tion of EPA's cost-benefit analysis shows that it was not the tool itself that led to so many problems in justifying the asbestos ban.

B. The Promise and Peril of Judicial Review in Corrosion Proof Fittings

EPA finally issued its asbestos ban in July of 1989, following the tortuous procedural gauntlet detailed in Part II.A.²⁷⁶ Shortly after EPA published the regulation, the asbestos industry and the Canadian government challenged the rule in the Fifth Circuit,²⁷⁷ arguing that the ban was “out of proportion to the risk.”²⁷⁸ EPA's problematic cost-benefit analysis, particularly the seemingly few lives saved at enormous cost, led the court to question the agency's rationale for the regulation and remand it to EPA for reconsideration.

The opinion has subsequently become one of the “most vilified cases in administrative law,”²⁷⁹ especially among those who believe EPA could not have done a better job with its cost-benefit analysis.²⁸⁰ A few scholars, on the other hand, have praised the court for remanding the rule and view the opinion as an

276. See 1989 Asbestos Rule, *supra* note 24.

277. TSCA allowed suits over EPA's chemical regulations to be filed directly in any circuit court of appeals. See Toxic Substances Control Act of 1976, *supra* note 21, § 2618(a).

278. Marshall Ingwerson, *Asbestos Industry Attacks Ban by EPA*, CHRISTIAN SCI. MONITOR, Aug. 25, 1989, at 8.

279. Jonathan S. Masur & Eric Posner, *Cost-Benefit Analysis and the Judicial Role*, 85 U. CHI. L. REV. 935, 937 (2018) (“More than seventy years after the APA placed the question of judicial review at the center of administrative law, no one agrees how it should operate. Scholars do agree on one thing: that the courts went too far in two notorious cases, *Corrosion Proof Fittings v Environmental Protection Agency* and *Business Roundtable v Securities and Exchange Commission*.”).

280. See, e.g., Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619, 1682 n.218 (2004) (asserting that the high evidentiary burden placed on EPA after the case was the reason the agency took no further action to regulate toxic chemicals); John S. Applegate, *Beyond the Usual Suspects: The Use of Citizens Advisory Boards in Environmental Decisionmaking*, 73 IND. L.J. 901, 910 (1998) (citing *Corrosion Proof Fittings* as evidence of how heavy burdens in informal rulemaking make it difficult for agency actions to survive judicial review); Joanne Scott, *From Brussels with Love: The Transatlantic Travels of European Law and the Chemistry of Regulatory Attraction*, 57 AM. J. COMP. L. 897, 904 (2009) (“TSCA's safety gap arises from the high evidentiary burden that the EPA must satisfy before it can act to restrict or ban a chemical . . . [f]amously, even its efforts to regulate asbestos were struck down.”); Thomas O. McGarity, *Professor Sunstein's Fuzzy Math*, 90 GEO. L.J. 2341, 2343 (2002) (“The process of gathering health, environmental, and cost data, dealing with large uncertainties in the data and associated models, quantifying and monetizing benefits, comparing costs and benefits of realistic alternatives, and providing support for the agency's conclusions in an administrative record has thoroughly stymied government action.”).

example of how judicial review can serve as an important check on a poorly justified regulation.²⁸¹

Both perspectives are incomplete. The court did provide an important critique of EPA's decision not to better quantify and monetize the benefits of the ban; as explained previously, it would have been possible for EPA to demonstrate that the asbestos regulation was cost-benefit justified. However, the court's lack of scientific and technical literacy contributed to extremely problematic language in the opinion that, if taken literally, could have tied EPA's hands on future chemical regulations, especially for substances without clear dose-response relationships.²⁸² The judges also gave credence to dubious industry claims about asbestos' carcinogenicity and the dangers of substitute chemicals in their opinion. The case is therefore neither an exemplar of judicial overreach nor a welcome development in judicial policing of agency expert conclusions.²⁸³ It instead shows both the value and danger of courts wading into the technical details of agency rulemakings.

Much of the Fifth Circuit's criticisms involved the agency's overall approach to assessing the costs and benefits of the regulation to determine whether a ban was an appropriate way to reduce the harms from asbestos. For example, the court rightly noted that EPA had left a significant number of benefits unquantified,²⁸⁴ even though the agency had information that would have allowed it to quantify these risks.²⁸⁵ EPA, as well as several environmental organizations that intervened in the litigation, argued that the regulation should stand given the significant risks not quantified in the final rule, especially those "to the general population from low-level asbestos exposure."²⁸⁶ The agency also pointed to the risks from continued asbestos exposure beyond the rule's implementation period, which it had similarly opted not to quantify.²⁸⁷ The court, however, argued that by not including such risks "in its quantitative analysis, even where doing so was not difficult, and reserving them as additional factors to buttress the ban, the EPA improperly transformed permissible con-

281. See, e.g., Masur & Posner, *supra* note 279, at 957–58; CASS SUNSTEIN, *THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION* 48–49 (2002); STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* 14–15 (1993) (asserting that EPA's asbestos ban involved "an expenditure of considerable effort to achieve results that save very few lives at high cost").

282. For an explanation of what a dose-response relationship is, and how EPA typically determines dose-response relationships for harmful chemicals, see *Conducting a Human Health Risk Assessment*, EPA, <https://perma.cc/Q2KS-ZFKQ>.

283. For a short summary of the split reactions to *Corrosion Proof Fittings*, see DANIEL FARBER, *ECO-PRAGMATISM* 38–39 (1999).

284. See *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1218 (5th Cir. 1991).

285. See *id.* at 1219.

286. *Id.* at 1230 n.20.

287. See *id.* at 1218.

siderations into determinative factors.”²⁸⁸ It similarly identified several methodological issues that resulted from EPA’s resistance to completing a full cost-benefit analysis, including the agency’s questionable attempt to discount harms from the time of asbestos exposure rather than when cancer eventually developed.²⁸⁹

However, while the court was correct to point out these issues with EPA’s assessment of the regulation’s benefits, it displayed no understanding of how or why it could be impossible to quantify or monetize certain health effects from toxic substances. Asbestos, unlike many chemicals, had a strong dose-response relationship linking exposure to cancer, making it possible to develop a numeric risk for population groups and quantify the likely increase in disease.²⁹⁰ At the time of the case, many chemical substances had no clear dose-response model that would allow the agency to easily quantify all health impacts—a problem that still exists today.²⁹¹ And yet, the court concluded that “unquantified benefits never were intended as a trump card allowing the EPA to justify any cost calculus, no matter how high.”²⁹² This over the top, unnecessary dicta took a legitimate criticism of the agency’s cost-benefit analysis and made it seem as though unquantified benefits could never constitute the bulk of EPA’s justification for restricting a chemical.

Further undermining support for the ban, according to the Fifth Circuit, was EPA’s decision to only assess the costs and benefits of various phaseouts, rather than considering the costs and benefits of other regulatory alternatives.²⁹³ The statute enumerated several possible controls other than a ban on a substance, such as limiting the amount that could be used or applying warning labels to products containing the chemical.²⁹⁴ Despite this statutory language, as the opinion noted, “EPA rejected calculating how many lives a less burdensome

288. *Id.* at 1230 n.20.

289. *See id.* at 1218 (“When the EPA does discount costs or benefits, however, it cannot choose an unreasonable time upon which to base its discount calculation. Instead of using the time of injury as the appropriate time from which to discount, as one might expect, the EPA instead used the time of exposure.”). The court did, however, find that EPA’s selection of a three percent discount rate, which matched the historical interest rate, was reasonable. It also upheld the agency’s decision to estimate a one percent decline in substitution pricing. *See id.*

290. *See* MARK R. POWELL, SCIENCE AT EPA: INFORMATION IN THE REGULATORY PROCESS 308 (2014) (quoting an EPA official as stating that the link between asbestos and human health effects “was among the strongest ever seen”).

291. *See* Lanphear, *supra* note 201.

292. *Corrosion Proof Fittings*, 947 F.2d at 1219 (“Unquantified benefits can, at times, permissibly tip the balance in close cases. They cannot, however, be used to effect a wholesale shift on the balance beam. Such a use makes a mockery of the requirements of TSCA that the EPA weigh the costs of its actions before it chooses the least burdensome alternative.”).

293. *See id.* at 1215–16 (arguing EPA did not show that a ban was the least burdensome regulation warranted).

294. *See* Toxic Substances Control Act of 1976, *supra* note 21, § 2605(a).

regulation would save, and at what cost.”²⁹⁵ The court found that this violated TSCA’s requirement that EPA promulgate the “least burdensome” regulation to eliminate an unreasonable risk.²⁹⁶

It was absolutely legitimate for the court to fault EPA for only assessing the costs and benefits of a ban, as the “least burdensome” language would seem to demand EPA show “that there is not some intermediate state of regulation that would be superior to both the currently regulated and the completely-banned world.”²⁹⁷ In fact, EPA’s own guidelines for performing regulatory impact analyses at the time stated that the agency should consider other alternatives within the legislative provision’s scope.²⁹⁸ However, the court again moved from a fair critique of EPA’s analysis to an unwarranted, absurd claim that “EPA’s regulation cannot stand if there is *any* other regulation that would achieve an acceptable level of risk as mandated by TSCA.”²⁹⁹ A requirement that EPA show that *no other rule* would achieve a similar level of risk reduction is unreasonable and likely contributed to fears that any future toxics regulation would simply lead to paralysis by analysis.³⁰⁰ While there is no set number of alternatives that an agency should examine, an appropriate number then and now is typically three or four,³⁰¹ as there is often a tradeoff between “considering more alternatives and developing more detailed, quantified, and reliable benefit and cost estimates for fewer alternatives.”³⁰² Read in the context of the rest of the opinion, it is evident that the court was predominately concerned

295. *Corrosion Proof Fittings*, 947 F.2d at 1216.

296. *Id.* at 1217.

297. *Id.*

298. See EPA, GUIDELINES FOR PERFORMING REGULATORY IMPACT ANALYSIS M4-M5 (1984) (describing four major types of alternatives an agency should consider when regulating).

299. *Corrosion Proof Fittings*, 947 F.2d at 1216 (emphasis added).

300. See Interview by Jody A. Roberts & Kavita D. Hardy with E. Donald Elliott, former Gen. Couns., EPA, at Willkie Farr and Gallagher LLP, Washington, D.C., Oral History Transcript No. 0686, at 7 (Jan. 22, 2010) (on file in The Science History Institute (formerly Chemical Heritage Foundation)), Philadelphia, PA [hereinafter Elliott Interview] (“I think that the burden of the court opinion, which is that you’ve got to show in the record that you’ve considered every other possible way of regulating and this is the least drastic one available . . . it’s just an impossible and impractical burden . . . You just can’t possibly do that. It just asks too much of an agency.”).

301. See OFF. OF MGMT. & BUDGET, CIRCULAR A-4, *supra* note 248 (recommending agencies analyze “at least three options” where “there is a ‘continuum’ of alternatives for a standard (such as the level of stringency)”); Winston Harrington, Lisa Heinzerling & Richard D. Morgenstern, WHAT WE LEARNED, in REFORMING REGULATORY IMPACT ANALYSIS: RESOURCES FOR THE FUTURE REPORT 222 (Winston Harrington, Lisa Heinzerling, & Richard D. Morgenstern eds., 2009) (arguing that agencies “must examine a reasonable set of alternative policy options” in regulatory impact analyses).

302. EPA, GUIDELINES FOR PERFORMING REGULATORY IMPACT ANALYSIS, *supra* note 298, at M5.

with the fact that EPA had not evaluated the costs and benefits of any intermediate restrictions. But this language seemed to suggest an exhaustive burden on the agency if it sought to ban a harmful substance.³⁰³

The Fifth Circuit's carelessness here in discussing how many alternatives EPA would need to examine to justify a ban was compounded by its uninformed forays into the scientific evidence the agency relied on in promulgating the regulation. For example, the court repeatedly faulted EPA for overlooking "credible contentions" that potential asbestos substitutes were carcinogenic.³⁰⁴ However, EPA had determined that such industry claims were not credible.³⁰⁵ EPA stated in the record that there was insufficient scientific evidence to show that substitutes had carcinogenic potential at all, let alone equal to that of asbestos.³⁰⁶ The court took the word of the Asbestos Information Association that such "credible studies" existed; it also gave credence to the dubious claim originally made by OMB that brake substitutes would increase car accidents, potentially decreasing the overall benefits of the rule.³⁰⁷ It did not defer to EPA's assessment that such technology forcing was reasonable given that substitute brakes were already used in Europe.³⁰⁸

The court's well-founded criticisms of EPA's cost-benefit analysis notwithstanding, its decision to wade into the nuances of how EPA should assess the scientific and economic evidence for a ban demonstrates the potential dangers of judicial review in such highly technical cases. The court ignored the important role unquantified benefits were likely to play in chemical regulation

303. Indeed, many legal commentators at the time noted that this interpretation of "least burdensome" would eviscerate TSCA, even while agreeing with the court that there were flaws with EPA's promulgation of the ban. See, e.g., Granta Y. Nakayama, Case Note, *Corrosion Proof Fittings v. EPA: No Death Penalty for Asbestos under TSCA*, 1 GEO. MASON INDEP. L. REV. 99, 118–19 (1992) ("A strict limitation of TSCA's statutory reach, to the *single* least burdensome regulation would eviscerate TSCA as a toxic substance control device . . . [p]etitioners would be free to posit a different regulation, slightly narrower in scope, which could arguably result in a similar reduction in toxic substance exposure."). On the other hand, the conclusion that EPA simply couldn't perform cost-benefit analyses for other regulatory options was incorrect. See Linda Stadler, Note, *Corrosion Proof Fittings v. EPA: Asbestos in the Fifth Circuit—A Battle of Unreasonableness*, 6 TUL. ENV'T L.J. 423, 433–35 (1992) (arguing that "*Corrosion Proof Fittings* is a tragedy for the EPA. It has created an unprecedented and unreasonable burden on the agency's ability to promulgate rules under TSCA" because EPA would not have the time or resources to perform cost-benefit analyses for different regulatory options.).

304. *Corrosion Proof Fittings*, 947 F.2d at 1224. Similarly, the court appeared to take seriously other dubious scientific assertions by the asbestos industry plaintiffs, including that certain forms of asbestos fibers may not be dangerous. See *id.* at 1227.

305. See *id.* at 1220–21.

306. See 1989 Asbestos Rule, *supra* note 24, at 29481.

307. *Corrosion Proof Fittings*, 947 F.2d at 1221, 1224.

308. See *id.* at 1225 (criticizing EPA for failing to account for an increase in automobile fatalities as a consequence of the rule); 1989 Asbestos Rule, *supra* note 24, at 29495.

and the absurdity of expecting EPA to prove that no other regulation could achieve the necessary risk reduction. It also disregarded EPA's assessment of the potential harms from substitute products.

Given that the opinion contains both valid points about flaws in EPA's approach to the ban and problematic pronouncements about how the agency could justify toxics regulations going forward, it is a mistake to view the decision as either dooming EPA to inaction or a model for judicial review. This bifurcated thinking provides little insight into the proper role of the court in evaluating cost-benefit analyses. The court should have been more careful to limit its review to the analysis the agency completed. In doing so, it would not have made uninformed statements about a host of complex, technical aspects of cost-benefit assessments in toxics regulation. While correctly pointing out problems with EPA's evidence for the ban, the Fifth Circuit opinion's overly prescriptive language compounded the agency's challenges in controlling toxic chemicals and contributed to a backlash against using cost-benefit methods in environmental rulemakings.

C. EPA's Response to Corrosion Proof Fittings

After the Fifth Circuit decision, numerous scholars and environmental advocates argued that the court's interpretation of TSCA's cost-benefit requirements made it pointless for EPA to revisit the asbestos regulation or try to justify any risk management rules at all.³⁰⁹ Yet as shown in Part III.A, it would have been possible to demonstrate that the benefits of an asbestos ban outweighed the costs if EPA had opted to better quantify and monetize averted cancer deaths. And in fact, internal agency documents obtained from the National Archives and Records Administration and oral histories with EPA staff reveal that it was primarily political considerations that drove the agency's decision not to revise the regulation. This fact has not been previously known to those outside the agency, including Congress.

Before discussing whether or not to revisit the ban, EPA first sought to appeal the ruling. The agency felt the court "disregarded the unquantified benefits of the rule" and overstepped by "substituting its judgement for that of the

309. See, e.g., *Reauthorization of the Toxic Substances Control Act*, *supra* note 60, at 69–71 (statement of Ellen Silbergeld, senior Toxicologist, Env't Def. Fund) (arguing that the *Corrosion Proof Fittings* interpretation of the substantial evidence standard and least burdensome requirement, as well as the court's conclusion that determinations of unreasonable risk require cost-benefit analysis, have made TSCA unworkable); Christopher H. Schroeder, *Clear Consensus, Ambiguous Commitment*, 98 MICH. L. REV. 1876, 1891 (2000) ("It is undeniably true that cases like *Corrosion Proof Fittings* place significant informational demands on CBA and also make it difficult for CBA to take account of complex or nonquantified values."); Wagner, *supra* note 280; Applegate, *supra* note 280; Scott, *supra* note 280.

EPA administrator in balancing the costs and benefits of the ban.³¹⁰ However, the Fifth Circuit denied EPA's petition for en banc review.³¹¹ When EPA and the Department of Justice declined to seek certiorari in the Supreme Court,³¹² EPA was forced to consider whether to revisit the regulation or find another means of regulating the asbestos products still on the market.³¹³

At first, EPA officials told Congress that the asbestos ban was "not a dead issue" and EPA expected to revisit the rule.³¹⁴ Indeed, numerous agency staff believed EPA could have reissued the regulation and satisfied the Fifth Circuit's requirements for a more robust cost-benefit analysis. One advocate of revising the rule was E. Donald Elliott, EPA's General Counsel at the time. Elliott believed that EPA had been "out-lawyered" by the attorneys representing the asbestos industry, who had cleverly focused on the "least burdensome" language in the statute given EPA's decision to only assess the costs and benefits of various bans.³¹⁵ These arguments were, he felt, picked up in the court's demand to consider "every other possible way of regulating" even though "cost/benefit analysis is not that perfect."³¹⁶ Yet Elliott ultimately felt that what the Fifth Circuit panel really sought was "some evidence that the Agency had con-

310. Letter from Lynn R. Goldman, Assistant Adm'r, Off. of Prevent, Pesticides, and Toxic Substances, EPA, to B.J. Pigg, President, Asbestos Info. Ass'n (Mar. 9, 1994), at 1 (on file in Folder "B.J. Pigg, President, Asbestos Info. Ass'n," Asbestos Ban and Phaseout Rule FY/1994, National Archives Record Identifier: 72052350, Box 5 of 7, National Archives).

311. See Letter from William K. Reilly, Adm'r, EPA, to Dr. Richard Laster, Laster & Gouldman, (Oct. 26, 1992), at 2-3 (on file in Folder "Richard Laster, Laster & Gouldman Law Offices," Asbestos Ban and Phaseout Rule FY/1992, National Archives Record Identifier: 72052318, Box 3 of 7, National Archives).

312. It is not entirely clear how strongly EPA pressed the Department of Justice to take the case to the Supreme Court, or whether they even asked at all. Staff interviews suggest that political appointees may have declined to request that the Department of Justice seek certiorari. See Interview by Jody A. Roberts & Kavita D. Hardy with Charles L. Elkins, former Dir., Off. of Pesticides and Toxic Substances, in Washington, D.C., Oral History Transcript 0643, at 17 (Apr. 9, 2010) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA) [hereinafter Elkins Interview] ("In the meantime, the decision came as to whether to appeal the asbestos court decision. The way that it worked back then was the agency would need to make a request that the [United States] Department of Justice appeal the case. [The decision time was very short], like thirty days or something. And I was not able to persuade [Linda Fisher to make the request for an appeal] . . . I think it was her decision on the substance that she thought . . . that we were over-regulating for the amount of risk. This might be a legitimate reason not to appeal, I guess, but it wasn't focused on the reason for the court's decision and it threw away ten years worth of work and our best chance to show we could regulate existing chemicals and it put nothing in its place . . . I was not able to persuade her, and we did not appeal.").

313. See Letter from William K. Reilly to Dr. Richard Laster, *supra* note 311.

314. *Implementation of the Toxic Substances Control Act*, *supra* note 58, at 33 (statement of Linda J. Fisher, Assistant Adm'r, Off. of Prevention, Pesticides and Toxic Substances, EPA).

315. Elliott Interview, *supra* note 300, at 7-8.

316. *Id.* (noting that courts typically evaluate agency actions for reasonableness, not perfection).

sidered less drastic means, and had a rational basis for leaving them aside.”³¹⁷ He therefore approached staff at the Office of Pesticides and Toxic Substances, notably the Associate General Counsel, to suggest they consider reissuing the asbestos ban.³¹⁸

Internal EPA documents show that other staff also had a more balanced view of the *Corrosion Proof Fittings* opinion and shared Elliott’s belief that the agency should try to revise the rule. For example, in correspondence with the Asbestos Information Association,³¹⁹ EPA Assistant Administrator Lynn R. Goldman stressed that nothing in the decision cast doubt on the “scientific basis for phasing out asbestos” and suggested that the opinion would not necessarily prevent the agency from reissuing the regulation should it choose to do so.³²⁰ The former director of the Office of Pesticides and Toxic Substances, Charles Elkins, also believed that the agency should have either sought certiorari or redone the rule.³²¹ He felt EPA had simply not done a good enough job explaining why substitutes were safer than asbestos, and did not need to do an extensive analysis to reissue the ban.³²²

Despite this support for revisiting the regulation, EPA opted not to do so, instead seeking voluntary agreements with manufacturers to phase out certain uses of the product as the agency had first sought to do under Administrator Gorsuch.³²³ Multiple issues, both internal and external to the agency, contributed to the agency’s decision not to revise the rule. The primary problem ap-

317. *Id.* at 10.

318. *See id.*

319. On the Association’s role in perpetuating misinformation about asbestos harms, see Markowitz & Rosner, *supra* note 225, at 834–40.

320. Letter from Lynn R. Goldman, Assistant Adm’r, Off. of Prevention, Pesticides, and Toxic Substances, to B.J. Pigg, President, Asbestos Info. Ass’n (Mar. 9, 1994), at 1 (on file in Folder “B.J. Pigg, President, Asbestos Info. Ass’n,” Asbestos Ban and Phaseout Rule FY/1994, National Archives Identifier: 72052350, Box 5 of 7, National Archives).

321. *See* Elkins Interview, *supra* note 312, at 18 (“I think that my successors must have decided that [if you spend] five million dollars in ten years and you can’t [regulate an existing chemical, well then, this section of the act is] just not going to work. I think that’s a little harsh, because I thought we did do it, and we could have won that lawsuit on appeal.”).

322. *See id.* at 16–17 (“My memory of it, and my reading of it at the time, I think, was we had really failed on only one point, and that point was that we had not [shown] that the substitutes [for asbestos] were safer than asbestos [itself]. I was really offended by that [court ruling], because we had spent a lot of time on that, and I decided we just hadn’t written it well enough . . . I had [focused on these substitutes] because the last thing I wanted to do was to take one chemical off the market and give us something worse . . . So, I said, well, we’ve got the case on that. We’ll just appeal, because [this court decision is] crazy. Look here. We’ve done this analysis, et cetera. It’s in the docket. We just didn’t write the Federal Register notice well.”).

323. *See* Letter from Michael Kergin, Minister, Canadian Embassy, to Robert M. Sussman, Deputy Adm’r, EPA (June 10, 1993), at 1 (on file in Folder “Michael Kergin, Canadian Embassy,” Asbestos Ban and Phaseout Rule FY/1993, National Archives Identifier: 72052332, Box 4 of 7. For EPA’s previous efforts at voluntary phase-out, *see supra* Part II.A.

pears to have been widespread demoralization among EPA career staff who worked on the regulation, which was exacerbated by the lack of support among key political appointees for redoing the rule.³²⁴ Elkins, who had played an important role in drafting and advocating for the rule during his time as the Office's Director, had left to become Associate General Counsel shortly before the Fifth Circuit decision.³²⁵ After his departure, there appears to have been little support to redo the rule among the remaining political appointees and senior career staff.³²⁶ As the head of EPA's Office of Pesticides and Toxic Substances put it, "after [the court decision], I could look around and have a sense that we were not going to be doing any Section 6 rules during the foreseeable future. Because I'm not sure I could have gotten anybody to [work on a new Section 6 rule]."³²⁷

In combination with these internal dynamics, EPA political appointees seemed to favor securing voluntary agreements to phase out asbestos because many companies were already switching to other chemical substitutes in anticipation of the ban going into effect.³²⁸ Domestic asbestos consumption peaked in 1973 and then declined considerably as the chemical's health hazards became more widely known and substitutes were introduced.³²⁹ Even during President Reagan's first term, when EPA initially drafted the regulation, consumption had already fallen to less than a third of its 1973 peak.³³⁰ By the time the Fifth Circuit issued its *Corrosion Proof Fittings* decision, EPA political appointees felt "people were getting out of asbestos faster than EPA could write a rule."³³¹ Furthermore, the court had upheld EPA's right to prohibit "significant new

324. See Greenwood Interview, *supra* note 23, at 8.

325. The former director, Charles Elkins, felt he was pressured to leave the Director position because of disagreements with political appointees over the asbestos rulemaking, notably Linda Fisher. See Elkins Interview, *supra* note 312, at 17.

326. See Interview by Jody A. Roberts & Kavita D. Hardy with Linda J. Fisher, former Assistant Adm'r, Off. of Prevention, Pesticides and Toxic Substances, in Washington, D.C., Oral History Transcript 0645, at 11–13 (Mar. 5, 2010) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA) [hereinafter Fisher Interview] (describing the demoralization among the staff, explaining "I think part of it was complete demoralization, no question").

327. Greenwood Interview, *supra* note 23, at 8.

328. See *id.* It is worth noting, however, that Elkins felt Fisher may not have believed that the regulation was justified substantively, given its expensive costs. See Elkins Interview, *supra* note 312, at 16–17.

329. See Letter from William K. Reilly, Adm'r, EPA, to Ambassador D.H. Burney (Sept. 25, 1989), at 1 (on file in Folder "D.H. Burney, Ambassador, Canadian Embassy," Asbestos/General FY/1989, National Archives Identifier: 72052296, Box 1 of 7, National Archives). See also EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 4.

330. See EPA, Asbestos Draft Rule, Mar. 1984, *supra* note 178, at 5.

331. Fisher Interview, *supra* note 326, at 12 (citing both the loss of morale and industry's shift away from asbestos uses as the key reasons the office did not redo the rule).

uses” of asbestos under a different TSCA provision.³³² The resumption of chemical uses that had already been phased out constituted a “significant new use” under the law, which meant that once companies replaced asbestos with a substitute, they could not reintroduce it unless they obtained a special waiver from EPA.³³³

Perhaps most significantly, the asbestos product that posed the greatest risk to most Americans—asbestos brake pads—had readily available substitutes that worked just as well.³³⁴ To some at the agency, it therefore seemed to make far more sense for EPA to seek voluntary agreements with the automobile industry to switch to these substitutes and eliminate one of the most hazardous sources of the chemical.³³⁵ There was also some precedent for such an approach, as the agency had successfully eliminated asbestos in hair dryers during the early years of the Reagan Administration through similar voluntary agreements.³³⁶

These reasons—staff demoralization, a lack of support among key agency leadership for redoing the rule, and industry’s voluntary phaseout of significant asbestos uses—were thus responsible for EPA’s decision not to reissue the ban. Furthermore, if EPA had returned to the asbestos regulation, the Fifth Circuit’s opinion in *Corrosion Proof Fittings* need not have stood in the way, as the

332. Interview by Jody A. Roberts and Kavita Hardy with Charles M. Auer, former Dir. of the Chem. Control Div., Off. of Pollution Prevention and Toxics, EPA, at Washington, D.C., Oral History Transcript No. 0642, at 20 (Apr. 23, 2011) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA) (“One of the parts of Corrosion Proof that wasn’t affected by the remand decision, was [the] significant new use provision for asbestos products.”). See also Letter from Lynn R. Goldman to Rep. William Paxon (June 22, 1994), at 2 (on file in Folder “Honorable William Paxon,” Asbestos Ban and Phaseout Rule FY/1994, National Archives Identifier: 72052350, Box 5 of 7, National Archives) (explaining that many companies were discontinuing use of asbestos products in the wake of the *Corrosion Proof Fittings* decision).

333. Fisher Interview, *supra* note 326, at 12 (stating that officials within EPA felt the significant new use provision would allow the agency to block reintroduction of asbestos products). For the significant new use provision, see Toxic Substances Control Act of 1976, *supra* note 21, § 2604.

334. See Interview by Jody A. Roberts with Victor J. Kimm, former Deputy Assistant Adm’r, Off. of Pesticides and Toxic Substances, EPA, at Ropes & Gray, LLP, Washington, D.C., Oral History Transcript No. 0644, at 14 (Feb. 3, 2011) (on file in The Science History Institute (formerly Chemical Heritage Foundation), Philadelphia, PA); Ralph Vartabedian, *Putting the Brakes on Those Asbestos Linings*, L.A. TIMES, Feb. 14, 1991, at SDE7.

335. Asbestos manufacturers were not pleased by this approach. See Letter from B.J. Pigg to Carol Browner, EPA Adm’r (Oct. 1, 1993), at 1–2 (on file in Folder “B.J. Pigg, President, Asbestos Information Association,” Asbestos Ban and Phaseout Rule FY/1994, National Archives Identifier: 72052350, Box 5 of 7, National Archives).

336. See Letter from Lynn R. Goldman, Assistant Adm’r, Off. of Prevention, Pesticides, and Toxic Substances, EPA, to B.J. Pigg, President, Asbestos Info. Ass’n (Mar. 9, 1994), at 3–4 (on file in Folder “B.J. Pigg, President, Asbestos Information Association,” Asbestos Ban and Phaseout Rule FY/1994, National Archives Identifier: 72052350, Box 5 of 7, National Archives).

agency's own economic guidelines from this period could have provided support for including a few intermediary alternatives in the cost-benefit analysis to show that a ban was justified, rather than the litany of options the Fifth Circuit implied would be necessary.³³⁷

Despite the nuanced view of *Corrosion Proof Fittings* within EPA, some agency officials and environmental groups began to claim that the Fifth Circuit's interpretation of TSCA's requirement to consider the costs and benefits of toxics regulation had made regulation of asbestos impossible.³³⁸ Yet the decision to place the blame on cost-benefit methods, rather than focus on the actual challenges the agency faced in banning asbestos, set EPA up to confront the same series of problems after Congress amended the law in 2016.

IV. RECURRING REGULATORY PROBLEMS IN IMPLEMENTING THE 2016 TSCA AMENDMENTS

When Congress amended TSCA in 2016, Democrats believed they were exchanging federal preemption of stringent state toxics controls for major repairs in the statute that would strengthen EPA's ability to evaluate and regulate harmful chemicals.³³⁹ As explained in Part I, the myth that the requirements of cost-benefit analysis doomed the 1989 asbestos ban led Democrats to press for changes to section 6 of the law, which governs existing chemicals. The statute now instructs EPA to determine whether a chemical poses an unreasonable risk to human health or the environment without considering costs or other

337. See EPA, GUIDELINES FOR PERFORMING REGULATORY IMPACT ANALYSIS, *supra* note 298, at 5–6.

338. See, e.g., *Reauthorization of the Toxic Substances Control Act*, *supra* note 60, at 70–71 (statement of Ellen Silbergeld, senior Toxicologist, Env't Def. Fund) (arguing that the Fifth Circuit's interpretation of the least burdensome requirement and their conclusion that determinations of unreasonable risk require cost-benefit analysis have made TSCA unworkable); GAO 1994 TSCA REPORT, *supra* note 64, at 21 (stating that “[o]fficials [in] EPA's Office of Pollution Prevention and Toxics told us that with the court decision in the asbestos case, EPA most likely will not attempt to issue regulations under section 6 for comprehensive bans or restrictions on chemicals” because the Fifth Circuit opinion would require EPA to conduct a cost-benefit analysis for “each product or use of a chemical, which can number up to a hundred or more”).

339. See S. REP. NO. 114–67, at 2 (2015) (“In the years since TSCA was first enacted, it has become clear that effective implementation of TSCA by the Environmental Protection Agency (EPA) has been challenged by shortcomings in the statute itself, and by several key decisions of Federal Courts and the Agency's interpretation of those decisions. S. 697 [the Lautenberg Act] . . . is intended to enhance confidence in the federal chemical regulatory system, provide EPA the authority necessary for efficient and effective regulation of chemical risks, and foster safety and innovation in commercial chemistry.”); H. REP. NO. 114–176, at 17 (2015) (explaining that Congress amended TSCA with “the aim of strengthening the Environmental Protection Agency's (EPA's) ability to evaluate and regulate potentially hazardous chemicals”).

“nonrisk” factors.³⁴⁰ If EPA determines that a chemical poses an unreasonable risk, the statute then requires EPA to consider costs and benefits when determining how to regulate it.³⁴¹

Yet adding statutory language specifying that EPA should assess a chemical’s risks without consideration of costs or other “nonrisk” factors did not change very much in practice about how EPA evaluates the potential harms from toxic chemicals. For the 1989 asbestos ban, EPA likewise first assessed the chemical’s health risks before completing its cost-benefit analysis.³⁴² The major difference in the new law is that EPA is now mandated to regulate a chemical, at least in some form, if EPA finds that it poses an “unreasonable risk” based on the risk evaluation.³⁴³

As this Part demonstrates, all this change has done is brought the problems that plagued the 1989 asbestos ban to the risk evaluation stage of the regulatory process. Risk evaluations are prone to many of the same errors and manipulations as poorly done cost-benefit analyses, especially when overseen by officials who are hostile to environmental controls. The Trump Administration, which was responsible for implementing the new amendments after the 2016 election, was highly sympathetic to the chemical industry and reluctant to impose stringent toxics regulations.³⁴⁴ Using similar strategies as the Reagan Administration’s OMB and asbestos producers, the Trump EPA sought to avoid making findings of “unreasonable risk” by excluding exposures under the purview of other laws or agencies and inadequately quantifying harmful health effects.

The 2016 amendments thus left EPA vulnerable to the same analytical pitfalls that beset the asbestos ban. And now, should EPA find that a chemical does not pose an unreasonable risk through such tactics, states will be prohibited from restricting that substance. This tragic and unnecessary outcome should prompt legal scholars and environmental advocates to focus greater attention on the underlying assumptions and value judgments that undergird all methods of determining pollution harms.³⁴⁵ These include whether EPA considers every potential exposure route, assumes industry will ensure worker safety

340. 15 U.S.C. § 2605(b)(4)(F)(iii).

341. See 15 U.S.C. § 2605(c)(2)(A)(i)–(iv) (instructing EPA to consider the environmental and health effects as well as the costs of controlling toxic chemicals).

342. See *supra* Part III.A.

343. 15 U.S.C. § 2605(a).

344. See, e.g., Richard Denison, *Trump EPA, ACC and Industry Law Firms Colluded to Weaken EPA New Chemical Safety Reviews*, ENV’T DEF. FUND BLOG (Mar. 11, 2021), <https://perma.cc/57NW-NSEV>.

345. A considerable portion of legal scholarship on environmental regulation has been dominated instead by debates over whether the method of cost-benefit analysis is inherently deregulatory or if it is the best metric to judge the wisdom of regulations and can be used in an environmentally progressive fashion. See, e.g., ACKERMAN & HEINZERLING, *supra* note 188; REVESZ & LIVERMORE, *supra* note 188; CASS R. SUNSTEIN, *RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT* (2002); CASS R. SUNSTEIN, *THE COST-BENEFIT*

through protective equipment, includes all populations at risk, and examines the cumulative effects of chemicals rather than analyzing their risks in isolation. The 2016 amendments would have been much more effective if they had provided explicit instructions to EPA on each of these matters.

Section A examines the Trump EPA's first strategy of excluding risks that could be managed through other environmental laws or government agencies, which parallels OMB's attempt to force EPA to refer asbestos to OSHA for regulation. Section B discusses the Trump EPA's second strategy of minimizing a chemical's health and environmental risks by not fully assessing and quantifying harmful health effects, such as by disregarding certain health outcomes in the risk evaluation. These efforts mirror EPA's failure to adequately quantify risks for the 1989 asbestos ban, although the Trump EPA's actions were undoubtedly driven by more nefarious purposes. Section C examines how many of these issues have continued during the Biden Administration and concludes by suggesting ways EPA can avoid similar problems going forward when conducting both risk evaluations and cost-benefit analyses.

A. TSCA as a "Gap-Filling" Statute

EPA officials and Congress have debated how EPA should coordinate action under TSCA with other federal laws for decades. After TSCA's passage in 1976, Congressional representatives and EPA officials at times referred to it as a "gap filling" statute, implying that TSCA should be used only as a last resort after other regulatory avenues were exhausted.³⁴⁶ However, this conception of TSCA's role in pollution regulation has the potential to inhibit EPA from assessing and controlling a chemical's risks. As detailed in Part II.B, OMB forced EPA to refer asbestos regulation to OSHA in the 1980s to try to avoid more stringent controls under TSCA, since most asbestos exposure happened in the workplace. It did so at the urging of the asbestos industry, which argued that EPA should consider residual risks only after OSHA imposed requirements for personal protective equipment.³⁴⁷ Although EPA could have still justified the ban on cost-benefit grounds even with OSHA's standards in place,

REVOLUTION (2018); Amy Sinden, *The Problem of Unquantified Benefits*, 49 ENV'T L. 73 (2019).

346. See, e.g., *Toxic Substances Control Act Oversight: Hearings Before the Subcomm. on Toxic Substances and Environmental Oversight of the S. Comm. on Environment and Public Works*, 98th Cong. 50, 276 (1983) (statement of Sen. Dave Durenberger, Chairman, S. Subcomm. on Toxic Substances and Env't Oversight) (referring to TSCA as a "gap filler" to be used when other federal laws are insufficient to manage chemical pollution); *Reauthorization of the Toxic Substances Control Act*, *supra* note 60, at 146, 149 (1994) (stating that "GAO testified that this 'gap filling' aspect of TSCA has been a hindrance to action").

347. See EPA's Asbestos Regulations: Case Study of OMB Interference, *supra* note 214, at 57-73 (printing a letter from asbestos industry attorneys urging OMB and EPA to defer to OSHA on any potential asbestos regulations or, in the alternative, for EPA to act only after OSHA implemented workplace controls).

the agency was highly skeptical that personal protective equipment could adequately reduce asbestos risks.³⁴⁸ It nevertheless assumed OSHA's regulation would lower cancers from asbestos exposure, decreasing the number of lives saved from a potential ban.³⁴⁹

When Congress amended TSCA in 2016, it did not make any meaningful changes to the portion of the statute that addressed TSCA's relationship to other environmental laws, nor did it clarify how or when EPA should decide to refer a chemical to another federal agency.³⁵⁰ The amendments kept in place language from the 1976 law that the Reagan Administration—and others since—have cited in support of the idea that TSCA is a stopgap mechanism to be used only after other laws. The revised statute contains nearly identical provisions instructing EPA to defer to other agencies or use other laws if the Administrator determines that these will sufficiently reduce or eliminate a chemical's risks.³⁵¹

Congress's lack of attention to this issue has allowed for continued battles over whether EPA should include chemical risks in toxics regulations that could be controlled through other environmental laws or by other agencies.³⁵² This dispute is now playing out over the agency's risk evaluations, as EPA must determine whether to regulate a chemical at this stage of the process.³⁵³

Because EPA cannot consider "costs or other nonrisk factors" at this stage,³⁵⁴ it now looks to whether a chemical increases the probability of causing harm above a certain threshold to assess reasonableness. For example, to determine whether a risk from a carcinogenic substance is unreasonable, EPA examines whether it increases the probability of developing cancer above a range of 1 in 1,000,000 to 1 in 10,000 depending on the subpopulation exposed.³⁵⁵ Computing that risk range involves multiplying a chemical's hazards by the amount

348. See *supra* Part III.A.

349. See *id.*

350. While Congress did add language requiring EPA to consider risks to vulnerable subpopulations under the conditions of use and *not* to consider costs or other "nonrisk" factors, it did not directly address whether TSCA should function as a gap-filling statute. See 15 U.S.C. § 2608(a)(1).

351. See *id.* § 2608(a)–(b).

352. See Rebecca Rainey, *EPA Narrows Scope of First 10 TSCA Assessments, Drawing Criticisms*, INSIDE TSCA 6 (June 1, 2018), <https://perma.cc/9V7F-9865> ("EPA's framework rule for evaluating risks of existing chemicals under TSCA generally precludes consideration of legacy uses, as well as those uses that are regulated by other agencies, such as the Occupational Safety and Health Administration (OSHA), arguing it has discretion under the new law to do so.").

353. See 15 U.S.C. § 2605(a).

354. *Id.* § 2605(b)(4)(F)(iii).

355. See, e.g., EPA, EPA-740-R1-8010, RISK EVALUATION FOR METHYLENE CHLORIDE 454–55 (2020), <https://perma.cc/SW5L-MQUC> ("Generally, EPA considers 1×10^{-6} to 1×10^{-4} as the appropriate benchmark for the general population, consumer users, and non-occupational [potentially exposed or susceptible subpopulations].").

of exposure.³⁵⁶ Therefore, eliminating exposure sources will necessarily decrease the calculation of risk.³⁵⁷

In numerous risk evaluations completed during the Trump Administration, EPA did not include certain exposure pathways when assessing whether a chemical poses an unreasonable risk of harm simply because these pathways *could* be regulated under other federal laws.³⁵⁸ Exposure pathway is a term used to describe potential avenues of contact with a chemical, such as from water, air, or the workplace.³⁵⁹ The Trump EPA's exclusion of particular exposure pathways closely mirrors the asbestos industry and OMB's efforts to avoid restrictions under TSCA during the Reagan Administration by having OSHA regulate asbestos instead. For example, in a risk evaluation for the carcinogen 1,4-dioxane, the Trump EPA refused to consider exposures from air, water, and sediment pathways because they fall under the jurisdiction of other environmental statutes,³⁶⁰ even though millions of Americans in more than two dozen states have the chemical in their drinking water.³⁶¹ Claiming that TSCA functions as a "gap-filling" statute, EPA argued that excluding such risks was consistent with the statute's text and legislative history.³⁶² By ignoring these exposure pathways, the agency was able to claim that 1,4-dioxane poses no unreasonable risk to the general population,³⁶³ even though there is currently no federal limit on 1,4-dioxane in tap water.³⁶⁴

356. See Petitioners Supplemental Brief at 4–5, *Safer Chems., Healthy Families v. EPA*, 943 F.3d 397 (9th Cir. 2019).

357. See *id.*

358. See Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act, 82 Fed. Reg. 33726, 33729 (July 20, 2017) (to be codified at 40 C.F.R. pt. 702) (asserting that the agency could exclude exposure pathways from risk evaluations that were "adequately assessed by another regulatory agency, particularly where the other agency has effectively managed the risks").

359. See EPA, GUIDELINES FOR EXPOSURE ASSESSMENT 9, 36–39 (2019), <https://perma.cc/QYW2-8FPQ> (defining an exposure pathway and illustrating various exposure routes).

360. See EPA, RISK EVALUATION FOR 1,4-DIOXANE 34 (Dec. 2020), <https://perma.cc/3TH4-EK7X>.

361. See Cheryl Hogue, *1,4-Dioxane: Another Forever Chemical Plagues Drinking-water Utilities*, CHEM. & ENG'G NEWS (Nov. 8, 2020), <https://perma.cc/K38R-XTAY>; EPA, TECHNICAL FACT SHEET – 1,4-DIOXANE (Nov. 2017), <https://perma.cc/ASL9-B6WA>. For more on 1,4-dioxane's carcinogenic potential, see EPA, 1,4-DIOXANE; CASRN 123-91-1, INTEGRATED RISK INFORMATION SYSTEM (IRIS) CHEMICAL ASSESSMENT SUMMARY (2013), <https://perma.cc/DB8S-8N7A>.

362. EPA, RISK EVALUATION FOR 1,4-DIOXANE 34 (Dec. 2020), <https://perma.cc/3TH4-EK7X>.

363. See Diana DiGangi, *EPA Urged to Regulate 1,4-Dioxane Uses Excluded from Risk Evaluation*, INSIDE EPA (Feb. 4, 2021), <https://perma.cc/SY55-T6NQ> (explaining that in the final risk evaluation "EPA retained its controversial draft conclusion the chemical poses no unreasonable risk to the general population").

364. See Hogue, *supra* note 361; EPA, TECHNICAL FACT SHEET – 1,4-DIOXANE (Nov. 2017), <https://perma.cc/RU25-T5WW>.

The Trump EPA also made some of the same assumptions about personal protective equipment to minimize the risk of harmful chemicals as EPA did during the Reagan Administration. As noted above in Part III.A, in assessing the benefits from an asbestos ban EPA reduced expected worker exposures because of OSHA's newly promulgated asbestos standards even though EPA officials did not believe they would adequately shield workers.³⁶⁵ Similarly, the Trump EPA assumed workers would wear personal protective equipment when assessing chemical risks, despite the fact that such equipment may not be available or deployed adequately.³⁶⁶ For instance, one of the first chemicals the Trump EPA evaluated under the 2016 amendments was methylene chloride,³⁶⁷ which is often used in paint strippers and can prove highly toxic in unventilated spaces. Although OSHA has issued standards requiring personal protective equipment for such uses, methylene chloride has nevertheless caused dozens of worker deaths over the past several decades.³⁶⁸ By making assumptions about protective equipment in its risk evaluation for methylene chloride, however, EPA was able to find that the chemical does not pose an unreasonable risk in numerous occupational settings.³⁶⁹

Whether a court will ultimately find such actions lawful is still unclear.³⁷⁰ The Biden Administration decided to redo most of the Trump EPA's risk evaluations in part because of the exclusion of pathways under the purview of other laws or agencies, using what it calls a "whole chemical" approach.³⁷¹ Yet industry has picked up the Trump EPA's arguments, claiming that the statute requires EPA to regulate chemicals under other environmental laws if it is

365. See *supra* Part III.A.

366. See EPA, RISK EVALUATION FOR METHYLENE CHLORIDE (DICHLOROMETHANE, DCM) 37–38 (2020), <https://perma.cc/RPF4-SJBD>.

367. See *id.*

368. See Anh Hoang et al., *Assessment of Methylene Chloride-Related Fatalities in the United States, 1980-2018*, 181 JAMA INTERNAL MED. 797, 798 (2021).

369. See Opening Brief of Petitioners Neighbors for Env't Just. et al. at 16–17, *Neighbors for Env't Just. v. EPA*, No. 20-72091 (9th Cir. Jan. 25, 2021).

370. Labor unions, state attorneys general, environmental organizations, and public health groups have filed petitions for review of EPA's risk evaluations for excluding such pathways from the risk evaluations, as well as for other problems with EPA's assessments. See *id.* at 27 ("EPA cannot know whether unreasonable risk can be 'eliminated or reduced to a sufficient extent' under other laws until it completes a lawful, comprehensive section 6 risk evaluation that identifies all unreasonable risk posed by a chemical."); Petition for Review, *Int'l Union et al. v. EPA*, No. 21-1057 (D.C. Cir. Feb. 10, 2021); Petition for Review, *New York et al. v. EPA*, No. 21-70684 (9th Cir. Mar. 22, 2021) (requesting review of EPA's 1,4-dioxane risk evaluation because of these and other problems).

371. Maria Hegstad, *EPA Finalizes New Methylene Chloride Risk Finding, Teeing Up TSCA Rule*, INSIDE TSCA (Nov. 9, 2022), <https://perma.cc/YK73-SU3T>; David LaRoss, *EPA Sets Timeline for Revisiting Trump-Era TSCA Chemical Evaluations*, INSIDE TSCA (June 30, 2021), <https://perma.cc/2BFG-YRLR>.

feasible to do so.³⁷² In the meantime, the Trump EPA's determinations of no unreasonable risk have remained in place, with the potential to preempt state controls of chemicals like 1,4-dioxane³⁷³ and methylene chloride.³⁷⁴

Regardless of the Biden Administration's efforts to improve upon the Trump EPA's approach, these problems demonstrate that Congress did not sufficiently address the question of how TSCA interacts with other laws and regulations in the 2016 amendments. In the hands of an administration uninterested in conducting rational analysis to fully assess a chemical's risks, the statute provided insufficient guardrails to constrain EPA from downplaying toxic threats in this way.

B. *Inadequate Assessment and Quantification of Health Harms*

To determine whether and how to regulate a toxic chemical, it is essential for EPA to fully assess and quantify the anticipated harms.³⁷⁵ An adequate risk evaluation and cost-benefit analysis both depend on the agency's comprehensive review of a chemical's health and environmental effects.³⁷⁶ A chemical's uses, the populations exposed, and the potential hazards should all be part of this assessment process.³⁷⁷ Excluding any subset of these categories will lead to an inaccurate picture of a chemical's risks and the costs and benefits of regulating.

372. See Maria Hegstad, *EPA's 1-BP Air Listing Spurs Industry Calls to Drop or Merge TSCA Rule*, INSIDE TSCA (Aug. 6, 2021), <https://perma.cc/LFN6-ZV36>.

373. See Response of Petitioners Env't Def. Fund et al. to Motion for Voluntary Remand at 13, Env't Def. Fund v. EPA, No. 21-70162 (9th Cir. July 9, 2021) (arguing that "leaving EPA's determinations of no unreasonable risk in place creates a significant threat of litigation alleging preemption of state regulation of 1,4-dioxane in a variety of products. Petitioner New York has enacted legislation setting limits on 1,4-dioxane in cleaning products, cosmetics, and personal care products"); Maria Hegstad, *Industry Seen Awaiting EPA 1,4-Dioxane Process to Claim TSCA Preemption*, INSIDE TSCA (June 25, 2021), <https://perma.cc/KC52-NH3P> ("Under the reformed TSCA, when EPA evaluates uses of an existing chemical and finds no unreasonable risk, it blocks any state or local regulation of those uses.").

374. See Eric Gotting, James Votaw, & Adrienne Timmel, *TSCA Preemption—Sooner Than Later?*, BLOOMBERG L. (Aug. 29, 2017), <https://perma.cc/M42C-QTT3> (examining how EPA actions could preempt states from regulating methylene chloride).

375. See NAT'L ACAD. OF SCI., *THE USE OF SYSTEMATIC REVIEW IN EPA'S TOXIC SUBSTANCES CONTROL ACT RISK EVALUATIONS* 53 (2021), <https://perma.cc/WMJ3-BM4Z> (stating that EPA's unreasonable risk determinations need to be based on "methods that are rigorous, reproducible, valid, and transparent" and finding that EPA's current methods fall short of this goal).

376. See *id.* See also EPA, *GUIDELINES FOR PREPARING ECONOMIC ANALYSES* 11-1, 11-3–11-4 (2010), <https://perma.cc/7MKE-8P8J> (stating that benefits analysis requires quantification and valuation of effects, and depends on economists working with human health and ecological risk assessors).

377. See Brief of Amici Curiae The American Academy of Pediatrics et al. in Support of Petitioners at 1, *Safer Chems., Healthy Families v. EPA*, 943 F.3d 397 (9th Cir. 2019) (supporting a petition for review of EPA's risk evaluation rule for excluding certain chemical uses, popu-

As demonstrated in Part III.A, EPA's decision to examine harms from only lung cancer and mesothelioma and to consider only certain worker populations in the 1989 asbestos regulation severely limited the agency's ability to calculate the expected benefits of a ban. These problems with the agency's analysis were a major reason the Fifth Circuit vacated the ban in *Corrosion Proof Fittings*.³⁷⁸ While EPA's mistakes in this regard were not deliberately designed to underestimate risk, Congress's lack of attention to this issue in the 2016 amendments left the agency vulnerable to officials purposefully engaging in shoddy analysis.

The Trump EPA subsequently exploited the lack of clear statutory language on these issues and excluded certain health outcomes, populations, and chemical uses from the risk evaluation process.³⁷⁹ By inadequately assessing and quantifying harms through these tactics, the agency was able to minimize the dangers from toxic chemicals and avoid an unreasonable risk finding in numerous risk evaluations.

One of the most galling examples of this ongoing problem occurred in the Trump EPA's asbestos risk evaluation. Just as EPA did in preparing the 1989 ban, the Trump EPA chose to only evaluate the morbidity and mortality from lung cancer and mesothelioma.³⁸⁰ Yet scientific research has documented an increasing number of cancer types that can result from asbestos exposure, including cancers of the larynx, ovary, pharynx, stomach, and colorectum.³⁸¹ EPA also omitted other asbestos related diseases in the risk evaluation such as interstitial lung disease, which can lead to serious decreases in quality of life because of an inability to continue with normal daily activities.³⁸² EPA stated that the agency only considered morbidity and mortality from lung cancer and mesothelioma because these are the "most critical" harms,³⁸³ reasoning that is almost identical to what EPA did in the 1989 asbestos regulation. Due to these and other manipulations in the analysis, EPA was able to conclude that 16 of 32

lations, and hazards because the rule as finalized will lead EPA to "ignore significant health risks posed by TSCA-covered chemicals, especially those affecting pregnant women, infants, and children").

378. See *supra* Part III.B.

379. See, e.g., Opening Brief of Petitioners at 30–32, *Safer Chems., Healthy Families*, 943 F.3d 397 (arguing that the Trump Administration's procedural rule for risk evaluations will allow EPA to exclude various populations, health outcomes, and uses).

380. See EPA, EPA-740-R1-8012, RISK EVALUATION FOR ASBESTOS PART I: CHRYSOTILE ASBESTOS 30 (2020), <https://perma.cc/3Q67-4BQ3>.

381. See American Public Health Association, Comments on Draft Risk Evaluation of Asbestos 5 (June 2, 2020), <https://perma.cc/7NUY-W3W8>.

382. See *id.*

383. EPA, RISK EVALUATION FOR ASBESTOS PART I, *supra* note 380.

asbestos uses do not pose an unreasonable risk,³⁸⁴ prompting a lawsuit by environmental, health, and labor groups.³⁸⁵

Another egregious example of such problems occurred in EPA's risk evaluation for the chemical trichloroethylene ("TCE"). TCE is used in a host of manufacturing processes and has become ubiquitous in the environment.³⁸⁶ Scientific studies have shown that TCE can cause numerous diseases, including cancer and autoimmune illnesses.³⁸⁷ But the most significant health harm linked to the chemical has been fetal heart defects. Research studies have found that TCE can cause heart malformations in the developing fetus with even minute exposures during pregnancy.³⁸⁸ As a result, when quantifying risk from TCE, including fetal heart defects would dramatically increase the expected incidences of harm.³⁸⁹

In an initial draft of the risk evaluation for TCE, EPA appropriately incorporated fetal cardiac malformations in assessing the health risks from exposure.³⁹⁰ However, EPA career staff subsequently disclosed that Trump political officials altered the draft risk evaluation to remove fetal heart defects as a relevant health endpoint in the assessment to avoid imposing stringent TCE con-

384. See David LaRoss, *Court Delays Briefing in Asbestos Evaluation Suit Amid 'Positive' Talks*, INSIDE TSCA (June 23, 2021), <https://perma.cc/X63V-4YWN>.

385. See Petition for Review, *Asbestos Disease Awareness Org. v. EPA*, No. 21-70160 (9th Cir. Jan. 26, 2021), <https://perma.cc/GN75-FW8E>.

386. See DEP'T OF HEALTH AND HUMAN SERVS., REPORT ON CARCINOGENS MONOGRAPH ON TRICHLOROETHYLENE 1 (Jan. 2015), <https://perma.cc/U6T2-KFXV>.

387. See *id.* See also Glinda S. Cooper et al., *Evidence of Autoimmune-Related Effects of Trichloroethylene Exposure from Studies in Mice and Humans*, 117 ENV'T HEALTH PERSP. 696 (2009).

388. See Paula D. Johnson et al., *Threshold of Trichloroethylene Contamination in Maternal Drinking Waters Affecting Fetal Heart Development in the Rat*, 111 ENV'T HEALTH PERSP. 289, 291 (2003); Susan L. Makris et al., *A Systematic Evaluation of the Potential Effects of Trichloroethylene Exposure on Cardiac Development*, 65 REPRODUCTIVE TOXICOLOGY 321, 321 (2016) (finding "TCE has the potential to cause cardiac defects in humans when exposure occurs at sufficient doses during a sensitive window of fetal development. The study by Johnson et al. was reaffirmed as suitable for hazard characterization and reference value derivation, though acknowledging study limitations and uncertainties"); Stanley J. Goldberg et al., *An Association of Human Congenital Cardiac Malformations and Drinking Water Contaminants*, 16 J. AM. COLL. CARDIOLOGY 155, 161-63 (1990).

389. See Env't Def. Fund, Comments for Toxic Substances Control Act (TSCA) Science Advisory Committee on Chemicals Review of the Draft Risk Evaluation of Trichloroethylene 36 (Mar. 18, 2020), <https://perma.cc/SS7P-6NLE> ("EPA's scientifically unsupported and contradictory decision results in EPA relying its risk determinations on risk estimates across various TCE exposure scenarios that are orders of magnitude more lax than those risks estimates associated with the most sensitive endpoint, fetal cardiac malformations.").

390. EPA, RISK EVALUATION FOR TRICHLOROETHYLENE 228-29, 374 (Dec. 20, 2019), <https://perma.cc/65EA-83K2> (a leaked, earlier draft TCE risk evaluation).

trols.³⁹¹ They justified this decision by arguing that studies of fetal heart defects were not of the highest scientific quality and had been contradicted by other research.³⁹² However, the alternative studies that EPA cited were funded by the chemical industry³⁹³ and had already prompted widespread criticism by experts in the field³⁹⁴ as well as environmental groups,³⁹⁵ who pointed out that EPA had repeatedly used cardiac malformations in past risk assessments to determine TCE's hazards.³⁹⁶ Nevertheless, in the final risk evaluation, the agency instead assessed risk using only TCE's immune and carcinogenic effects.³⁹⁷ As a result, for each potential exposure, the final risk evaluation raised the levels presumed to be safe.³⁹⁸ EPA scientists eventually filed a whistleblower complaint³⁹⁹ accusing their superiors of deliberately tampering with the risk evaluation for TCE and other chemicals and transferring them to other EPA offices after they objected.⁴⁰⁰

The Biden Administration has since acknowledged that the TCE risk evaluation was subject to "political interference" and must be revised to reflect

391. See Elizabeth Shogren, *EPA scientists found a toxic chemical damages fetal hearts. The Trump White House rewrote their assessment*, REVEAL NEWS (Feb. 28, 2020), <https://perma.cc/TBX4-SWQM>.

392. See EPA, RISK EVALUATION FOR TRICHLOROETHYLENE 628-42 (Nov. 2020), <https://perma.cc/TXK5-9MK6>.

393. See Shogren, *supra* note 391 (noting the Halogenated Solvents Industry Alliance, which represents the makers of TCE, and the American Chemistry Council funded a key study cited by EPA).

394. See Raymond B. Runyan et al., *Letter to the Editor*, 111 BIRTH DEFECTS RSCH. 1234, 1236 (2019) (arguing that data from the chemical industry funded study "is insufficient to overcome a substantial literature showing the sensitivity of the developing heart to environmentally relevant TCE exposures. Their conclusion that ingestion of TCE in drinking water at less than 1,000 ppm does not cause heart defects is not supported").

395. See Nat. Res. Def. Council, Comments of Jennifer Sass, PhD Senior Scientist, Nat. Res. Def. Council for the TSCA SACC Peer Review of the Draft Risk Evaluation of Trichloroethylene (TCE) 6 (Mar. 24, 2020), <https://perma.cc/XH7X-FWV7> (noting that EPA's own experts found the industry sponsored study to be flawed and found "there is an association between TCE developmental exposures and cardiac defects").

396. See Env't Def. Fund, *supra* note 389, at 41 ("EPA has repeatedly examined TCE-induced cardiac malformations and the use of Johnson et al. 2003 specifically for determining TCE hazard and risk, concluding the evidence to be scientifically robust and Johnson et al. 2003 to be appropriate for the derivation of toxicity values and risk estimates."). See also Nat. Res. Def. Council, *supra* note 395, at 6 (citing a scientific paper published by EPA scientists).

397. See EPA, *supra* note 392, at 280 (selecting autoimmune endpoints, rather than fetal heart defects, to perform risk calculations for non-carcinogenic health harms).

398. See Shogren, *supra* note 391.

399. See Maria Hegstad, *OIG Opens 'Inquiry' Into TSCA Risk Assessments Based on Staff Complaint*, INSIDE TSCA (July 15, 2021), <https://perma.cc/G85N-SM4V> (noting that EPA's Office of Inspector General has opened an investigation into the whistleblowers' complaint).

400. See Sharon Lerner, *Whistleblowers Expose Corruption in EPA Chemical Safety Office*, INTERCEPT (July 2, 2021), <https://perma.cc/9BTE-P9FE>.

the best available science on TCE's harms.⁴⁰¹ Chemical manufacturers, however, have continued to try to discredit the scientific basis for including fetal heart defects in evaluations of the chemical's risks, arguing that there is too much uncertainty about these health effects to base TCE regulations on them.⁴⁰² And should another administration assume office seeking environmental deregulation regardless of whether it results in harmful effects to American society,⁴⁰³ the amended statute does not provide safeguards to prevent these types of mistakes and manipulations.

C. Executive Branch Solutions to the Ongoing Problems with Toxic Chemical Regulations

Given Congress's inability to pass bipartisan legislation on a host of domestic priorities, including environmental issues, it is unlikely that Republicans and Democrats will be able to reach an agreement on amending TSCA again any time soon.⁴⁰⁴ Rather than suggest legislative reforms to the law, then, this section focuses on near-term solutions that the Biden EPA and future administrations can take to improve the underlying rationale for toxic chemical controls. These efforts won't directly prevent a future administration from engaging in similar tactics to the Trump EPA. However, by implementing a sounder analytical approach to toxics regulation, they will make it more difficult for future administrations to persuade a court that it has rational reasons for departing from these practices.⁴⁰⁵

401. Maria Hegstad, *Freedhoff Says 'Political Interference' Compromised TSCA TCE Evaluation*, INSIDE TSCA (Mar. 19, 2021), <https://perma.cc/RG2M-JQJT> ("White House staff directed [the office of toxics] career staff to alter the draft TCE risk evaluation to change the point of departure used for making determinations of risk to a less sensitive endpoint.").

402. See Maria Hegstad, *EPA's TCE Study Renews Industry Fears Over TSCA Unreasonable Risk Bar*, INSIDE TSCA (Jan. 12, 2021), <https://perma.cc/84WF-3D8P> ("[The American Chemistry Council] told EPA last year that even though the agency based its overall risk estimate for non-cancer effects of exposure to TCE on immune system effects rather than the more-sensitive fetal cardiac defects (FCDs) identified in the Johnson study, it is still concerned that its inclusion of the Johnson study could leave the door open to addressing risks of FCD when EPA writes risk management rules in the future.").

403. See generally Richard L. Revesz, *Destabilizing Environmental Regulation: The Trump Administration's Concerted Attack on Regulatory Analysis*, 47 *ECOLOGY L.Q.* 887 (2020) (describing how the Trump Administration has undertaken "a series of deregulatory moves" to undercut environmental regulations).

404. See Riley E. Dunlap, *Partisan Polarization on the Environment Grows Under Trump*, GALLUP BLOG (Apr. 5, 2019), <https://perma.cc/RZ48-VWPT> (finding that the partisan gap on concern for environmental issues widened further during the Trump Administration, growing from a difference of 25 percentage points under President George W. Bush to an average of 45 percentage points under President Donald J. Trump).

405. See Fed. Comm'n Comm'n v. Fox Television Stations, Inc., 556 U.S. 502, 514–15 (2009) (explaining that when a "new policy rests upon factual findings that contradict those which

One potential mechanism for ensuring that toxic chemical regulations are based on the best available scientific studies and robust cost-benefit analysis is for EPA to revise its TSCA procedural rule for conducting chemical risk evaluations. Under the 2016 amendments, EPA was required to issue a regulation to govern the risk evaluation process for toxic chemicals.⁴⁰⁶ Work began on the procedural rule during the final months of the Obama Administration, but it was not finalized until 2017, shortly after the Trump Administration took office.⁴⁰⁷

The Trump Administration made several changes to EPA's draft procedural regulation at the behest of the chemical industry that appeared to give the agency discretion to ignore certain harms from toxic chemicals by limiting the uses and exposures considered in a risk evaluation.⁴⁰⁸ Environmental groups sued the administration over the procedural rule, arguing that it was inconsistent with several aspects of the 2016 TSCA amendments.⁴⁰⁹ In *Safer Chemicals, Healthy Families v. EPA*, the Ninth Circuit found that many of these challenges to the procedural rule were premature and dismissed them on standing and ripeness grounds.⁴¹⁰ The court determined that it was too speculative to know whether the procedural rule would lead to risk evaluations that violated TSCA's mandates, as "it is not clear, due to the ambiguous text of the Risk Evaluation Rule, whether the Agency will actually conduct risk evaluations in the manner Petitioners fear."⁴¹¹

With the Biden Administration revising seven of the ten risk evaluations completed under the Trump Administration,⁴¹² it is now evident that the 2017 procedural rule for risk evaluations did allow EPA to conduct risk evaluations in ways that minimized the potential benefits of regulations.⁴¹³ EPA should

underlay its prior policy," the agency must provide "a more detailed justification than what would suffice for a new policy created on a blank slate". See also *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1038 (D.C. Cir. 2012).

406. See 15 U.S.C. 2605(b)(4)(A).

407. See *Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act*, 82 Fed. Reg. 33726 (July 20, 2017) (to be codified at 40 C.F.R. pt. 702).

408. See Opening Brief of Petitioners at 12–16, *Safer Chems., Healthy Families v. EPA*, 943 F.3d 397 (9th Cir. 2019) (describing how the Trump Administration changed the proposed rule on risk evaluation procedures to be more favorable to industry at the request of the American Chemistry Council, a trade group representing industry interests).

409. See *id.* at 1–3.

410. 943 F.3d at 413–16.

411. *Id.* at 413.

412. See David LaRoss, *EPA Sets Timeline for Revisiting Trump-Era TSCA Chemical Evaluations*, INSIDE TSCA (June 30, 2021), <https://perma.cc/2BFG-YRLR>.

413. See Swati D.G. Rayasam et al., *Toxic Substances Control Act (TSCA) Implementation: How the Amended Law Has Failed to Protect Vulnerable Populations from Toxic Chemicals in the United States*, 56 ENV'T SCI. TECH. 11969, 11971 (2022) ("EPA's exclusions of conditions of use in three of the first 10 risk evaluations and exposure pathways in eight of the first 10 mean these evaluations systematically underestimated exposure and risk.").

therefore revise the procedural rule to ensure the agency relies on the best available science and fully quantifies the identified risks. Indeed, the National Academy of Sciences recently reviewed EPA's risk evaluation methodology and found it lacking in objectivity, transparency, and comprehensiveness.⁴¹⁴ EPA should also specify in a revised procedural rule that risk evaluations must include exposure pathways that might fall under the jurisdiction of other laws or agencies, avoiding the interagency battles that compromised the 1989 asbestos ban and the more recent risk evaluations during the Trump Administration.

After some delay, in December 2021 the Biden Administration announced that it planned to revise the procedural rule.⁴¹⁵ While it was expected in September 2022,⁴¹⁶ the Biden Administration still has not released the proposed rule, and it is now unclear if or when the administration will move forward with a revised framework rule.⁴¹⁷ Yet given the problems detailed above, the Biden EPA should promulgate a new procedural rule to ensure the agency fully assesses a chemical's risks and selects a regulatory option that maximizes the benefits from controls.

First, under a revised procedural rule, EPA should be required to assess exposures from all pathways, such as air, water, soil, and the workplace, even if they fall under the jurisdiction of other laws or agencies. This will ensure that the agency obtains as complete a picture as possible of a chemical's risks by providing robust data on expected health and environmental harms. It will also allow EPA and public stakeholders to have a more transparent, evidence-based debate about whether to manage these risks under TSCA or other environmental laws.

Second, the procedural rule should make clear that EPA must evaluate the potential for health harms without assuming that any control techniques or protective equipment are used. These options to reduce exposure are better assessed when deciding how to manage chemical risks alongside other technological solutions as well as more restrictive prohibitions.

414. See NAT'L ACAD. OF SCIS., *THE USE OF SYSTEMATIC REVIEW IN EPA'S TOXIC SUBSTANCES CONTROL ACT RISK EVALUATIONS* 6 (2021).

415. See OFF. MGMT. & BUDGET, *RECONSIDERATION OF PROCEDURES FOR CHEMICAL RISK EVALUATION UNDER THE AMENDED TOXIC SUBSTANCES CONTROL ACT* (2021), <https://perma.cc/X7K3-D8N7>.

416. See Maria Hegstad, *EPA Plans SNURs To Limit Inactive Uses Of 'High-Priority' Chemicals, PFAS*, INSIDE TSCA (June 22, 2022), <https://perma.cc/Z6UE-HXMN> ("EPA's proposal to revise the Trump EPA's 'framework' rule laying out how the agency evaluates chemicals appears to remain on track from the fall 2021 agenda, with a proposal still expected in September.").

417. See Maria Hegstad, *EPA Faces Pressure To Avoid 'Whole Chemical' Model In TSCA Rules*, INSIDE TSCA (Jan. 18, 2022), <https://perma.cc/HZU8-ZZH6> (noting that Trump EPA officials and industry attorneys continue to argue that EPA must redo its 2017 framework rule if it wants to adopt a "whole chemical" approach to unreasonable risks).

The Biden administration also has the opportunity to set an important precedent for future toxics regulations through its recently proposed ban on chrysotile asbestos, one of the most common types of the substance.⁴¹⁸ Although environmental and health advocacy groups have praised the agency's decision to ban numerous uses of chrysotile asbestos,⁴¹⁹ the draft of the proposed rule and the accompanying cost-benefit analysis demonstrate that the Biden EPA has made little headway in resolving the issues identified in this paper.⁴²⁰

The proposed rule's cost-benefit analysis claimed the ban would generate just a few thousand dollars in direct health benefits from avoided cancer cases by making many of the same analytical missteps as the 1989 rulemaking and Trump-era risk evaluations.⁴²¹ The agency assumed exposures would be considerably reduced through personal protective equipment even though it has access to data showing that these devices often do not reduce inhalation of the chemical as expected.⁴²² It also ignored risks to the general population and ongoing harms from so-called "legacy" uses,⁴²³ among other errors.⁴²⁴ EPA can remedy some of these problematic assumptions before it finalizes the rule, but other issues cannot be easily fixed because of the poorly done Trump-era risk evaluation, as the agency can only monetize health benefits that are already quantified in the risk evaluation. At a minimum, then, the Biden EPA should follow executive branch guidance on the best practices for assessing the costs and benefits from regulations, and recognize that a considerable number of health benefits from the ban have not been captured in its analysis.⁴²⁵

These efforts will provide an evidentiary record that will be more likely to withstand judicial review as well as attempts at reversal in future administra-

418. See EPA, Asbestos Part 1: Chrysotile Asbestos, 87 Fed. Reg. 21706 (Apr. 12, 2022) (to be codified at 40 C.F.R. pt. 751).

419. See Maria Hegstad, *EPA Proposes Chrysotile Asbestos Ban in Landmark Step Under TSCA*, INSIDE EPA (Apr. 5, 2022), <https://perma.cc/2NUS-P4VM> (quoting the President of the Asbestos Disease Awareness Association as stating that the rule "is a strong step forward in eliminating exposure to a substance that is killing 40,000 Americans each year").

420. See generally Inst. for Pol'y Integrity, Comments on Asbestos Part 1: Chrysotile Asbestos (July 13, 2022), <https://perma.cc/Q62Z-NFEQ>.

421. See EPA, ECONOMIC ANALYSIS OF THE TSCA SECTION 6 PROPOSED RULE FOR ASBESTOS RISK MANAGEMENT, PART 1 4-24, tbl. 4-21 (Apr. 2022).

422. See *id.* at 4-9-4-17.

423. *Id.* at 6-19.

424. EPA is planning to address these legacy uses in a second regulation after a lawsuit from public health and environmental organizations. See David LaRoss, *ADAO Ramps Up Push For 'Full Asbestos Ban' Following TSCA Proposal*, INSIDE TSCA (Apr. 19, 2022), <https://perma.cc/PP2R-497W>; Press Release, Asbestos Disease Awareness Organization, EPA Improves Legacy Asbestos Scope of Risk Review (June 29, 2022), <https://perma.cc/6JLQ-YL2J>.

425. See, e.g., EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES, *supra* note 376; OFF. OF MGMT. & BUDGET, CIRCULAR A-4, *supra* note 248, at 26.

tions that may be hostile to environmental regulations. Though *Corrosion Proof Fittings* is certainly an example of aggressive judicial scrutiny of an agency's evidence for a rulemaking, courts continue to closely examine agencies' cost-benefit analyses.⁴²⁶ Furthermore, an extensive record of a rule's benefits can insulate it from a future administration's rollbacks,⁴²⁷ which is an ongoing threat to pollution regulations given political polarization over environmental issues.

The above proposals cannot guarantee that EPA never again puts forward a poorly supported toxics regulation, whether through ineptitude or deliberate malfeasance. But they will undoubtedly increase the odds that EPA's rulemakings protect Americans from toxic chemicals. With tens of thousands of chemicals in use that have never been tested for safety,⁴²⁸ EPA must press forward with managing the potentially serious health risks they pose.⁴²⁹

CONCLUSION

On the day that Congress passed the final bill enacting the 2016 TSCA amendments, Senator Barbara Boxer of California spoke on the Senate floor about her decision to vote for the legislation. Throughout debates over TSCA reform, Senator Boxer had expressed skepticism about the wisdom of exchanging federal preemption of state toxics controls for amendments to the 1976 law. In the end, she decided to support the bill because the revised statute would allow a "good EPA" to "deliver a much safer environment for the American people."⁴³⁰ With a "bad EPA," she said, not much would get done, but at least "if a bad EPA takes no action, States will be free to act."⁴³¹

Yet Senator Boxer's belief that a "bad EPA" simply meant no toxics control, leaving states free to regulate, turned out to be mistaken. The revised stat-

426. See *City of Portland v. EPA*, 507 F.3d 706, 712–13 (D.C. Cir. 2007) (“[W]e will [not] tolerate rules based on arbitrary and capricious cost-benefit analyses”); *Nat’l Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) (“[W]hen an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable.”).

427. See *Fed. Comm’n Comm’n v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009) (finding that “a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy”).

428. See Schmidt, *supra* note 50, at 183.

429. See David LaRoss, *EPA Sets Timeline for Revisiting Trump-Era TSCA Chemical Evaluations*, INSIDE TSCA (June 30, 2021), <https://perma.cc/2BFG-YRLR>.

430. 162 CONG. REC. S3511, S3512 (daily ed. June 7, 2016) (statement of Sen. Barbara Boxer) (“Looking forward, I want to make a point. This new TSCA law will only be as good as the EPA is good. With a good EPA, we can deliver a much safer environment for the American people—safer products, less exposure to harmful toxics, and better health for our people. With a bad EPA that does not value these goals, not much will get done. But, again, if a bad EPA takes no action, States will be free to act.”).

431. *Id.*

ute preempts state action on a chemical when EPA determines that it does not pose an unreasonable risk.⁴³² And by eliminating exposure pathways and insufficiently quantifying harms, a “bad EPA” can complete an analysis purporting to show chemicals are safe even when they are not. These determinations will then make it impossible for states to restrict use of these chemicals under the 2016 amendments’ preemption provisions.⁴³³ Congress, in revising the law, thus gave the chemical industry a powerful mechanism to weaken environmental and public health protections under an administration predisposed to protecting their interests.

The tragedy of the 2016 amendments is that this preemption bargain was unnecessary and did not fix the problems that led to EPA’s struggles to regulate existing chemicals like asbestos. As this Article has shown, it was based on flawed assumptions about why EPA’s asbestos ban did not survive judicial review and the agency’s inability to justify its toxics regulation on cost-benefit grounds. If EPA had performed a cost-benefit analysis that further quantified and monetized the health benefits of banning asbestos, it would have been able to show that a ban was warranted. The combination of an administration hostile to environmental controls and an agency deeply concerned about the ethics of placing a value on human life and health resulted in EPA producing a flawed analysis in support of the ban. And while portions of the Fifth Circuit opinion in *Corrosion Proof Fittings* overstated what EPA should be required to demonstrate in a cost-benefit analysis, this was not the only or even the best reading of the opinion. Many EPA staff believed the agency could have reissued the rule and satisfied the court’s concerns, but political considerations ultimately led EPA to pursue voluntary agreements with industry instead of revising the rule.⁴³⁴

Agency officials nevertheless allowed a misleading narrative to develop about why EPA struggled to justify its 1989 asbestos ban, which blamed the need to do cost-benefit analysis for the problems in banning asbestos and other chemicals on the market. Not only was this characterization factually incorrect, but it also led advocates for TSCA reform to overlook the actual reasons EPA

432. See 15 U.S.C. § 2617(a)(1)(B).

433. See Diana DiGangi, *Environmentalists Fear TSCA Preemption Of States’ Broad PFAS Limits*, INSIDE TSCA (Mar. 1, 2021) <https://perma.cc/6UEW-32SD> (“Following new steps by several states to regulate per- and polyfluoroalkyl substances (PFAS) as a class, environmentalists are now warning against new EPA rules on the same subject that could open the “Pandora’s box” of TSCA preemption.”); Elizabeth Shogren, *New York Bill to Ban Toxic Solvent TCE Awaits Governor’s Signature*, REVEAL NEWS (Aug. 4, 2020), <https://perma.cc/TAR6-UPE3> (explaining that federal action on TCE could preempt New York state efforts to ban the chemical); Laura Berryman, *States Move to Regulate Toxic Chemicals; Federal Government Still Far Behind*, PUB. HEALTH WATCH (May 10, 2022), <https://perma.cc/PLJ8-KYR7>.

434. See *supra* Part III.C.

struggled to ban asbestos. These were conflicts over whether to regulate under TSCA or other laws and inadequate quantification of health harms.

Rather than revising the law to deal with these issues, Congress simply shifted them to the risk evaluation process through the 2016 amendments. Risk evaluations and cost-benefit analyses are both important analytical methods for determining when and how to regulate toxic chemicals. But as this Article has demonstrated, they can each be misused to understate a chemical's harmful effects through similar means. One method is not necessarily more insulated than the other from mistakes or manipulation by industry interests. If Congress, environmental organizations, and other advocates for TSCA reform had understood the true reasons for EPA's struggles to ban asbestos, they could have approached calls to reform toxics regulation differently to better confront such problems. Bad history, unfortunately, led Congress to reform TSCA without addressing the root challenges of regulating dangerous chemicals.

