
BEHAVIORALLY INFORMED
MANDATES?
INTERNALITIES, EXTERNALITIES, AND
FUEL ECONOMY RULES

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ABSTRACT

It is standard to think that economic incentives are generally or always better than regulatory mandates. But in the face of behavioral market failures, that conclusion might not be so clear. Fuel economy and energy efficiency mandates are possible examples. Because such mandates might produce billions of dollars in annual consumer savings (as economic incentives do not), they might have very high net benefits, complicating the choice between such mandates and economic incentives (such as carbon taxes). Under plausible assumptions, fuel economy and energy efficiency standards might have higher net benefits than economic incentives, if and because they confer significant benefits on consumers, in addition to reducing externalities. The net benefits of mandates that simultaneously reduce internalities and externalities might exceed the net benefits of incentives that reduce externalities alone, even if mandates turn out to be a highly inefficient way of reducing externalities.

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* Robert Walmsley University Professor, Harvard University. This is an essay for a symposium at New York University School of Law, in honor of Richard B. Stewart. Dick launched my academic career and sparked so many of my interests; it is very hard to put my gratitude into words. Dick taught me civil procedure and administrative law, and after my first year in law school, I was privileged to be his research assistant, among other things on an administrative law casebook of which I am now lucky enough to be a coauthor. I am so grateful to him for so many things—his immense intellectual integrity, his insistence on trying to get things right, his curiosity, his commitment to both truth and human welfare, and his interdisciplinary approach, including his belief that without some understanding of economics, political science, and philosophy, you can't do law right. This essay should be seen as an effort to engage with Dick's work on the use of economic incentives in regulatory policy and administrative law; despite the questions raised here, I believe that he is fundamentally correct in his general prescriptions. *See generally* Richard B. Stewart, *Reconstitutive Law*, 46 MD. L. REV. 86 (1986).

I. MARKET FAILURES, OLD AND NEW

In light of behavioral findings, demonstrating the occasional human propensity to blunder, some people have been asking whether mandates and bans have a fresh justification.¹ The motivation for that question is clear: If we know that people's choices lead them in the wrong direction, why should we insist on freedom of choice? In the face of human errors, is it not odd, or even perverse, to insist on that form of freedom? Is it not especially odd to do so if we know that in many contexts, people choose wrongly, thus injuring their future selves?

If a mandate would clearly increase social welfare, there is a strong argument on its behalf.² Of course we would have to specify what social welfare means, and people disagree about the right specification.³ But often diverse people are able to put their philosophical disagreements to one side and agree that mandates do or do not make sense, whatever their views about the deepest issues. For instance, no one believes that fines or subsidies are a sufficient approach to the problem of violent crime. No one thinks that people should be allowed to choose to steal or to assault. In the face of harm to others or a standard market failure, a mandate has a familiar justification; consider the problem of air pollution. It is true that even when there is harm to others or a standard market failure, default rules may have an important role; consider the possibility of defaults in favor of clean energy, as, for example, when people are

¹ See SARAH CONLY, *AGAINST AUTONOMY: JUSTIFYING COERCIVE PATERNALISM* (2012); Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. 1593 (2014).

² Of course, there might be deontological objections. See Jeremy Waldron, *It's All for Your Own Good*, N.Y. REV. BOOKS (Oct. 9, 2014), <http://www.nybooks.com/articles/archives/2014/oct/09/cass-sunstein-its-all-your-own-good/>.

³ I am bracketing the question of definition, but note that freedom of choice is, on any reasonable account, an important ingredient in social welfare. See generally Daniel J. Benjamin et al., *Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference*, 104 AM. ECON. REV. 2698 (2014); Björn Bartling et al., *The Intrinsic Value of Decision Rights* (U. of Zurich, Dep't of Econ., Working Paper No. 120, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2255992. For valuable discussion of foundational issues, see generally MATTHEW ADLER, *WELL-BEING AND FAIR DISTRIBUTION: BEYOND COST-BENEFIT ANALYSIS* (2011).

automatically enrolled in solar or wind.⁴ But the effects of default rules, taken by themselves, might well prove too modest for the problem at hand, and they hardly exhaust the repertoire of appropriate responses.

In many contexts, including occupational safety, energy policy, antidiscrimination policy, and antipoverty policy, there are behavioral market failures as well.⁵ If people are suffering from present bias, unrealistic optimism, limited attention, or a problem of self-control, and if the result is a serious welfare loss for those people, there is an argument for some kind of public response, potentially including mandates. If, for example, people are present-biased, they might not protect their future selves. When people are running high risks of mortality or otherwise ruining their lives, it might make sense to adopt a mandate or a ban on welfare grounds. After all, people have to get prescriptions for certain kinds of medicines, and even in freedom-loving societies, people are forbidden from buying certain foods, or running certain risks in the workplace, simply because the dangers are too high. Many occupational safety and health regulations must stand or fall on behavioral grounds; they forbid workers from voluntarily facing certain risks, perhaps because unrealistic optimism or present bias might lead them to do so unwisely.⁶ There are certainly cases in which the best approach is a mandate or a ban, because that response is preferable, from the standpoint of social welfare, to any alternative, including economic incentives or defaults.

These are general points about behaviorally informed policy. My particular goal here is to explore the possibility of defending fuel economy mandates, and also energy efficiency mandates, as opposed to economic incentives, by reference to behavioral market failures, captured in insufficient consumer attention, *ex ante*, to

⁴ See generally Felix Ebeling & Sebastian Lotz, *Domestic Uptake of Green Energy Promoted by Opt-out Tariffs*, 5 NATURE CLIMATE CHANGE 868 (2015); Daniel Pichert & Konstantinos V. Katsikopoulos, *Green Defaults: Information Presentation and Pro-Environmental Behaviour*, 28 J. ENV'T PSYCH. 63 (2008).

⁵ See generally IRIS BOHNET, *WHAT WORKS: GENDER EQUALITY BY DESIGN* (2016); SENDHIL MULLAINATHAN & ELДАР SHAFIR, *SCARCITY* (2013); George Akerlof & William Dickens, *The Economic Consequences of Cognitive Dissonance*, 72 AM. ECON. REV. 307, 310 (1982); OREN BAR-GILL, *SEDUCTION BY CONTRACT* (2012).

⁶ See George A. Akerlof & William T. Dickens, *The Economic Consequences of Cognitive Dissonance*, 72 AM. ECON. REV. 307, 310 (1982).

economic and time savings. The most general point is that such mandates may reduce “internalities,” understood as the costs that choosers impose on their future selves.⁷ Fuel economy mandates might simultaneously reduce internalities and externalities. On plausible assumptions about the existence and magnitude of consumer errors—stemming from, for example, present bias—such mandates might turn out to have higher net benefits than carbon taxes, because the former, unlike the latter, deliver consumer savings.⁸ To say the least, this is not a conventional view, because fuel economy standards are a highly inefficient response to the externalities produced by motor vehicles, especially when compared to optimal corrective taxes.⁹

Everything turns, of course, on whether the plausible assumptions turn out to be true. My goal is not to run the numbers or to reach a final conclusion but to make two more general points. The first is that in light of behavioral findings about consumer errors, fuel economy mandates might be amply justified on welfare grounds. The second is that the standard economic preference for economic incentives over mandates misses something of considerable importance. In brief, it misses the fact that mandates might simultaneously address both internalities and externalities, even if they address the latter inefficiently. The consequence of missing that fact is to undervalue the potential value, and the potentially high net benefits, of mandates.

II. INTERNALITIES AND EXTERNALITIES

Most motor vehicles emit pollution, including greenhouse gases, and the use of gasoline increases national dependence on foreign oil. On standard economic grounds, the result is a market

⁷ See generally Hunt Allcott & Cass R. Sunstein, *Regulating Internalities*, 34 J. POL’Y. ANALYSIS & MGMT. 698 (2015).

⁸ Ryan Bubb and Richard Pildes similarly contend that fuel economy regulation might be justified by reference to behavioral considerations, but they focus only on externalities. The conclusion is much easier to justify by reference to internalities, which Bubb and Pildes bracket in their provocative discussion. See Bubb & Pildes, *supra* note 1.

⁹ See Valerie J. Karplus et al., *Should A Vehicle Fuel Economy Standard Be Combined with an Economy-Wide Greenhouse Gas Emission Constraint? Implications for Energy and Climate Policy in the United States*, 36 ENERGY ECON. 322, 322 (2013).

failure in the form of excessive pollution, and some kind of cap-and-trade system or corrective tax is the best response, designed to ensure that drivers internalize the social costs of their activity. The choice between cap-and-trade programs and carbon taxes raises a host of important questions.¹⁰ But the more fundamental point is that economic incentives of some kind, and not mandates, are the appropriate instrument.¹¹ Simply put, incentives are far more efficient; for any given reduction in pollution levels, they impose a lower cost.¹²

For obvious reasons, a great deal of recent analysis has been focused on greenhouse gas emissions and how best to reduce them.¹³ In principle, regulators have a host of options. They might create subsidies—say, for electric cars. They might use nudges—say, by providing information about greenhouse gas emissions on fuel economy labels.¹⁴ They might impose regulatory mandates—say, with fuel economy and energy efficiency standards. Careful analysis suggests that carbon taxes can produce reductions in greenhouse gas emissions at a small fraction of the cost of fuel economy mandates.¹⁵ On one account, “a fuel economy standard is shown to be at least six to fourteen times less cost effective than a price instrument (fuel tax) when targeting an identical reduction in cumulative gasoline use.”¹⁶

These are points about how best to reduce externalities. But behaviorally informed regulators focus on consumer welfare, not only

¹⁰ For a defense of carbon taxes, see generally WILLIAM NORDHAUS, *THE CLIMATE CASINO: RISK, UNCERTAINTY, AND ECONOMICS FOR A WARMING WORLD* (2015).

¹¹ See RICHARD B. STEWART & JONATHAN B. WIENER, *RECONSTRUCTING CLIMATE POLICY: BEYOND KYOTO* 29–30 (2003).

¹² For an excellent treatment, see Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 *COLUM. J. ENV'T L.* 171 (1988).

¹³ See, e.g., NORDHAUS, *supra* note 10.

¹⁴ See Cass R. Sunstein & Lucia A. Reisch, *Automatically Green: Behavioral Economics and Environmental Protection*, 38 *HARV. ENV'T L. REV.* 127, 127 (2014).

¹⁵ See Karplus et al., *supra* note 9, at 322; Christopher R. Knittel et al., *Diary of A Wimpy Carbon Tax* (MIT Ctr. for Energy & Env't Pol'y Rsch., Working Paper No. 13, 2019), <http://ceep.mit.edu/files/papers/2019-013.pdf>; Lucas W. Davis & Christopher R. Knittel, *Are Fuel Economy Standards Regressive?* (Nat'l Bureau of Econ. Rsch., Working Paper No. 22925, 2016), <https://www.nber.org/papers/w22925>.

¹⁶ Karplus et al., *supra* note 9, at 322.

externalities. They are concerned about a different kind of market failure, one that is distinctly behavioral. Regulators speculate that at the time of purchase, many consumers might not give sufficient attention to the full costs of driving a car.¹⁷ Even if they try, they might not have a sufficient understanding of those costs because it is not simple to translate differences in miles per gallon (MPG) into economic and environmental consequences.¹⁸ An obvious response, preserving freedom of choice, would be disclosure, in the form of a fuel economy label that would correct that kind of behavioral market failure.¹⁹ In principle, such a label, if behaviorally informed, should solve the problem. In short: labels should be used to promote consumer welfare by increasing the likelihood that consumers will make optimal choices, and corrective taxes should be used to respond to externalities. A label protects consumers from their own mistakes, in terms of their own self-interest; corrective taxes protect those who are injured by pollution.

But it would be possible to wonder whether a label will be sufficiently effective. This is an empirical question, not resolvable in the abstract. Perhaps some or many consumers will pay too little attention to the label, and hence will not purchase cars that would save them a significant amount of money.²⁰ And if some or many consumers are genuinely inattentive to the costs of operating a vehicle at the time of purchase, and if they do not make a fully informed decision in spite of adequate labelling—perhaps because of a behavioral bias—then it is possible to justify fuel economy standards with a level of stringency that would be difficult to defend on standard economic grounds.

In support of that argument, it would be useful to focus directly on two kinds of consumer savings from fuel economy standards, involving internalities rather than externalities: money and time. In fact, the vast majority of the quantified benefits from recent fuel economy standards come not from environmental improvements, but from money saved at the pump; turned into monetary

¹⁷ See Bubb & Pildes, *supra* note 1, at 1669.

¹⁸ See Richard P. Larrick & Jack B. Soll, *The MPG Illusion*, 320 SCIENCE 1593, 1593 (2008).

¹⁹ For one example, see generally *Green Vehicle Guide: Learn about the Fuel Economy Label*, EPA, <https://www.epa.gov/greenvehicles/learn-about-fuel-economy-label> (last visited Mar. 5, 2021).

²⁰ See Bubb & Pildes, *supra* note 1, at 1675.

equivalents, the time savings are also significant. Under the Obama administration, the Department of Transportation found, over a fifteen year period, consumer savings of about \$529 billion, time savings of \$15 billion, energy security benefits of \$25 billion, CO₂ emissions reductions benefits of \$49 billion, other air pollution benefits of about \$14 billion, and up to \$568 million from reduced fatalities.²¹ The total projected benefits were \$633 billion, of which a remarkable 84 percent would come from savings at the pump, and no less than 86 percent from those savings along with time savings, because drivers do not have to go to the gas station so often.²² In its own rulemaking, the Trump administration rethought those numbers by reference to recent work,²³ raising questions about whether consumers are insufficiently attentive to the economic savings, but noting that it projected the consumer savings to be in the same general vicinity and actually even higher.²⁴

The problem is that on standard economic grounds, it is not at all clear that consumer benefits from money and time savings are entitled to count in the analysis, because they are purely private savings and do not involve externalities in any way.²⁵ In deciding which cars to buy, consumers can certainly take account of the private savings from fuel-efficient cars; if they choose not to buy such cars, it might be because they do not value fuel efficiency as compared to other vehicle attributes, such as safety, aesthetics, and

²¹ See NAT'L. HIGHWAY TRAFFIC SAFETY ADMIN., FINAL REGULATORY IMPACT ANALYSIS: CORPORATE AVERAGE FUEL ECONOMY FOR MY 2017–MY 2025 49–50 (2012). The calculated consumer benefits are mostly consumer savings on lifetime fuel expenditures, but also include time savings and the consumer surplus from additional driving.

²² See *id.* For additional background, see also Antonio M. Bento et al., *Estimating the Costs and Benefits of Fuel Economy Standards*, in 1 ENVIRONMENTAL AND ENERGY POLICY AND THE ECONOMY 129 (Matthew J. Kotchen et al. eds., 2021).

²³ See Hunt Allcott & Christopher Knittel, *Are Consumers Poorly Informed About Fuel Economy?*, 11 AM. ECON. J. ECON. POL. 1 (2019); James M. Sallee et al., *Do Consumers Recognize the Value of Fuel Economy? Evidence from Used Car Prices and Gasoline Price Fluctuations*, 135 J. PUB. ECON. 61 (2016); Meghan R. Busse et al., *Are Consumers Myopic? Evidence from New and Used Car Purchases*, 103 AM. ECON. REV. 220 (2013).

²⁴ See Bento et al., *supra* note 22, at 148–49.

²⁵ See Ted Gayer & W. Kip Viscusi, *Overriding Consumer Preferences with Energy Regulations*, 43 J. REGUL. ECON. 248, 254, 257 (2013).

performance.²⁶ Where is the market failure? If the problem lies in a lack of information, the standard economic prescription is the same as the behaviorally informed one: *Fix the label and provide that information so that consumers can easily understand it.*

But there is a problem here: Even with the best fuel economy label in the world, consumers might turn out to be insufficiently attentive to the benefit of improved fuel economy at the time of purchase, not because they have made a rational judgment that these benefits are outweighed by other factors, but simply because consumers focus on other variables, such as performance, size, and cost. It follows that the problem may be not one of information, but of insufficient attention.²⁷ A behavioral hunch, discussed below, is that automobile purchasers do not give adequate consideration to economic savings.²⁸ Apart from savings, there is the question of time: How many consumers think about time savings when they are deciding whether to buy a fuel-efficient vehicle?

III. “THE CENTRAL CONUNDRUM” AND THE ENERGY PARADOX

Such questions raises a host of empirical issues, to which we lack full answers.²⁹ But assuming consumers are not paying enough attention to savings in terms of money and time, a suitably designed fuel economy mandate might well be justified, because it would produce an outcome akin to what would be produced by consumers who

²⁶ *See id.*

²⁷ *See generally* Xavier Gabaix, *Behavioral Inattention* (Nat’l Bureau of Econ. Rsch., Working Paper No. 24096, 2018), <https://www.nber.org/papers/w24096>.

²⁸ The hunch is questioned in Allcott & Knittel, *supra* note 23, at 27; Sallee et al., *supra* note 23, at 62; Busse et al., *supra* note 23, at 220. The hunch is supported in Kenneth Gillingham et al., *Consumer Myopia in Vehicle Purchases: Evidence from a Natural Experiment* (Nat’l Bureau of Econ. Rsch., Working Paper No. 25848, 2019), <https://www.nber.org/papers/w25845>. A sharp, balanced discussion can be found in John D. Graham et al., *Co-Benefits, Countervailing Risks, and Cost-Benefit Analysis* (2019), <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1273/2019/09/Graham-Wiener-Robinson-2019.pdf>, with what seems to me a prudent conclusion: “it seems that agency analysts should adopt a middle-ground position between full consumer valuation of fuel economy and no consumer valuation of fuel economy, and perform sensitivity analyses with different partial degrees of consumer valuation.” *Id.* at 20.

²⁹ *See* Allcott & Knittel, *supra* note 23, at 19; *see generally* sources cited *supra*, note 28.

are at once informed and attentive.³⁰ Energy efficiency requirements might be justified in similar terms, and indeed, the argument on their behalf might be stronger.³¹ If the benefits of mandates greatly exceed their costs, and if there is no significant consumer welfare loss—in the form, for example, of reductions in safety, performance, or aesthetics—then the mandates would seem to serve to correct a behavioral market failure. And indeed, the U.S. government has so argued:

The central conundrum has been referred to as the Energy Paradox in this setting (and in several others). In short, the problem is that consumers appear not to purchase products that are in their economic self-interest. There are strong theoretical reasons why this might be so:

- Consumers might be myopic and hence undervalue the long-term.
- Consumers might lack information or a full appreciation of information even when it is presented.
- Consumers might be especially averse to the short-term losses associated with the higher prices of energy-efficient products relative to the uncertain future fuel savings, even if the expected present value of those fuel savings exceeds the cost (the behavioral phenomenon of “loss aversion”).
- Even if consumers have relevant knowledge, the benefits of energy-efficient vehicles might not be sufficiently salient to them at the time of purchase, and the lack of salience might lead consumers to neglect an attribute that it would be in their economic interest to consider.
- In the case of vehicle fuel efficiency, and perhaps as a result of one or more of the foregoing factors, consumers may have relatively few choices to purchase vehicles with greater fuel economy once other characteristics, such as vehicle class, are chosen.³²

³⁰ See Cass R. Sunstein, *Rear Visibility and Some Unresolved Problems for Economic Analysis*, 10 J. BENEFIT-COST ANALYSIS 317 (2019).

³¹ For suggestive evidence, see Richard G. Newell & Juha V. Siikamaki, *Individual Time Preferences and Energy Efficiency* (Nat'l Bureau of Econ. Rsch., Working Paper No. 20969, 2015), <https://www.nber.org/papers/w20969>. Note that the miles-per-gallon measure is hardly hidden, and there is nothing quite as salient for energy efficiency.

³² See Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, Part II, 75 Fed. Reg. 25,324, 25,510–11 (May 7, 2010) (to be codified at 40 C.F.R. pts. 85, 86, and 600; 49

Of course, we should be cautious before accepting a behavioral argument on behalf of mandates or bans. Behavioral biases have to be demonstrated, not simply asserted; important research suggests that consumers do pay a lot of attention to the benefits of fuel-efficient vehicles.³³ Some of that research finds that with changes in gas prices, consumers adjust their vehicle purchasing decisions, strongly suggesting that in choosing among vehicles, consumers *are* highly attentive to fuel economy.³⁴ Other research points in the same direction. It finds that when aggressive steps are taken to inform consumers of fuel economy, they do not choose different vehicles, which suggests that consumers are selecting the vehicles they want and not suffering from a lack of information or a behavioral bias.³⁵

On the other hand, some evidence cuts the other way. A large-scale study of actual behavior finds that after a significant correction of an erroneously stated miles per gallon measure, consumers were relatively unresponsive; they did not make different choices.³⁶ As Gillingham et al. write, “Using the implied changes in willingness-to-pay, we find that consumers act myopically: consumers are indifferent between \$1 in discounted fuel costs and 15-38 cents in the vehicle purchase price when discounting at 4%.”³⁷ Puzzlingly, many consumers do not buy hybrid vehicles even in circumstances in which it would seem rational for them to do so.³⁸ According to the leading study, a significant number of consumers choose standard vehicles even when it would be in their economic interest to choose a hybrid vehicle, and even when it is difficult to identify some other feature of the standard vehicle that would justify their choosing it.³⁹

It is also possible to think that even if consumers are responsive to changes in gasoline prices, they are still myopic with respect to

C.F.R. pts. 531, 533, 536, et al.), <http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf>.

³³ See generally works cited *supra* note 23. For valuable, inconclusive discussions, see generally Hunt Allcott, *Paternalism and Energy Efficiency: An Overview*, 8 ANN. REV. ECON. 145 (2016); Hunt Allcott & Michael Greenstone, *Is There an Energy Efficiency Gap?*, 26 J. ECON. PERSP. 3, 5 (2012).

³⁴ See Sallee et al., *supra* note 23, at 61; Busse et al., *supra* note 23, at 220.

³⁵ See Allcott & Knittel, *supra* note 23, at 33–34.

³⁶ See Gillingham et al., *supra* note 28.

³⁷ *Id.*

³⁸ See Denvil Duncan et al., *Most Consumers Don't Buy Hybrids: Is Rational Choice a Sufficient Explanation?*, 10 J. BENEFIT-COST ANALYSIS 1, 1 (2019).

³⁹ See *id.* at 30.

choices of vehicles that have technological advances. Graham et al. put it crisply:

Consumers are more familiar with changes in fuel price than with changes in technology, since consumers experience fuel prices each time they refill their tank. Vehicle purchases are much less common in the consumer's experience, especially purchases that entail major changes to propulsion systems. Many consumers – excluding the limited pool of adventuresome “early adopters” – may be reticent to purchase vehicles at a premium price that are equipped with unfamiliar engines, transmissions, materials, or entirely new propulsion systems (e.g., hybrids or plug-in electric vehicles), even when such vehicles have attractive EPA fuel-economy ratings.⁴⁰

More broadly, the government's numbers under President Obama, finding no significant consumer welfare loss from fuel economy standards, are consistent with the suggestion that consumers are suffering from some kind of behavioral bias.⁴¹ If consumers were not biased, we should expect to see some kind of welfare loss, in the form, for example, of vehicles that lacked attributes that consumers preferred.

At the same time, the government's numbers, projecting costs and benefits, might be wrong.⁴² Engineering estimates might overlook some losses that consumers will actually experience along some dimension that they failed to measure. No one doubts that consumers have highly diverse preferences with respect to vehicles, and even though they are not mere defaults, fuel economy standards should be designed to preserve a wide space for freedom of choice. Appropriate standards ensure that such space is maintained. Economic incentives have inherent advantages on this count.

The real question, of course, is the magnitude of net benefits from the different possible approaches. If the consumer savings are taken to be very large, fuel economy standards are likely to have correspondingly large net benefits. To give a very rough, intuitive sense of how to think about the comparative question, let us suppose that the U.S. government imposed an optimal carbon tax. Simply for purposes of analysis, suppose that it is \$50 per ton, understood to

⁴⁰ Graham et al., *supra* note 28, at 19.

⁴¹ See Gayer & Viscusi, *supra* note 25, at 255.

⁴² See generally *id.*

capture the social cost of carbon.⁴³ Suppose that in relevant sectors, including transportation, a certain number of emitters decide to reduce their emissions on the ground that the cost of reducing them is, on average, \$Y, which is lower than \$50. The net benefit of the carbon tax would be \$50 minus Y, multiplied by the tons of carbon emissions that are eliminated. It is imaginable that the resulting figure would be very high. But it is not necessarily higher than the net benefits of well-designed fuel economy standards. If consumer savings are real and high, fuel economy standards might have much higher net benefits than carbon taxes.

IV. MANDATES AND INTERNALITIES

With the various qualifications, the argument for fuel economy standards, made by reference to behavioral market failures and to externalities in particular, is at least plausible. In this context, nudges (in the form of an improved fuel economy label) and mandates (in the form of standards) might march hand-in-hand. It is true that if the goal is only to reduce externalities, a carbon tax is far better than a regulatory mandate. It is also true that in theory, the best approach to externalities should be appropriate disclosure, designed to promote salience and to overcome limited attention. But with an understanding of behavioral findings, a regulatory approach, promoting consumer welfare as well as reducing externalities might turn out to have higher net benefits than the standard economic remedy of corrective taxes and disclosure.

Everything turns on what the evidence shows and on the particular numbers. But in principle, regulation of other features of motor vehicles could also be justified in behavioral terms; certain safety equipment might not be sufficiently salient to consumers at the time of purchase, and some such equipment might fall in the category of experience goods.⁴⁴ Credit markets can be analyzed similarly.⁴⁵ The broadest point is that while a presumption in favor of freedom of

⁴³ A great deal depends on whether a domestic or global figure is chosen. See Gayer & Viscusi, *supra* note 25, at 252; Matthew J. Kotchen, *Which Social Cost of Carbon? A Theoretical Perspective*, 5 J. ASS'N ENV'T & RES. ECONOMISTS 673, 673 (2018), <https://environment.yale.edu/kotchen/pubs/whichscc.pdf>.

⁴⁴ See generally Sunstein, *supra* note 30.

⁴⁵ See generally Natasha Sarin, *Making Consumer Finance Work*, 119 COLUM. L. REV. 1519 (2019).

choice makes a great deal of sense, it is only a presumption. If our lodestar is human welfare,⁴⁶ it might be overcome, especially when it can be shown that externalities are large.

⁴⁶ There are of course other lodestars, such as autonomy. See Waldron, *supra* note 2.