
Clean Air Act — Cost-Benefit Analysis —
Michigan v. EPA

A recurring question among administrative agencies, courts, and scholars has been whether, and to what extent, agencies should account for cost when engaging in public-health and environmental regulation.¹ The Supreme Court has addressed the issue four times in recent years. In the first case, it held that the relevant statutory provision unambiguously precluded agency cost considerations,² and in the next two, it deferred to agency decisions to consider cost.³ Last Term, in *Michigan v. EPA*,⁴ the Court held that cost considerations were required under a provision directing the Environmental Protection Agency (EPA) to regulate power plants if such regulation was “appropriate and necessary.”⁵ This decision may alter the way in which agency cost considerations interact with two seminal administrative law doctrines: *Chevron* and *State Farm*. These doctrinal consequences, in turn, have the potential to impede agencies pursuing aggressive public-health and environmental agendas.

The core of the Clean Air Act⁶ (CAA) consists of a number of programs designed to control air pollution from stationary sources (for example, refineries and factories).⁷ One such program is the National Emissions Standards for Hazardous Air Pollutants Program⁸ (NESHAP program), which Congress established in its current form as part of the 1990 CAA Amendments and codified at 42 U.S.C. § 7412. Under the NESHAP program, EPA has authority to regulate stationary-source emissions of over 180 hazardous air pollutants.⁹

As a general matter, the program applies automatically to stationary sources that emit over ten tons of a single pollutant or twenty-five tons of a combination of pollutants.¹⁰ But Congress created a special procedure for applying the program to one type of stationary source: power plants.¹¹ It did so because under the 1990 Amendments, power plants

¹ See, e.g., *Am. Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490 (1981); Cass R. Sunstein, *Cost-Benefit Default Principles*, 99 MICH. L. REV. 1651, 1656–68 (2001) (considering relationship between cost-benefit analysis and environmental law statutes).

² *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 471 (2001).

³ See *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1607 (2014); *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 222 (2009).

⁴ 135 S. Ct. 2699 (2015).

⁵ *Id.* at 2707 (quoting 42 U.S.C. § 7412(n)(1)(A) (2012)).

⁶ 42 U.S.C. §§ 7401–7671q.

⁷ See, e.g., *id.* § 7409 (National Ambient Air Quality Standards Program); *id.* §§ 7470–7479 (Prevention of Significant Deterioration of Air Quality Program).

⁸ *Id.* § 7412.

⁹ *Id.* § 7412(b); *Michigan*, 135 S. Ct. at 2704.

¹⁰ 42 U.S.C. § 7412(a)(1), (c)(1)–(2); *Michigan*, 135 S. Ct. at 2705.

¹¹ *Michigan*, 135 S. Ct. at 2705.

would face various other regulatory requirements including a major program to combat acid rain,¹² and Congress expected that these requirements alone might sufficiently reduce power plants' hazardous-air-pollutant levels.¹³ With this possibility in mind, Congress instructed EPA to take a "wait-and-see" approach¹⁴ before regulating power plants. First, EPA was to complete a study of the public-health hazards still posed by power-plant emissions after the other CAA requirements had been instituted.¹⁵ Then, "after considering the results of the study," EPA was to regulate power plants under the NESHAP program only if it found "regulation [was] appropriate and necessary."¹⁶

EPA completed the required study in 1998 and concluded in 2000 that regulation of power plants was "appropriate and necessary."¹⁷ After trying to revoke its "appropriate and necessary" finding and then losing a round of litigation,¹⁸ EPA reaffirmed this finding in 2012 as part of its final rule applying the NESHAP program to power plants.¹⁹ Crucially, EPA interpreted the statutory phrase "appropriate and necessary" to preclude it from considering cost when deciding whether to regulate power plants under the program.²⁰ In applying the program's terms to power plants, EPA divided the plants into categories based on type, and then promulgated emissions standards for each category.²¹ Alongside the final rule, EPA released a "Regulatory Impact Analysis" (RIA) of its power-plant regulations to comply with an Executive Order mandating cost-benefit analysis for major regulations.²² The RIA calculated that the regulations would cost power plants \$9.6 billion per year and generate \$4 to \$6 million per year of quantifiable direct bene-

¹² *Id.* at 2715 (Kagan, J., dissenting).

¹³ *Id.* at 2705 (majority opinion).

¹⁴ *Id.* at 2715 (Kagan, J., dissenting).

¹⁵ 42 U.S.C. § 7412(n)(1)(A); *Michigan*, 135 S. Ct. at 2705 (majority opinion).

¹⁶ 42 U.S.C. § 7412(n)(1)(A); *Michigan*, 135 S. Ct. at 2705.

¹⁷ Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826, 79,830 (Dec. 20, 2000); *Michigan*, 135 S. Ct. at 2705.

¹⁸ *See* *New Jersey v. EPA*, 517 F.3d 574, 580, 583 (D.C. Cir. 2008).

¹⁹ National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9304, 9363 (Feb. 16, 2012). EPA found regulation "appropriate" because power plants' emissions of hazardous air pollutants posed serious health risks, and a number of control options were available to reduce those emissions. *Id.* It found regulation "necessary" because the Act's other requirements had failed to sufficiently reduce the health risks. *Id.*

²⁰ *Id.* at 9326–27; *Michigan*, 135 S. Ct. at 2705.

²¹ *See Michigan*, 135 S. Ct. at 2718–21 (Kagan, J., dissenting) (detailing EPA's categorization and standard-setting process).

²² *Id.* at 2705 (majority opinion); *see also* Exec. Order No. 12,866, 58 Fed. Reg. 51,735, 51,738, 51,741 (Sept. 30, 1993) (requiring cost-benefit analysis for all rules with annual economic effect of at least \$100 million); Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011) (reaffirming Executive Order No. 12,866).

fits from reduction in hazardous air pollutants.²³ Yet EPA also found that the regulations would produce significant ancillary benefits — that is, benefits stemming not from reduced emissions of hazardous air pollutants, but from reduced emissions of other substances, such as particulate matter and sulfur dioxide.²⁴ With these benefits as part of the equation, the regulation’s total quantifiable benefits stood at \$37 to \$90 billion annually — far in excess of its costs.²⁵

Twenty-three states, along with numerous industry groups, sought review of EPA’s power-plant regulations in the D.C. Circuit.²⁶ They argued, *inter alia*, that EPA acted unlawfully by refusing to consider cost in making its “appropriate and necessary” finding.²⁷ In a *per curiam* opinion, a divided panel of the D.C. Circuit²⁸ upheld EPA’s decision not to consider cost.²⁹ The court reasoned that the phrase “appropriate and necessary” did not require cost considerations because Congress intended to train EPA’s attention solely on “the conclusions of the study regarding public health hazards from [power-plant] emissions.”³⁰

The Supreme Court reversed. Writing for the Court, Justice Scalia³¹ began by setting out the doctrinal backdrop for evaluating EPA’s refusal to consider cost. As he explained, two fundamental administrative law doctrines governed: first, under *State Farm*, agencies must consider all of the “relevant factors” of a problem when deciding how to regulate;³² second, under *Chevron*, although agencies deserve deference when interpreting ambiguous statutory provisions, they still “must operate within the bounds of reasonable interpretation.”³³ Applying these principles, the Court found that because “the phrase ‘appropriate and necessary’ requires at least some attention to cost,” EPA’s contrary interpretation ran afoul of both *State Farm* and *Chevron*.³⁴

To support this conclusion, the Court began by pointing to the plain meaning of “appropriate,” which it described as “the classic broad and

²³ *Michigan*, 135 S. Ct. at 2706.

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*; *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222, 1233 (D.C. Cir. 2014) (*per curiam*).

²⁷ *White Stallion*, 748 F.3d at 1236.

²⁸ The panel consisted of Chief Judge Garland and Judges Rogers and Kavanaugh.

²⁹ *White Stallion*, 748 F.3d at 1241.

³⁰ *Id.* at 1237. Judge Kavanaugh dissented on this issue. *Id.* at 1259–66 (Kavanaugh, J., concurring in part and dissenting in part).

³¹ Justice Scalia was joined by Chief Justice Roberts, as well as Justices Kennedy, Thomas, and Alito. Justice Thomas also filed a concurrence in which he questioned the constitutionality of *Chevron* deference. See *Michigan*, 135 S. Ct. at 2712–14 (Thomas, J., concurring).

³² *Id.* at 2706 (majority opinion) (quoting *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)).

³³ *Id.* at 2707 (quoting *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427, 2442 (2014)).

³⁴ *Id.*

all-encompassing term that naturally and traditionally includes consideration of all the relevant factors.”³⁵ In the Court’s view, cost was clearly a relevant factor in this case, given the \$9.6 billion per year EPA was poised to foist on industry.³⁶ More broadly, to the Court, cost represents “a centrally relevant factor” in nearly all “reasonable regulation”;³⁷ it forms part of the “backdrop” of “established administrative practice,” so ignoring it is generally unreasonable, and especially so when an agency has been instructed to consider all relevant factors.³⁸

Next, the Court turned to § 7412(n)(1)’s context, noting that, in addition to commanding EPA to study the public-health hazards posed by power plants, Congress also mandated a separate study of mercury emissions from power plants and other sources.³⁹ In that study, EPA was to consider not only the health effects of mercury emissions, but also the cost of technologies available to control those emissions.⁴⁰ In the majority’s view, Congress intended the results of this separate mercury study to factor into EPA’s “appropriate and necessary” decision along with the results of the health-hazards study.⁴¹ And because the mercury study incorporated an element of cost, cost should have played a role in EPA’s decision whether to regulate.⁴²

The Court then rebuffed a series of arguments offered by EPA and the dissent to justify the agency’s interpretation. As an initial matter, it rejected the claim that because the CAA expressly mentions cost in other provisions, Congress must have intended to preclude cost considerations in § 7412(n)(1)(A).⁴³ That inference did not follow, the Court explained, because while express references to cost “encompass just cost,” § 7412(n)(1)(A)’s “broad reference to appropriateness encompasses *multiple* relevant factors,” including cost.⁴⁴ The Court then spurned EPA’s argument that it need not consider cost when making the threshold determination whether to regulate power plants because it could consider cost later when setting actual emissions standards.⁴⁵ According to the Court, the fact that cost may play a role in subsequent stages of the regulatory process does not establish its irrelevance at any prior stage.⁴⁶ In any event, EPA never made this argument when explaining its “ap-

³⁵ *Id.* (quoting *White Stallion*, 748 F.3d at 1266 (Kavanaugh, J., concurring in part and dissenting in part)).

³⁶ *See id.*

³⁷ *Id.*

³⁸ *See id.* at 2708.

³⁹ *Id.*

⁴⁰ *Id.*; 42 U.S.C. § 7412(n)(1)(B) (2012).

⁴¹ *See Michigan*, 135 S. Ct. at 2708.

⁴² *Id.*

⁴³ *Id.* at 2708–09.

⁴⁴ *Id.* at 2709.

⁴⁵ *Id.*

⁴⁶ *Id.*

propriate and necessary” finding; consequently, it should not be permitted to rely on it in light of the “foundational principle of administrative law that a court may uphold agency action only on the grounds that the agency invoked when it took the action.”⁴⁷

Finally, the majority briefly addressed *how* EPA must consider cost going forward. It explained that it was stopping short of holding that EPA must perform a formal cost-benefit analysis,⁴⁸ and it also left open an important question related to ancillary benefits: when agencies do perform cost-benefit analysis, may they account not only for direct benefits, but also ancillary benefits?⁴⁹

Justice Kagan dissented.⁵⁰ She began by agreeing with the majority’s premise that cost is almost always a relevant factor in regulation;⁵¹ however, she disagreed with the majority’s conclusion that agencies must consider cost *at every stage* of the regulatory process.⁵² And because EPA knew that cost considerations would become highly relevant at other stages of the process — in, inter alia, categorizing plants, calculating emissions standards, and performing cost-benefit analysis to comply with Executive Order — it reasonably declined to consider cost “in making its kick-off finding”⁵³ that regulation was “appropriate and necessary” at all.⁵⁴ Indeed, the majority “ignore[d] everything but one thing EPA did”;⁵⁵ and in seizing to that blinkered view, it stymied a regulation that would have “save[d] many, many lives.”⁵⁶

Commentators have downplayed EPA’s loss in *Michigan*, stressing that because the Court declined to vacate EPA’s regulation, its decision would not preclude the rule from eventually going into effect.⁵⁷ The environmental law community has also made clear that *Michigan* should not impact the legality of EPA’s ambitious Clean Power Plan — which became final in August 2015 — since the CAA provision at issue there explicitly mentions cost.⁵⁸ Although these points

⁴⁷ *Id.* at 2710 (citing *SEC v. Chenery Corp.*, 318 U.S. 80, 87 (1943)).

⁴⁸ *Id.* at 2711.

⁴⁹ *See id.*

⁵⁰ Justice Kagan was joined by Justices Ginsburg, Breyer, and Sotomayor.

⁵¹ *Michigan*, 135 S. Ct. at 2716–17 (Kagan, J., dissenting).

⁵² *See id.* at 2717.

⁵³ *Id.*

⁵⁴ *Id.* at 2721; *see id.* at 2717–18, 2721.

⁵⁵ *Id.* at 2724.

⁵⁶ *Id.* at 2726.

⁵⁷ *See, e.g.*, Dietrich Hoefner, *MATS Is Dead, Long Live MATS — The Michigan v. EPA Decision on Mercury and Air Toxics Standards*, NAT’L L. REV. (July 7, 2015), <http://www.natlawreview.com/article/mats-dead-long-live-mats-michigan-v-epa-decision-mercury-and-air-toxics-standards> [<http://perma.cc/EEC5-PAZG>].

⁵⁸ *See, e.g.*, Richard Revesz, *What the Supreme Court’s EPA Decision Means for the Mercury Rule and Clean Power Plan*, THE HILL (June 30, 2015, 11:00 AM), <http://thehill.com/blogs/pundits-blog/energy-environment/246516-what-the-epa-decision-means-for-the-mercury-rule-and>

may be true, it would be a mistake to cast *Michigan* aside as an insignificant decision based on these reactions. In fact, the case could set in motion doctrinal and practical changes that will hinder agencies' efforts to aggressively regulate public-health hazards.

Michigan has the potential to alter two seminal doctrines governing judicial review of administrative action: *Chevron* and *State Farm*. *Chevron*, which guides judicial review of agency statutory interpretations, holds that courts must defer to reasonable agency constructions of ambiguous statutory language.⁵⁹ On three occasions prior to *Michigan*, the Court had applied *Chevron* in cases involving EPA and the role of cost considerations in administering environmental law statutes. First, in *Whitman v. American Trucking Ass'ns*,⁶⁰ the Court held that a CAA provision directing EPA to set air-quality standards that are "requisite to protect the public health" with "an adequate margin of safety"⁶¹ unambiguously precludes cost considerations.⁶² Next, in *Entergy Corp. v. Riverkeeper, Inc.*,⁶³ the Court deferred to EPA's interpretation that statutory language requiring certain standards to "reflect the best technology available for minimizing adverse environmental impact"⁶⁴ permits cost-benefit analysis.⁶⁵ Finally, in *EPA v. EME Homer City Generation, L.P.*,⁶⁶ the Court again deferred to EPA's decision to consider costs, this time in implementing a CAA provision that requires upwind states to "eliminate those 'amounts' of pollution that 'contribute significantly to nonattainment [of certain ambient air-quality standards]' in downwind States."⁶⁷

Taken together, this line of cases established a background rule for agency cost considerations in *Chevron* cases. Where a statutory provision was silent or ambiguous as to cost, the agency had discretion to decide for itself whether to take cost into account;⁶⁸ where the provision expressly prioritized public-health protection over all else, cost

[<http://perma.cc/2KCC-TS45>]. The Clean Power Plan is EPA's initiative to regulate greenhouse-gas emissions from existing power plants. *Id.*

⁵⁹ *Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842–44 (1984).

⁶⁰ 531 U.S. 457 (2001).

⁶¹ 42 U.S.C. § 7409(b)(1) (2012).

⁶² *Am. Trucking*, 531 U.S. at 471.

⁶³ 556 U.S. 208 (2009).

⁶⁴ 33 U.S.C. § 1326(b) (2012).

⁶⁵ *Entergy*, 556 U.S. at 222, 226.

⁶⁶ 134 S. Ct. 1584 (2014).

⁶⁷ *Id.* at 1603 (quoting 42 U.S.C. § 7410(a)(2)(D)(i) (2012)) (emphasis omitted).

⁶⁸ Although both *Entergy* and *EME Homer* found EPA's decision to *consider* cost permissible, both also suggested that a decision by EPA *not to consider* cost in those circumstances would have been reasonable. See *id.* at 1604 (explaining that the Court "read[s] Congress' silence as a delegation of authority to EPA to select from among reasonable options" and noting approaches excluding cost as possible options); *Entergy*, 556 U.S. at 222 ("It is eminently reasonable to conclude that § 1326(b)'s silence is meant to convey nothing more than a refusal to tie the agency's hands as to whether cost-benefit analysis should be used, and if so to what degree.").

considerations were precluded.⁶⁹ This background rule accorded with the logic of *Chevron*, which rests on the principle that statutory ambiguity represents an implied delegation from Congress to an agency⁷⁰: a statutory provision that is silent as to cost delegates authority to the agency to account for cost as it sees fit.

Michigan could reverse this background rule. Although one can read the decision as holding only that the capacious term “appropriate” must include cost considerations, the majority used broad language implying that, to be reasonable under *Chevron*, an agency’s interpretation of any ambiguous statutory mandate must account for costs. Specifically, the majority emphasized that “[a]gencies have long treated cost as a *centrally relevant factor* when deciding whether to regulate,”⁷¹ that “[c]onsideration of cost reflects the understanding that reasonable regulation *ordinarily requires* paying attention to the advantages *and* the disadvantages of agency decisions,”⁷² and that EPA’s interpretation was unreasonable “[a]gainst the backdrop of this *established administrative practice*.”⁷³ This language is not tied to the particular facts or statutory scheme in *Michigan*. Instead, it seems to create a presumption that “reasonable regulation” *in general* necessitates some attention to cost.

If future courts read *Michigan* this way, then statutory silence may no longer trigger deference to agency decisions whether to consider cost, but may rather *mandate* agency cost considerations. Put another way, unless Congress evinces clear intent to bar cost considerations (as in *American Trucking*), agencies would have to interpret provisions to implicitly require cost considerations for their interpretations to be upheld under *Chevron*. As the Government forewarned in its brief, this potential pro-cost clear-statement rule threatens numerous longstanding agency interpretations of ambiguous statutory language, especially language similar to the “appropriate and necessary” terminology involved in *Michigan*.⁷⁴ And, as a clear-statement rule, it imposes a greater burden on Congress to preclude agency cost considerations in the future.

⁶⁹ See *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 469, 471 (2001). Some commentators have gone even further, arguing that *American Trucking* created an “anti-cost canon.” Richard J. Pierce, Jr., *The Appropriate Role of Costs in Environmental Regulation*, 54 ADMIN. L. REV. 1237, 1251–52 (2002).

⁷⁰ *Chevron U.S.A. Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843–44 (1984).

⁷¹ *Michigan*, 135 S. Ct. at 2707 (emphasis added).

⁷² *Id.* (first emphasis added).

⁷³ *Id.* at 2708 (emphasis added).

⁷⁴ See Brief for the Federal Respondents at 43 n.12, *Michigan*, 135 S. Ct. 2699 (Nos. 14-46, 14-47, 14-49); see also, e.g., Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360d (2012) (stating that the agency must, prior to issuing a performance standard for a device, make a finding that “the performance standard is appropriate and necessary to provide reasonable assurance of the safety and effectiveness of the device”).

Michigan affects not only *Chevron*, but also *State Farm*, which guides courts in determining whether agency policy decisions are “arbitrary, capricious, [or] an abuse of discretion” under the Administrative Procedure Act (APA).⁷⁵ The doctrine requires that an agency’s policy-formation process be reasonable: the agency must consider all “important aspect[s] of the problem”⁷⁶ and base its decision “on a consideration of the relevant factors.”⁷⁷ The Court has never before held that one particular factor is “relevant” or “an important aspect of the problem” in *every* case. Rather, the Court has evaluated regulatory decisions holistically and contextually, based on each agency’s particular statutory mandate and reasoning process. In *State Farm*, for instance, the Court struck down as arbitrary and capricious the National Highway Traffic Safety Administration’s decision to revoke a rule requiring certain passive restraints in cars because, inter alia, the agency had entirely failed to consider the factor of “inertia,”⁷⁸ which counseled in favor of mandating detachable automatic seatbelts.⁷⁹

To be sure, *Michigan* could be deemed consistent with *State Farm*: just as inertia was a relevant factor in *State Farm* because it clearly supported adoption of detachable automatic seatbelts, cost was a relevant factor in *Michigan* because the \$9.6 billion levied on industry was so strikingly high in relation to quantifiable benefits. But the majority’s aforementioned broad language suggests the more sweeping possibility that cost may now be a “relevant factor” or “important aspect of the problem” *whenever* an agency decides whether or how to regulate. In other words, in the majority’s view, a cost-consideration requirement may be built directly into the APA’s prohibition against arbitrary and capricious regulation. Although the D.C. Circuit has gestured toward this sort of cost-consideration requirement in the past,⁸⁰ the Supreme Court has never before embraced it.⁸¹ Even if *Michigan* itself does not stand for the proposition that agencies must consider cost to survive *State Farm* review, it at least seems to set the stage for the Court to impose such a requirement in the future.

These potential doctrinal developments could create significant ob-

⁷⁵ 5 U.S.C. § 706(2)(A) (2012).

⁷⁶ *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

⁷⁷ *Id.* (quoting *Bowman Transp., Inc. v. Ark.-Best Freight Sys., Inc.*, 419 U.S. 281, 285 (1974)).

⁷⁸ “Inertia” here refers to the tendency of a driver, once her seatbelt is attached, to keep it attached.

⁷⁹ *State Farm*, 463 U.S. at 54.

⁸⁰ See RONALD A. CASS ET AL., *ADMINISTRATIVE LAW: CASES AND MATERIALS* 538 (7th ed., forthcoming 2015) (citing *Am. Petrol. Inst. v. EPA*, 216 F.3d 50 (D.C. Cir. 2000)).

⁸¹ In fact, the Court had repeatedly rejected attempts to require agencies to consider cost in their administration of public-health and environmental statutes. See *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 471 (2001); *Am. Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 509 (1981); *Union Elec. Co. v. EPA*, 427 U.S. 246, 265 (1976).

stacles for agencies tasked with improving public health and the environment. First, at a minimum, agencies pursuing ambitious agendas in these areas may be slowed down by the need to consider cost at each statutorily prescribed stage of the regulatory process; second, and more importantly, these agencies may be halted altogether by courts striking down regulations as arbitrary and capricious.

Because agencies may read *Michigan* to require them to consider cost at each stage of multistage regulatory processes — that is, processes in which agencies must make threshold decisions whether to regulate, followed later by setting standards⁸² — those processes may take more time. Agencies may no longer assume, as EPA did in *Michigan*, that considering cost only at the standard-setting stage is sufficient to withstand attack in litigation. These additional cost calculations will inevitably demand time and resources, further burdening already strapped agencies. And, as Justice Kagan explained in her dissent, it may be nearly impossible for agencies to accurately calculate costs during the earliest phases of the regulatory process.⁸³ In *Michigan*, for instance, EPA's first "appropriate and necessary" finding in 2000 preceded its setting of emissions standards.⁸⁴ Without knowing the stringency of those standards, it would have been difficult — if not impossible — for EPA to project their costs to industry. Nevertheless, under *Michigan*, agencies may have to invest the time and resources to produce premature cost estimates that carry little informational value.

More dramatically, *Michigan* may portend a scenario where many more agency regulations are struck down as arbitrary and capricious under *State Farm*. In light of *Michigan*, agencies will have to calculate regulatory costs more frequently. To contextualize these costs and justify them in litigation, agencies will likely also strive to calculate regulatory benefits. If this analysis reveals that a regulation's costs are wholly disproportionate to its benefits, the regulation could well be struck down as arbitrary and capricious under *State Farm* review. Indeed, the *Michigan* Court suggested this prospect: "One would not say that it is even rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits."⁸⁵

The fact that cost-benefit analysis will most often favor industry over agencies increases the likelihood of this scenario. For one thing,

⁸² See, e.g., 42 U.S.C. §§ 7408(a), 7409(a)–(b) (2012); *id.* § 7521(a).

⁸³ *Michigan*, 135 S. Ct. at 2723–24 (Kagan, J., dissenting).

⁸⁴ *Id.* at 2716, 2723.

⁸⁵ *Id.* at 2707 (majority opinion); *cf.* *Indus. Union Dep't., AFL-CIO v. Am. Petrol. Inst.*, 448 U.S. 607, 667 (1980) (Powell, J., concurring in part and concurring in the judgment) ("An occupational health standard is neither 'reasonably necessary' nor 'feasible,' as required by statute, if it calls for expenditures wholly disproportionate to the expected health and safety benefits.")

regulatory costs are far easier to quantify than regulatory benefits.⁸⁶ To calculate costs, an agency determines the expense of the technology that will allow regulated entities to meet the requisite standard, as well as concomitant monitoring and reporting expenses;⁸⁷ by contrast, because the health and climate benefits of a cleaner environment are amorphous and stretch over an indefinite time period, they are far more difficult to accurately reduce to a monetary figure.⁸⁸

For another thing, the possibility looms that the Court may eventually restrict agencies' consideration of ancillary benefits when completing cost-benefit analyses. Ancillary benefits frequently make up the majority of quantifiable benefits flowing from public-health regulation: this was true in *Michigan*,⁸⁹ and may be true for EPA's Clean Power Plan as well.⁹⁰ The *Michigan* Court reserved the question whether ancillary benefits can factor into agencies' cost-benefit analyses, but certain Justices appeared skeptical of the idea at oral argument.⁹¹ And if the Court were to bar consideration of ancillary benefits, it might not likewise deem ancillary costs irrelevant. After all, the *Michigan* Court stressed that "'cost' includes more than the expense of complying with regulations; any disadvantage could be termed a cost."⁹²

With more agency cost-benefit analyses, a *State Farm* standard that might forbid regulations whose costs substantially outweigh their benefits, and the possible preclusion of ancillary benefit consideration, the path to valid regulation may be narrowed significantly. Thus, if *Michigan* is read broadly, it could spur a series of developments that would thwart agency efforts to pursue enterprising public-health and environmental initiatives.

⁸⁶ See, e.g., Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1557–60 (2002).

⁸⁷ See, e.g., *id.* at 1557; National Emission Standards for Hazardous Air Pollutants from Coal and Oil-Fired Electric Utility Steam Generation Units, 77 Fed. Reg. 9304, 9306 (Feb. 16, 2012).

⁸⁸ See Ackerman & Heinzerling, *supra* note 86, at 1563–64, 1584; see also EPA, REGULATORY IMPACT ANALYSIS FOR THE CLEAN POWER PLAN FINAL RULE 4-5 (2015) [hereinafter Clean Power Plan RIA], <http://www2.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule-ria.pdf> [<http://perma.cc/W3K2-J6HB>] (“[M]odels do not assign value to all of the important physical, ecological, and economic impacts of climate change . . . due to a lack of precise information on the nature of damages . . .”).

⁸⁹ Direct benefits totaled only \$4 to \$6 million per year, while ancillary benefits reached \$37 to \$90 billion per year. *Michigan*, 135 S. Ct. at 2706.

⁹⁰ See Clean Power Plan RIA, *supra* note 88, at 4-44 to 4-45.

⁹¹ Transcript of Oral Argument at 59, 63–64, *Michigan*, 135 S. Ct. 2699 (Nos. 14-46, 14-47, 14-49) (Chief Justice Roberts stating that accounting for ancillary benefits is an “end run around the restrictions that would otherwise . . . give you less control over the regulation,” *id.* at 59, and “an illegitimate way of avoiding the . . . quite different limitations on EPA that apply in [other programs],” *id.* at 63).

⁹² *Michigan*, 135 S. Ct. at 2707. The Court could potentially justify this disparity on the ground that accounting for ancillary costs, unlike accounting for ancillary benefits, does not risk circumventing different statutory limitations governing regulation of separate pollutants.