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Empowering Economic Freedom by Reducing Regulatory Burdens

Throughout the Trump Administration, Federal agencies have demonstrated a sustained commitment to regulatory reform. As a result, the Administration's regulatory efforts have reduced red tape for small businesses and the middle class. Although the Administration set the goal of eliminating two existing regulations for every one new regulation, it has far exceeded it. Between fiscal years 2017 and 2019, the executive branch agencies have issued roughly seven deregulations for every one significant regulatory action. The Administration's actions have served to lower costs for businesses and households while increasing competition and productivity in the American economy, leading to real gains, particularly at the middle and lower ends of the income distribution.

One of the most important deregulatory actions that the Trump Administration finalized in 2020 is the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule. This joint rule from the Environmental Protection Agency and the U.S. Department of Transportation establishes tough, but reasonable, light vehicle carbon dioxide (CO_2) and fuel economy requirements for the 2021–26 model years. This regulatory approach continues to improve fuel economy year over year, while balancing efficiency, economic, and safety goals in a manner that gives the automobile industry greater flexibility to produce products that meet consumer demand and also creates meaningful savings for both manufacturers and customers. The Council of Economic Advisers (CEA) estimates that the SAFE Vehicles Rule will lead to $26 billion a year in savings for producers and consumers, and will deliver roughly 300,000 more new vehicles annually than the previous standards at a similar total cost. Taking market distortions into

account, the CEA finds that the broader benefit of the SAFE Vehicles Rule is $39 billion a year, leading to an increase in real incomes and gross domestic product of $53 billion a year, or about 0.3 percent.

The CEA finds that the benefits of deregulation tend to skew toward the lower-income quintiles, suggesting that lower-income households may have benefited most, relative to household income, from the Administration's deregulatory actions. This finding is driven by the fact that deregulation often reduces the prices of economic necessities—such as groceries, electricity, prescription drugs, health insurance, and telecommunications—thereby making deregulatory actions progressive because lower-income quintiles spend a disproportionately larger fraction of their income, relative to higher-income quintiles, on necessities. Specifically, the gains from the deregulatory actions discussed in this chapter amount to 3.7 percent of the average income of the poorest fifth of households, compared with only 0.8 percent of the richest fifth, suggesting that they benefited the poorest households four times as much as the richest ones.

When the CEA examined the effect of a subset of the Trump Administration's deregulatory agenda for the 2020 *Economic Report of the President*, it estimated that, after 5 to 10 years, these deregulations would lead to an increase in real incomes of $3,100 per household a year. These previous findings, combined with our distributional analysis, suggest that the prioritization of sensible regulatory reform has particularly benefited the lowest-income households and allowed the U.S. economy to reach record-setting levels before the COVID-19 pandemic. A persistent focus on regulatory reform will play a critical role in the U.S. economy's return to the levels of economic prosperity it achieved before the COVID-19 pandemic.

I n this chapter, we briefly review the Administration's regulatory reform progress and find that the Administration has slowed the pace of significant regulations issued compared with previous Administrations.[1] While executive agencies added an average of 275 significant regulations a year between presidential years (PYs) 2001 and 2016, President Trump added an average of only 74 per year, excluding deregulatory actions.[2] We also find that in fiscal year (FY) 2020, the Trump Administration is likely to achieve additional cost savings for a fourth consecutive year. We also discuss Executive Order 13891 (EO 13891), which directs executive branch agencies to publish their guidance documents on easily searchable public websites, marking an important step toward increasing the transparency and accessibility of the documentation that regulates all sectors of the U.S. economy.

In the next section, the CEA estimates the benefits associated with the SAFE Vehicles Rule, one of the Trump Administration's most significant deregulatory actions. This rule right-sizes CO_2 emissions standards for automobile manufacturers and establishes a slower rate of stringency increase through 2026. The CEA finds that compared with the 2012 rule, the SAFE Vehicles Rule will lead to $26 billion in savings a year for car manufacturers and consumers, and will deliver roughly 300,000 more new vehicles annually than the previous rule at a similar total cost. In addition, accounting for the effects of the rule on factor markets, the CEA estimates that the SAFE Vehicles Rule will increase the real incomes of Americans by $53 billion a year, or $416 per household a year, over the 2021–29 period.

Finally, the CEA examines how the gains from regulatory reform are distributed across income quintiles. Federal agencies must analyze whether a proposed deregulatory action reduces regulatory costs and whether the cost savings are larger than the benefits forgone from removing the regulation. Earlier, the CEA (2019) analyzed deregulatory actions that yield cost savings that are larger than the benefits forgone. In this chapter, the CEA finds that the cost savings from those regulations were distributed progressively. Specifically, we find that though regulatory reform benefits all households, those in the lowest income quintile likely benefit the most as a proportion of their income. The cost savings from the deregulatory actions we study amount to 3.7 percent of the average income of the lowest income quintile of households compared with only 0.8 percent for the highest income quintile of households. Our findings reaffirm that the Administration's regulatory reform efforts are helping consumers in low-income households, in part, because low-income

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[1] The Office of Information and Regulatory Affairs deems a regulation significant when it may have an impact on the economy of at least $100 million, adversely affect the economy in a material way, raise novel legal or policy issues, or otherwise meet the criteria set forth in Section 3(f) of Executive Order 12866 from 1993. Among regulations deemed significant, those that are expected to have an impact on the economy of at least $100 million or adversely affect the economy in a material way are deemed economically significant.

[2] Presidential years begin on February 1 and end January 31 of the following year.

households spend a relatively large share of their budgets on necessities like groceries and medical care that are produced by heavily regulated sectors of the economy.

Regulation in Review

The Trump Administration's regulatory reform agenda has reduced unnecessary regulatory burdens while continuing to protect workers, public health, safety, and the environment. This section discusses three major executive orders that implement this agenda. As directed by Executive Order (EO) 13771 and EO 13777, executive branch agencies have sharply cut the rate at which they introduce new regulations and have adhered to regulatory budgets. Under EO 13891, executive branch agencies have improved public access to their regulatory guidance documents.

EO 13771, which was signed on January 30, 2017, requires executive branch agencies to remove two regulations for each new regulatory action.[3] EO 13777, which was signed on February 24, 2017, further requires agencies to evaluate their regulations on a periodic basis and to make recommendations to repeal, replace, or modify them to alleviate unnecessary regulatory burdens. The Administration surpassed its obligations under these EOs in FY 2019, with executive agencies issuing 150 deregulatory actions while issuing only 35 new significant regulatory actions. Between FYs 2017 and 2019, the Trump Administration achieved roughly a 7:1 ratio of deregulatory to significant regulatory actions. Focusing on significant regulations, the Administration has achieved a ratio of 2.5 significant deregulatory actions to 1 significant regulatory action between FYs 2017 and 2019.

Figure 6-1 shows the total numbers of significant rules, which include economically significant rules and other significant rules that meet part of the definition for economic significance or are important for other reasons described in EO 12866 (see note 1). During the Trump Administration, the average number of economically significant regulations, excluding deregulatory actions, was only 26 per PY. The Trump Administration's average number of economically significant regulations remains below the average of 52 economically significant regulatory actions per year between PYs 2001 and 2016. Including both economically significant and other significant rules, executive branch agencies added an average of 275 significant regulatory actions per year between PYs 2001 and 2016. Between PYs 2017 and 2019, the average number of significant regulations each year was only 74—excluding deregulatory

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[3] The Office of Management and Budget defines an EO 13771 regulatory action as (1) a significant regulatory action as defined in Section 3(f) of EO 12866 that has been finalized and that imposes total costs greater than zero; or (2) a significant guidance document (e.g., significant interpretive guidance) reviewed by the Office of Information and Regulatory Affairs under the procedures of EO 12866 that have been finalized and that impose total costs greater than zero.

Figure 6-1. Significant Final Rules Excluding Deregulatory Actions, by Presidential Years 2001–19
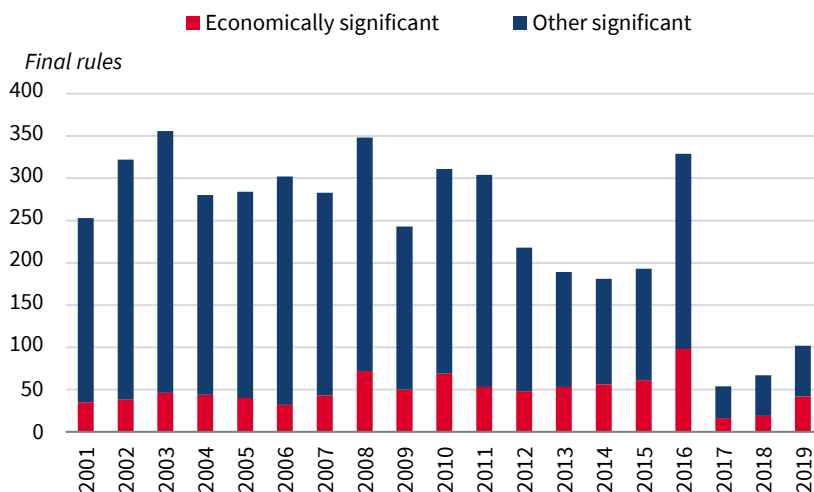
■ Economically significant   ■ Other significant

Final rules

Sources: George Washington University Regulatory Studies Center; Office of Information and Regulatory Affairs; CEA calculations.
Note: Presidential years begin in February and end in January of the following year. Rule counts for 2017, 2018, and 2019 exclude rules that were considered significant deregulatory actions; before 2017, the CEA estimates that there was about one such action a year.

actions. This illustrates that the Trump Administration has slowed the pace of significant regulations more than any administration since 2001.

In addition to the two-for-one requirement, EO 13771 required executive branch agencies to adhere to annual regulatory budgets with cost savings targets set by the Office of Management and Budget. In FY 2019, the Trump Administration reached its cost savings targets for the third year in a row, with executive branch agencies eliminating $13.5 billion of regulatory costs. Between FYs 2017 and 2019, these agencies eliminated nearly $51 billion in regulatory costs. In FY 2020, the Administration is likely to achieve additional regulatory cost savings for a fourth year. This four-year stretch of regulatory reform significantly reduced the regulatory burdens that these agencies impose.

In 2019, President Trump issued EO 13891 to address the accumulation of regulatory guidance documents that Federal agencies use to clarify their regulations. EO 13891 requires executive branch agencies to make guidance documents more accessible to the public by building a "single, searchable, indexed website that contains, or links to, all of the agencies' respective guidance documents." To comply, agencies were given until June 27, 2020, after which they needed to submit any existing guidance documents that they had failed to publicly post as if they were new guidance. Crews (2020) estimates

that agencies posted more than 54,010 documents as of July 7, 2020. Though many Federal agencies have asked for waivers on compliance deadlines, EO 13891 is a significant step toward bringing transparency and oversight to Federal guidance documents.

The Administration's regulatory agenda has differed from that of previous administrations due to its emphasis on limiting the burden of Federal government regulation. After four years of regulatory reform, there has been an observable change in the cost of and rate of regulation. The establishment of a regulatory budget and the commitment to removing two regulations for every one new significant regulatory action have led to significant cost savings for American firms and consumers. Supported by the improved public access to agency guidance, these changes are enhancing the Nation's economic efficiency and competitiveness. The CEA discussed the impact of many deregulatory actions on real income growth in an earlier report (CEA 2019). The next section examines one of the largest deregulatory actions finalized in 2020: the SAFE Vehicles Rule.
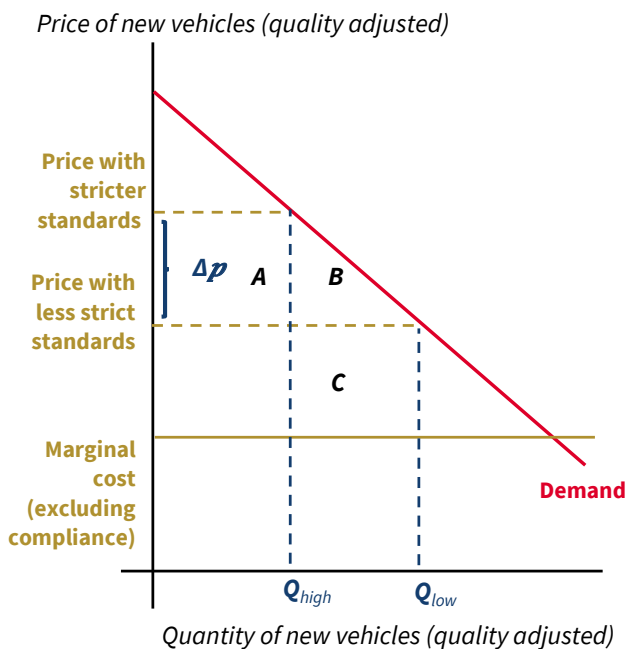
The Safer Affordable Fuel Efficient (SAFE) Vehicles Rule

The largest deregulatory action finalized under the Trump Administration has been the SAFE Vehicles Rule. This rule, which amended CO_2 emission standards for light vehicles and appropriately increased stringency, now gives automakers greater freedom to build and sell vehicles as demanded by consumers. It accomplishes this goal by reducing the CO_2 emission requirements for light vehicles produced by a manufacturer. Given the inherent relationship between CO_2 emissions and fuel economy, this has also had the effect of reducing the required minimum fuel economy standards (in miles per gallon, mpg). Though the SAFE Vehicles Rule promotes fuel efficiency, the fuel economy standards grow in stringency through 2026 at a lower rate than was prescribed by prior policy to appropriately balance policy considerations. This section estimates the potential cost savings associated with the SAFE Vehicles Rule as well as its distributional effects.

The corporate average fuel economy (CAFE) and greenhouse gas (GHG) regulations are written jointly by the U.S. Department of Transportation (DOT) and the Environmental Protection Agency (EPA) to ensure harmonization between the two standards, given the direct relationship between fuel used and GHG emissions.[4] More stringent GHG standards increase quality-adjusted automobile prices. In a supply-and-demand diagram, such as figure 6-2, the gold line represents the marginal cost of producing another vehicle and the red line represents consumers' willingness to pay for vehicles. The GHG standard

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[4] Given the harmonization of the standards, we refer to these standards as GHG standards for brevity.

Figure 6-2. Vehicle Market Equilibrium with GHG Standards

Price of new vehicles (quality adjusted)

Price with stricter standards

Price with less strict standards

Δp A B

C

Marginal cost (excluding compliance)

Demand

Q_{high} Q_{low}

Quantity of new vehicles (quality adjusted)

Note: GHG = greenhouse gas.

drives a wedge between the marginal cost of producing a vehicle (excluding regulatory compliance costs) and the marginal willingness of consumers to purchase one, raising the price of the vehicle above the marginal cost of production. The 2012 rule would have increased the wedge by about $2,200 per vehicle by model year 2026 relative to the SAFE Vehicles rule, as represented by Δp in figure 6-2.

The EPA and DOT rules generally allow firms to comply by purchasing credits from other firms that have overcomplied, thus leading to the lowest overall cost of compliance for the industry. The approach to this analysis assumes that the price at which automakers buy and sell compliance credits reveals the private cost of meeting the standards, because it should incorporate both the cost of building marginally more efficient vehicles and the willingness of consumers to buy them. To estimate prices of compliance credits, the CEA draws from public records on nearly $700 million in credit transactions that occurred over seven years (2012–18), which provide a simple and transparent basis for our cost estimates.

Inferring costs and benefits based on actual firm behavior—in this case the price at which automakers buy and sell GHG compliance credits—eliminates a great deal of guesswork. Credit prices incorporate a wealth of information that is otherwise hard to observe, such as the extra cost of building a more

efficient vehicle and the willingness of consumers to pay for such vehicles. This approach, also known as the revealed preference approach, differs from much of the existing literature on the costs of CAFE and GHG standards, which examines volumes of automotive engineering data and assesses consumer's driving habits, fuel-purchasing routines (including attempts to value consumers' time spent pumping fuel), and decisions about when to scrap a vehicle.[5]

In the revealed preference approach, we replace engineering assumptions with economic assumptions such as cost-minimization and pass-through of costs, in which case credit prices convey the information needed to estimate the private costs and benefits of complying with the standards.[6] To the extent that manufacturers minimize the cost of producing a given model and can freely trade credits, the observed credit price is equal to the marginal cost of reducing the manufacturer's fleet-wide emissions.[7] To the extent that the cost of GHG credits is reflected in the prices consumers pay for vehicles (i.e., pass-through), the cost also reflects consumers' willingness to have vehicles with more weight or other attributes that produce additional emissions as measured by the GHG program. This includes many dimensions of consumer preferences, including the value that consumers place on fuel savings over the life of a vehicle.

The costs and valuations permit quantifying the private net costs of changing the standards because the market complies with a stricter standard through some combination of changing vehicle attributes and adjusting prices to shift sales to lower-emission vehicles. These private net costs are pivotal for understanding the effects of the SAFE Vehicles Rule. Prior analyses of the standards show that private costs and benefits dwarf environmental costs and benefits (Bento et al. 2018).

The value of compliance credits equals the private net costs of changing the standards, which arise through some combination of changing vehicle attributes and skewing sales to lower-emission vehicles. These private net costs are pivotal for understanding the effects of the SAFE Vehicles Rule: prior analyses of the standards show that private costs and benefits dwarf environmental costs and benefits (Bento et al. 2018).

GHG Credit Transaction Data

The price at which automakers buy or sell GHG compliance credits is not publicly available. However, because credit revenue is significant for Tesla, it reports the revenues in its financial reports to the Securities and Exchange

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[5] See, e.g., regulatory impact analyses (EPA/DOT 2012, 2020).

[6] EPA/DOT (2016, 2020) assume a one-for-one pass-through of compliance costs to consumer prices, as we do.

[7] Note that trading was quite limited in the initial years of the program, that these data are not widely available for every trade, and that some companies announced intentions to not trade, even when it represented a lower-cost way to comply.

Commission. The reports indicate that Tesla earned $695 million in revenues (in 2018 dollars) from the sale of GHG credits over the years 2012–18.[8] For the same period, EPA data show that Tesla was the second largest seller of GHG credits, after Honda, since GHG credit trading began in 2012. Tesla's sales have accounted for nearly a quarter of all sales in the U.S. credit market (EPA 2019). These revenue and sales numbers suggest that roughly $3 billion in credit transactions have occurred across the industry since the GHG credit trading program began.

Using Tesla's credit sales and revenues, we calculate the average credit price over the 2012–16 period.[9] We associate this price with the standards of the 2012–21 period because GHG credits earned during model years 2010–16 are used through model year 2021. Because credits are banked and traded across automakers and fleets, all model years 2012 through 2021 are effectively a single fleet for GHG compliance purposes.[10] Focusing on the 2012–16 price also has the advantage of the period being before President Trump's election, which would have changed expectations about the value of the credits later in the 2012–21 period.

When calculating the credit price, we adjust Tesla's 2012–16 credit revenues to incorporate their timing, using a 7 percent interest rate to standardize all revenues as if they were earned in 2016, which is when the industry's fleet shifted from performing above the standard and accumulating credits to performing below the standard and drawing down credits. Dividing total revenues by the quantity of credits sold over the period gives an average price of $86 per ton of CO_2 emissions, or $116 per mpg per vehicle (in 2018 dollars).[11] [12]

The $116 credit price is a lower-bound estimate of the actual average price at which Tesla sold its credits. Automakers are not required to report the timing of transactions, which complicates efforts to identify credit sales in individual years. However, automakers cannot sell credits that they do not have. Over the 2012–16 period, at most Tesla could have sold all the credits

[8] For several years, Tesla's annual filing with the Securities and Exchange Commission did not report revenues separately for zero emissions vehicle credits and GHG credits, but this breakout is available from the company's quarterly filings with the commission and was reported by *Forbes* (2017). This allows us to ensure that we are not including zero emissions vehicle revenues in our GHG revenues.

[9] We note that Leard and McConnell (2017) were the first to match Tesla credit revenue with trade volumes to infer credit prices.

[10] Because the GHG standard increased in each of the years 2012–21, we expect manufacturers to accumulate GHG credits in the early years and spend them in the later years. EPA records show this to be the case, with most manufacturers having a credit shortfall in model year 2017; see EPA (2019, figure 5.17).

[11] In 2014 Kia and Hyundai forfeited credits in a settlement with the EPA, which were valued at $51 per ton (in 2018 dollars and with interest until 2016). Because the price is not based on a market transaction, we do not include it in our estimation of the 2012–16 price.

[12] When calculating the credit price, we take into account the small number of GHG credits that Tesla sold in the Canadian GHG market and whose revenues would presumably be included in the credit revenues reported to the Securities and Exchange Commission.

that it earned through model year 2015, which is the quantity that we used to estimate the 2012–16 price. If Tesla sold any less, the estimated price would be higher because the same revenue would be divided by a smaller number of credits.

Estimating the Curve for the Marginal Cost of Compliance

Our credit price data and a prior study provide two relevant points that allows us to project what the market equilibrium price of compliance credits would be for any given standard.[13] The Tesla credit data described above provide one observation on compliance costs: credits cost $116 per mpg per vehicle when the standard was about 35 mpg, the average over the 2012–21 period.[14] The second data point is for model year 2006, for which Anderson and Sallee (2011) estimate the average marginal cost of tightening CAFE standards by 1 mpg to be $18 per vehicle. The CAFE standard during that year was 24.8 mpg.[15]

With two observations on compliance costs at different standards, we can project the relationship between the standard measured in mpg and the marginal effect of the standard on the marginal (production and opportunity) cost of manufacturing a vehicle (figure 6-3).[16] The horizontal axis measures the standard, while the vertical axis measures additions to the marginal cost of each vehicle. The area under the curve measures the additional cost of the standard per vehicle. The SAFE Vehicles Rule will raise standards for 2021–26 at a rate of 1.5 percent a year. Using fleet data from the 2012 rule rather than the SAFE Vehicles final rule, the standards reach 45.6 in 2026, while the 2012 rule prescribed a standard of 54.5 for model year 2025, which we assume will also apply to model year 2026.

If going from 24.8 to 35.8 mpg increased the marginal cost of tightening the standard from $18 to $116, then the marginal cost of further increasing the standard must be greater than $116. From the linear credit-supply assumption, the CEA projects that the credit price would be $203 per mpg for model year 2026 under the standards established in the SAFE Vehicles Rule (a standard of 45.6 mpg), as compared with about $283 per mpg for model year 2026 under

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[13] The CEA's theoretical analysis of models with constant elasticity of substitution between types of vehicles has shown a linear credit-supply schedule (with respect to mpg) to be a good approximation of the actual schedule, except when the standard is especially tight, in which case linear supply underestimates compliance costs. This suggests that our estimate of the marginal cost of complying with the 2012 rule is likely conservative.

[14] Some manufacturers let credits expire in 2014, which may suggest that the standard may not have been binding at that time. However, 2009 credits could not be traded among automakers. In addition, the credits that expired were 2009 credits that could only be banked for five years, unlike credits earned in model years 2010–16, which could be banked and used through model year 2021.

[15] Although this estimate of the marginal cost of compliance is for CAFE standards, it remains our best estimate of the cost of compliance of a GHG standard of 24.8 mpg, given that there was not a GHG standard at the time.

[16] Figure 6-3 is labeled with fuel economy standards rather than emissions standards because mpg are more familiar to readers than tons of GHG.

Figure 6-3. GHG Credit Market Equilibrium for Various Standards
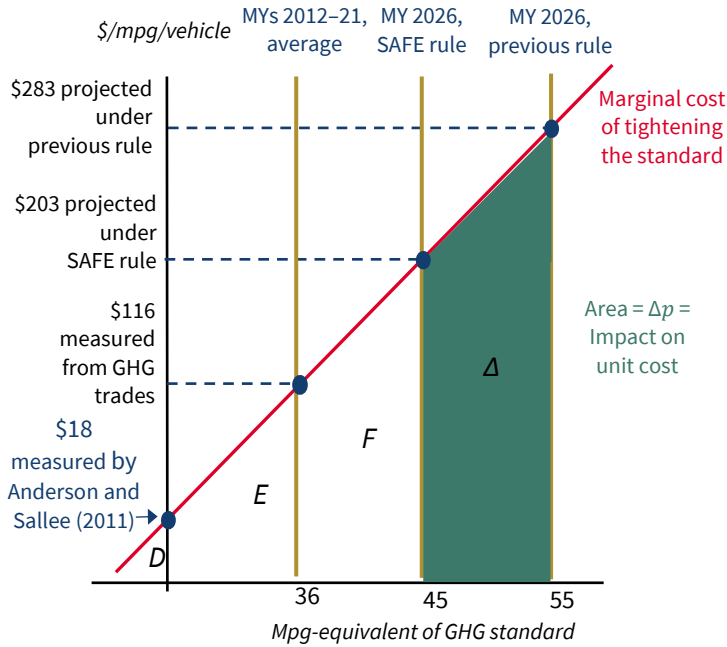
Sources: National Highway Traffic Safety Administration; Environmental Protection Agency; Leard and McConnell (2017); CEA calculations.
Note: GHG = greenhouse gas; MY = model year.

the tighter standard originally put in place by the 2012 rule (a standard of about 54.5 mpg). For each year of the 2021–29 period, we use the average of the two marginal costs, which can then be multiplied by the mpg difference in the standards to give the savings per vehicle from the SAFE Rule. The resulting value is equivalent to the green area in figure 6-3.

The CEA estimates that areas A, B, and C of figure 6-2 represent $26 billion a year in costs to new automobile consumers and producers. Relative to the SAFE Vehicles Rule, the 2012 rule results in roughly 300,000 fewer new vehicles delivered to consumers every year at a similar total cost, including fuel costs and the opportunity costs of vehicle features.

The rectangular area A of figure 6-2 accounts for the largest portion and is the product of the number of vehicles sold and the effect of changing the standards on costs per vehicle. The marginal cost of compliance curve shown in figure 6-3 allows us to calculate the cost of the 2012 rule per vehicle (for model year 2025) compared with the cost of the SAFE Vehicles Rule. Doing so indicates that phasing in the higher standard would eventually increase

average quality-adjusted prices by about $2,200.[17] For the years 2021–29, the average annualized quality-adjusted price increase would be about $1,600. This amount corresponds to in figure 6-2.[18]

Applying the $1,600 average annual savings to the more than 16 million new vehicles sold annually in the United States gives an annualized average increase in consumer benefits of $25 billion each year for model years 2021–29, equivalent to area A in figure 6-2.[19]

Areas B and C of figure 6-2 are also part of the cost of increasing the standards. Estimating them requires an estimate of the impact of increasing the standards on vehicle sales. To identify the new quantity of vehicles sold annually, the CEA uses a price elasticity of demand for new vehicles of –0.4 (Berry, Levinsohn, and Pakes 2004), model-year-specific increments to vehicle costs (derived as above) relative to the average 2018 vehicle sales price, and model-year-specific projections of vehicle sales.[20] The sales impact is roughly 300,000 vehicles a year, which makes area B about $0.3 billion a year. Area C requires an estimate of the effect of the SAFE Vehicle Rule standards, relative to no standards, costs per vehicle. This baseline private cost per vehicle is shown in figure 6-3 as areas D, E, and F. Applying it to the change in vehicle sales gives an estimate of figure 6-2's area C of roughly $0.4 billion a year.

Because the emissions and fuel-efficiency requirements are imposed on the supply chain rather than on the final consumer, it follows from the pass-through assumption that costs of the regulation are reflected in consumer prices. The $26 billion in annual private costs in the market for vehicles is there-fore measured as a productivity loss, in the sense that the economy produces less private value when assessed at market prices, using the same factors of production—capital and labor.

The productivity loss is experienced by market participants that sup-ply less capital in the long run and less labor in the short run.[21] This means even less real income and, to the extent that factor markets are distorted by taxes, additional private costs. Using a marginal cost of public funds of 0.5, the decline in labor and capital supplied adds $13 billion in private costs (0.5 x $26

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[17] To the extent that compliance with tighter standards is achieved entirely by adding or changing model designs in ways that reduce emissions and increase fuel economy without other perceptible effects on consumers' valuation of the vehicles, the average price increase is the same as the average quality-adjusted price increase.

[18] If we assume a flat $116 per mpg per vehicle in compliance costs, the SAFE rule saves consumers $1,032 per car, which is similar to the EPA/DOT (2020) regulatory impact analysis estimate.

[19] We use a 7 percent real discount rate for the purposes of annualizing 0-year cost profiles. All amounts are in 2018 dollars.

[20] The average vehicle price is from the *Kelley Blue Book*. Model year 2020–29 sales forecasts are from EPA/DOT (2020, table VI-189).

[21] We adopt the "balanced growth" assumption that productivity has income and substitution effects on labor supply that offset in the long run. As people earn more, they demand more leisure (the income effect); but rising wages has the opposite effect, of increasing the value of work relative to leisure, which encourages more work and less leisure (the substitution effect).

Figure 6-4. Consumer Savings from the SAFE Vehicles Rule as a Percentage of Income, by Income Quintile

Reduction in new car expenditures as a percentage of income
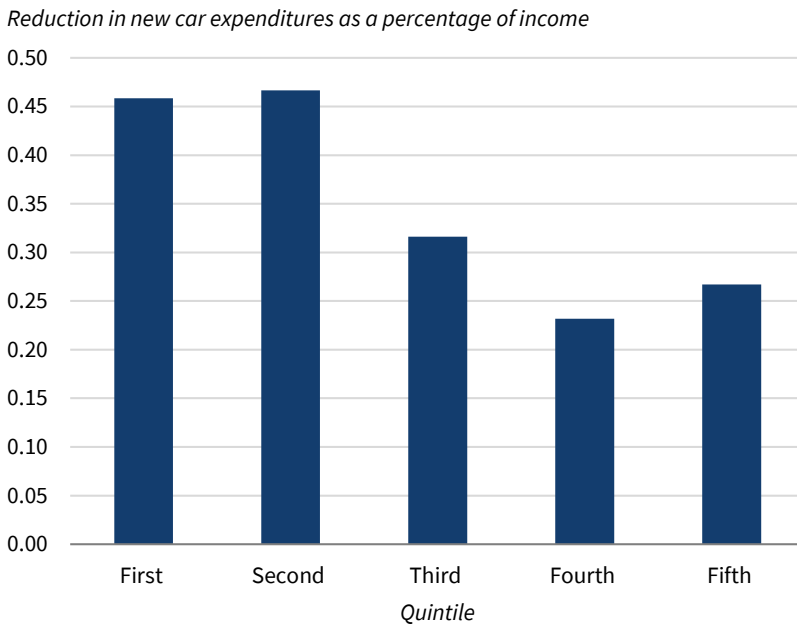
Sources: Bureau of Labor Statistics; CEA calculations.

billion). If the full market value of the factors supplied is considered, assuming a marginal tax rate of 0.48 (CEA 2019), the total gross domestic product loss in factor markets is about $27 billion ($13 billion / 0.48).

In total, the higher standards reduce real income and gross domestic product by $53 billion a year ($26 billion in the regulated market and $27 billion in factor markets), which is about 0.3 percent.[22] This makes the SAFE Vehicles Rule one of the single most effective deregulatory actions that the Trump Administration has finalized thus far (CEA 2019). The estimated $26 billion in consumer savings from the SAFE Vehicles Rule can be distributed among different household income groups. We allocate the savings across income quintiles based on each quintile's share of aggregate spending on new vehicles, as reported in the Consumer Expenditure Survey. Figure 6-4 depicts the savings as a percentage of the posttax income of each group. The savings from the SAFE Vehicles Rule disproportionately benefit lower-income consumers, with the savings in the lowest income quintile exceeding those of the highest quintile

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[22] As with many of the other regulations that the CEA has analyzed previously (CEA 2019), the SAFE Vehicles Rule has an effect on real income whose dollar amount significantly exceeds the dollars of net (private and social) benefits. This is primarily because net benefits account for opportunity costs—for example, the value of leisure if not working—while real income does not.

by 66 percent. This is because a larger share of the posttax income of lower-income consumers goes toward the purchase of new vehicles.

The Potentially Regressive Nature of Regulation

Our analysis of the SAFE Vehicles Rule illustrates that the burden of regulatory costs can fall disproportionately on low-income households. And though a standard question in public finance is who bears the burden of the taxes needed to fund government expenditures, much less is known about who bears the burden of the costs of regulations. We find that deregulation can help consumers in low-income households by easing restrictions that disproportionately increase the prices of the goods and services they purchase. Because high-income households spend proportionately less on economic necessities than low-income households, the deregulation of such goods and services has progressive benefits.[23]

In 2019, the CEA studied 20 deregulatory actions of the Trump Administration and estimated that, after 5 to 10 years, they will together raise real incomes by 1.3 percent. In this section, we revisit 10 of these regulations to assess their distributional effect. We find that many of them will lower the prices of necessities—such as groceries, electricity, prescription drugs, health insurance, telecommunications, and other consumer goods and services—and will likely benefit lower-income households more than higher-income households. Specifically, we find that the cost savings from this subset of deregulatory actions—together with the SAFE Vehicles Rule—amount to 3.7 percent of the average income of the lowest income quintile of households compared with only 0.8 percent for the highest-income quintile of households (figure 6-10). This suggests that these deregulations benefited, relative to their income, the lowest-income quintile households four times as much as those in the highest-income quintile.

Progressive and Regressive Tax Structures

To evaluate how a tax burden is shared, public finance economists examine whether the burden increases with an individuals' capacity to pay (Duclos 2008). When the burden of a tax relative to income is higher for high-income individuals, the tax is described as progressive. In the United States, for example, Congress designed the Federal income tax to impose progressively higher marginal rates on earners with higher incomes. In tax year 2017, the lowest half of filers accounted for 11 percent of the adjusted gross income share while the highest quintile accounted for 63 percent. However, due to the progressive structure of the Federal income tax, the lowest half of filers represented less than 3 percent of total Federal income taxes, while filers with an adjusted gross

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[23] The concept of economic necessities defined this way is broader than the way the word "necessity" is commonly used outside economics.

Figure 6-5. Illustrative Impact of a 15 Percent Grocery Tax, by Income Quintile

Percentage of income
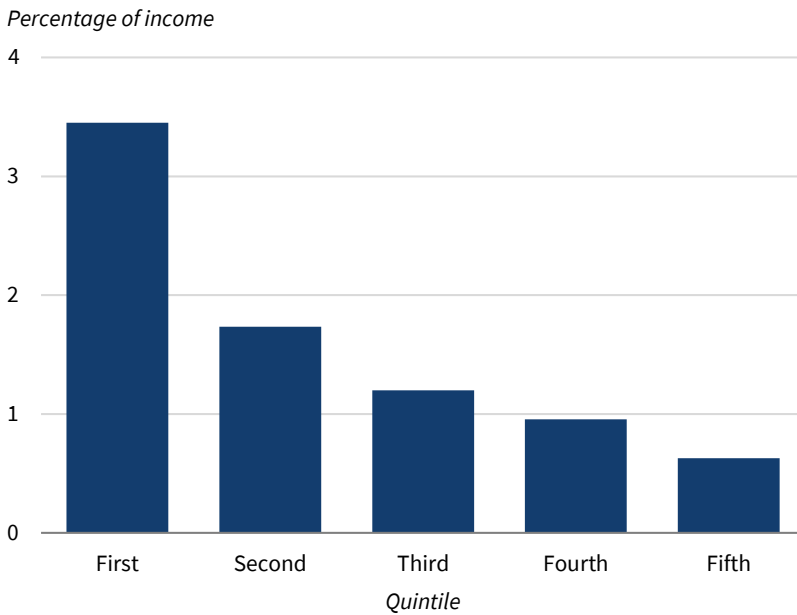
Sources: Bureau of Labor Statistics; CEA calculations.

income in the highest quintile accounted for over 82 percent. Conversely, when the burden of a tax relative to income is lower for high-income individuals, the tax is considered regressive.

Sales taxes and other consumption-based taxes, such as the value-added tax, tend to be regressive. According to the technical economic definition, a good or service is a necessity when the income-elasticity of demand is less than 1—for example, when a 10 percent increase in income leads to an increase in consumption of less than 10 percent. Because low-income households spend a higher proportion of their incomes on necessities like groceries and medical care, sales taxes on these goods are regressive. Figure 6-5 illustrates the regressivity of a 15 percent sales tax on groceries. Households in the lowest fifth of the income distribution would pay 3.5 percent of their income in grocery sales taxes, while households in the top fifth would pay 0.6 percent. The grocery tax would have an impact on consumers in the lowest income quintile, which, relative to their income, is over five times larger than the impact on the highest-income quintile. To reduce the regressivity of sales taxes, most States exempt groceries and some other necessities from the sales tax (Figueroa and Waxman 2017). Other States offer credits or rebates to low-income households to help offset some of the regressivity of their sales taxes.

The Harm Regressive Regulation Systems Pose

Many regulations may be regressive because they increase the costs of producing goods and services that are necessities (e.g., groceries and medical care). When complying with regulations increases the costs of production, firms increase the prices charged to consumers. Because low-income households spend proportionately more of their income on necessities, these regulation-induced price hikes on necessities are similar to regressive sales taxes. However, the magnitude of the effect of a regulation on consumer prices depends on how firms respond to production cost increases, which in turn depends on market conditions. After a regulation, the market reaches a new equilibrium, where consumers pay a higher price for the good (figure 6-6).

In the case shown in figure 6-6, firms are able to pass their regulatory costs fully through to consumers through higher consumer prices. In other cases with different market structures (not shown), a full pass-through of regulatory costs does not always occur. For example, in response to a $1 increase in the cost of production, a firm might only raise prices by 50 cents due to competitive constraints. Figure 6-6 can also be reinterpreted to show another possible effect of regulation, where the regulation acts as a barrier to entry that limits new competition, resulting in a higher equilibrium price with above-normal profits or "economic rents" for established firms. In general, regulations will have effects on consumers and firms, conventionally measured by changes in consumer and producer surpluses. Tracing through the producer surplus effects to the distribution of the incomes of factors of production can be complex. (See box 6-1.)

Low-income households spend more of their income on goods and services in general because they have lower savings rates, making regulations that increase the price of these goods and services more regressive (Dynan, Skinner, and Zeldes 2004). Households in the lower-income quintiles spend larger fractions of their incomes for almost all the categories of goods and services tracked by the Consumer Expenditure Surveys (CEX). Thus, deregulation is often progressive because it removes regressive regulatory cost burdens that inflate the prices of necessities. Figure 6-7 shows spending patterns for some important categories of goods and services. Even when regulations do not intentionally target necessities, they can have the unintended consequence of imposing a regressive cost burden. Chambers, Collins, and Krause (2019) find that regulatory compliance costs increase the prices of necessities including energy, food, healthcare and health insurance, housing, and transportation. Unlike sales taxes, however, policymakers typically do not exempt the production of necessities from regulations.

Other regulations can be regressive because they intentionally target consumer choices that vary with income. Product standards are a common example because they mandate that products must have certain features or

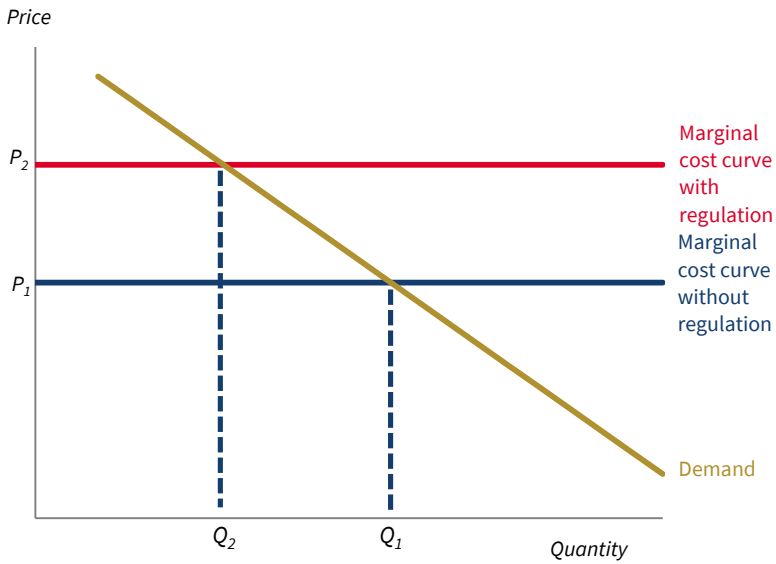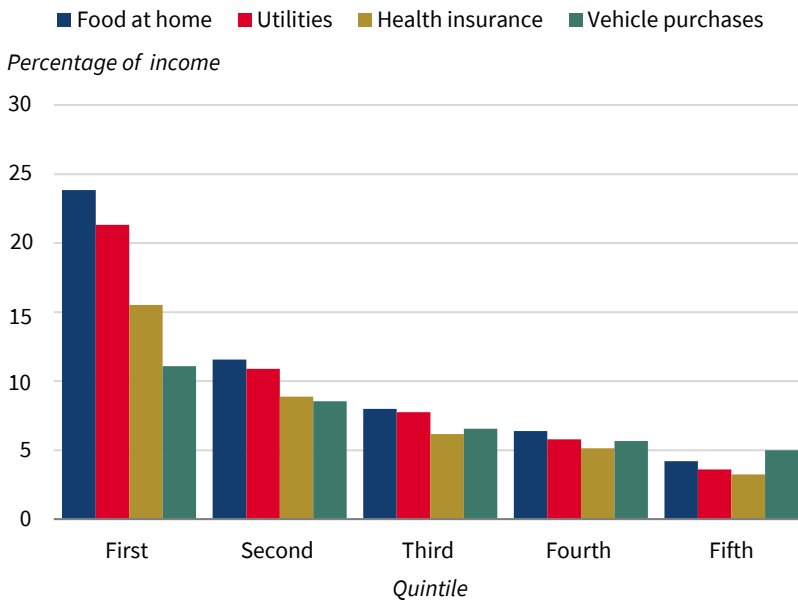**Figure 6-6. The Impact of Regulation in a Competitive Market**

Price

P_2 — Marginal cost curve with regulation

P_1 — Marginal cost curve without regulation

Demand

Q_2 Q_1 *Quantity*

Figure 6-7. Percentage of Income Spent on Outlay Category, by Income Quintile

■ Food at home   ■ Utilities   ■ Health insurance   ■ Vehicle purchases

Percentage of income

First   Second   Third   Fourth   Fifth

Quintile

Sources: Bureau of Labor Statistics; CEA calculations.
Note: Utilities includes utilities, fuel, and public services.

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Box 6-1. Effects of Regulation on Small Businesses

Regulations can have regressive effects on small business because of economies of scale. For example, if a regulation requires that firms establish retirement accounts, larger firms' average costs will be lower because they can spread the fixed costs over a larger pool of employees. Given that the cost of retirement accounts are already lower for larger firms than for small firms, large firms, all else being equal, will be more likely to already have retirement accounts established before the regulation, thereby causing the regulation to have more of an impact on small than large firms.

Policymakers often attempt to offset regulatory burdens for small businesses by exempting businesses with a certain level of revenue or number of employees. However, the threshold exemptions distort the market and can cause businesses to cluster near the threshold limit. In France, where many regulations apply after a firm reaches 50 employees, Garicano, LeLarge, and Reene (2016) find that firms cluster below the employee threshold to enjoy regulatory exemptions. Though clustering reduces firm's regulatory burden, it also reduces total welfare and the productivity of the economy. In the United States, the Affordable Care Act used a similar approach by reducing the requirements imposed on businesses with fewer than 50 full-time employees.

Congress has passed several pieces of legislation that attempt to reduce the regulatory burden placed on small entities. The Regulatory Flexibility

Figure 6-i. Economically Significant Final Rules with Regulatory Flexibility Analysis for Small Businesses, by Presidential Years 2001–19
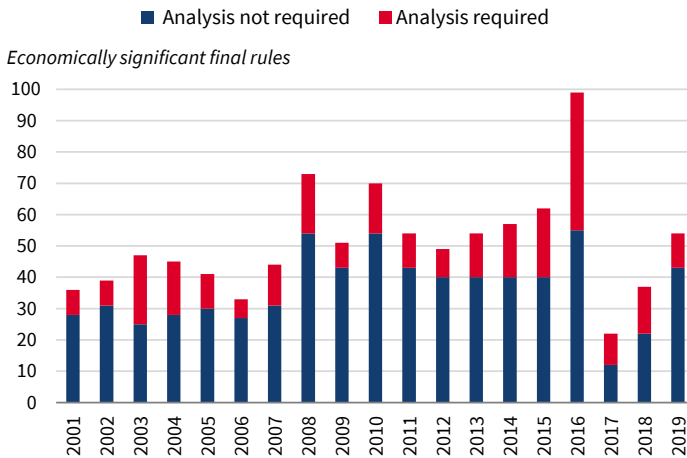
■ Analysis not required ■ Analysis required

Economically significant final rules

Sources: George Washington University Regulatory Studies Center; Office of Information and Regulatory Affairs; CEA calculations.
Note: Presidential years begin in February and end in January of the following year.

Act of 1980 requires that agencies perform regulatory flexibility analyses for regulations that may have an effect on small entities, with specific attention to competitiveness and fairness; see figure 6-i. In 1996, Congress passed the Small Business Regulatory Enforcement Fairness Act, creating panels that enable small entities and regulatory agencies to interact with regulators during the regulatory process. In 2019, the Trump Administration issued EO 13891 and EO 13892, which required Federal agencies to make their guidance easily accessible and make sure that all enforcement actions are transparent and fair. These EOs are especially important for small businesses that may otherwise lack the capability to understand regulations relevant to their business.

attributes, whose desirability can depend on one's income. To the extent that the mandated features are normal goods (i.e., demand for the feature increases as income increases), high-income consumers would purchase more of the mandated feature even without the product standard. If their demand for the regulated feature is strong enough, the products purchased by high-income consumers will likely already meet the product standard. Although product standards are less binding or even nonbinding on high-income consumers, these standards impose costs on low-income households, which are required to pay higher prices for features they do not highly value.

Energy efficiency standards are another example of regulations that can be regressive due to the consumer choices they target. For instance, consumers who use their air conditioners on most days of the summer might find that energy savings pay back the higher price of a more efficient appliance within a few years. Low-income consumers who can only afford to use their air conditioners infrequently face a longer payback period and might be better off purchasing a lower-price and less-efficient appliance. Therefore, energy-efficient appliances and vehicles are more valuable to consumers who use their appliances and vehicles regularly. The CAFE standards, discussed above, have a similar effect. Levinson (2019) finds that high-income households purchase more fuel-efficient cars. Levison estimates that the CAFE standards disproportionately burden low-income households, which are less likely to prioritize fuel efficiency, absent CAFE. In other words, the CAFE standards may have less impact on high-income households because they already prefer to purchase more fuel-efficient cars.

Some health insurance regulations include product standards that can also be regressive. Health insurance regulations related to the Affordable Care Act (ACA) are notable examples. The ACA's individual mandate requires non-exempt consumers to have one of several enumerated forms of health insurance coverage. Through tax year 2018, the Internal Revenue Service enforced the individual mandate with a monetary penalty; the Tax Cuts and Jobs Act

Figure 6-8. Individual Mandate Penalties as a Percentage of Income, by Income Quintile

Percentage of income

Quintile
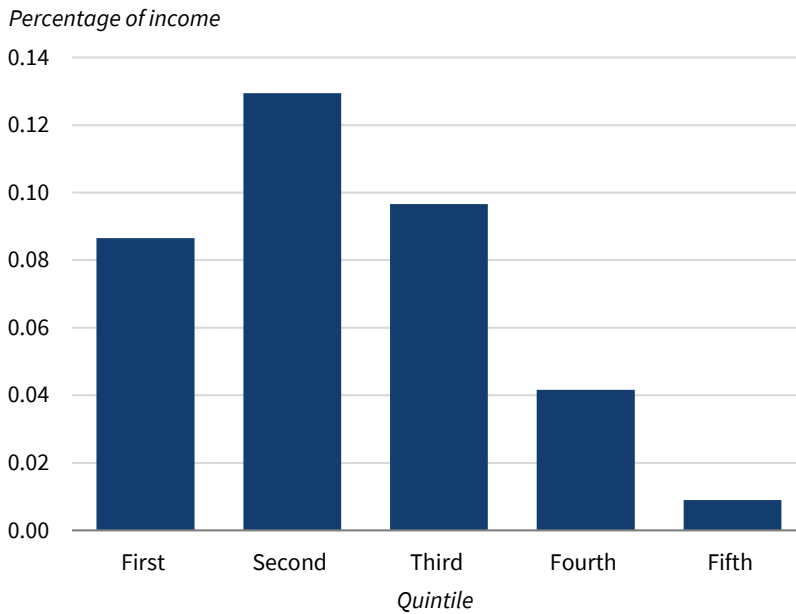
Sources: Bureau of Labor Statistics; Internal Revenue Service; CEA calculations.

of 2017 set the mandate penalty to zero, becoming effective in the 2019 tax year. Because most high-income households already had coverage through ACA-compliant insurance plans, the mandate penalty fell disproportionately on lower- and middle-income households (figure 6-8). Households in the lowest income quintile bore a proportionately smaller burden than households in the second-lowest quintile because households in the lowest income quintile were more likely to be covered by Medicaid or receive subsidies to purchase ACA-compliant insurance. After the second lowest income quintile, the burden of the individual mandate penalty was steeply regressive. Other regulations—including the 2016 short-term, limited duration insurance rule—banned a number of insurance options that were popular among low-income households that made choices based on what was best for them.

Academic research provides several explanations for why the regulatory process leads to product standards and other forms of regulations that intentionally target certain consumer choices. Instead of always serving the general public interest, the regulatory apparatus may be prone to capture by special interests (Stigler 1971). Regulatory capture could cause policymakers to enact legislation and regulators to issue regulations that privilege certain groups, to the detriment of other groups, such as the public or their competitors. Mulligan and Philipson (2000) argue that wealthier portions of society may advocate for

regulations that impose their preferences on the general population and offset some of those costs through a progressive tax system. Similarly, Thomas (2012) suggests that regulators may focus on prioritizing regulations that reduce risks for wealthier households at the cost of low-income households.

Lower-Income Households Often Gain the Most from Regulatory Reform

In an earlier report, the CEA estimated that the effect on real incomes associated with 20 deregulatory actions under the Trump Administration will total $235 billion a year (CEA 2019, 2020), which we also discussed in chapter 3 of the 2020 *Economic Report of the President*. We estimated that these 20 deregulatory actions will raise real incomes by reducing the prices of consumer goods, and by increasing competition, productivity, and wages. An important part of our earlier analysis was to account for the excess burden that regulatory actions impose on factor markets for labor and capital. In this section, we focus on the distributional implications of the reductions in the prices of consumer goods. The narrower scope of the analysis means that some of the deregulatory actions considered in the earlier CEA report are not part of this study (table 6-1). Though the CEA has not studied all the deregulatory actions taken since 2017, our analysis in this section builds upon our previous work, which used a sampling procedure to identify the largest deregulatory actions in terms of economic impact (CEA 2019, 2020).

We combine our estimates of the cost savings from deregulatory actions with data from the CEX. We attribute the reduction in industry costs to an expenditure category listed in the CEX shares of annual expenditures by income quintile. For example, we estimated that the Federal Communication Commission's (FCC) repeal of the Protecting and Promoting the Open Internet and issuance of Restoring Internet Freedom Order would provide $16.1 billion in cost savings to Internet users.[24] The expenditure category of the CEX for consumers most affected by Internet prices is the computer information services (Internet access) category. We used the expenditure shares by income quintile to calculate the reduction in Internet access expenditures as a fraction of total income (after tax) for each quintile. The results, shown in figure 6-9, show that relative to their incomes, the FCC's deregulation of internet access has an effect on consumers in the lowest income quintile that is five times larger than the effect on the highest income quintile.

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[24] The CEA's distributional analysis focuses on regulatory cost savings that we predict are passed through to consumers who pay lower prices for the goods and services produced by the deregulated industries. Our earlier study finds substantial additional cost-savings in the markets for factors of production, i.e., in the labor and capital markets, as reported by the CEA (2019, table 6-1). Tracing through the factor market effects to their effects on the distribution of household incomes is a complex and challenging task that is beyond the scope of this *Report*. This narrower focus is only a portion of the total cost savings than we estimated in the earlier CEA report.

Figure 6-9. Consumer Savings on Internet Access from the Restoring Internet Freedom Rule, by Income Quintile

Percentage of income
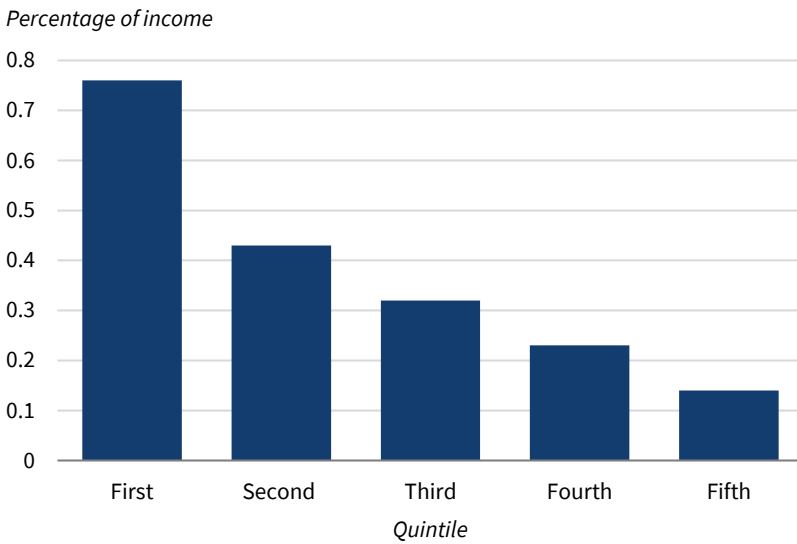
Sources: Bureau of Labor Statistics; Bureau of Economic Analysis; CEA calculations.
Note: Values represent the CEA's estimates of consumer savings as a share of their income, which applied the Consumer Expenditure Survey's quintile and expenditure data to national income data.

We performed similar calculations for the set of deregulatory actions enacted since 2017 that reduced consumer prices (table 6-1). For some deregulatory actions, the distribution of the cost savings across income quintiles exactly follows the distribution of consumer expenditures in the relevant CEX category. Examples include deregulatory actions that we estimate will reduce the prices of electricity, prescription drugs, and Internet access. For other deregulatory actions, the distribution of cost savings across income quintiles reflects the fact that the original regulation targeted consumer choices that were more common among low-income households. Examples include health insurance deregulations and the deregulation of the short-term loan industry. We used additional information about consumer behavior in those markets to refine our estimates of the distribution of the cost savings across income quintiles.

When we total the results for the complete set of regulations we analyze, we find that the deregulatory actions are strongly progressive and reduce the disproportionate burden regulations impose on low-income households. We find that the gains from the deregulatory actions we study amount to 3.7 percent of the average income of the poorest fifth of households, compared with only 0.8 percent for the richest fifth (figure 6-10). The deregulatory actions have an effect on consumers in the lowest income quintile, which relative to

Table 6-1. Selected Deregulatory Actions' Annual Impact on Real Income

| Name/Description	Impact on Real Income (in billion dollars a year)
Protecting the Privacy of Customers of Broadband and Other Telecommunications Services (Opt-In)	$22
Stream Protection Rule	$2
Definition of "Employer" Under Section 3(5) of ERISA- Association Health Plans (AHP Rule)	$17
Short-Term, Limited-Duration Insurance* (STLDI)	$13
Payday, Vehicle Title, and Certain High-Cost Installment Loans	$7
Scope of Sections 202(a) and (b) of Packers and Stockyards Act	$0
Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision*	$0
Repeal of Protecting and Promoting the Open Internet and Issuance of Restoring Internet Freedom	$54
FDA and HHS Modernization Efforts	$32
The Tax Cuts and Jobs Act- Reduced the Individual Mandate Penalty to Zero	$28
Safer Affordable Fuel Efficient (SAFE) Vehicles Rule	$53
Total	$228

Source: CEA calculations.

Note: An asterisk (*) signifies the use of a shortened name for the regulation. All annual effects on real income are rounded to the nearest billion dollars. The impact on real incomes is estimated based on the full impact of the regulation, which may be realized in the future.

their income is over four times larger than the effect on the highest one. Above, we noted that we find that, with a hypothetical 15 percent tax on groceries, households in the lowest fifth of the income distribution would pay 3.5 percent of their income in grocery sales taxes, over five times larger than the effect on the highest-income quintile. The deregulatory actions we study removed cost burdens that were similar to a regressive tax on groceries.

Our analysis focuses on the distribution of the gains from regulatory reform that reduced the burdens costly regulations impose on consumers. Regulatory and deregulatory actions have both benefits and costs. The net effect of the actions on consumer welfare depends on the difference between benefits and costs, or the net benefits. The distribution of the net benefits of an action depends on the relative sizes of the benefits and costs and on the relative progressivity of how the benefits and costs are distributed (Bento, Freedman, and Lang 2015). Under Executive Order 12866 and Executive Order 13771, Federal agencies must analyze whether a proposed deregulatory action reduces regulatory costs and whether the cost savings are larger than the benefits forgone from removing the regulation. The CEA (2019, 2020) analyzed

Figure 6-10. Consumer Savings from Selected Deregulatory Actions and the SAFE Vehicles Rule, by Income Quintile

Percentage of income
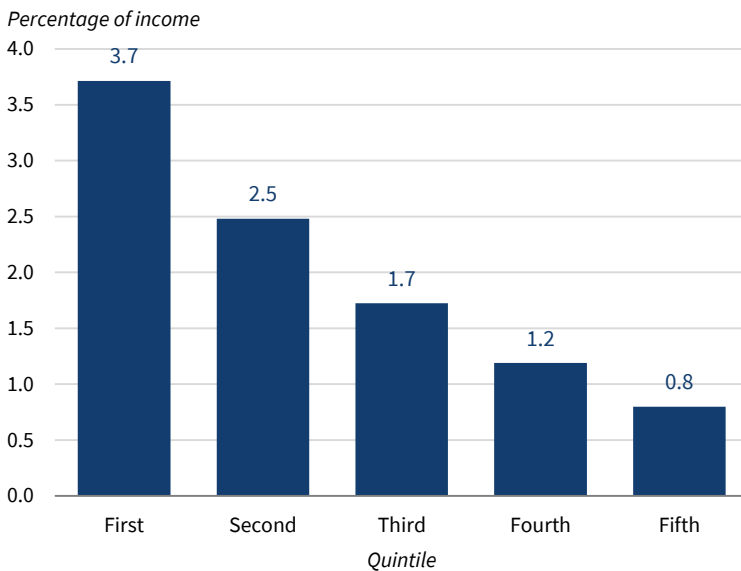
Sources: Bureau of Labor Statistics; Bureau of Economic Analysis; CEA calculations.

deregulatory actions that yield cost savings that are larger than the benefits forgone, and we find that the cost savings are distributed progressively. Unless the forgone benefits of these rules were distributed more progressively than the costs, the distribution of the net benefits from these deregulations were progressive.

The Regressivity of Federal Regulation Offsets the Progressivity of Federal Taxes

Despite the deregulatory actions taken by the Trump Administration, a large amassed body of Federal regulations remains. The total cost of Federal regulations is difficult to estimate with precision. As of September 1, 2020, Federal agencies estimate that their regulations require that the U.S. public complete roughly 11.6 billion hours of paperwork at a cost of $150 billion each year. Between 2006 and 2018, the Federal Government issued an average of 3,600 regulations each year, not including guidance and other documents that some observers describe as "regulatory dark matter," which is another form of regulation that does not always include public participation (Crews 2017). Recent estimates of the total annual costs of Federal regulations range from

Figure 6-11. Consumer Savings from Deregulatory Actions Compared with the Federal Tax Rate, by Income Quintile

Consumer savings from deregulatory actions (percentage of income)   Federal tax rate (rate)
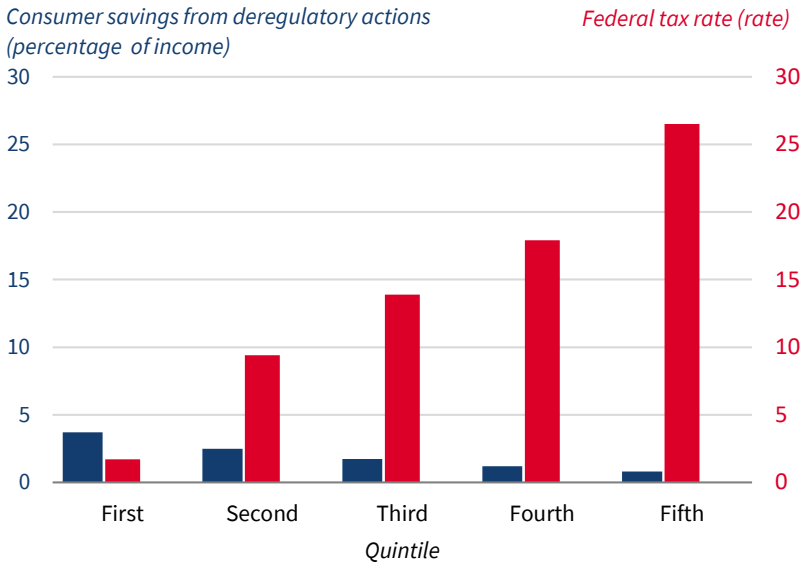
Sources: Congressional Budget Office; CEA calculations.

Note: The CBO's estimates of each income quintile's average Federal tax rate includes individual income, payroll, corporate income, and excise taxes as of 2016.

almost half a trillion dollars into the trillions of dollars (CEA 2019).[25] Crain and Crain (2014) use a proxy measure of regulation to conclude that Federal regulations imposed a burden of roughly $2 trillion in 2012. Coffey, McLaughlin, and Peretto (2020) estimate the effect of regulations on 22 industries, between 1977 and 2012, and find that if regulations were held at 1980 levels, then the economy would have been $4 trillion larger in 2012.

The magnitude of regulatory burdens, in combination with their potential regressivity, implies that regulatory costs could largely offset the progressivity of Federal taxes. Regulatory cost estimates that range into the trillions of dollars are substantial compared with the $3.6 trillion in Federal tax revenues in fiscal year 2020. In fact, the distribution of the gains from the subset of deregulations we examined is almost the mirror image of the distribution of the burden of Federal taxation (figure 6-11). Thus, we find that continued regulatory reform has the potential to shift more of the total burden the Federal government imposes on businesses and consumers away from low-income households with less capacity to pay.

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[25] No Federal agency attempts to estimate the cumulative cost of all Federal regulation; however, the Regulatory Right-to-Know act tasked the Office of Management and Budget to estimate the total cost and benefits of a subset of Federal rules that have been designated major rules. Federal regulatory agencies only monetize the costs and benefits of less than 1 percent of all the rules they issue.

Conclusion

This chapter has highlighted the Trump Administration's commitment to reducing the regulatory burden on households and businesses. The CEA finds that the benefits associated with one of fiscal year 2020's biggest deregulatory actions (the SAFE Vehicles Rule) will reduce prices for consumers by almost $2,200 per vehicle by 2026. Moreover, we find that the Administration's regulatory reform efforts may have benefited those in the lowest income quintile the most as a proportion of their income. Specifically, we conclude that the costs savings from the SAFE Vehicles Rule and other deregulatory actions we have studied amount to 3.7 percent of the average income of the lowest income quintile of households compared with 0.8 percent for the highest income quintile of households. Our findings provide evidence of the benefits of regulatory reform and reaffirm that deregulation can help consumers in low-income households—who spend a relatively large share of their budgets on necessities that are often in heavily regulated sectors of the economy—the most.

The regulatory reforms we have reviewed in this chapter were enacted before the COVID-19 pandemic and its effects on health and the U.S. economy. Although the longer-term consequences are hard to predict, evidence on the scope and nature of COVID-19's near-term effects are beginning to emerge. Unfortunately, the COVID-19 pandemic has hit low-income households particularly hard, in their health outcomes and in economic consequences including lost jobs and wages. The cost savings and distributional effects from the deregulations we discuss may have somewhat cushioned the blow to low-income households. Moreover, regulatory reform may help position the United States for a robust economic recovery and be a powerful tool to help lift up middle- and low-income Americans as the economy recovers from the COVID-19 pandemic.