



Consumer Federation of America

**Testimony of
Jack Gillis, Executive Director,
Consumer Federation of America
Author, *The Car Book*
Before the
U.S. House of Representatives Committee on Energy and Commerce
Consumer Protection and Commerce Subcommittee
And
Subcommittee on Environment and Climate Change of the Committee
Hearing on
"Driving in Reverse: The Administration's Rollback of Fuel Economy and Clean Car
Standards"
June 20, 2019**

The Consumer Federation of America (CFA) is pleased that the House Energy and Commerce Consumer Protection and Commerce Subcommittee and the Subcommittee on the Environment and Climate Change are holding a hearing on the Administration's Rollback of Fuel Economy and Clean Car Standards. NHTSA and EPA's joint proposal is indeed "driving in reverse".

CFA is an association of more than 250 non-profit consumer groups that, since 1968, has advanced the consumer interest through research, education, and advocacy. For over 20 years we have been a vigorous and continuous participant in the process of setting regulations to improve the energy efficiency of consumer durables and lower the cost of energy borne by consumers.¹ Historically, the use of standards to promote energy efficiency has enjoyed a remarkable degree of bipartisan and public support. This support stems from the obvious benefits of efficiency, including massive pocketbook savings to consumers that help to grow the economy and national security protections. While the public health and environmental benefits of efficiency standards are substantial, they are much smaller than the direct and indirect economic benefits.

With regard to fuel economy standards, CFA supported the enactment of the Energy Independence and Security Act (EISA) of 2007 which rebooted a 20 year flat lining of the CAFE program and participated in [virtually every regulatory proceeding](#) related to the fuel economy standards. We were major participants in the development of the current fuel economy standards

¹ The CFA website (<http://consumerfed.org/issues/energy/>) provides links to 140 pieces of testimony and reports published in the past ten years dealing with the efficiency of energy-using consumer durables divided roughly equally between appliances and vehicles.

agreed to in 2012 by a very diverse group of stakeholders: automakers, labor, consumer groups, environmental organizations and scientists as well. Our role was to identify the significant consumer pocketbook benefits of the standards. Since 2012, we have analyzed both consumer demand for the standards and automaker compliance. Not only do consumers want to continue the standards, but it is clear that automakers can comply with them. CFA has also supported California's Clean Cars Program and the efforts by 13 states and DC to adopt the Section 177 provision of the Clean Air Act. CFA's focus on the consumer pocketbook is because household transportation fuel (gasoline) is a major household expenditure, representing over 3 percent of total expenditures and the 6th largest household expense category.

The Current Standards Save Consumers Money

Simply stated, increasing in the fuel efficiency of cars and light duty vehicles saves consumers money at the pump.

The empirical basis for the standards is overwhelming, as they deliver massive benefits to consumers and the nation. Hundreds of billions of dollars are split between pocketbook savings (50%), macroeconomic growth stimulus (30%) and environmental, health and other public benefits (20%). The standards also insulate consumers from the volatility of gas prices.

An empirical breakdown of the standards show:

- Consumers have directly saved over \$500 billion since 2008 when the standards went into effect. If macroeconomic, environmental, health and other benefits are included, the benefit increases to almost \$900 billion. The cost of these enormous benefits was only \$120 billion.
- The standards have a cost benefit ratio greater than 6-to-1.
- The breakeven cost of the standard is such that as long as gasoline stays above \$0.75 per gallon, the standards save money.

The historical record and current economic conditions strongly suggest that, if the agencies want to change the levels of the standards, they should be raised, not lowered.

Low Income Consumers Need the Standard the Most

A rollback of the standards will hurt low-income consumers the most. CFA found that lower income households spend almost 9 percent of their income on gas – which is two times as much as middle income households.² A rollback would force these consumers to pay more for gas, especially when gas prices rise, leaving less for needed family and household essentials.

² Bureau of Labor Statistics, Consumer Expenditure Survey, 2015

Under the current standards, low-income consumers, 92% of whom only buy used vehicles,³ will save almost \$900 during the typical six years that they own their used vehicle.

On the other hand, keeping the current standards will benefit low-income consumers more than any other group. Due to vehicle depreciation, buyers of new cars absorb a significant amount of operating and ownership costs, including the cost of new fuel efficiency technology. This means that used car buyers receive a disproportionate share of the fuel economy benefits resulting from the standards. In fact, only one-fifth of the cost of new vehicle fuel economy technology is reflected in the price of a used car. This means that low-income consumers buying used cars get essentially the improved fuel economy benefits at a significantly reduced price.

Rolling Back the Standards Will Harm All Consumers

The impact on consumer pocketbooks of rolling back the 2021-2025 standards and freezing them at the 2020 level is enormous.

CFA's analysis finds that the Trump Administration's proposed rollback and freeze will:

- Rob consumers of net savings of over \$4,500 per household,
- Prevent a reduction in operating costs of \$150 billion,
- Undermine \$150 billion of macroeconomic growth, and
- Forego over \$50 billion in environmental, health and other benefits.

Contrary to the Administration's Illogical Rationale, Vehicles Have Become Safer Under the Current Standards

Besides costs, the main argument the agencies put forward to support the rollback is vehicle safety, which the agencies state will be decreased if the current standards continue to be implemented. The argument that the standards will result in a dramatic increase in traffic fatalities is flat-out wrong.

NHTSA's analysis assumes, contrary to the empirical evidence and literature that an increase in fuel efficiency will increase the number of vehicles on the road and miles driven. In the Administration's flawed justification for the rollback, they have grossly overstated the increase in driving due to lower expenditures on gasoline (paying less per mile to drive). In their analysis, they irrationally doubled the rebound rate (the increase in driving due to lower costs) while any proper analysis done today would have decreased the rebound rate. The agencies then projected a 75% increase in fatalities due to increased fuel economy. By incorrectly assuming a massive increase in the number of cars and average miles driven, NHTSA concludes there will be a massive increase in fatalities. Since the former will not happen, the latter will not happen.

³ Bureau of Labor Statistics, Consumer Expenditure Survey, 2015

The assumption of dramatically increased fatalities is inconsistent with real world experience. The agencies underestimate the increasing crashworthiness of vehicles. While the agencies point out that vehicles are becoming lighter to meet the standards, they fail to recognize that they are also more crashworthy compared to just 7 years ago when the standards went into effect. An analysis of all 2018 crash tests show that 71 percent of vehicles weigh less and had better fuel economy than its previously crash tested version. Of these vehicles, 47 percent had a better crash test rating, while the other 53 percent had the same rating. Not a single vehicle in the analysis had a worse crash test rating than its previous version. Outside of the passive nature of crashworthiness, the amount of added safety features that actively help to prevent a crash have increased by 60 percent since 2011. These facts can be proven by real-world driving experiences as well. The percentage of crashes that result in a fatality has steadily been decreasing since the standards were enacted, with a full tenth of a percentage decline from 0.61% to 0.51% from 2011 when the standards were enacted, to 2016 (the latest year figures are available).

The agencies also claimed that the cost of fuel economy technology was forcing consumers to buy vehicles with fewer advanced safety features, thereby increasing the risk of a fatality in an accident. The reality is that advanced safety features have become common features on vehicles, with 2018's "all-new" vehicles⁴ including an average of 12.3 advanced safety features, such as blind-spot detection and lane keeping assist, compared to an average of 7.4 in 2011.⁵ While over that time period vehicles did indeed go up in price, by an average of \$2,127 from 2011 to 2018, those same vehicles will save drivers an average of \$2,605 over 5 years. This shows that not only will fuel savings cover any cost of fuel saving technology, but will cover all of the other costs that go into carmaker price increases including new safety features, new technology and design changes.

There is Bipartisan Public Support for the Standards

According to a recent national survey⁶ commissioned CFA, increasing federal fuel economy standards for cars and light duty trucks to 42 MPG by 2025, is supported by 78% of Americans. Furthermore, that support is bipartisan with 66 percent of Republicans, 92 percent of Democrats, and 76 percent of independents supporting the standards.

⁴ Each year only about 10 percent of the fleet is made up of truly "all-new" vehicles. Typically, when a new model is introduced, that vehicle essentially stays the same for 5-6 years. This is called a "model series" and while there may be some style and feature changes during a model's series, the mechanics of the vehicle generally stay the same.

⁵ The 15 features we reviewed included Head Airbag, Torso Airbag, Knee Airbag, Roll Sensing, Stability Control, Frontal Collision Warning, Collision Avoidance, Lane Departure Warning, Lane Keep Assist, Blind Spot Detection, Auto Crash Notification, Day Running Lamps, Dynamic Head Restraints, Pretensioners, and Adjustable Front Belts using data from NHTSA's safecar.gov.

⁶ The survey was conducted for CFA by Engine's CARAVAN® by cell phone and landline on March 7-10, 2019, using a representative sample of 1001 adult Americans. The survey's margin of error is plus or minus 3.1 percentage points.

When asked if fuel economy would be important in their next vehicle purchase, a significant majority (81%) of consumers said it would be important. In fact, when consumers were asked about the expected fuel economy in their next vehicle, their mean choice was 41 MPG, which is slightly above the target for the standard in 2025.⁷

These recent findings of public support are consistent with CFA survey results done over the past 8 years.⁸

The Standards are Achievable

CFA's analysis over the past 5 years has found that the automakers have been complying with, and in fact in many cases, exceeding the standards.

Carmakers are also making good progress in complying with the standards:

- 85 percent of the “all-new” 2018 cars had a CAFE-compliant trim, compared to 41 percent of the “all-new” 2015 vehicles.
- In looking at all of the 2018 models, “gas guzzlers” getting below 14 MPG are a miniscule 0.7% in 2018, down from 8.5% in 2011.
- 11 of the 17 manufacturers improved their CAFE compliance rate from 2015 to 2018.

The empirical evidence shows that the standards are readily achievable for a variety of reasons:

- Consistent with the long history of fuel economy standards, automakers' compliance with the standards show that the cost of compliance has been below the NHTSA/EPA projections and far below inflated industry estimates. In fact, in every analysis the EPA and NHTSA have conducted (2008, 2012, 2016), they overestimated the cost of compliance. And rather than fixing the analysis to reflect the real-world costs, the Administration inexplicably increased its estimate of the cost to comply with the standards by 50-100%, thereby in some cases doubling the compliance costs.
- The current standards are roughly consistent with (albeit slightly below) other major automotive producing nations, including, China, Japan, South Korea and the entire European Union. Rolling back the standard will mean that either U.S. automakers will be uncompetitive or even barred from selling their vehicles in other countries, or they will be forced to produce two different versions of their vehicles in order to sell them abroad.

⁷ The Consumer Federation of America uses the EPA Consumer Label mpg ratings.

⁸ Jack Gillis and Mark Cooper, Report On Consumer Attitudes Toward Fuel Economy Standards, September 25, 2018.

- Fuel economy pays for itself. In an analysis of 2018's "all-new" vehicles, the average added cost of fuel economy technology was \$320 per vehicle which will save the buyer an average of \$946 over the next 5 years, putting \$626 back into the consumer's pocketbook.
- With a gradual, but steady approach, developing new models to meet the standards and meeting consumers' needs has been occurring in the marketplace and automakers have been complying with the standards.

Rolling Back the Standards Will Hurt US Automakers

Rolling back the standards will not only make U.S. automakers uncompetitive globally, as they won't be able to sell their less fuel efficient, U.S. compliant vehicles in other countries, but also domestically. If the Administration goes forward with rolling back the standards, California and the other clean car states, which represent 40% of annual vehicle sales, will move forward with their own standard, creating two different auto markets in the U.S. This will increase costs for US automakers, cost Americans who purchase the vehicles in compliance with the proposed, lower federal standard and allow forward looking, more fuel efficient foreign automakers to gain market share.

The fuel economy standard crafted in 2011 is one of the most elegantly drafted regulations in U.S. history for the following reasons: 1) it respects the fact that some manufacturers make and sell big vehicles and others sell small vehicles; 2) it doesn't dictate what manufacturers have to sell; 3) it keeps the U.S. vehicles nationally and globally competitive; 4) it saves consumers billions, 5) reduces our dangerous dependence on foreign oil; 6) it helps sell vehicles; 7) it benefits the environment and 8) is eminently achievable. Furthermore, 9) it was agreed to by one of the most diverse set of stake holders in regulatory history including the car companies, unions, consumer groups, scientists, and environmentalists.

All of those stakeholders, including almost all the car companies that originally asked for the rollback, thirteen states' Attorneys Generals from around the nation, as well as CFA and 31 of its members and a host of others have gone on record opposing the Administration's proposed rollback of the fuel economy standards.⁹

In closing, the standards comply with the law and executive orders and OMB guidances in an elegant and thoughtful manner; the auto industry has demonstrated it has the capability to meet the standards; consumers want the standards and our economy will benefit from the standards. On behalf of all Americans, but most importantly those families and workers and who desperately

⁹ Comments submitted to NHTSA and EPA on the *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks*, October 26, 2018. <https://consumerfed.org/wp-content/uploads/2018/10/nprm-comment.pdf>

depend on their vehicles, stay the course, the standards should not be rolled back, in fact, they should be increased.

Thank you for considering our views on the consumer benefits the fuel economy standards. We respectfully request that this statement and the following associated documents be made part of the hearing record.

Documents attached:

1. Appendix A – Report: [Consumer Attitudes Toward Fuel Economy Standards](#) – Our recent survey report, which covers CFA’s 12 years of consumer attitudes towards fuel economy, May 30, 2019.
2. Appendix B – Press Release: [CFA Joins in Lawsuit Against Trump Administration’s Effort to Roll Back Fuel Economy Standards](#) – Press release on our involvement in the state Attorney’s General suit against the EPA, February 15, 2019.
3. Appendix C – Press Release/Comment: [Consumer Groups Fight Back on Trump’s Plan to Kill Money-Saving MPG Standards](#) – Our press release on our [comments](#) submitted to EPA and NHTSA, with 32 consumer organizations signing onto our comments, October 26, 2019.
4. Appendix D – Report: [Fuel Economy Standards: There is No Tradeoff with Safety, Cost and Fleet Turnover](#) – A major report demonstrating that fuel economy and safety can co-exist, and that savings at the pump actually pay for safety improvements, directly countering Trump’s claims, July 24, 2018.
5. Appendix E – Press Release: [SUVs, Crossovers and Pickups with High MPG Percent Increases Sell Better](#) – A CFA analysis of SUV & crossover fuel economy and sales, showing vehicles that increased their fuel economy sold better, August 15, 2018.
6. Appendix F – Report: [An Analysis of Consumer Savings and Automaker Progress - On the Road to 2025 CAFE Standards](#) – This automaker progress report demonstrated that car companies can meet the standard, July 24, 2017.

Appendix A



Consumer Federation of America

Consumer Attitudes Towards the Rollback and Freeze of Fuel Economy Standards

Jack Gillis
Executive Director

Mark Cooper
Director of Research

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[The Consumer Federation of America](#) is a national organization of more than 250 nonprofit consumer groups that was founded in 1968 to advance the consumer interest through research, advocacy, and education.

EXECUTIVE SUMMARY

In the Consumer Federation of America's most recent survey of public opinion¹, there is broad, intense and consistent support for federal fuel economy standards in all states and across all political orientations. Respondents who are Democrats (92%) and independents who lean democratic (89%) almost universally support the standards, followed by independents (72%). Even among Republicans, there is significant support for the standards with two-thirds (66%) of respondents supporting the standard. Over 12 years of public opinion polling by CFA shows that consumers have consistently supported fuel economy standards. Even when gas prices rise and fall, corresponding support changes only slightly.

The results of this latest research are particularly important as the Trump Administration implements plans to roll back fuel economy standards that have been in place since 2012 and are on track to raising overall vehicle fuel efficiency to 40 MPG by 2025. These standards, agreed to in 2012 by one of the most diverse set of stakeholders in regulatory history (car companies, environmentalists, consumer groups, scientists, and unions) are clearly achievable and will protect consumer pocketbooks, U.S. car sales, and the environment. As this report will demonstrate, there is no conceivable reason to roll back the standards other than to fill the coffers of the oil industry.

When respondents to CFA's latest survey were asked if they supported a rollback, Democrats (23%) and independents leaning Democrat (28%), supported the rollback of the current standards. A slightly higher number of independents (46%) support the rollback of the standards, while Republicans (71%) and independents leaning Republican (69%) support the rollback and freeze of the current standards. The contradiction between support for the standards and support for the rollback shows conflict among the respondents. While this contradiction is present among all groups, it is particularly present among Republicans and independents leaning Republican. While Republicans 33% of all respondents, they make up 46% of the group of respondents that supports standards and the rollback. In looking at responses from those identifying as Democrats we found little

¹ The survey was conducted for CFA by Engine Group's CARAVAN® by cell phone and landline on March 7-10, 2019, using a representative sample of 1001 adult Americans. The survey's margin of error is plus or minus 3.1 percentage points.

conflict with supporting the standard (92%) and supporting a rollback of the standard (23%). However, those identifying as Republicans were significantly conflicted with 66% supporting the standard and 71% supporting the rollback. One interpretation of these results is that Republicans DO want a standard and more fuel efficient vehicles, but their long-standing approach to government is to always call for less regulation. In their efforts to roll back the fuel economy standards, the Trump Administration is likely ignoring the overarching need among Republicans for more efficiency and mistakenly focusing on the “old-school—all regulations are bad” position.

What is particularly ironic about the Trump rollback, which the President says is to help the car companies, is that a strong majority of all respondents (74%) believe that if American auto makers made more fuel-efficient vehicles, they would sell more. This belief is also held by 59% of Republicans, and 67% of independents leaning Republicans.² In addition, when these two groups were asked what gas mileage, they would like their next vehicle to get, Republicans stated 33, which is above the Trump Administration’s proposed rollback and independents leaning Republican wanted 37, which is far above the Trump plan and very close to the current standard set for 2025.

Our research also examined consumer attitudes on the state level. In those states whose economies are heavily dependent on the auto industry, Indiana, Michigan, Missouri, and Ohio, have stronger support for fuel economy standards (77%) than consumers across the country. This is a clear indication that the citizens of those states know firsthand what happens to their states’ economy when fuel inefficient vehicles don’t sell, as was the case in 2008. They suffered first hand when poor fuel economy meant acres of unsold vehicles and expensive government bail outs.

Our detailed economic analysis of the current fuel economy standards implemented in 2012,³ the entire 40 year history of fuel economy and our

² In fact, these respondents are correct. In a recent CFA analysis of the relationship between fuel efficiency and sales *SUVs, Crossovers and Pickups with High Mpg Percent Increases Sell Better* (August 15, 2018) we confirmed that increasing fuel economy resulted in a corresponding increase in sales.

³ The national standard on greenhouse gas emissions (GHG) and light-duty vehicle fuel economy was developed by the Environmental Protection Agency (EPA), the National Highway Traffic

preliminary analysis of the Trump proposal to roll back the standard⁴ all provide extraordinary evidence of why consumers are right to support the standards and oppose the rollback. In fact, the proposed rollback will drain consumer pocketbooks of a half a trillion dollars of cost savings over the next few decades. These are savings that will end up in the coffers of the oil industry instead of being used to stimulate the U.S. economy.

The Administration's proposed rollback and freeze of the standards, misleadingly called SAFE (Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks), is not only uneconomical and unpopular, but it violates the Administrative Procedure Act (APA) because of its severely flawed analysis. By totally disregarding current and historical evidence, the proposed rollback will hurt Americans financially, reduce auto sales, and harm the environment. In addition to being a violation of the APA, it also violates the underlying statutes that govern EPA and NHTSA in setting standards.

While there are numerous empirical and technological reasons not to roll back the standards, because the auto industry is now a global market, such an action would again have America's car companies losing out internationally as the rest of the world focusses on significantly improving vehicle fuel efficiency.

Americans, regardless of their political inclinations, don't want a roll back. A roll back would severely disadvantage American car companies; continue our dependence on oil; take money that could be used to stimulate the economy out of consumer pocketbooks; and further hamper efforts to address climate change. In a thoughtless effort to deregulate, the Trump Administration has created a situation where each and every stakeholder is going to suffer losses.

Safety Administration (NHTSA) and the California Air Resource Board (CARB) with the express purpose of unifying emissions and fuel efficiency standards across the country. This is often referred to by the industry and regulators as the "Single National Standard" or "One National Program."

⁴ The Trump Administration's roll back effort is called SAFE (Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks)

INTRODUCTION

The Consumer Federation of America (CFA) has been sampling public opinion on fuel economy standards for over 12 years. The surveying began in 2007, just before the passage of the Energy Independence and Security Act (EISA). These surveys consistently found strong support for standards as do CFA's two surveys since the Trump administration began to address the fuel economy standards. The results of the two most recent surveys (2018 and 2019) add key insights in several ways.

Over the past decade, the Consumer Federation of America has examined public opinion about both vehicle fuel efficiency and the regulation of fuel efficiency. During this process, the survey questions have varied slightly due to the policy issues being considered at the time. It is clear that over the last decade consumers have consistently supported a desire for both fuel-efficient vehicles and regulatory efforts to improve fuel efficiency.

Given the significant impact that gas costs have on household budgets, the volatility of gas prices and consumers' desire for technological improvements in the products they buy, it is no surprise that consumers want more fuel-efficient vehicles. On the other hand, bringing about those improvements has been a challenge, as the auto industry, and specifically the U.S. manufacturers, have, until 2012, generally opposed regulations requiring improvements. It wasn't until the economic disaster which befell GM, Chrysler and Ford during the days of skyrocketing gas costs (2008-2009), when fuel inefficient vehicles sat on dealer lots for months, that the car companies saw the wisdom of joining an extraordinary collection of stakeholders to come to consensus on a regulatory plan. The National Program set the goal of creating a fleet of vehicles that reached about 42 MPG⁵ by 2025. Never before had car companies, unions, consumer advocates, environmentalists, suppliers, transportation companies and other industries been so unified on regulatory policy.

In spite of the strong consumer demand for more fuel-efficient vehicles and the fact that car companies are fully capable of complying with the standards they agreed to in 2012, automakers asked President Trump to roll those standards back.

⁵ CFA uses the EPA "real-world" sticker MPG conversion of the 54.5 MPG by 2025 number based on the DOT CAFE standard.

The juxtaposition of this request in the face of recently rising and volatile gas prices shows both a disregard for the economic welfare of America's already financial beleaguered households and extremely poor business judgement.

Over the course of 2017, it became clear that the agencies with responsibility for energy efficiency intended to dramatically reduce standards. However, we showed in a 2017 report entitled [*Pocketbook Savings, Macroeconomic Growth and Other Public Benefits of Fuel Economy Standards*](#) and in our following report entitled [*An Analysis of Consumer Savings and Automaker Progress On the Road to 2025 CAFE Standards*](#) that car companies were not only on the road to full compliance, but increasing fuel efficiency increases car sales. However, by 2018 the direction of Trump policy was clear and we presented a historical look at the most important reason for improving vehicle fuel efficiency – consumer desire for more fuel-efficient vehicles.

Beginning in 2018, our surveys started to address the Administration's proposal to rollback and freeze the fuel economy standards, which we continue to do in 2019, calling these our "Trump era" survey's

This is a unique moment in the history of the fuel economy standards. After half a decade of remarkable success, the Trump Administration has proposed to abandon the process of steady increases in fuel economy, which was initiated after President Bush rebooted the CAFE program by signing EISA. This change in direction is not supported by public opinion.

In 2018 we deepened the analysis by conducting a very large survey,⁶ with comparable national and state-by-state sampling to examine public opinion about key aspects of the debate. As such, we were able to:

- Ask specific questions about current policy issues, as well as long term general questions;
- Do intensive analysis of different types of states combining a national random sample telephone survey with an online survey conducted in 4 automotive states;

⁶ Mark Cooper, Jack Gillis, *Report On Consumer Attitudes Toward Fuel Economy Standards* (Consumer Federation of America, September 2018).

- Analyze the responses across political identification to questions in both the national and auto state surveys.

The recent 2019 survey not only follows that template, it adds new data. We have brought back questions about the mileage respondents would like to get in their new vehicles, which allows a comparison of what consumers want and what the administration has proposed for vehicles. We have also repeated questions about consumer attitudes toward the “payback period” associated with the fuel economy standards, in other words the time it takes for lower gas expenditures to cover the increase in vehicle price associated with the fuel saving technology. This was a central point of discussion and debate in the freeze and rollback proposal and regulatory comments.

Our most recent and historical analysis of consumer attitudes is included in this report as follows:

Section 1: American Attitudes Toward Fuel Economy Standards analyzes attitudes toward standards in the overall population, including a long-term historical review. In addition to our repeated question about support for standards, in 2018 we added a second question about standards relating to the rollback proposed by the Trump administration.

Section 2: Political Orientation and Support for Fuel Economy Standards analyzes attitudes toward standards across the political spectrum, using self-identified political orientation. The Administration’s proposed rollback to the 2020 level through 2026, is very substantial, fixing the standards a full 24% below the current standard which goes through 2025. We also analyze the striking difference in the “inconsistency” of responses towards general support for the standards versus the Administration’s proposed rollback of the standards across political orientations.

Section 3: Analysis of Public Opinion on Fuel Economy Standards on the State Level analyzes the attitudes toward standards in different types of states, clean car, climate aware, automotive and other.

While the previous sections focus on standards, the next set of analyses focuses on individual attitudes toward vehicles.

Section 4: Consumer Attitudes about Fuel Economy were explored in four questions to ascertain consumer attitudes toward fuel economy. The first three of these are discussed in this section.

First, we asked consumers how important mileage is in their vehicle purchase decision.

Second, we asked about the mileage they hope to get in their next vehicle purchase.

Third, we asked whether they think improving fuel economy is good for automakers.

Section 5: Support for Standards and Payback Periods analyzes two questions to ascertain consumer willingness to pay for fuel economy technology with 3-year and 5-year payback periods. The payback period is the time it takes for the increased cost of the vehicle due to energy saving technologies to be offset by the reduction in gas expenditures. Over the years we have tested various “payback time frames”. In the 2019 survey we asked about 3-year and 5-year payback periods.

Throughout the analysis, we include in each section information on the historical patterns of attitudes. This enables us to establish the context for the impact of the dramatic change in fuel economy standards by the Trump Administration.

Section 6: Multivariate Analysis is presented in two ways. First, the responses to the attitudinal questions are examined in a standard, multiple regression framework. Second, we consider the apparent conflict between responses to the support for standards/support for rollback across categories of political identification.

1. American Attitudes Toward Fuel Economy Standards

Support for Fuel Economy Standards

In the most recent (March, 2019) survey, we asked two questions on fuel economy. First, was a general question on support for standards⁷ which we have asked for over a decade. In prior surveys we frequently confirmed support for the standards, as discussed below with questions on support at specific payback periods.⁸ In the recent period, we have added a question on support for the rollback of standards.⁹

Throughout this analysis we drop the “don’t know/refused” responses to the questions about attitudes and expectations. Generally, the percentage of respondents who did not offer an opinion was between 3 and 8 percent for each question.¹⁰

In our most recent survey conducted from March 7-10, 2019, by ORC International, as shown in Figure 1.1, we found almost eighty percent of respondents support fuel economy standards (46% strongly) compared to 22 percent who oppose standards (11% strongly). Thus, while supporters outnumber opponents by a margin of 3.5-to 1, strong supporters outnumber strong opponents by over 4-to-1.

There are very few statistically significant differences between demographic groups in support for standards, however, education does have a large effect. Those with at least some college express much more strong support (50%) than those who have a high school or less education (29%).

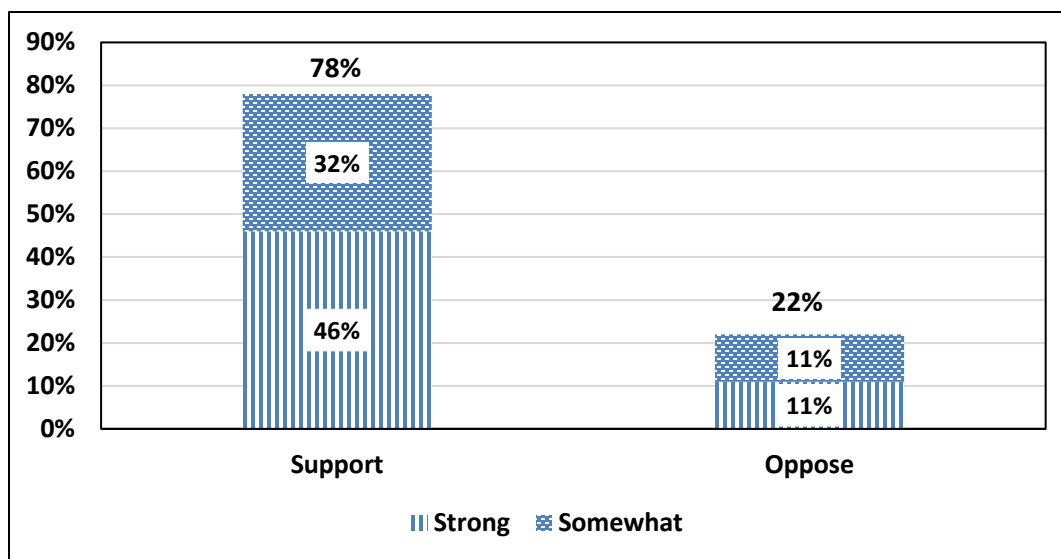
⁷ Appendix A, question 1.

⁸ Id., questions 6 and 7

⁹ Id., question 2.

¹⁰ In the 2019 survey, for example, 4% of respondents did not give an opinion about standards or the rollback. The respondents who answered one of the questions dealing with standards but not the other look very much like the respondents who answered both. About 67% who answered the support question but not the roll back question, support standards. In contrast, only about 44% of those who answered the roll back question but not the support question support the roll back.

Figure 1.1: 2019 Consumer Support for Federal Fuel Economy Standards

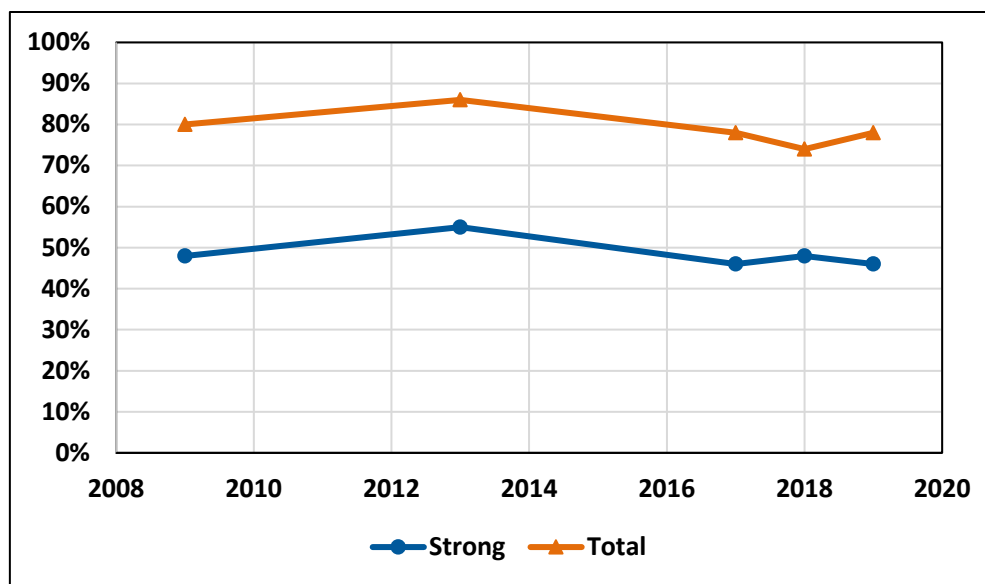


Past Surveys

Since we began conducting public opinion polls in 2007, the overall trend of consumers supporting fuel economy standards has been increasing, as shown in Figure 1.2.¹¹ Even during the recent years of lower gas prices, the level of support has remained strong and consistent. In our 2019 survey, increasing federal fuel economy standards for cars and light duty trucks, to approximately 40 MPG by 2025, rather than reducing them to about 30 mpg, is supported by 78% of Americans. Clearly support has declined somewhat in the “Trump era,” but still remains substantial and in the 75% range.

¹¹ The trend provides a good fit, explaining 43% of the variance. % supporting = .0197(year) +.5649,

Figure 1.2: Consumers Historically Support Fuel Economy Standards



Changes in Support for Specific Levels of Standards

In addition to the broad support for standards that we have observed over the last 12 years of surveying public opinion, we began surveying attitudes toward raising standards to specific targets in 2011 as the government was developing the 2012 CAFE standards. In two surveys conducted in 2010¹², we found a clear majority of respondents supported setting the standard for 2025¹³ in the range of 38 miles per gallon (65% in March 2010) and 46 miles per gallon (59% in September 2010).

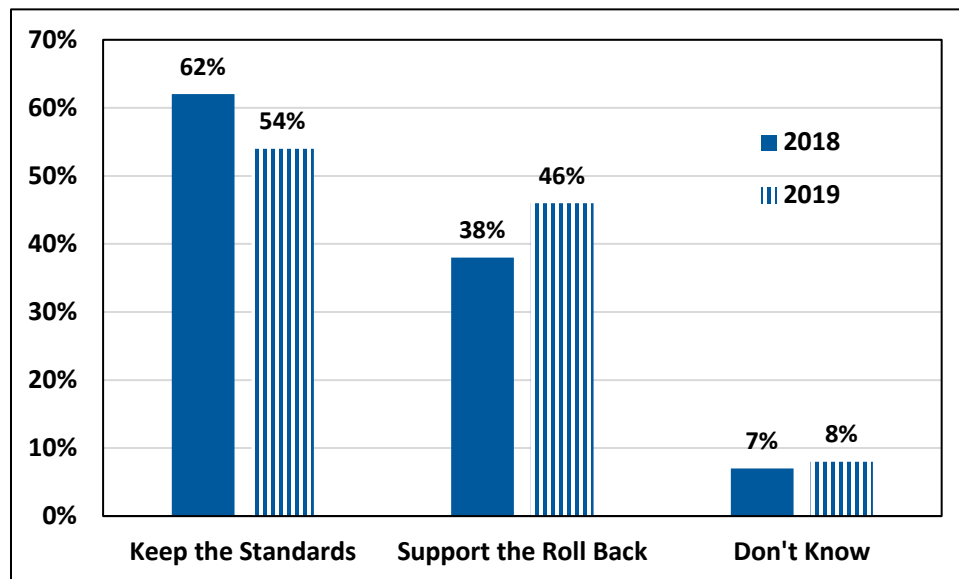
In the last two years the government has shifted from increasing standards to decreasing standards. Starting in CFA's 2018 survey, in addition to asking about general support for fuel economy standards, we also asked about support for rolling back the standards. As shown in Figure 1.3, the rollback of standards has been opposed by a majority of respondents in both our 2018 and 2019 surveys. We do note that the support for the rollback is lower in response to this question

¹² Mark Cooper, *Issue Brief: Public Support for a 60 Mile per Gallon Fuel Economy Standard* (Consumer Federation of America, September 2010), p. 2 (hereafter *2010 Issue Brief*).

¹³ In this analysis, our MPG figures are based on the EPA expected mileage ratings that appear on vehicle window stickers and published by the EPA as predictors of actual mileage. This is opposed to the CAFE figures which are based on laboratory tests and do not reflect actual expected mileage. There is a proven relationship between the two numbers, which track each other.

than is the support for the standards. The difference raises a question about the inconsistency between responses i.e. respondents who support standards and a rollback. We will examine this in Section 2: Political Orientation and Support for Standards, after we examine difference across political orientations in the following section.

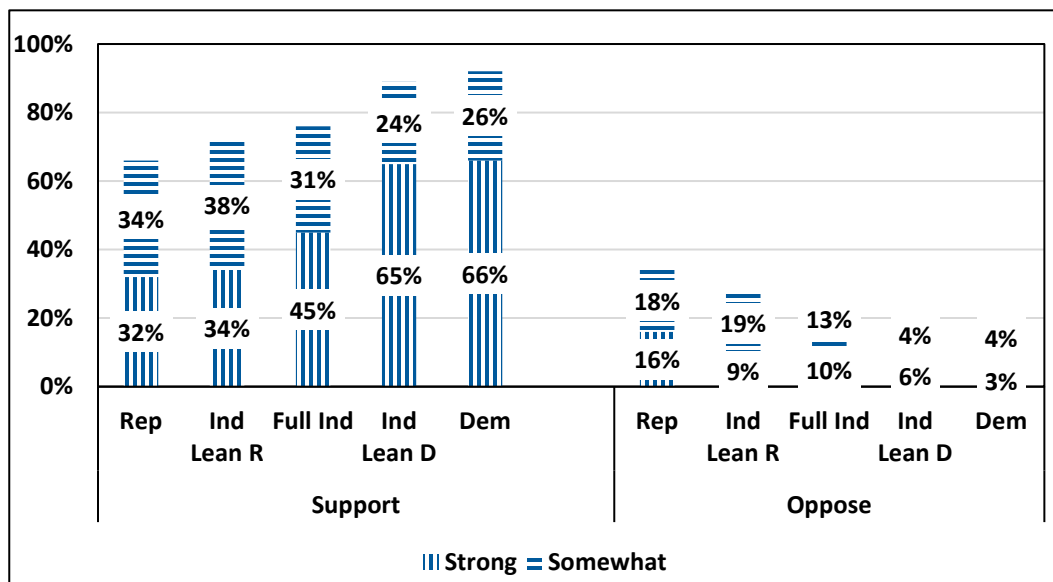
Figure 1.3: Attitudes Toward Rollback of Standards



2. Political Orientation and Support for Fuel Economy Standards

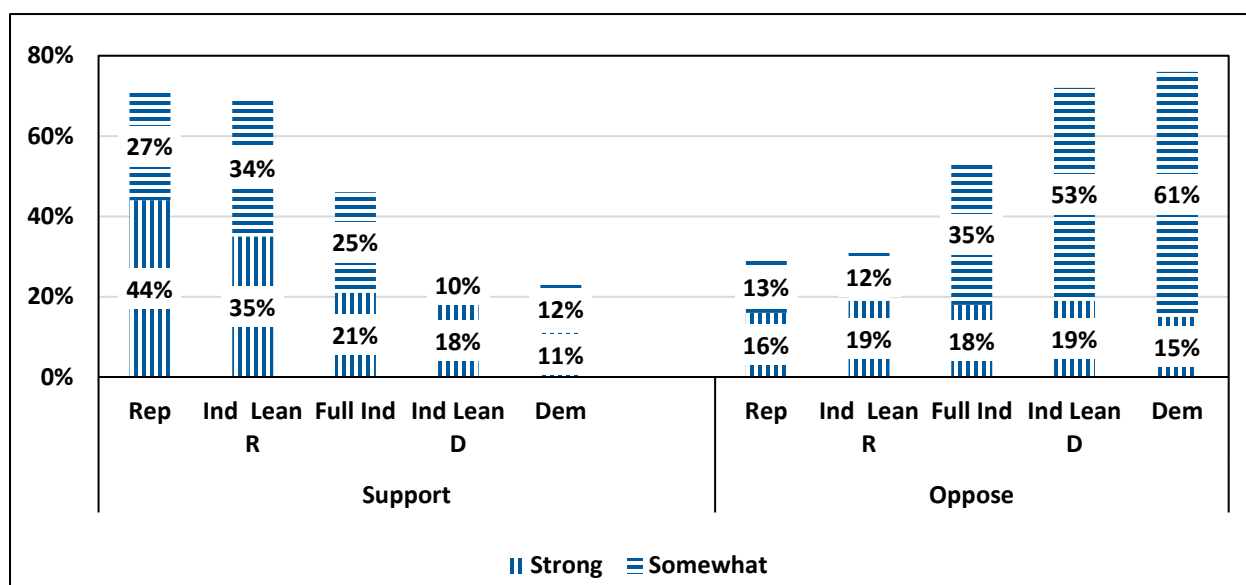
In the current (March, 2019) survey, support for the standards remains bipartisan, as it has always been. Using only respondents who offered an opinion, we find that while 78% of all respondents support standards, as shown in the previous Figure 1.1. 66% of Republicans and 72% of independents leaning Republican support the standards. 76% of independents also support the standards. On the Democratic side, independents leaning Democrat (89%) and Democrats (92%) express a much higher support. The level of strong support is also quite high among all groups, with 32% of Republicans and 34% if independents leaning Republican strongly supporting the standards, while 45% of independents do and very large majority of independents leaning Democrat (65%) and Democrats (66%) do.

Figure 2.1: 2019 Support for the Standards Across the Political Spectrum



In the current survey CFA also asked about support for the rollback of the standards, which unlike support for the standards is highly partisan. Using only respondents who offered an opinion, we find that while 50% of all respondents oppose rolling back the standards. 71% of Republicans and 69% of independents leaning Republican support the rolling back the standards. 46% of independents also support the rollback. On the Democratic side, independents leaning Democrat (28%) and Democrats (23%) express a much lower levels of support.

Figure 2.2: 2019 Support for Rollback of Standards Across the Political Spectrum



All the analyses of the political identification include all of the respondents, with the respondents who fell in the “don’t know, Refused” counted as full independents. Examination of their responses to all seven of the attitudinal questions showed that they were very much like the full independents.¹⁴ Figures 2.1 and 2.2 present a potential inconsistency (or conflict) between support for standards and support for rollback. We discuss this in Section 5, where we show that Republicans make up a disproportionate share of this the “inconsistent”

¹⁴ On six of the seven questions used to assess attitudes towards standards and fuel economy, the differences in the responses of the full independent and refused categories are not statistically significant. The one exception is the importance of fuel economy question where full independent were more likely to say it is important (55%) than among the “refused,” category. This difference is significant at the 5% level.

3. Analysis of Public Opinion on Fuel Economy Standards on the State Level

In order to examine public opinion about standards and the current policy debate on the state from a geographic, industry and political level, CFA has broken up its 2019 national survey data in various ways as follows:.

Figure 3.1: Groups of States Used for Analysis

Clean car states are those that have adopted the standard set by California which is allowed under the Clean Air Act. Climate concerned states are those states in which mayors of major urban areas have committed to the clean car standards, or the state has joined the Climate Alliance. Automotive states are those with a disproportionate share (more than 10%) of their workforce employed in automotive industries. Other states are the remainder of the states.			
Category of States	Entities	National Sample in CFA Survey (n)	
		2018	2019
Clean car	CA CO, CT, DC, DE. MA, MD, ME, NJ, NY, OR, PA, RI, VT, WA	350	373
Climate concerned	Mayors, State and Cities: GA: Atlanta, +4, TN: Nashville, Memphis, TX: Austin, Dallas, Houston, San Antonio, AZ: Phoenix, Tucson, +3		
	Climate Alliance States NM. IA, IL, NC, VA, MN	318	300
Auto states	IN, MI, MO, OH	106	120
Other	AL, AR, ID, KS, KY, LA, MS, ND, NE, NH, NV, OK, SC, UT, WI, WV, WY	226	204

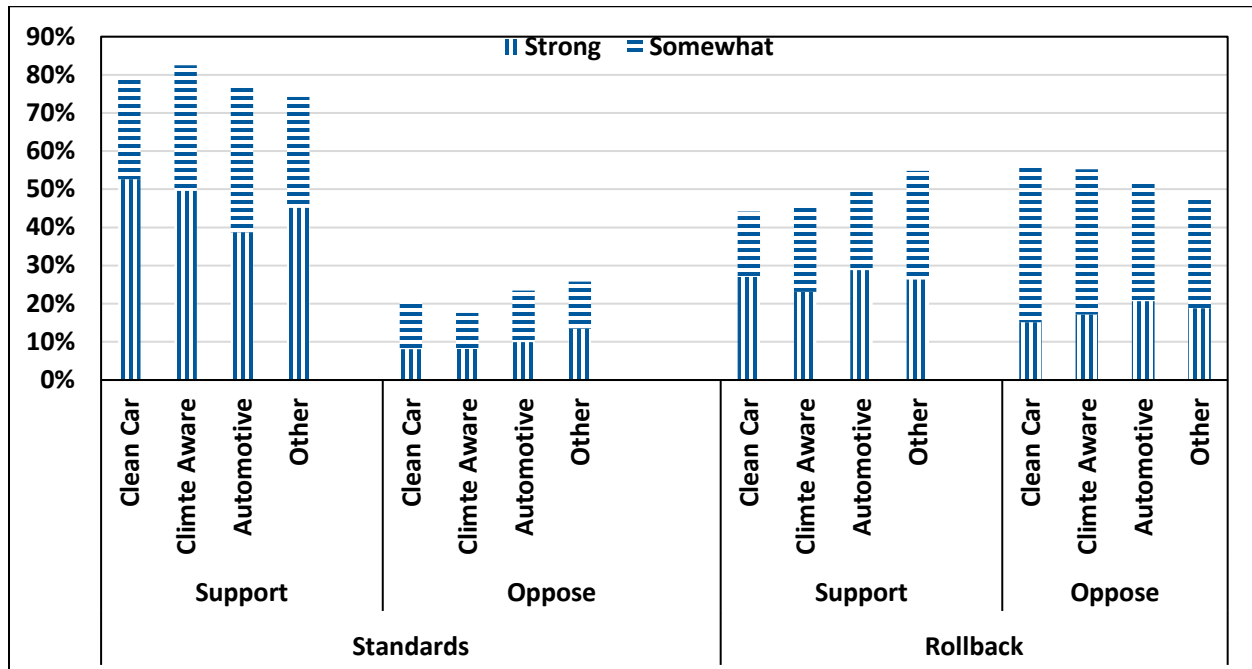
In addition to our current (2019) survey, in 2018, we also surveyed Americans in four states whose economies are heavily dependent on the auto industry: Indiana, Michigan, Missouri, and Ohio. This was an online survey of 400 respondents in each state. Because we had the contemporaneous national random sample from our 2019 survey, we compared the group of auto states in our 2018 national poll with the results of our specific state polls. We find that, as a group, the attitudes of the respondents in the four auto states were similar in the national and state level surveys.

In an earlier, national random sample survey¹⁵ conducted in 2011, we had taken a similar approach to defining groups and comparing results for individual groups. The results of our national random sample were similar across the four groups of state, so we feel confident that these comparisons lead to valid observations.

Current Survey Results by Various Categories of States

Figure 3.2 shows the results of the various categories of states in response to two questions on attitudes toward standards and rolling back the standards in the 2019 survey. The state results are similar to the overall national survey. A substantial majority supports standards in every group of states. Support for the rollback is a closer call, with small majorities supporting the rollback in the automotive (50%) and other states (58%). However, these differences are not statistically significant compared to the clean car (44%) and climate aware states (46%).

Figure 3.2: Attitudes Toward Standards and the Rollback across States



¹⁵ In CFA's 2011 fuel economy survey, we doubled our normal number of respondents from 1,000 to 2,000 in order to get higher levels of respondents in key categories of states.

The 2018 Survey

In comparing the 2019 survey to the 2018 survey, we found similar results. We observed consistent support for standards in every group of states. In the 2018 national survey, about 70% of respondents supported standards in each group of states. Strong support hovered around 40%, while strong opposition was in single digits for all groups, except the “other” states, where it was 16%. The pattern for the responses to the other questions was similar to the support for standards. None of the differences were statistically significant, except for the response to the rollback question, where the auto states respondents were less opposed to the rollback. The percentage who opposed the rollback still exceeded the percentage that supported it by a substantial margin (49% to 39%).

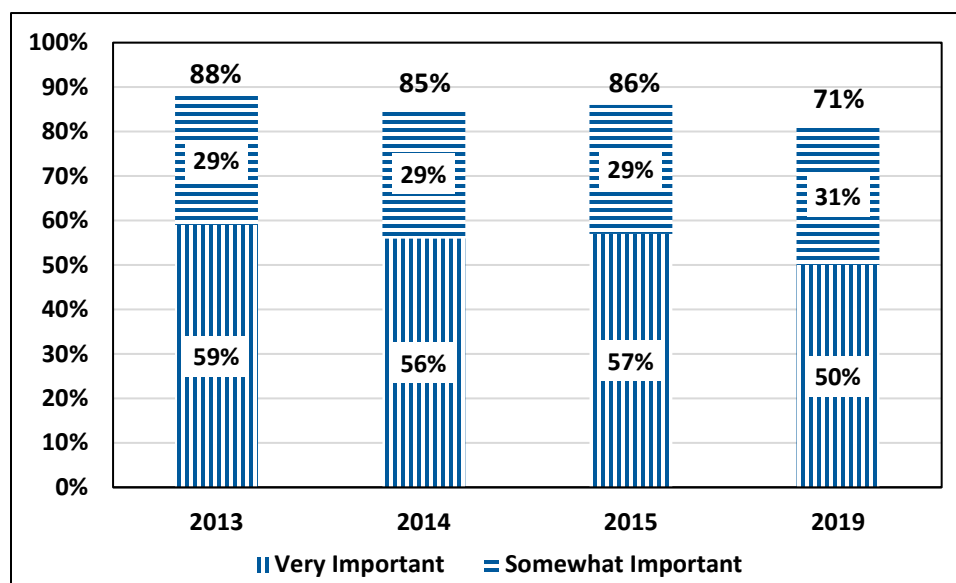
4. Consumer Attitudes About Fuel Economy

The preceding analysis focuses on attitudes toward standards across various state groups. In this section we turn our attention to consumer attitudes toward fuel economy and how this affects their attitudes toward standards. Consumer attitudes toward fuel economy are consistent with the above observations about standards in each of the aspects about mileage we addressed.

Importance of Mileage in Purchase Decisions

Figure 4.1 shows that consumers consider mileage an important consideration in the purchase of their next vehicle.¹⁶ The percentage has consistently been above 80%, with very important above 50%. There has been a slight downward trend in both.

Figure 4.1: Historic Importance of Mileage in Vehicle Purchase Decisions

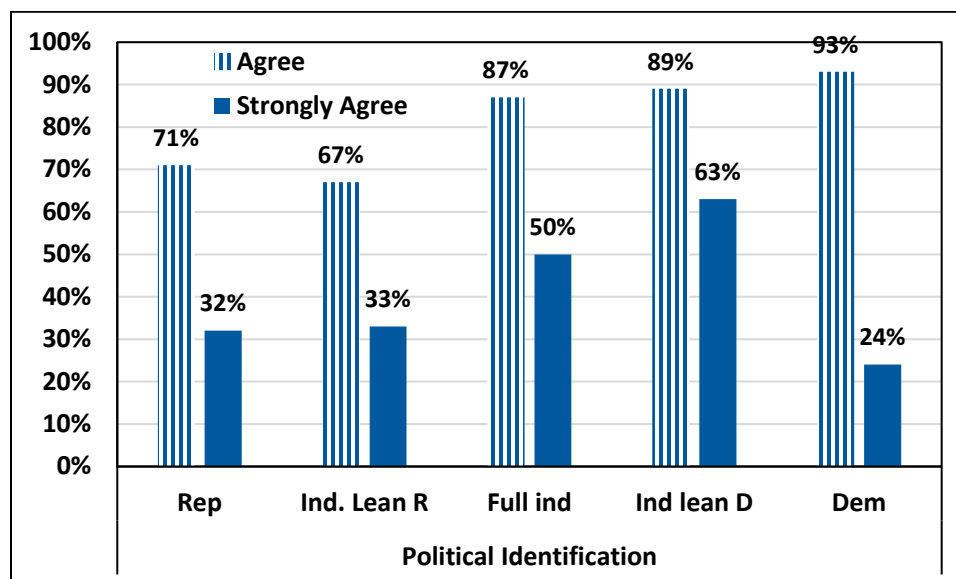


Current attitudes about the mileage for their next vehicle to be purchased are strong across political identification, as shown in Figure 4.2. Over 70% of Republicans and 65% of independents leaning Republican think it is important,

¹⁶ Appendix A, question 3.

with about one-third of Republicans and independents leaning Republican saying it is very important. The percentages increase substantially as we move across the political spectrum, with over 90% of Democrats saying mileage is an important consideration in the purchase of their next vehicle, with over two-third saying it is very important.

Figure 4.2: Importance of Fuel Economy Across Groups of Respondents



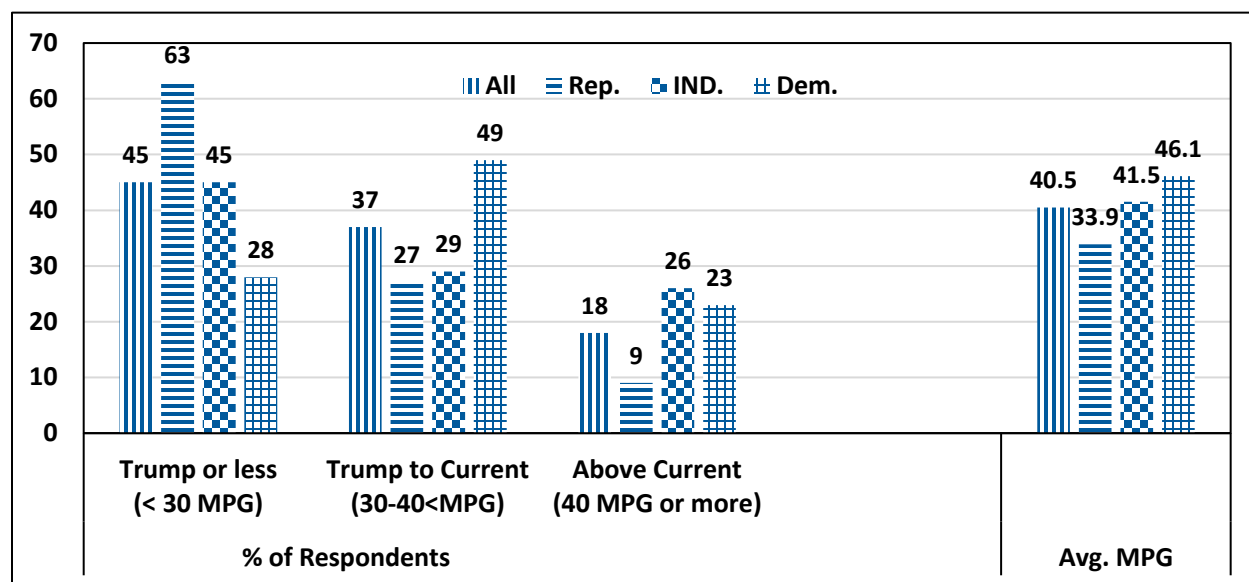
Expected Mileage of Next Car Purchased

The respondents who stated that fuel economy would be important in their next purchase, unsurprisingly wanted gas mileage that was much higher than those who did not think fuel economy would be an important factor in their next vehicle (see Figure 4.3). Only 45% of all respondents would like to get the Trump target of 30 MPG or less, whereas 55% would like to get more than that. Furthermore, about 18%, like to get more than the current fuel economy target of 40 mpg or higher. Across political identifications 36% of Republicans and independents leaning Republican would like to get more than Trump's target. This rises to 55% of full independents and 72% of Democrats.

Impact of Efficiency on Automakers¹⁷

One of the important issues that is debated when standards are set is the impact on automakers. Over the past decade, our analysis has shown that improving fuel economy helps automakers sell cars. Respondents to the 2019 survey agree with this observation, because they believe “if American auto manufacturers made more fuel-efficient vehicles, they would sell more”.

Figure 4.3: Expected Mileage of Next Car Purchased

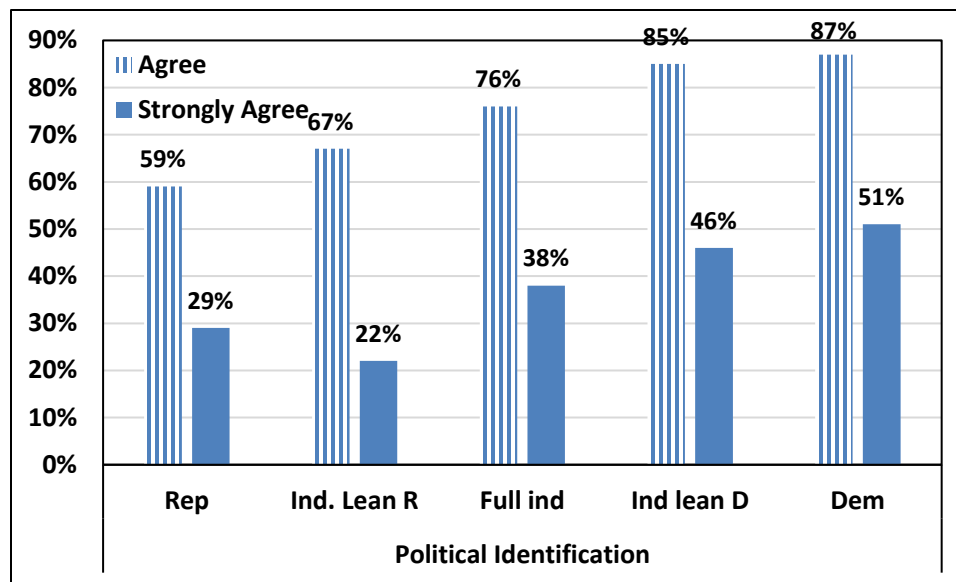


Asked whether making more fuel-efficient cars would increase sales, 74% of respondents agreed (38% strongly).¹⁸ As shown in Figure 4.4, a majority (59%) of Republicans agree with the statement. Democrats almost universally agree (87%), that increased fuel economy would increase automaker sales.

¹⁷ Appendix A, question 5.

¹⁸ Respondents were asked if they supported the idea “If American auto manufacturers made more fuel-efficient vehicles, they would sell more.”

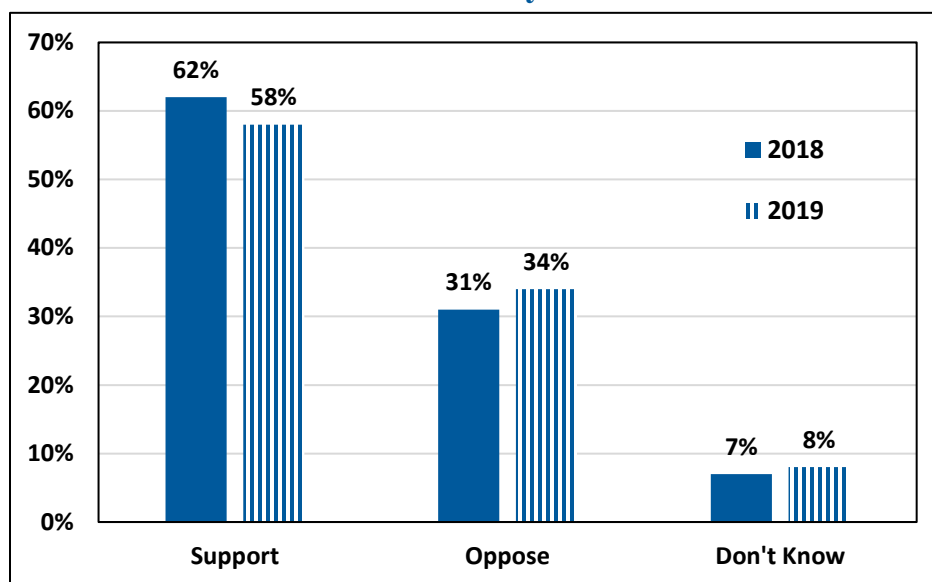
Figure 4.4: Fuel Economy Helps Sell Vehicles



5. Support for Standards and Payback Periods

Consumers understand that the technology needed for increasing fuel economy may increase the vehicle purchase cost. To determine if consumers would accept a higher initial price for a vehicle knowing that savings on fuel costs would pay for the fuel economy technology and save money after a payback period, we asked consumers if they would accept a 3-year payback period. In surveys conducted in 2018 and 2019 62% consumers supported a 3-year payback period for vehicles (see Figure 5.1).

Figure 5.1: Consumers Are Willing to Pay for Fuel Efficiency
If the Cost of Fuel Economy Technology took 3 Years to Pay Back, Would that be Okay?

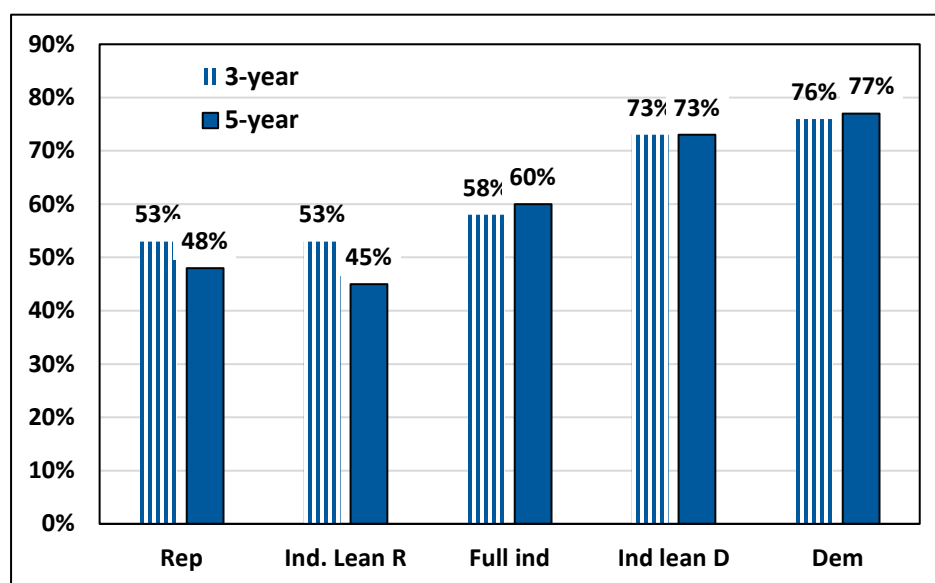


Interestingly, the percentage of respondents supporting standards that took 5-years to payback their cost is equal to the 3-year payback. The support for standards across political identifications and payback periods Figure 5.2 is consistent with that observation. The Republicans are a slight majority, but the support rises to over three quarters among the Democrats. For the 5-year payback Republications fall just below a majority, but the other political identifications are unaffected.

Interestingly, the percentage of respondents supporting standards at a 5-year payback is equal to the 3-year payback. The support for standards across political

identifications and payback periods Figure 5.2 is consistent with that observation. The Republicans are a slight majority, but the support rises to over three quarters among the Democrats. For the 5-year payback Republications fall just below a majority, but the other political identifications are unaffected.

Figure 5.2: 2019 Support for the Standards by Political Party Based on a 3- or 5-Year Payback Period



These results are similar to the 2018 results across political identification. Support for standards among Republicans (52%) and independent leaning Republicans is a slight majority (53%), with a 3-year payback period. It rises to 60% among independents and 80% among Democrats and independent leaning Democrats.

Earlier, we mentioned that there were a small number of statistically significant demographic differences. Figure 5.3 includes those observations and also identifies the statistically significant differences with respect to the attitudes included in this section. The pattern is clear and consistent. Women, younger and better educated respondents are more supportive of standards (because) they think mileage is more important and want more mileage in their next vehicle. The statistically significant differences are about 10 percentage points, e.g. 58% of women oppose the rollback compared to 48% of men).

Figure 5.3 Statistically Significant Difference Across Demographic Groups

Group	Issue				
	Support Standards	Oppose Roll Back	Mileage More Important	Want More Mileage	Support w/ 5-year Payback
Women	X	X	X	X	
Young		X	X	X	
Better Educated	X		X	X	X
Region	North East	West			

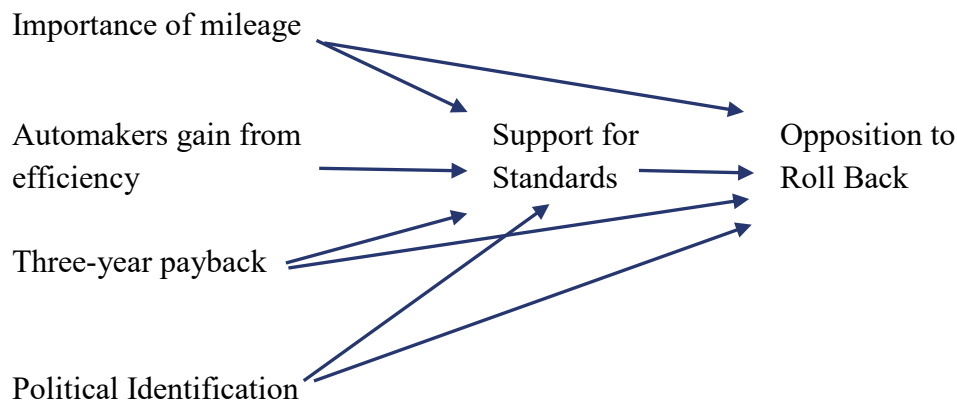
6. Multivariate Approaches

In this section we examine two multivariate approaches to the analysis, in order to, first, assess how the attitudes of respondents interact to yield the high level of overall support. . Second, we examine a subtheme that points in the opposite direction – respondents who say they support (oppose) standards in general but express the opposite opinion when it comes to rollback This adds considerable depth to the analysis, although it also introduces complexity. First, we report on a multiple regression analysis. Then we report on a typology of responses to the attitudes toward standards.

Multiple Regression

Given the large quantity of data covered in this survey, a “simple” way to summarize and present it is to use a multiple regression, as in Figure 6.1 and Figure 6.2. The demographic differences noted also suggest the direction of the outcome of that analysis.

Figure 6.1: A Multivariate Model of Attitudes and Support for Standards



Interestingly, the individual level attitudes, alone, explain over one fifth of the variance in attitudes toward standards. In every case, however, the signs are opposite, which is to be expected. The more the importance of fuel economy, the more the respondents think fuel economy would be good for the automakers and the more willing respondents are to support a 3-year payback, the more they support standards and oppose the roll back. Adding in political identification on top of those variables is statistically significant, but raises explained variance by only 2 percentage points for support for standards. However, it raises the

explained variance by 12 percentage points for rollback, affirming our demonstration that roll back is very much a political undertaking.

Figure 6.2 Multiple Regression Results

Independent Variables	Dependent Variable (Coefficient (Sig.))								
	Variable:	Standards		Rollback				Consistency/ Conflict	
	Model:	I	II	III	IV	V	VI	VII	VIII
Importance of mileage		0.19	0.23	-0.35	-0.23	-0.29	-0.19	-0.62	-0.47
Automakers gain from efficiency		0.15	0.13					-0.25	-0.16
Three-year payback		0.27	0.27	-0.17	-0.1	-0.11	-0.07	-0.48	-0.42
Political Identification			0.09		-0.28		-0.16		-0.40
Standards						-0.25	-0.27		
R ²		0.23	0.25	0.11	0.23	0.16	0.26	0.26	0.35

Notes: Beta Coefficient, Robust Standard Errors and adjust-R²

Interestingly, the individual level attitudes, alone, explain over one fifth of the variance in attitudes toward standards. In every case, however, the signs are opposite, which is to be expected. The more the importance of fuel economy, the more the respondents think fuel economy would be good for the automakers and the more willing respondents are to support a 3-year payback, the more they support standards and oppose the roll back. Adding in political identification on top of those variables is statistically significant, but raises explained variance by only 2 percentage points for support for standards. However, it raises the explained variance by 12 percentage points for rollback. In other words, even after controlling for the statistically significant attitudinal factors, including political identification has a much bigger effect on support for rollback than it does on support for standards. This suggests that the rollback is much more political undertaking, as will be discussed in the next. The last two columns show regression results for a new variable “Consistency/conflict” that is introduced below.

Examination of “Inconsistent” Responses

To explore this issue, we created a seven-point scale to describe their responses as shown in Figure 6.3.

Figure 6.3 Typology of Categories of Consistency/Conflict in Support of Standards

		Support Standards		Oppose Standards	
		Strong	Somewhat	Somewhat	Strong
Support Rollback	Strong	5 Very Conflicted Support	4 Moderately Conflicted Support	2 Moderately Consistent Support	1 Very Consistent Support
	Somewhat	4 Moderately Conflicted Support	4 Moderately Conflicted Support	2 Moderately Consistent Support	2 Moderately Consistent Support
Oppose Rollback	Somewhat	6 Moderately Consistent Support	6 Moderately Consistent Support	3 Status Quo	3 Status Quo
	Strong	7 Very Consistent Support	6 Moderately Consistent Support	3 Status Quo	3 Status Quo

The end points are straightforward. Strong opposition to standards and support for rollback is coded as a 1, very consistent opposition to standards. Strong support for standards and opposition to rollback is coded as 7, very consistent support for standards. We then distinguish mixed positions working down from these two end points. Moderately consistency is defined by all others who expressed a uniform view, but not a consistently strong one (2=moderately consistent opposition, 6=moderately consistent support). Respondents are categorized as “status quo” (3) if they oppose standards but also oppose rollback. Very conflicted respondents state strong preferences in opposite directions (4). Moderately conflicted respondents (5) express support and opposition that is “somewhat” on at least one of the two questions.

The distribution of the respondents across political identification categories is presented in Figure 6.4. Republicans are divided into three roughly equal groups – consistent opponents of standards, status quo, and conflicted supporters of standards. In contrast, the Independents tend to fall in the status quo and consistent support categories, while the Democrats fall in the very consistent support category, with some in the status quo category (which of course supports the

current standards. The “non-Republican” part of the population consistently leans much more heavily in favor of standards, and, the number of Republicans who support standards equals number of Republicans consistently oppose them. In other words, among Republicans the percentage that consistently oppose standards (categories 1+2 = 27%) is just slightly above the percentage that consistently support them (categories 6+7 = 24%). A third of Republicans fall into the status quo category. Independents and Democrats are much less likely to fall into the opposition categories and more likely to fall into the support category. More importantly we find that about 70% of the consistent opposition to standards is Republican, but they represent only 10% of the total population, which is a very narrow base of opposition.

Figure 6.4: Distribution of Consistency/Conflict in Support of Standards

% of Respondents		All	Republican	Independent	Democrat
Complex Attitudes					
1. Very Consistent Opposition	7.3	14		7	1
2. Moderately Consistent Opposition	7.4	13		7	2
3. Status Quo	26.7	34		25	13
4. Very Conflicted Support	8.9	9		9	9
5. Moderately Conflicted Support	6.7	6		10	5
6. Moderately Consistent Support	19.9	16		21	23
7. Very Consistent Support	26.2	8		21	47

Complex Attitudes	% of Respondents			
	All	Republican	Independent	Democrat
1. Very Consistent Opposition	7.3	14	7	1
2. Moderately Consistent Opposition	7.4	13	7	2
3. Status Quo	26.7	34	25	13
4. Very Conflicted Support	8.9	9	9	9
5. Moderately Conflicted Support	6.7	6	10	5
6. Moderately Consistent Support	19.9	16	21	23
7. Very Consistent Support	26.2	8	21	47

Figure 6.5 shows that there are also difference between Republicans and the other political identifications in terms of the mileage expected. To keep the comparison simple, we show the expected mileage for “conflict” categories across political identifications that we highlight in Figure 6.4. Excluding these mixed categories also avoids the categories with the smallest cell counts.

Figure 6.5: Expected Mileage Across “Consistency/Conflict Categories”

Complex Attitudes	All	Republican	Independent	Democrat
1. Very Consistent Opposition	31.2	26.4		
2. Moderately Consistent Opposition	29.6	29.8		
3. Status Quo	31.9	29.2	35.0	34.7
4. Very Conflicted Support				
5. Moderately Conflicted Support				
6. Moderately Consistent Support	34.0	34.5	32.6	34.4
7. Very Consistent Support	47.7	40.9	50.5	48.0

Consistent opponents among the Republicans expect 5 miles per gallon less than the overall population. Status Quo Republicans expect somewhat lower mileage (2.7 MPG). Moderately consistent supportive Republicans look about the same as the rest of the respondents in this category, but very consistent supportive Republicans are well below (almost 7 MPG) the rest of the respondents in this category. Thus, the difference in the Republican respondents is a result of both the distribution of the population and their expectations. Note also that consistent Republicans expect substantially more mileage than the rollback target. This is true among the independents and Democrats and also the Status Quo categories of these two political identifications.

Figures 6.6 and 6.7 show the relationships between the consistency/conflict scale and the other two questions asked to measure attitudes toward standards. The results follow the same pattern. The more consistent the support for standards, the more importance respondents attach to them and the more they think fuel economy helps sales. The regression results in Figure 6.1 reflects these relationships. The three attitudinal variables combined with political identification explain over one-third of the variance in the consistency/conflict scale.

The bottom line on the issue of the apparent “conflict” between support for standards and support for rollback can be summarized as follows. About 85% of respondents make up a group that supports standards and/or opposes the rollback, while only 15% fall in the group that opposes standards and supports the rollback. Moreover, over two-thirds (70%) of the later group are Republicans or

independents who lean Republican. Thus, consistent support for the Trump administration proposal is very narrow and highly partisan.

Figure 6.6: Importance of Fuel Economy

“Consistency/Conflict Categories”

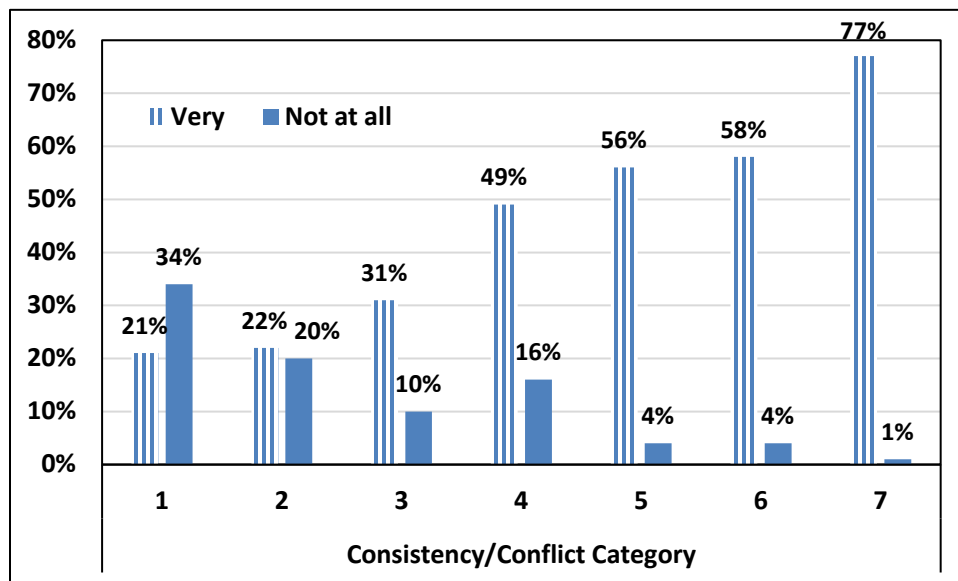
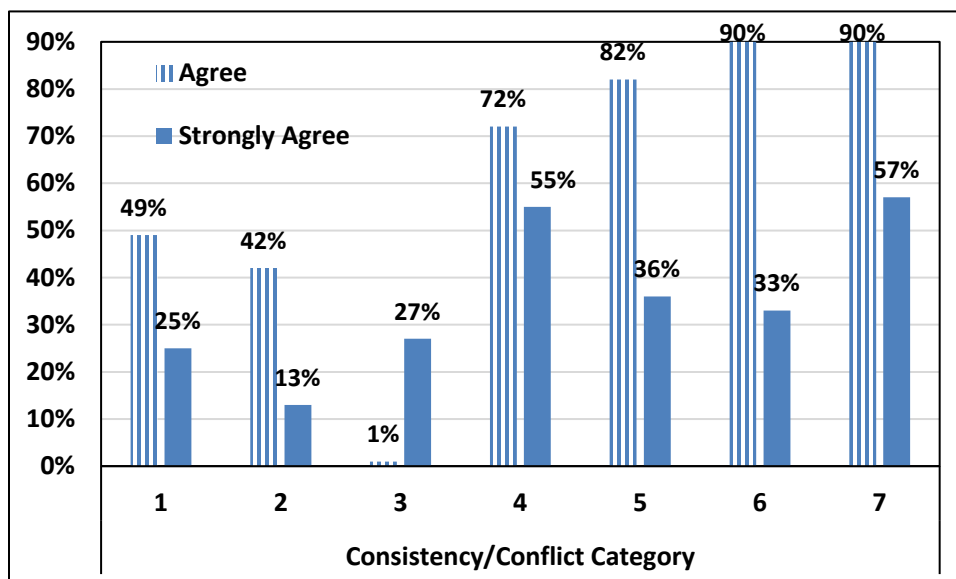


Figure 6.7: Fuel Economy Helps Sell Vehicles Across “Consistency/Conflict Categories”



CONCLUSION

Our detailed economic analysis of fuel economy standards, including the recent National Program, as well as the entire history going back forty years and our preliminary analysis of the Notice of Proposed Rulemaking give a good indication of why consumers are right to support the standards and oppose the rollback and freeze.¹⁹ The rollback is bad economic policy that will harm consumers and the economy by draining consumer pocketbooks of half a trillion dollars of cost savings over the next few decades which could have been used to stimulate substantial economic growth. The Administration should listen to the consumers, who want their next vehicle to get 40 MPG, in line with the current standard, and who believe that the automakers would sell more vehicles if they made more fuel efficient cars. Not only will the SAFE proposal uneconomical and unpopular, but it violates the Administrative Procedure Act (APA) because of its severely flawed analysis. By totally disregarding current and historical evidence, the proposed rollback will hurt Americans financially, reduce auto sales, and harm the environment. In addition to being a violation of the APA, it also violates the underlying statutes that govern EPA and NHTSA in setting standards.

¹⁹ Comments of the Consumer Federation of America, before the Department of Transportation, Office of the Secretary of Transportation, Re: Notification of Regulatory Review: 14 CFR Chapters I, II, and III, 23 CFR, Chapters I, II, and III, 46 CFR Chapter II, 48, CFR Chapter 12, 49 CFR Chapters I, II, III, V, VI, VII, VIII, X, and XI, Docket No. DOT-OST-2017-0069, November 1, 2017; Comments of the Consumer Federation of America on the California Air Resources Board *Mid-Term Review*, March 24, 2017; Comments of the Consumer Federation of America, Before the Environmental Protection Agency, Evaluation Draft Technical Assessment Report for Model Year 2022–2025 Light Duty Vehicle GHG Emissions and CAFE Standards, EPA-HQ-OAR-2015-0827; NHTSA-2016-0068; FRL-9949-54-OAR, Department Of Transportation RIN 2060-AS97; RIN 2127-AL76, September 26, 2016.

APPENDIX A

2019 CFA Survey Questions²⁰

Now I'd like to ask you several questions about motor vehicle fuel economy standards.

Support for Standards

- F1 For almost 40 years, the Department of Transportation has set standards for the minimum level of fuel economy or miles per gallon of cars, SUVs and pickups. Do you support federal standards requiring auto companies to increase the fuel economy of the vehicles they manufacture? Would you say you...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Support strongly
- 02 Support somewhat
- 03 Oppose somewhat
- 04 Oppose strongly
- 99 DON'T KNOW/NO OPINION

Support for Roll Back

- F2 Current fuel economy standards require each automaker to increase the average fuel economy of all their new cars and light duty trucks to approximately 40 miles per gallon by 2025. The Trump administration is proposing to reduce this 40 miles per gallon average to about 30 miles per gallon in 2025. What is your view of this proposal to reduce the standards? Do you...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Support strongly
- 02 Support somewhat
- 03 Oppose somewhat
- 04 Oppose strongly
- 99 DON'T KNOW/NO OPINION

²⁰ The survey was conducted for CFA by Engine Group's CARAVAN[®] by cell phone and landline on March 7-10, 2019, using a representative sample of 1001 adult Americans. The survey's margin of error is plus or minus 3.1 percentage points.

Importance of Fuel Economy in Vehicle Purchase

- F3 Thinking about the next vehicle you will purchase, how important will MPG, or miles per gallon, be in your decision of which vehicle to buy? Will it be...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Very important
- 02 Somewhat important
- 03 Not very important
- 04 Or, not at all important
- 99 DON'T KNOW/NO OPINION

Expected Mileage

- F4 What would you like the gas mileage of your next vehicle to be? Please answer in terms of MPG, or miles per gallon.

(RECORD A NUMBER. RANGE IS 1-150 MILES PER GALLON, DON'T KNOW/NO OPINION)

Benefit of Fuel Efficiency to Automakers

- F5 Please indicate if you agree or disagree with the following statement: 'If American auto manufacturers made more fuel-efficient vehicles, they would sell more.' Would you say you...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Agree strongly
- 02 Agree somewhat
- 03 Disagree somewhat
- 04 Disagree strongly
- 99 DON'T KNOW/NO OPINION

Support for Standards with 3-year Payback

- F6 Now suppose increases in the fuel economy of motor vehicles increased their purchase price but reduced the cost of driving them. If these price increases were offset by reduced gasoline costs over a THREE-YEAR time period, would you favor or oppose these fuel economy increases? Would you say you...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Favor strongly
- 02 Favor somewhat
- 03 Oppose somewhat
- 04 Oppose strongly
- 99 DON'T KNOW/NO OPINION

Support for Standards with 5-year Payback

F7 If increases in the purchase price of motor vehicles were offset by reduced gasoline costs over a FIVE-YEAR time period, would you favor or oppose these fuel economy increases? Would you say you...

(READ ENTIRE LIST BEFORE RECORDING ONE ANSWER)

- 01 Favor strongly
- 02 Favor somewhat
- 03 Oppose somewhat
- 04 Oppose strongly
- 99 DON'T KNOW/NO OPINION

SP1 In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?

- 01 REPUBLICAN
- 02 DEMOCRAT
- 03 INDEPENDENT
- 98 OTHER PARTY
- 99 DON'T KNOW/REFUSED

[ASK IF SP1 (03-99)]

SP2 As of today, do you lean more to the Democratic Party or the Republican Party?

- 02 DEMOCRATIC
- 01 REPUBLICAN
- 98 NEITHER/OTHER
- 99 DON'T KNOW/REFUSED

Sp2a Political party identification [to be set up for data file]

- 01 Republican [Sp1 (01)]
- 02 Independent-Lean Republican [Sp2 (01)]
- 03 Independent [Sp1 (03) That Are Sp2 (98, 99)]
- 04 Independent-Lean Democratic [Sp2 (02)]
- 05 Democrat [Sp1 (02)]
- 98 Other Party [Sp1 (98) That Are Sp2 (98) Or Sp1 (99) That Are Sp2 (98)]
- 99 Don't Know/Refused [Sp1 (99) That Are Sp2 (99) Or Sp1 (98) That Are Sp2 (99)]

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Appendix B



Consumer Federation of America

FOR IMMEDIATE RELEASE

February 15, 2019

Contact: Jack Gillis, 202-939-1018

[CFA Link](#); [Facebook Post](#) and [Tweet this](#)

CFA JOINS IN LAWSUIT AGAINST TRUMP ADMINISTRATION'S EFFORT TO ROLL BACK FUEL ECONOMY STANDARDS

Eviscerating the Current Standards Will Cost Consumers Billions of Dollars

Washington, D.C. – On February 14, 2019, the Consumer Federation of America [filed a 'Friend of the Court' brief](#) with the DC Circuit in a lawsuit against the U.S. Environmental Protection Agency (EPA) brought by the California Attorney General, 16 other states and the District of Columbia. This suit is intended to halt the Administration's ill-conceived plan to substantially weaken fuel economy standards for cars, SUVs and light duty trucks.

Last April, the Trump Administration initiated an effort designed to roll back reasonable fuel economy standards that would gradually increase the fuel efficiency of vehicles from model years 2021 to 2025. These are the standards agreed upon by an extraordinary group of stakeholders including 13 automakers, unions, environmentalists and consumer advocates.

"CFA has been championing higher fuel economy standards for over ten years because gasoline is a major household expense. In fact, right now the average household spends about two thousand dollars per year on gas. The gradually increasing standards currently in place will significantly reduce this household expenditure which is why in every poll CFA has conducted during the past ten years, consumers have favored keeping those standards in place", said Jack Gillis, CFA's Executive Director and author of *The Car Book*.

CFA's Amicus Brief Counters the EPA's Flawed Rationale for Rolling Back Fuel Efficiency Standards

CFA's brief focused on 3 consumer related areas:

1. Consumer Savings: The Trump Administration's withdrawal of the Final Determination significantly harms consumers by eliminating billions of dollars in consumer savings at the gas pump. EPA attempts to claim that fluctuations in gas prices justify its reversal of the prior administration's decision to strengthen fuel economy standards. But gas price fluctuations are one of the main reasons consumers support the standard; they know that as often as gas prices go down, they go way back up.

2. Consumer Preferences: EPA is claiming that consumers' desire for standards has changed since the Final Determination was issued in 2017. Not so. The agency's record, including CFA surveys, reveal that consumers strongly prefer higher fuel economy standards.
3. Low-Income Consumers: EPA's claims that low-income consumers will be hurt by higher fuel economy standards because they are forced out of the new car market. This patently false claim ignores that only about 2% of low income consumers purchase new cars. Low-income consumers purchase *used* cars—not new cars. Higher standards will ensure that a steady flow of increasingly fuel efficient vehicles will flow into the used car market. Without the standards, used car buyers will pay more for gasoline.

“Reversing the ill-considered and illegal withdrawal of the Obama administration’s Final Determination supporting the 2022 standards is important because it affirms the evidentiary support for the rule”, pointed out CFA Senior Fellow Mark Cooper. “Two of the three agencies¹ that collaborated on the rule (EPA and the California Air Resources Board with its Clean Cars Program) supported the 2017 Final Determination. This shows how far off the mark the Trump Administration is.”

It is anticipated that this case will be heard in the U.S. Court of Appeals for the D.C. Circuit this summer but could be impacted by the Administration issuing a final rule this spring affecting model years 2021-2025 vehicles. CFA will continue to vigorously fight for higher standards and their enormous benefits for hardworking American families who depend on their vehicles for work and family transportation.

[The Consumer Federation of America](#) is an association of more than 250 non-profit consumer groups that, since 1968, has sought to advance the consumer interest through research, education, and advocacy.

¹ NHTSA was required to undergo a separate rulemaking process.

Appendix C



Consumer Federation of America

FOR IMMEDIATE RELEASE

Contact: [Jack Gillis](#), 202-939-1018

October 26, 2018

[CFA link](#); [Facebook post](#) and [Tweet this](#)

CONSUMER GROUPS FIGHT BACK ON TRUMP'S PLAN TO KILL MONEY-SAVING MPG STANDARDS

Administration Breaks Promise of Fuel Savings to American Families

Washington, D.C. — In [comments](#) submitted jointly with 32 of America's consumer groups to the U.S. EPA and NHTSA in response to the Administration's ill-founded proposal to roll back and freeze the highly-popular, cost-saving fuel economy standards at their 2020 level, Jack Gillis, Executive Director of the Consumer Federation of America and author of *The Car Book*, issued the following statements:

A Broken Promise:

“Rolling back our miles-per-gallon standards is a broken promise to the American people. Families cannot afford to spend more money at the pump. These standards protect consumers from rollercoaster gas prices that are already on their way up again (up 16% in the last year). This is why over two-thirds of Americans [support](#) federal fuel economy standards. Households don't have a choice in what they pay at the pump so they need fuel efficient choices at the dealership, whether it's a car, truck or SUV. Denying families the fuel savings that will come from the current standards will wreak havoc on household finances.”

Blaming the Need for Rollbacks on Safety is Flat Out Wrong:

[“Our safety report](#) completely refutes the Administration’s flat-out wrong rationale for rolling back the standards. In our [most recent analysis](#), CFA has determined that all new 2018 vehicles are not only more fuel efficient, but they are also more crashworthy and include more safety features than their previous versions. Not only do auto safety experts and NHTSA (whose own data shows that vehicles are safer) debunk the Administration’s safety claims, but they were also rejected by 76% of consumers in a recent national survey. The fact is, safety is up, fuel economy is up and sales are up. The truth is that today’s “all-new” vehicles are the safest and most efficient cars, trucks and SUVs in history, and consumers are responding by buying them in record numbers. When it comes to protecting your family and saving money on gas, you don’t have to choose.”

Fuel Efficiency Pays for Itself and Everything Else:

“Not only does fuel savings cover the cost of fuel efficient technology, but it will often cover [all of the other costs](#) that go into automakers annual price increases many times over, including new advanced safety features. When examining 2018’s “all-new” vehicles, CFA determined that 50% of these vehicles were actually cheaper to purchase and fuel compared to their 2011 counterparts. Consumers who purchase a new vehicle today, will typically save \$860 over the cost of fuel efficiency technology—savings which will grow as gas prices increase. Not only is this a benefit to household finances, but when these consumers spend these savings on other household goods and services, the economy gets a boost.”

Fuel Efficient Trucks and SUVs Sell Better:

“Families and workers that need larger vehicles will be hurt the most by this rollback. Ironically, as the car companies request a rollback, the resulting fuel efficiency improvements brought about by the standards have made these vehicles more desirable, increasing sales for automakers. CFA’s [analysis](#) of vehicle sales shows that popular SUVs, which have increased their MPGs by 15 percent, sell far better than those who had less than a 15 percent improvement. MPG standards have been a win-win for the people

who need bigger cars and, ironically, for the automakers who sell them. In the years since the standards were enacted, car makers have enjoyed the highest vehicle sales in American history. Increasing fuel efficiency helps make new vehicles entering the market more affordable for consumers.”

Short Sighted Action Will Hurt U.S. Car Makers:

[“CFA’s recent analysis](#) clearly shows automakers are on the road to achieving the standards, with many vehicle models already meeting the 2025 standard. Halting this progress at 2020 – half a decade before we’ll see the full benefits of the standards – will roll the American auto industry back to the days of the last fuel price spike when lots of vehicles remained unsold and the taxpayers had to bail them out while foreign carmakers reaped the sales with their fuel-sipping vehicles.””

Putting Corporations Before People:

“The American public does not want these standards rolled back. Survey after survey shows that consumers want the higher fuel efficiency standards because they save money. [CFA's latest survey](#) provides indisputable evidence that consumers of all political ideologies strongly support them. (61% of Republicans, 66% of independents and 71% of Democrats) In fact, states that are dependent on the auto industry support the standards to an even higher degree compared to the general populace. To roll back fuel efficiency standards is to put corporate lobbyists’ wish lists over the needs of American families, who want, and are buying, safe, attractive and efficient vehicles that go farther on every gallon of increasingly more expensive gas.”

Revoking States’ Rights:

“Revoking states’ rights guaranteed under the Clean Air Act, in place since 1975, goes against the will of thirteen states and DC representing 113 million Americans and over a third of the automotive market. These states have chosen address their own unique air quality issues which have resulted in cost-saving, efficient cars for their citizens. The standards are also

immensely popular, with over 2 out of 3 consumers supporting states' rights to adopt the clean car standards.”

Good Jobs Will Be At Risk:

“Tragically, good manufacturing jobs across the country will be at risk with this proposed rollback. Jobs could be lost if Detroit again cedes market share to foreign car companies fully prepared to meet increasing national and global demand for more fuel efficient cars.”

*Consumer groups joining the Consumer Federation of America in comments to NHTSA and EPA opposing the proposed freeze and rollback of the federal fuel economy standards and the revocation of the California waiver:

AKPIRG

Arizona Consumers Council Foundation

Arizona PIRG Education Fund

California Public Interest Research Group Education Fund (30)

Chicago Consumers Council

Citizens Action Coalition of Indiana

Colorado Public Interest Research Foundation

ConnPIRG Education Fund

Consumer Action

Consumers Council of Missouri

Consumers for Auto Reliability and Safety

Florida Consumer Action Network

Florida Public Interest Research Group Education Fund

Illinois PIRG Education Fund

Maryland Public Interest Research Foundation

Massachusetts Public Interest Research Group Education Fund

Montana Organizing Project

New Mexico PIRG Education Fund

North Carolina Public Interest Research Group Education Fund

Ohio PIRG Education Fund

Oregon Citizens Utility Board

OSPIRG Foundation

Pennsylvania Public Interest Research Group Education Fund

PIRGIM Education Fund

Policy Matters Ohio
Public Interest Research Foundation of New Jersey
Texas Consumer Association
Texas Public Interest Research Group Education Fund
U.S. PIRG Education Fund
Virginia Citizens Consumers Council
Washington Public Interest Research Group Foundation
WisPIRG Foundation

For a copy of the full comments go [here](#).

[The Consumer Federation of America](#) is a nonprofit association of more than 250 consumer groups that was founded in 1968 to advance the consumer interest through research, advocacy, and education.

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BEFORE THE
DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

And the

ENVIRONMENTAL PROTECTION AGENCY

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks	49 CFR Parts 523, 531, 533, 536, and 537, 40 CFR Parts 85 and 86 [NHTSA–2018–0067; EPA–HQ–OAR–2018– 0283; FRL–9981–74–OAR] RIN 2127–AL76; RIN 2060–AU09
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COMMENTS OF CONSUMER GROUPS:

THE CONSUMER FEDERATION OF AMERICA, AKPIRG, ARIZONA CONSUMERS COUNCIL FOUNDATION, ARIZONA PIRG EDUCATION FUND, CALIFORNIA PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, CHICAGO CONSUMERS COUNCIL, CITIZENS ACTION COALITION OF INDIANA, COLORADO PUBLIC INTEREST RESEARCH FOUNDATION, CONNPIRG EDUCATION FUND, CONSUMER ACTION, CONSUMERS FOR AUTO RELIABILITY AND SAFETY, FLORIDA CONSUMER ACTION NETWORK, FLORIDA PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, ILLINOIS PIRG EDUCATION FUND, MARYLAND PUBLIC INTEREST RESEARCH FOUNDATION, MASSACHUSETTS PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, MONTANA ORGANIZING PROJECT, NEW MEXICO PIRG EDUCATION FUND, NORTH CAROLINA PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, OHIO PIRG EDUCATION FUND, OREGON CITIZENS UTILITY BOARD, OSPIRG FOUNDATION, PENNSYLVANIA PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, PIRGIM EDUCATION FUND, PUBLIC INTEREST RESEARCH FOUNDATION OF NEW JERSEY, TEXAS CONSUMER ASSOCIATION, TEXAS PUBLIC INTEREST RESEARCH GROUP EDUCATION FUND, U.S. PIRG EDUCATION FUND, VIRGINIA CITIZENS CONSUMERS COUNCIL, WASHINGTON PUBLIC INTEREST RESEARCH GROUP FOUNDATION, WISPIRG FOUNDATION

October 26, 2018

INTRODUCTION

Fuel Economy is a Major Consumer Issue

The Consumer Federation of America¹ (CFA) and 30 of its member organizations (hereafter Consumer Groups) appreciate the opportunity to provide the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) with comments regarding the Notice of Proposed Rulemaking on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. The agencies are proposing to freeze the current CAFE standards at their 2020 levels through 2026 and to revoke California's waiver to set its own emissions standards which can be and has been adopted by other states.

Throughout its 50 years of existence, CFA has been a vigorous and continuous participant in the process of setting regulations to improve the efficiency of energy-using consumer durables and lower the cost of energy borne by consumers.² Transportation fuels, the sources of energy most directly affected by DOT regulations are a major household expenditure, representing over 3 percent of total expenditures, one of the 6 largest subcategories listed in the consumer expenditure survey. The overwhelming majority of the benefits of fuel economy (80% or more) and pollution reduction standards are economic, directly yielding consumer pocketbook savings and indirectly stimulating macroeconomic growth.

In these comments we make a simple point, with a great deal of data and analysis. In 2008, NHTSA wrote a standard using many of its old, error ridden assumptions and practices that did not conform to the program as rebooted by the Energy Independence and Security Act of 2007 (EISA). Beginning in 2009 and particularly with the National Program, NHTSA/EPA corrected almost all of those errors. The Technical Analysis Report (TAR) affirmed those corrections. CFA's comments in these proceedings analyzed and affirmed those corrections, although there were still a couple more we would have liked to have seen. Unfortunately, with the 2018 Rollback and Freeze proposal, the agency has tried to go back to the bad old days, re-introducing two dozen errors into its approach. These comments explain why those assumptions and analyses are incorrect and illegal, violating the Administrative Procedure Act and the enabling statutes under which the agencies operate.

Below is a summary of our in-depth comments which provide our analysis of key aspects and reasons for unequivocal opposition to this rulemaking. Based on that analysis, we recommend the following:

- The EPA should affirm its earlier conclusion that the standards set for 2021-2025 are appropriate.

¹ The Consumer Federation of America is an association of more than 250 nonprofit consumer groups that was established in 1968 to advance the consumer interest through research, advocacy, and education.

² The CFA website (<http://consumerfed.org/issues/energy/>) provides links to 140 pieces of testimony and reports published in the past ten years dealing with the efficiency of energy-using consumer durables divided roughly equally between appliances and vehicles.

- There is no need, under the enabling statutes of both NHTSA and EPA, to issue rules for the “out years” beyond 2026 and the agencies should make clear that their recommendation of the 2021-2025 standards, does not address future standards.
- To the extent that the agencies can identify flexibility within the current rules that enable automakers to accomplish essentially the same goals at a lower cost, they should put these proposals out for further comment.

Historical Analyses

To explain why a rollback of the standards is not warranted, CFA analyzed the data and assumptions made by NHTSA since the passage of the Energy Independence and Security Act of 2007 (EISA). This analysis is summarized in Table 1.

The first column identifies the over 40 correctible errors made in the 2008 Rulemaking, as we described them in our comments. Even with these flaws there was clear evidence to support increasing fuel economy levels as dictated by EISA.

The next three columns show how the agencies corrected these errors, again as we say in our comments. Correcting the errors showed that much more improvement in fuel economy was possible under the enabling statutes of both agencies.

The fifth column identifies ways in which EPA/NHTSA have deviated from the improved practice and reintroduced two dozen errors into the proposed rule. The final column shows the magnitude of the impact that these errors have on its cost benefit calculations. The Rollback and Freeze proposal does not have a positive benefit cost ratio, compared to the continuation of the standards set by the National Program; once the errors are corrected, it has a negative benefit cost ratio of -6-to-1.

However, the flaws needed to be corrected in light of the enactment of the Energy Independence and Security Act (EISA). As we show in these comments, rulemakings in 2009-2010 began a transitional process of doing so. A transition was needed because the industry was under extreme pressure, with two of the “big three,” U.S. automakers in bankruptcy and a great deal of regulatory underbrush that had to be cleared away.

The next major step was taken by NHTSA, EPA and the California Air Resources Board (CARB) which collaborated on the National Program to set long-term standards for 2017-2025 Model Year Light-Duty Vehicles in 2012. As these comments show, the 2012 rule corrected the majority of the flaws in the 2008 approach to standards setting, using data supported by historical and current trends. The 2016 Technical Assessment Report (TAR), a collaborative work of NHTSA, EPA and CARB affirmed the approach to standard setting. In these comments, by reference, we incorporate all of the sources identified in Table 1 in the Technical Appendix into the current record. We believe this is appropriate, not only as a matter of general practice, but also because the mid-term review was intended to look at the record and performance of the National Program and the entire hearing record of that proceeding, including, in particular the TAR, which should be the foundation for the review.

TABLE 1: TABLE 1: A DECADE OF EVOLUTION YIELDS A RATIONAL, LEGAL APPROACH TO STANDARD SETTING IN THE POST-EISA ERA

ISSUES	2008	2010	2012	TAR	2018	Impact on
(correctable errors)	Post-EISA	Transition	Full	Approach	Old/New	B,C = Δ %
	Errors	Correction	Correction	Affirmed	Errors	TAR v. 2018
Underestimating Benefits						
Truncating Benefits					43314	B= + > 30
Rebound Effect Pocketbook	2,8,10,59-60; 8,28	10,27	12,53	5,6	43099-108	B= + 10 to 15
Gasoline Prices	2,8,44,49;2a		53		4299343070	B= + 3
Include All Benefits	2.8.57-58;a6	27,71, 2,16,27	14	2		B= + 50
Macroeconomic	22	8	14	4,6,69-72, App.G	43068	B= + 60
Public Health Co-Benefits	9	3,29,33	7,33	App.H,a4		B= + 33
Non-enviro externalities	2,8	3,6-7, 33-37	7,14,33			B= +
Discount rate (3% v. 7%)	2,40,52-55		55	APP.E	42306	B= + 34
Overestimating Cost						
Technology Cost	3,4,57	1,5,12	8,35,42-43	2,3,APP.D	42993	C= - 50
Tecnology Feasibility	3,10,11,17, 20-21		8,41,12	14,b8	42991	
Payback	53-54,56;a51		29,72	4,59	43255	
emerging technology	9,21	7		2		
Refresh and redesign cycle	11			?		
Misrepresenting safety					43231	
Rebound effect	10					C= - >75
Light-weighting trucks						C = - ?
Technology						C = - ?
Broad Market Issues						
Low income households			12,51	6-7	43227	B = + ?
Pocketbook			12,51	6-7	43105	B = + ?
Public Health				6-7		B = + ?
Clean Cars States					43306-16	
Federalism	Econ. Anal		Federalism	3,4,15,a4	43235-53	B = + ?
Hybrids aand Evs		35		3,15,APP.I,a8-9	43217-22	
Conceptual & Legal Frame						
Economic Assumptions	36,39,65	2,4,21,40-45				
Efficiency Gap/Diffusion	22,33-37,41-42	2,3,22,23 38,39,50,56	12-13,15,54	8,APP.B,C,F, b6-7	43071	B = + ?
Behavioral Economics	36,39,38,41	22-23,31-32,45-46				B = + ?
Legal Balancing Post-EISA	2-3,8,11-13,17;a3-4	3,5,7-8, 19-21, 34,35, 64-66,109	8,15	2-4,12-13, APP. A,G;C6,ATT.SII	43206-16,43309	
Modelling Flaws		5, 19, 110		4,5		
Failure to vet, peer review						
Outdated data	10,11					
Internal inconsistencies	57, 10 VMT				xx scrappage	
Real World Behavior						
Consumers		6,68,70			43070-74	
Attitudes	18;a2,5	76,77				
Support for Snadards						
Interest in Fuel Economyu		78-79			435216-17	
Payback Periods				5	43255	
Behavior	18,69;a7,30	68, 86-88,96-98	27-29			
marginal value of driving					42991-92	B = + ?
WTP Critique	42	24, 68			43071	B = + ?
Monthly Loan Payment			29	2,4		B = + ?
Automaker behavior	a2,7	71,73-75,91-95	46	2,16, APP.D,b10		
Misrepresenting Consumers	36, 39;a5	71, 58-64	5,20	9,,10,11,a10,12	42993	
preferences			4	3,10		B = + ?
payback	53,60,61	1		2		B = + ?
Advertising (manipulation)						B = + ?
Strategies & Pricing	61, a11	9, 70, 81			42993-4	
Plans & Refresh Cycle	10,11,17, 33,38,41;a3, 33,35,41,59	81	48			C = - ?
Fines, credits	12,33;a11	20				C = - ?
Compliance				3-4,12		C = - ?
Market Performance	4,9,11	15	10	2,17,a4,6	43809-94,43099	
Prices	11			51,7	42993	
Auto sales total	9,43	81-90,99-102		2,b11-13	42995	
Sales of efficient vehicles	11a,			2,b11-13		
Overall Impact of Rollback & Freeze	2,8,14,25,36, 39,65	4,9,17,30,39-41, 70	5,6,8,11	2,5,17,b6	43419	TAR v. CFA = + 10% to 30%

The current SAFE proposal goes backwards by making and expanding upon the flaws found in the 2008 rule. By carefully re-analyzing of the impact of the standards, CFA shows the conclusions drawn from the 2012 rule and 2016 TAR were correct in their assessment of the benefit and costs of the standards. The SAFE analysis both underestimates the benefits of the standards by 10-30%, while also downplaying the harms of not enacting the standards as put forth in the TAR. The bottom line is clear, the Rollback and Freeze Proposal will cost consumers and then nation about six times as much as it saves in auto technology costs.

Thus, the benefit cost ratio is -6 to 1, which violates the enabling statutes of both agencies and guidance from the Office of Management and Budget (OMB) on rulemakings. By turning their backs on the current rule without building a record to support it, the about face on standards also violates the Administrative Procedure Act (APA). In these comments we highlight the major conceptual, analytic and quantitative flaws in the Rollback and Freeze Proposal. The Technical Appendix and attachments discuss many more flaws in the proposal and provide empirical evidence that support our conclusions.

One of the main claims by NHTSA/EPA is that there have been fundamental changes in the auto market in the years after the 2012 rule and the TAR (which reaffirmed the findings of the 2012 rule). The fact of the matter is there is no evidence to support this claim, therefore the agencies simply re-interpreted old data in a fashion that recreated the effort of the original 2008 rule, misconstrued the data and made assumptions that that were proven to be incorrect by almost a decade of fact-based analysis and made assumptions that almost a decade of rigorous, fact-based analysis had shown to be incorrect.

Consumer Savings

If the agencies go forward with the rollback of the fuel economy standards, consumers would lose out on over \$145 billion in pocketbook benefits and \$75 billion in overall economic growth. This \$220 billion in lost benefits compares to a paltry \$70 billion in savings if there is a rollback. Public health and environmental benefits would increase the total.

- We have included for the purposes of this analysis the traditional industry approach, which is the sum of pocketbook and environmental benefits. The Freeze and Rollback Proposal has a substantial negative benefit cost ratio (-3 to 1).
- Taking cost reductions and the pocketbook value of the rebound effect into account, the benefit cost ratio is -4.5 to one. As noted above, the cost declines on which this scenario is based are already in evidence and the pocketbook value of the rebound effect is also correct, so this assessment of the economics is likely the best.
- Adding the lost environmental benefits to the adjusted economic benefits would put the negative benefit ratio close to -6 to 1 for freeze and rollback. This is the best estimate of the impact of the attack on fuel economy standards.

FUNDAMENTAL FLAWS IN THE NHTSA/EPA ANALYSIS

The agencies' notice tries to establish general themes that argue that the standards have diminished value and are not needed. Their arguments are, at best, unsupported and dubious, and at worst, they are flat out wrong. Here we provide one example. The Notice tries to argue that

fuel economy makes new vehicles unaffordable, hurting the industry and keeping consumers in older, dirtier cars.

Missing Benefits

The Notice claims that the need to conserve energy, embraced by Congress as the overarching goal, has been eliminated by the improvement in our oil situation, but ignores the fact that one-fifth of the recent improvement has been due to improved efficiency and the Rollback and Freeze Proposal will increase consumption by billions of gallons over the next decade. The SAFE analysis also irrationally and unreasonably excluded important benefits, including macroeconomic and public health benefits, benefits that are inextricably tied to the reduction of consumption of fossil fuels. The agencies have also dramatically lowered the public health benefits that are associated with reducing the amount of gasoline used. As there is a clear and obvious link between reducing the use of fossil fuels and lower amounts of pollutants, the benefits of increasing fuel economy have a co-benefit of making the air cleaner and thereby helping decrease any diseases tied with air pollutants. Lower fuel consumption is one of the least cost ways to lower pollution, which not only saves consumers money, but also reduces public health costs.

The Notice claims that as fuel economy rises the diminishing benefit of continuing improvements are no longer justified, but fails to note that in its own example the benefits exceed the costs. Indeed, early in the Notice, we are shown a graph to support the claim of “unaffordability” that is fundamentally flawed by comparing current prices to constant income. Correcting that error, as shown in Figure 1, shows that there has been no significant change in affordability. After the Great Recession, spending on vehicles returned to their pre-standards range. Fuel economy is certainly not to blame for a non-existent problem. The failure of NHTSA/EPA to recognize this reflects a fundamental failure to understand how the new approach to standards setting adopted by EISA works. We call it “command-but-not-control” performance standards setting, which preserves consumer choice and gives automakers flexibility in meeting standards.

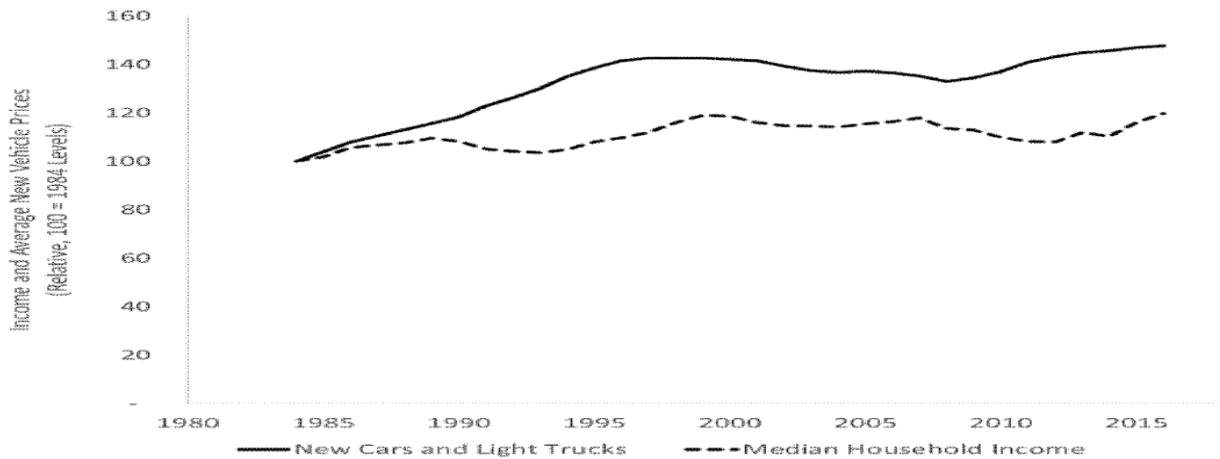
Rebound Rate

The misleading re-interpretation of old data can be found throughout the SAFE analysis. The biggest misleading re-interpretation can be found in doubling the rebound rate, which claims that consumers will drive greater distances thanks to increased fuel economy, thereby negating some of the benefits. In 2012 and 2016, the agencies determined the rebound rate to be 10%, which any reasonable analysis done today would find to be too high. As shown in Figure 2, the agencies in the SAFE analysis have decided to use an incredibly high rebound rate of 20%, which is one-third higher than the already flawed 2008 analysis. By doubling the previous rebound rate, the agencies have dramatically reduced the estimate of the pocketbook benefits to consumers, thereby underestimated the welfare gains consumers enjoy.

COSTS

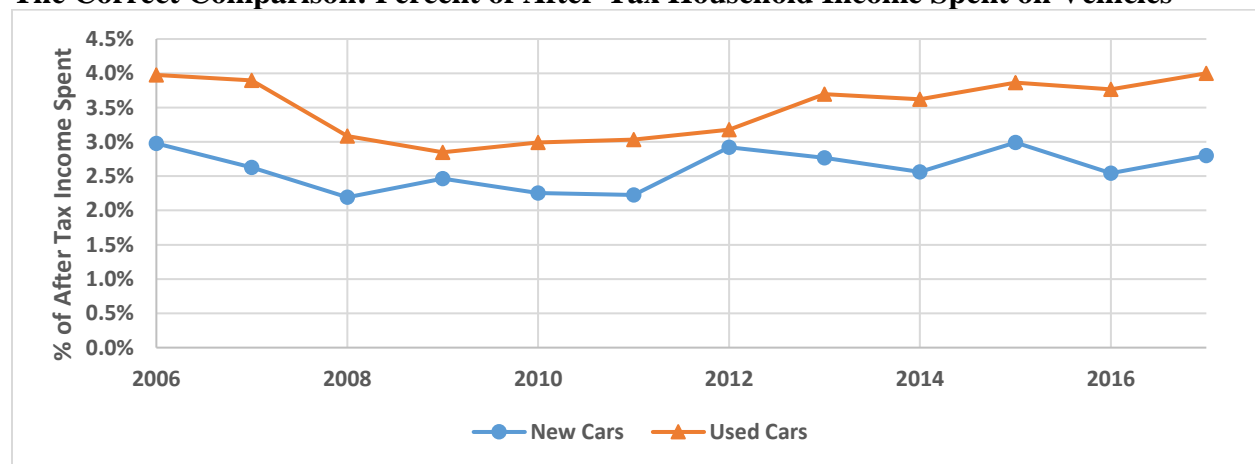
The agencies also increased the costs to comply with the standards by 50-100%, thereby in some cases doubling the compliance costs. By decreasing the options associated with making

FIGURE 1: AFFORDABILITY OF VEHICLES HAS NOT BEEN UNDERMINED BY FUEL ECONOMY
The Erroneous NHTSA/EPA Comparison, Nominal Prices versus Real Income



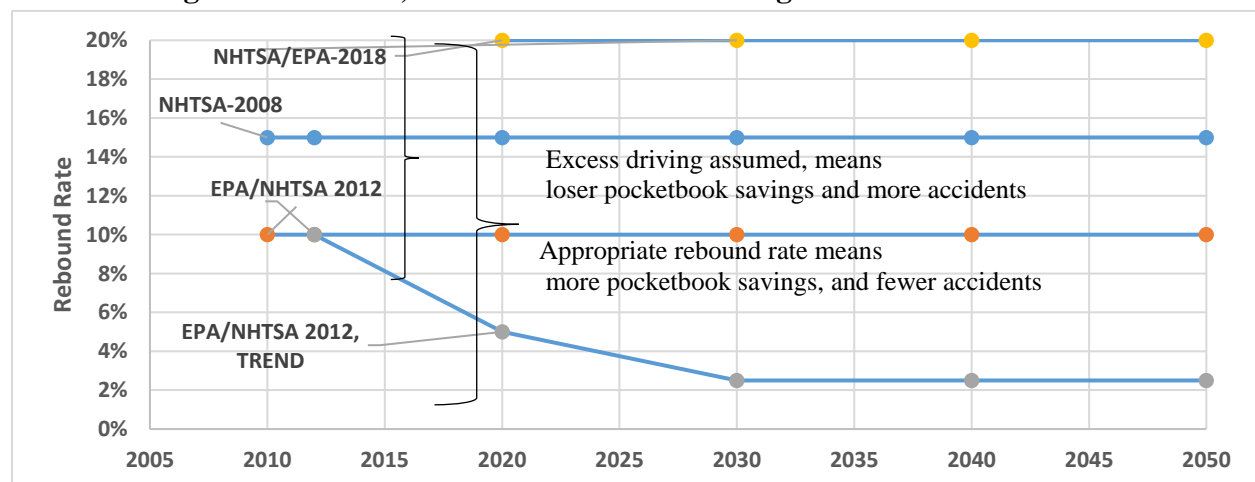
Source: NPRM, p. 22995

The Correct Comparison: Percent of After-Tax Household Income Spent on Vehicles



Source: Bureau of Labor Statistics, Consumer Expenditure Survey

FIGURE 2: EXTREMELY HIGH, EXCESSIVE ASSUMED REBOUND RATE
More Driving and Accidents, Smaller Pocketbook Savings Macroeconomic Benefits



internal combustion engines to be compliant with the standards, the SAFE analysis forces a significant increase in the penetration of electric vehicles to meet the standards. This re-interpretation of compliance costs goes against the increasing availability of fuel saving technology as well as the historical pattern which shows automakers and the private sector have been decreasing the cost of compliance. In fact, in every analysis (2008, 2012, 2016), the agencies have overestimated the cost of compliance, as automakers are able to produce fuel economy technology at lower cost prices than regulators estimated. A reasonable analysis would have reduced the estimated compliance costs, not increased them, and concluded that the standards set in 2012 and re-affirmed in 2016 are technically feasible and economically viable, as EPA and CARB found in their mid-term reviews.

Technology Cost Whiplash

The whiplash of the current proposal is depicted in Figure III-3. The reasons for the whiplash are the severe constraint on technology choices imposed by the model and the very high markup assumed. By imposing constraint on the use of technologies, ignoring emerging technologies and assuming many more electric vehicles would be necessary, NHTSA has adopted a price that is far above EPA's estimates and those of independent third parties, as shown in the upper graph of Figure 3.

Another way to appreciate this whiplash is to calculate the cost of increasing fuel economy per MPG. As shown in the lower graph of Figure III-3, David Greene, one of the leading experts on fuel economy, recently conducted a review of the literature in which he concluded that an estimate of 27% of the increase in vehicle cost, or about \$150 for every mile per gallon improvement, was too high. He gave two reasons for this.

First, backward looking analysis of cost increases that included used vehicles (as his analysis did), were double counting the cost of increasing fuel economy because the sellers of vehicles were capturing a significant part of the capitalized value of better fuel economy equal to about 20% of the estimated cost of efficiency, in their sales price. This factor alone would lower the estimate to 21.6% of the increase in price or to about \$120 for each 1-mile improvement in the MPG. Second, real world experience showed that there was a learning process in which costs fell as automakers gained more experience with increasing fuel economy. Greene suggested that 2% per year was a reasonable estimate. Over the redesign cycle of vehicles (e.g. five years) this learning rate would lower the cost by about 10%. Thus, one might argue that the appropriate numbers would be about 20% per year and \$108 dollars per MPG.

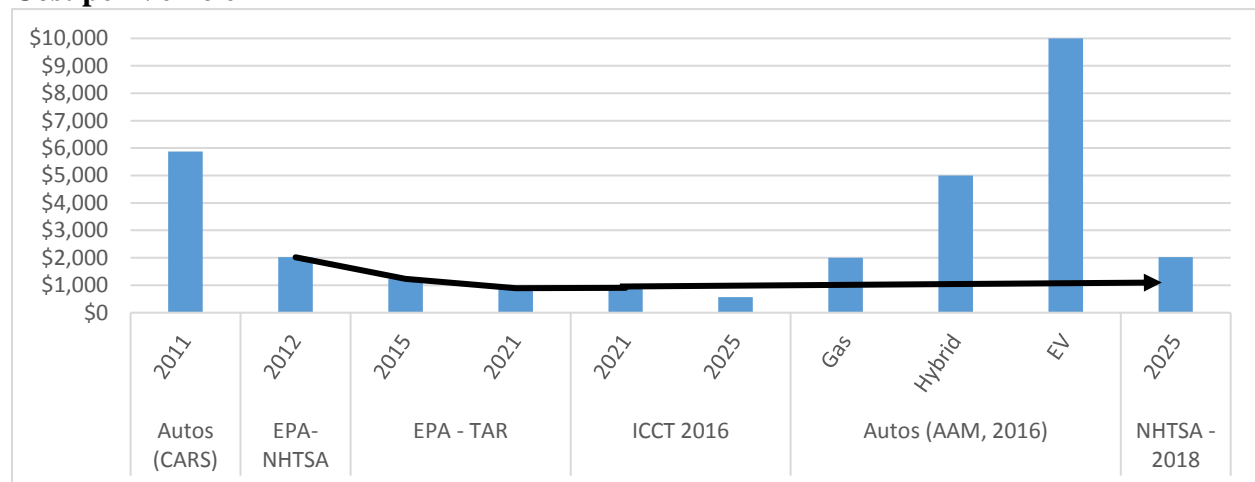
In a subsequent analysis, Greene estimated the cost of improving fuel economy directly with an econometric model that corroborated the above concerns, as shown in the lower graph in Figure 3. The simple adjustment to a constant 20% of total cost moves the estimate much closer to the empirical evidence offered by Greene suggesting costs that are about two thirds of the literature review—about 18% or \$99/MPG.

EPA's analysis of the cost of the National Program in the TAR yields an estimated cost for fuel savings that is similar, \$97/MPG. This estimate reflects considerable technological progress over the early years of the National Program, which is consistent with the historical pattern. A recent study by the ICCT offers an estimate of going forward costs of improvement

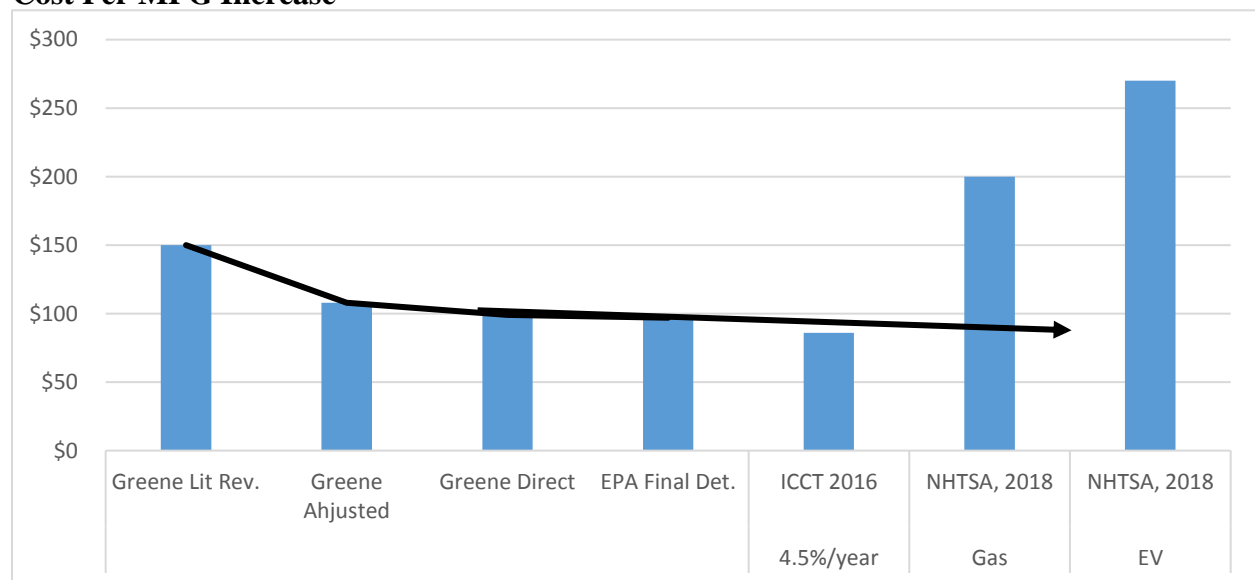
close to the rate of the National Program (national program = 3.3%, ICCT = 4% per year). The ICCT study also includes continuing technological progress.

FIGURE 3: THE COST WHIPLASH: PER VEHICLE COST OF MEETING THE 2025 STANDARD

Cost per Vehicle



Cost Per MPG Increase



Source: CFA, CARS Memo, NHTSA, 2018, p. 43222

Automakers also regularly state that compliance costs are higher than what regulators estimate, when in fact they comply with efficiency standards at a lower cost than the regulators' estimates. New car prices for the most part have, since the Great Recession, failed to match the rate of inflation, all the while increasing in fuel economy. While new vehicle prices are indeed rising, this is due to the switch from cars to trucks and SUV's, which have a higher MSRP.

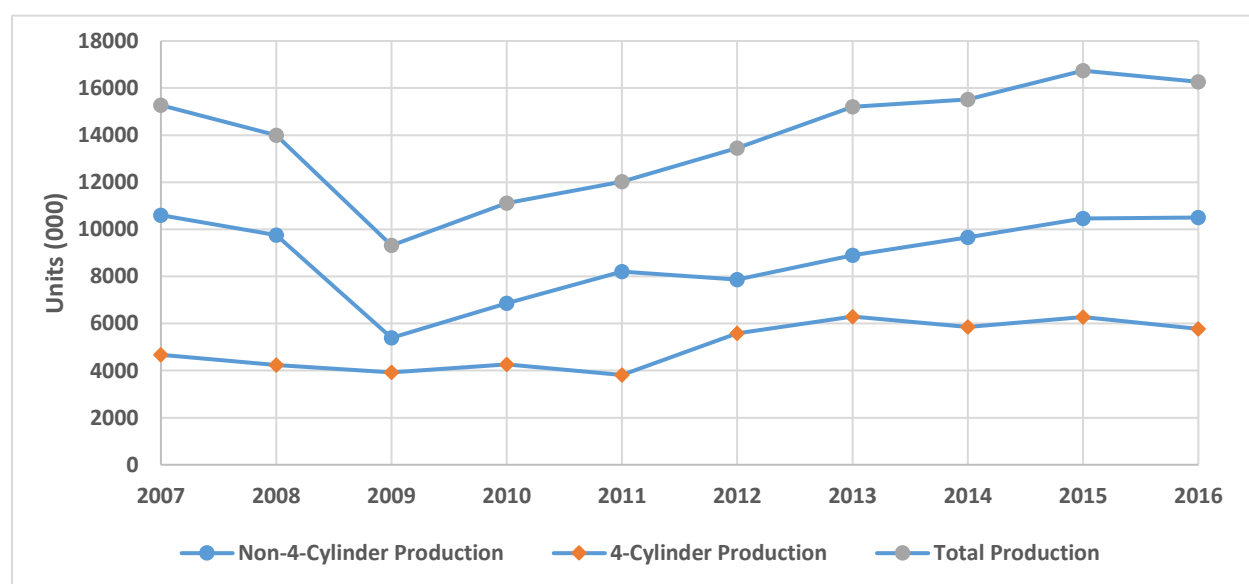
CFA analysis has further shown that after factoring in inflation, a full 27 percent of the "all-new" 2017 vehicles went down in price and increased their fuel economy by 1 to 10 MPG

compared to their 2011 counterpart³. This is without considering that fuel economy technology is only one of the many different improvements that increase a vehicle's MSRP, such as safety technology, convenience items and design changes which are all equal or higher drivers to increased vehicle costs. When using historically supported evidence, the best estimate of fuel economy technology costs is about \$100 per MPG of improvement. Using this estimate, 94 percent of the "all-new" 2017 vehicles saw a net positive benefit for the drivers, as the fuel savings exceeded the cost of fuel efficiency technology over the first five years of ownership.

Technology Deployment

The overarching discussion of technology developments that introduces the NHTSA analysis is fundamentally flawed and infects the entire proposal. NHTSA claims that some options considered in the original order for the National Program have not worked out as EPA/NHTSA anticipated. This is given as a major justification for rolling back and freezing the standards. EPA/NHTSA fail to note that some options have performed better than anticipated and that as the Notice pointed out that there were many alternative routes available to complying with the standards. More importantly, this is what should be expected from the "command-but-not-control" approach embodied in EISA and implemented faithfully in the National Program. The idea is to give the automakers flexibility to meet consumer needs while complying with the standards. EPA/NHTSA fail to accept the fact that the automakers and the auto market have used this flexibility to achieve both goals. Take the example of four-cylinder engines (shown in Figure 4).

FIGURE 4: 4-CYLINDER ENGINES OUTPERFORM THE REST OF THE MARKET:
4-cylinder sales withstood the great recession accounting for the increase in sales since 2007



Source: EPA, Trends, 2017

³ Jack Gillis and Richard Eckman, entitled, *An Analysis of Consumer Savings and Automaker Progress on the Road to 2025 CAFE Standards Increasing Fuel Economy Saves Consumers Money, Sells Vehicles, Keeps American Companies Competitive and, Most Importantly, is Achievable*, July 24, 2017

The market share of 4-cylinder engines has grown dramatically, thereby improving the average mileage of cars substantially. In part, their popularity reflects the fact that they have more horsepower than earlier 4-cylinder engines. This means that some of the fuel savings that could have been achieved by shifting to smaller engines is “taken back.” That is exactly the objective of a command-but-not-control approach. Automakers make the choices that keep them in compliance while also meeting consumer needs. This balance has worked extremely well. The performance of the auto market does not support the claim that the standards have damaged its functioning. Record numbers of vehicles have been sold and record number of 4-cylinder vehicles have been purchased.

Vehicle Safety

Besides costs, the main argument regarding the current standards that the SAFE analysis puts forward as rationale to roll back the standards, is vehicle safety which the agencies state will be decreased if the current standards were to be implemented. The argument that the standards will result in a dramatic increase in traffic fatalities is wrong for two reasons, theory and reality.

NHTSA’s analysis assumes, contrary to the empirical evidence and literature that an increase in new vehicle prices will increase the number of vehicles on the road and miles driven (VMT). By far the largest change from previous analyses in connection with safety is the change in the rebound rate. By irrationally doubling the rebound rate, the agencies projected increased fatalities due to increased fuel economy by 75%. By incorrectly assuming a massive increase in the number of cars/miles driven, NHTSA concludes there will be a massive increase in fatalities. Since the former will not happen, the latter will not happen.

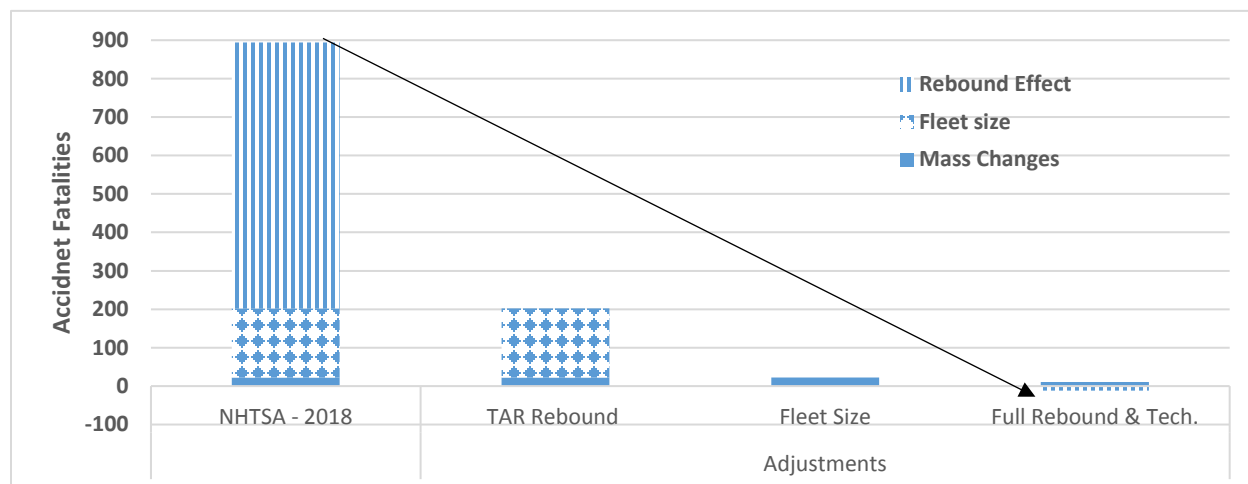
This assumption of increased fatalities is also inconsistent with real world experience. The agencies underestimate the increasing crashworthiness of vehicles. While the agencies correctly point out that vehicles are becoming lighter to meet the standards, vehicles are also more crashworthy compared to just 7 years ago when the standards went into effect. An analysis^[1] of all 2018 crash tests show that 71 percent of vehicles weigh less and had better fuel economy than its previously crash tested version. Of these vehicles, 47 percent had a better crash test rating, while the other 53 percent had the same rating. Not a single vehicle in the analysis had a worse crash test rating than its previous version. Outside of the passive nature of crashworthiness, the amount of added safety features that actively help to prevent a crash^[2] have increased by 60 percent since 2011. These facts can be proven by real-world driving experiences as well. The percentage of crashes that result in a fatality has steadily been decreasing since the standards were enacted, with a full tenth of a percentage decline from 0.61% to 0.51% from 2011 when the standards were enacted, to 2016 (the latest year figures are available).^[3]

Another argument the agencies put forward to roll back the standards is that due to the increased cost of vehicles, the turnover rate would decrease, meaning there would be more, older less safe vehicle on the road. The agencies ignore the fact that each year for the past five years, an average of 16.9 million new, safer and more fuel-efficient vehicles (17 million over the last two years) have been added to the fleet, while an average of 13 million older, less safe and less fuel-efficient vehicles have been retired^[4]. Even this year, auto sales are up 1.1 percent compared to the same time last year, clearly showing the argument of low turnover rate to be fictional.

Correcting the major flaws in the NHTSA/EPA framework, including the rebound effect, the absence of an increase in the number of vehicles on the road and the failure to recognize technological flexibility for automakers, eliminates any increase in fatalities as a result of the maintaining the standards set by the National Program, as shown in Figure 5. We believe other technological improvements, introduced along with higher fuel economy, further reduce the impact of increased accidents. Given the fact that the rebound rate is well below the level assumed by the TAR and safety technology continues to be added to vehicles, the TAR is likely to have significantly overestimated the increase in fatalities, not underestimated it as NHTSA now claims.

And our national survey conducted in August, 2018 revealed that over three quarters (76%) of Americans rightly reject the assertion that increasing fuel economy standards would lead to more accidents.^[5] This rejection is widely bipartisan, with 60 percent of Republicans, 80 percent of independents, and a plurality of 90 percent among Democrats rejecting the argument.

FIGURE 5: CORRECTING NHTSA ERRORS ELIMINATES ANY INCREMENTAL INCREASES IN FUEL ECONOMY RELATED ACCIDENT FATALITIES



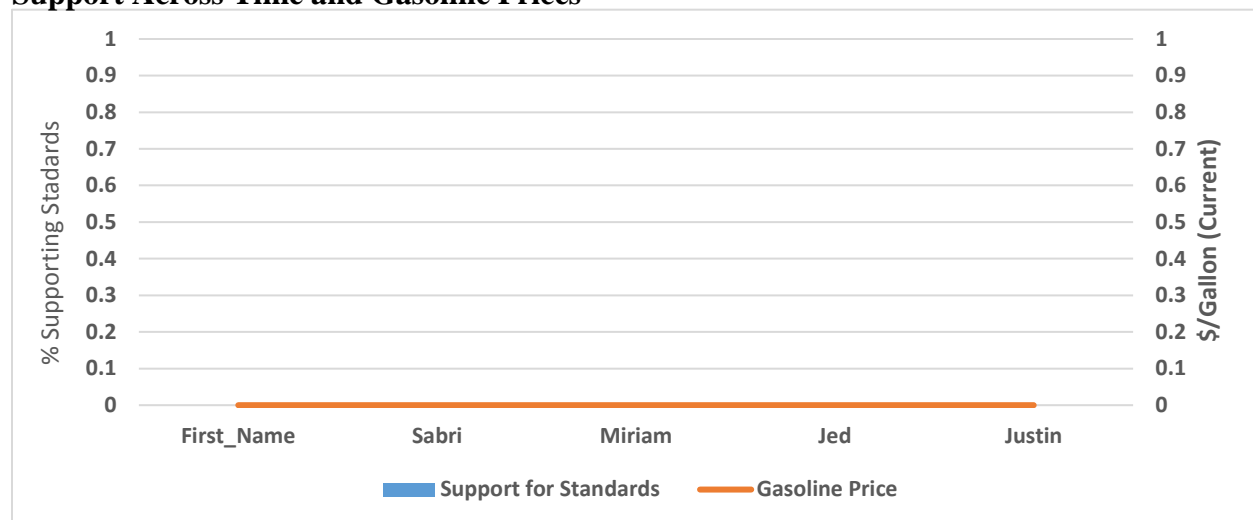
Source: NHTSA, 2018, PRIA, p. 1080; adjusted by CFA to eliminate excessive rebound effect and overreliance on mass reduction

CONSUMER ATTITUDES

Public Support for Standards

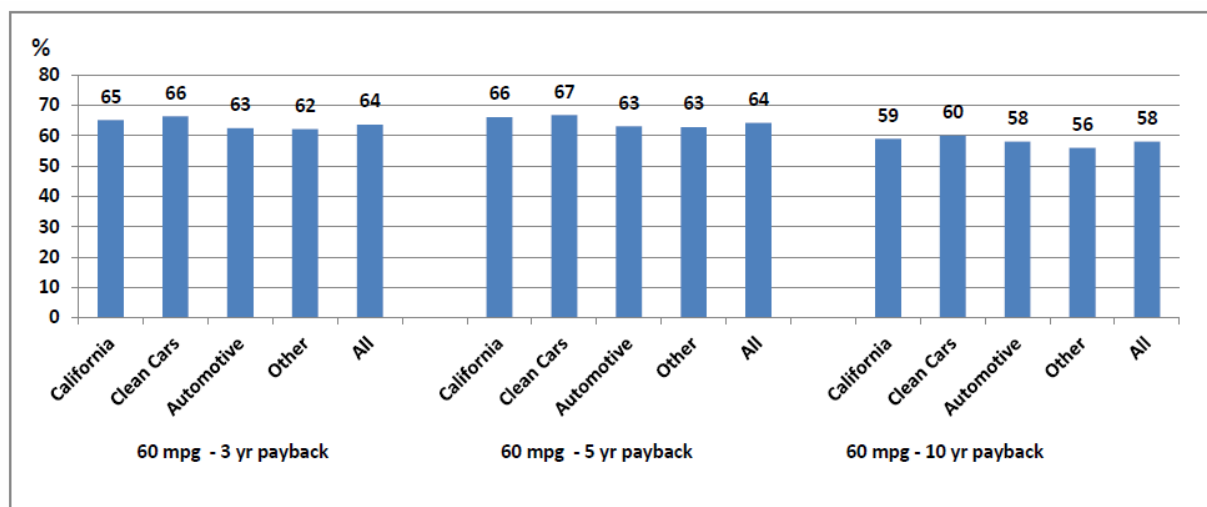
Over the course of more than a decade, CFA has sampled public opinion about fuel economy standards. We have found consistent large majorities support standards. Support cuts across, geographic areas (Clean Cars states, auto states, other states) and political orientation of respondents. Figure 6 shows the support for standards starting in 2010, when the questions identified substantial increases in fuel economy that were in the range being contemplated by the National Program. It also shows gasoline prices in current dollars in the year of the survey. Gasoline prices do not exhibit a strong relationship to prices in this period, which we surmise reflects the fact that consumers expect them to rise and also react adversely to price volatility. This, of course, is one of the primary reasons we have been vigorous advocates of increasing standards.

FIGURE 6: PUBIC SUPPORT FOR STANDARDS
Support Across Time and Gasoline Prices



Sources: CFA surveys, EIA database, Gasoline Prices

Support for Standards by Region and Payback Period



Source: National Survey Shows that Most Consumers Support 60 MPG Fuel Economy Standards by 2025, 09/28/10.

Consumers understand that the technology to increase fuel economy costs money, and therefore may increase the overall vehicle cost. CFA found that three out of five consumers support the standard if they would see a return on their investment in just 3 years. In fact, our previous surveys, that tested various levels of payback periods, found the level of support is roughly the same at 3 and 5 years and, even at a 10-year payback period there was majority support.

Payback Periods and Technology

Of most direct relevance to the standards setting process, we have asked consumers how they view the potential economic impact of standards. As a general proposition, payback periods

are an inferior measure of economic performance that should not be used to drive the economic analysis. In this case, the payback periods are seen as a constraint on market behavior by assuming that people will not buy technologies with a longer payback. The 2.5-year payback period dramatically and inappropriately restricts the technologies that the model can include in its estimation of costs

In the last 2011 survey, in addition to the general question about support for fuel economy standards, we also asked respondents whether they support a standard of 60 miles per gallon.⁴ For the latter question, we asked about support depending on how long the fuel saving technology would take to pay for itself. We asked about a 3-year, 5-year and 10-year payback period. The specific target of 60 mpg is supported by over 60% of respondents with payback periods of three and five years. This support remains in the high 50% range with a ten-year payback period. We noted at the time that using a payback period to assess fuel economy is actually a fairly “demanding” approach, since most consumers purchase autos with loans that last a relatively long period (with the majority being 5-year loans). In the auto loan framework, the relevant comparison is the cash flow. When a consumer buys a vehicle with more fuel saving technology, the cost of the vehicle increases and the monthly loan payment goes up. However, monthly expenditures on gasoline go down, since the consumer can drive as far on less gasoline. If the savings on gasoline exceed the increase in the loan payment, the consumer is better off from the beginning. The analysis arbitrarily restricts technology choices, particularly compared to the TAR.

Automaker Misrepresentation of Consumer Attitudes

Automakers have consistently misunderstood or misrepresented consumer purchasing behavior and attitudes. Of course, automakers spend an immense amount of money to influence public attitudes towards the vehicle on which they make the most profit, but even their own data shows that consumers want more fuel economy that the automakers will not deliver absent standards, as Figure 7 shows.

After the big four attributes, respondents care as much about fuel efficiency as the ability to take long trips and the automakers are working on that too. Beyond these big six attributes, the valuation of others falls off, but efficiency comes next. Even here the message for EVs is positive. Environmental impacts rank a lot higher (8th and 9th) than powerful engines (13th) or engine type (gasoline power = 14th, electricity = 16th). Fitting more than 5 people (15th) or hauling boats and campers (ranks dead last) don’t matter much.

ADDITIONAL IMPORTANT PUBLIC POLICY ISSUES

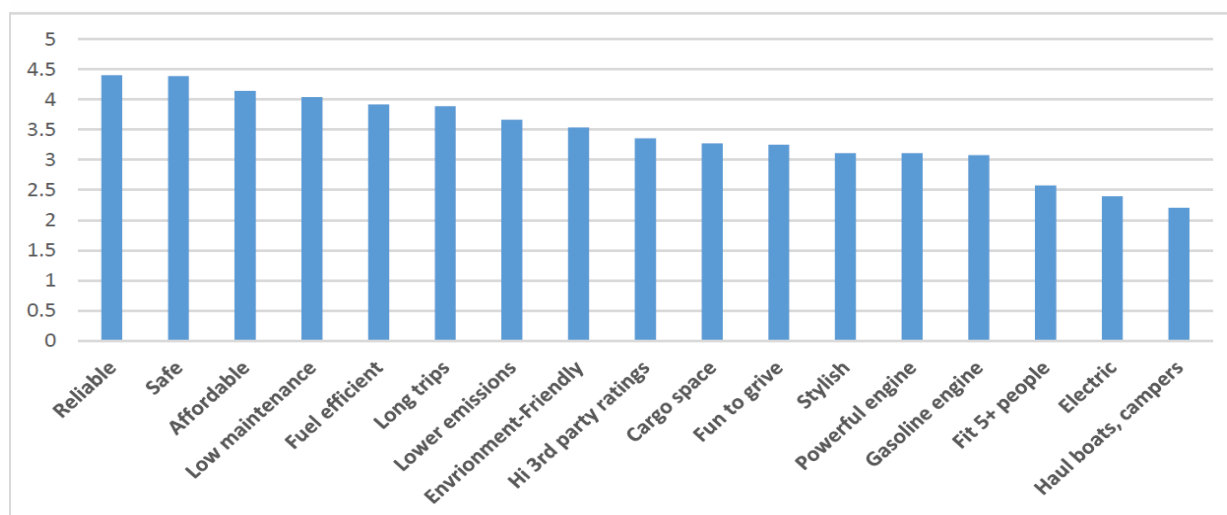
Low Income Households

An issue that has been examined in every CAFE analysis is the impact fuel economy standards would have on low-income consumers. The agencies posit that due to increased manufacturers’ suggested retail prices (MSRP) from meeting the current standards, lower income households would be driven out of the market. This argument is misleading for the basic fact that low income households are generally not in the new car market. In fact, due to operating costs

⁴ CFA Consumer Groups Comment, 2012, pp. 24-25.

being a much larger share of the cost of driving for low-income drivers, having higher standards would help them rather than hurt them. Also, the fact that the economic value of future fuel savings is only partially reflected in the resale price of used vehicles. Low income consumers get a disproportionate share of the operating cost reduction thanks to increased fuel economy.

FIGURE 7: RANK ORDER OF IMPORTANCE OF VEHICLE CHARACTERISTICS



Source and Notes: Mitch Bainwol, President and CEO, Alliance of Automobile Manufacturers, *Consumers & Fuel Economy*, CAR Management Briefing Seminars, Traverse City, Michigan, August 2016, p. 10. The winter related question, specific to the North East, has been discarded. It would rank 12th of 18, low in California, high in New England)

Clean Cars States Waiver

The agencies also propose repealing California's ability to set a different, higher fuel economy standard compared to the federal standard. This policy was founded on the fundamental principle of the American political system, wherein federalism allows the national and state levels of governments to pursue different pathways to solve a similar problem, as the problems and solutions to those problems can vary quite frequently depending on location.

Currently 13 states and Washington DC, which collectively represent 113 million Americans and over a third of the automotive market have signed onto the California Clean Car Program. The Program has helped to set the U.S. on a path that will improve the performance of light duty vehicles by a greater amount in a shorter time period than ever accomplished in U.S. history. This two-standard arrangement is supported by over two-thirds of Americans, as consumers can see the clear benefit of increased fuel economy.

Legality

If the agencies decide to move forward with the rollback in fuel economy standards, with no new, compelling evidence and by irrationally, and misrepresenting old data, the agencies will directly violate the Administrative Procedure Act (APA). The APA does not allow for a radical change in agency direction without strong and thorough evidence to support it, and by the significant lost benefits to savings (-6 to 1), it is clear this is not the case. The rollback also

violates legal obligations of NHTSA, as it is mandated to set standards with the highest technologically feasible and economically practicable energy savings possible.

Changing Market

CFA analyzed the changing automotive market and the switch from cars to SUVs and whether consumer preference is connected to fuel efficiency. The agencies' position that consumers don't value fuel economy is completely false as SUVs, pickups and crossovers, whose fuel economy increased by over 15% between 2011 to 2017, had a 70% increase in sales. On the other hand, these types of vehicles with less than a 15% increase in fuel economy from 2011 to 2017 only experienced a 50% increase in sales, 20% less. Consumers are therefore switching from cars to SUV's because they can now obtain the same fuel economy as in a sedan, while SUVs also provide numerous additional benefits, from storage and leg room to increased field of vision

CONCLUSION

History and the hearing record support the continuation of the standards. In summary, it is clear that EPA and NHTSA's Rollback and Freeze Proposal is not supported by the in-depth analysis done since the CAFE program was restarted in 2012 through 2016. The agencies' proposal harms consumers and our economy and should be withdrawn.

- The EPA should affirm its earlier conclusion that the standards set for 2021-2025 are appropriate.
- There is no need, under the enabling statutes of both NHTSA and EPA, to issue rules for the "out years" beyond 2026 and the agencies should make clear that their recommendation of the 2021-2025 standards, does not address future standards.
- To the extent that the agencies can identify flexibility within the current rules that enable automakers to accomplish essentially the same goals at a lower cost, they should put these proposals out for further comment.

Appendix D



Consumer Federation of America

FUEL ECONOMY STANDARDS: THERE IS NO TRADEOFF WITH SAFETY, COST, AND FLEET TURNOVER

July 24, 2018 — UPDATE



The Consumer Federation of America is an association of more than 250 non-profit consumer groups that, since 1968, has sought to advance the consumer interest through research, education, and advocacy.

Jack Gillis
Executive Director

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OVERVIEW

Consumer Federation of America (CFA) has undertaken an analysis of the relationship between increased vehicle fuel efficiency and safety, vehicle cost, fleet turnover, and sales, given these issues are part of the Trump/Pruitt team’s stated rationale for freezing gradually increasing fuel efficiency requirements intended to carry through to 2025, at year 2020. The original requirement was a true consensus standard in which the car companies, consumers, environmentalists, unions, and the government came to agreement in 2011 with implementation starting in 2012. Rarely has such an elegant and well thought-out regulatory standard been implemented. What made the original requirements eminently achievable was the sensible connection between the size of the vehicle and its fuel efficiency requirements. Simply put, larger, heavier vehicles have lower requirements than smaller, lighter vehicles. The result enabled consumers to continue to buy, and manufacturers continue to make, whatever size vehicles were desired in the market rather than force either group into making or buying vehicles that didn’t meet their needs.

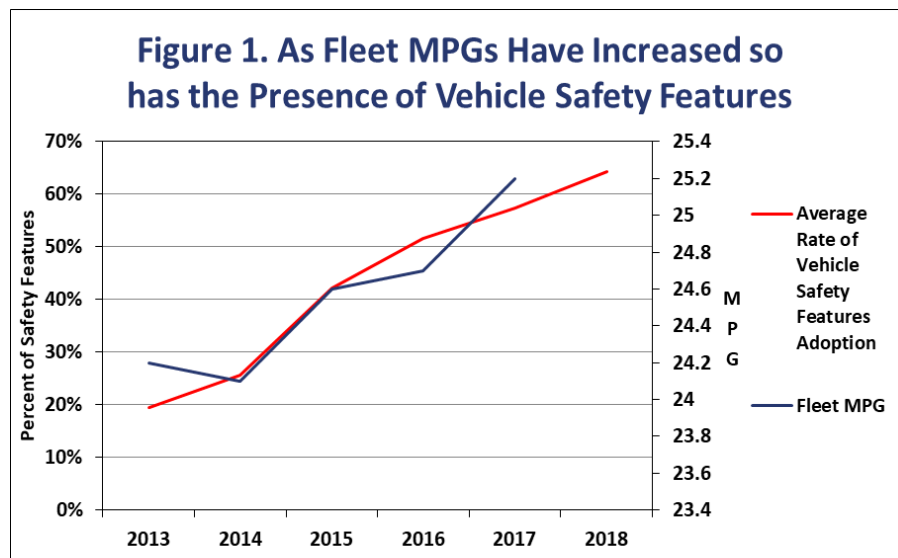
In what amounts to a rollback of well-considered, money-saving standards, the Trump/Pruitt team has said that they jeopardize safety, hamper sales and raise costs. Essentially the automakers are claiming that consumers are not willing to buy more fuel efficient vehicles and that this is hurting manufacturers profits. The Trump/Pruitt team wants to bring to a halt the significant improvements in vehicle fuel efficiency at the year 2020, in an effort to put corporate profits ahead of consumer needs and desires.

This report finds that newer, more fuel efficient vehicles have: 1) more safety features, 2) continue a strong upward trend in sales, 3) provide cost savings that eliminate price increases, and, in fact, 4) sell better as their fuel efficiency increases.

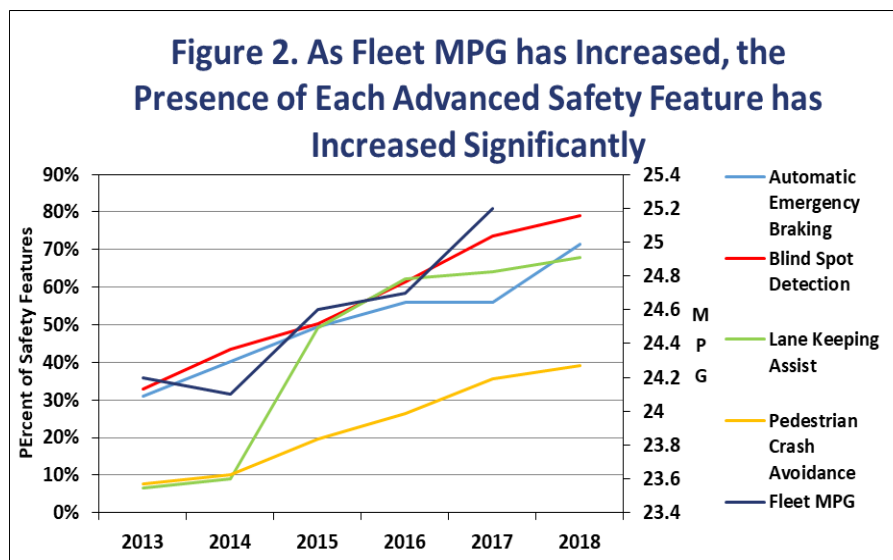
To address the Trump/Pruitt claims, here is what we found is actually happening in the market as fuel efficiency continues to increase:

- The average number of vehicle safety features increased from 19.5 percent to 64 percent since 2013.
- The average fuel economy of “all-new” vehicles increased to 25.1 MPG in 2018 from 21.8 MPG in 2011 (a year before current standards were adopted).
- 2018’s “all-new” vehicles include an average of 12.3 advanced safety features such as blind-spot detection and lane keeping assist, compared to an average of 7.4 in 2011.
- Drivers of “all-new” vehicles introduced in 2018, compared to their 2011 models, will save an average of \$2,605, which eclipses the average sticker price increase of \$2,127. Not only will fuel savings cover any cost of fuel saving technology, but also all of the other costs that go into carmaker price increases such as new safety features, technology and designs.
- Each year for the past five years, an average of 16.9 million new, safer and more fuel efficient vehicles (17 million over the last two years) have been added to the fleet, while an average of 13 million older, less safe and less fuel efficient vehicles have been retired. Along with becoming more fuel efficient, the fleet is becoming safer every year.
- Already, 2018 is projected to be another record year in vehicle sales, with a record 8,617,655 sold in the first half alone, up 1.9% from last year. CFA projects that 2018 will see vehicle sales of 17.4 million.

NEW VEHICLES HAVE BECOME MORE FUEL EFFICIENT AND SAFER



While many vehicles have significantly increased their fuel efficiency over the past five years, the average fleet fuel efficiency has increased from 24.2 to 25.2¹. At the same time, the average number of high-tech safety features has increased from 19.5 percent to over 64 percent.² Today's fleet includes both more fuel efficient vehicles and significantly higher percentages of advanced safety features. The gradually increasing fuel efficiency requirements from 2012 to 2018 did not have any negative impact on the safety of today's vehicles.

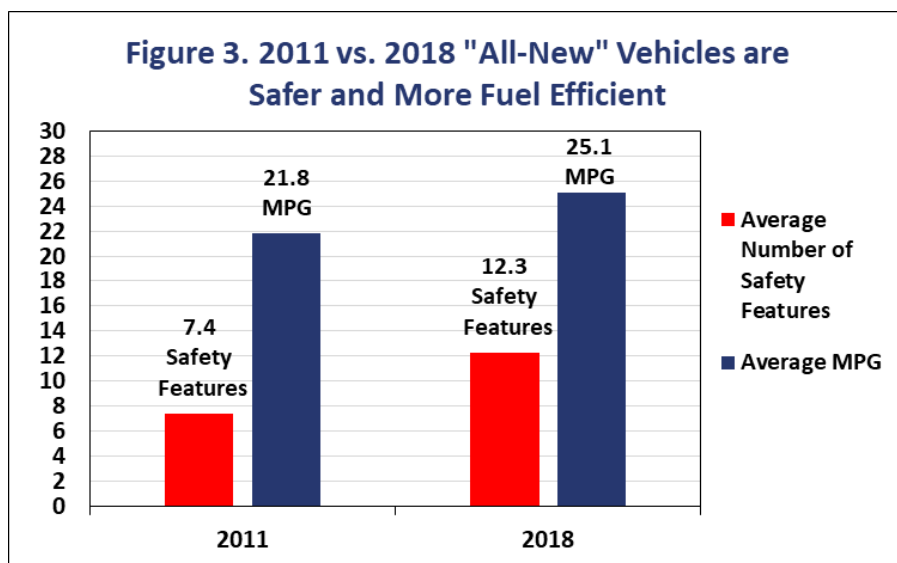


¹ According to the 2017 EPA Fuel Efficiency Trends Report.

² We examined the presence of four critical safety features—automatic emergency braking, blind spot detection, lane keeping assist, and pedestrian crash avoidance—and determined the average presence of those features in the 2011 fleet versus the 2018 fleet, using the data from NHTSA's safecar.gov.

Looking at the individual safety features, the presence of each one has increased significantly in the 5 years since the current fuel efficiency standard was implemented. The marketplace has provided consumers with a true “win-win” with money-saving increases in fuel efficiency and, significantly increasing the availability of critical safety features, (in some cases by 10-fold). Today’s more fuel efficient vehicles are far safer than their less fuel efficient predecessors.

“ALL-NEW” VEHICLES ARE LEADING THE WAY ON BOTH FUEL EFFICIENCY AND SAFETY ADDITIONS



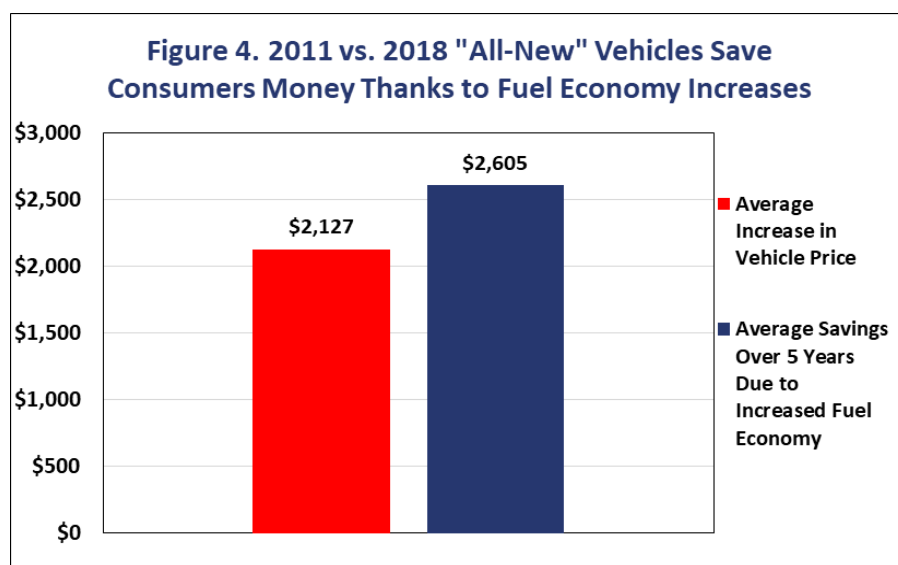
“All-new” vehicles³ provide the best indication of manufacturers’ ability to improve fuel efficiency as these vehicles have been designed and built with the new standards in place. We examined 19 truly “all-new” 2018 models which had a (pre-standard) 2011 version, to see how much they improved in both safety and fuel efficiency. On the safety side, the “all-new” 2018 vehicles contained an average of 12.3 important safety features (out of 15 possible⁴). This is significantly more than the average of 7.4 safety features in their 2011 versions. These same vehicles increased their fuel efficiency by 15 percent from an average of 21.8, to an average of

³ NOTE: When a car maker introduces an “all-new” model, that version of the vehicle essentially remains the same for about 5 years. During that time, while the car maker will tweak certain aspects of the vehicle, the mechanical underpinnings generally remain the same. As such, it is difficult to make any significant improvements in the fuel efficiency of that particular vehicle during its model series. On the other hand, each year manufacturers introduce 25-30 truly “all-new” versions of their vehicles and that’s when they have the opportunity to incorporate the latest fuel saving technology and significantly increase the vehicle’s fuel efficiency. For this part of the report, CFA looked at the models that were “all-new” for 2018, that is, significantly redesigned, and compared them with their pre-standard predecessors (2011 models). There were 19 “all-new” models that had 2011 predecessors.

⁴ The 15 features we reviewed included Head Airbag, Torso Airbag, Knee Airbag, Roll Sensing, Stability Control, Frontal Collision Warning, Collision Avoidance, Lane Departure Warning, Lane Keep Assist, Blind Spot Detection, Auto Crash Notification, Day Running Lamps, Dynamic Head Restraints, Pretensioners, and Adjustable Front Belts using data from NHTSA’s safecar.gov.

25.1 MPG⁵. Clearly, when it comes to vehicles designed and built after the standards were in place, they were not only more fuel efficient, but contained significantly more safety features. The Trump/Pruitt claims that somehow the fuel efficiency standards are impinging on vehicle safety is absolutely the opposite of what is happening. Not only are these “all-new” vehicles significantly improved in safety and fuel efficiency, but their sales are expected to be 40 percent⁶ higher than their previous versions.⁷ Consumers are voting in the marketplace for both increased fuel efficiency and safety.

GAS SAVINGS ELIMINATE “ALL-NEW” VEHICLE PRICE INCREASES



The average price of “all-new” vehicles introduced in 2018 increased by \$2,127⁸ from 2011 but these vehicles will save consumers an average of \$2,605⁹ over 5 years due to increased fuel efficiency. So not only will the fuel efficiency savings cover the minor technological costs associated with better mileage, but they also cover all of the safety features, design improvements, new features and new electronics in these vehicles, which make up the normal year over year price increases. Thanks to the fuel economy standards, the increased MPG of the “all-new” 2018 vehicles enables the gas savings alone to more than make up for all of the additional costs. And as gas prices start going back up, the savings will be even greater. They are already up 12 percent since January 1st, and 17 percent since a year ago. Instead of increasing the cost for consumers as the Trump/Pruitt team suggests, the fuel efficiency standards actually underwrite all of the cost increases that typically occur as “all-new” vehicles are introduced.

⁵ Based on EPA estimates for these vehicles.

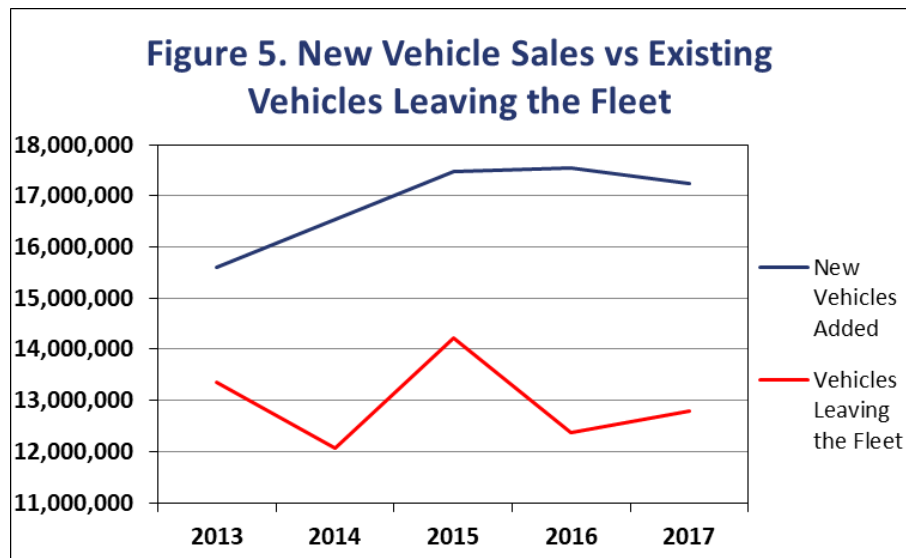
⁶ Based on an extrapolation of 2018 first quarter year-to-date sales data from Auto News.

⁷ Based on Auto News sales data.

⁸ Using MSRP from the New Car Cost Guide and eliminating inflation.

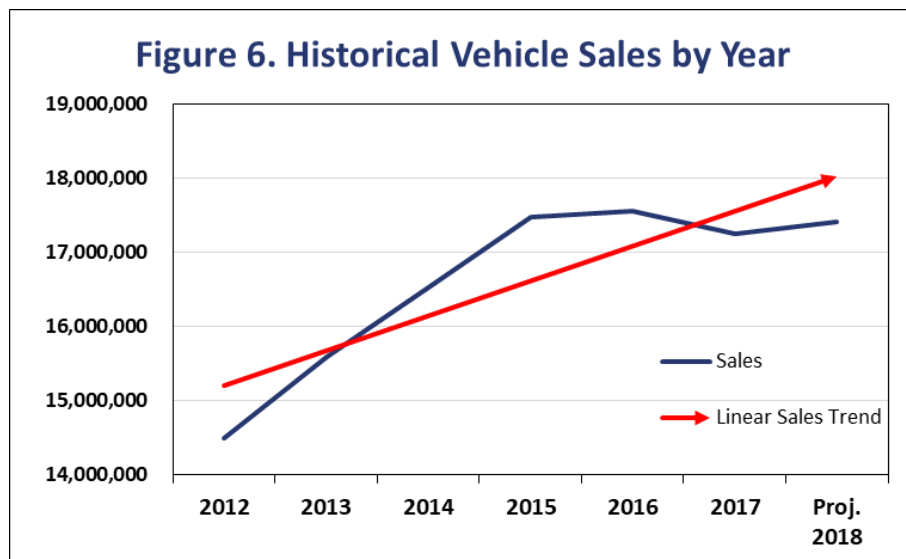
⁹ Using AAA average national gas price as of 5/7/018.

FUEL EFFICIENCY IMPROVEMENTS DO NOT CAUSE MORE UNSAFE VEHICLES TO REMAIN IN THE FLEET



The Trump/Pruitt team implies that fuel efficiency standards are causing more unsafe vehicles to remain in the fleet. Nothing could be further from the truth. In fact, each year, for the past five years, an average of 16.9 million new, safer vehicles have been added to the fleet¹⁰ while an average of 13.0 million older, less safe vehicles have left the fleet¹¹. As a result, each year there will be fewer and fewer older and less safe vehicles on the road. The simple fact is that the fleet is getting safer as the number of newer, safer cars entering the fleet is significantly greater than the number of older less safe cars leaving the fleet.

VEHICLE SALES ARE CONTINUING THEIR UPWARD TREND AS FUEL EFFICIENCY INCREASES



¹⁰ Based on Auto News sales data.

¹¹ According to vehicle registration data from the U.S. DOT.

The claim that fuel efficiency standards have hurt vehicle sales is simply false. Every year since the 2012, when the standards were first put into place, vehicle sales have steadily increased (with a small correctional slump in 2017). They've gone from 14.5 million in 2012, to a high of 17.6 million in 2016, for an overall increases of 19% by 2017.¹² Looking at 2018, first half vehicle sales of 8.6 million are up by 1.9 percent from 2017, almost matching the all-time record for first half vehicle sales reached in 2016.¹³ Using the 2018 first quarter sales of 8.6 million, we project¹⁴ that 2018 could see 17.4 million sales, over 200,000 more vehicles than 2017. Therefore the Trump/Pruitt team's claim that the standards need to be revisited due to a slowdown in vehicle sales is completely false.

CONCLUSION

The administration's woefully misguided plan to freeze fuel economy standards, at the behest of auto companies, using concerns about safety, cost and reduced sales will actually cause consumers to pay more and lower auto sales. Vehicles manufactured under the current standards are safer and more fuel efficient than ever before. In addition, thanks to the higher MPG requirements, the fuel savings of "all-new" cars offset any increases in vehicle retail pricing. The result is continued record setting sales for the auto industry, which has contributed to both record industry profits and pocketbook savings for consumers. The gradual increase in the fuel economy standards through 2025 needs to go forward—freezing them will cost consumers, harm auto sales, make U.S. cars less competitive globally, and ultimately hurt our economy.

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¹² Based on Auto News sales data.

¹³ Based on Auto News sales data.

¹⁴ To project the full 2018 vehicle sales, CFA calculated the average percent of sales of yearly sales from 2012 to 2017 that are sold in the first half of the year (49.5 percent).

Appendix E



Consumer Federation of America

FOR IMMEDIATE RELEASE

Contact: [Jack Gillis](#), 202-939-1018

August 15, 2018

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SUVs, CROSSOVERS AND PICKUPS WITH HIGH MPG PERCENT INCREASES SELL BETTER

*Trump Administration's Plan to Roll-Back Fuel Efficiency Standards
Will Hurt Sales – Consumers Buying Larger Vehicles Want More MPGs*

Washington, D.C. – A new analysis by the Consumer Federation of America shows that SUVs, pickups and crossovers, whose MPGs (miles per gallon) increased by over 15% between 2011 to 2017, had a 70% increase in sales. On the other hand, those same vehicles with less than a 15% increase in MPGs from 2011 to 2017 only experienced a 50% increase in sales, 20% less. (See figure below). “This analysis completely debunks automaker and Trump Administration claims that consumers don’t value good gas mileage,” said Jack Gillis, CFA’s Executive Director and author of *The Car Book*. “Clearly, the more improvement in MPG, the better the sales.” NOTE: 2011 was the year prior to when the current CAFE requirements went into effect.

SUVs, Crossovers, Light Trucks - 2011-2017					
Percent Increase in MPG 2011 - 2017	Number of Vehicles	2011 Average Sales Per Model	2017 Average Sales Per Model	Average Change in Sales (Units)	2011 - 2017 Average % Change in Sales
15% or More	29	93,323	158,218	64,895	70%
Under 15%	46	64,279	96,345	32,066	50%
Mileage figures from EPA and Sales from Auto News					

The Nissan Pathfinder, which increased by 4 MPG from 2011 to 2017 and saw a sales increase of 278,922 or a 224% increase in annual vehicle sales. Meanwhile, the Kia Sorento which had a 1 MPG decrease saw a 23% decrease in sales from 2011 to 2017. And today, as consumers increasingly choose crossover models over sedans, the typical crossover now gets 11% better gas mileage than in 2011, thanks to fuel economy standards that the car companies and President Trump want to rollback.

“Our analysis clearly indicates that the car companies are fully capable of meeting the CAFE standards and can do so with great savings for consumers,” said Gillis. “Rolling back the standards at this point would not only hurt America’s already financially beleaguered consumers, but would hamper vehicle sales and put U.S. car companies at a distinct competitive disadvantage to the Asian car companies who will meet the standards.” [Numerous cost-benefit analyses](#) show that these standards can save consumers thousands of dollars over the life of the vehicle in reduced gas costs, even at today’s lower prices. In a recent [report](#), CFA calculated that rolling back fuel economy standards, would lose one-half trillion dollars in pocketbook savings on transportation costs, considering both household gasoline and the cost of diesel used in trucking goods, (which is passed through to consumers).

It is particularly interesting to note that the Asian and Korean car companies joined with U.S. automakers in asking President Trump to roll back the standards. “If the standards are rolled back, and the domestics take advantage of lower standards, the foreign manufacturers will inundate the market with their fuel sipping models and once again, U.S. automaker lots will be filled with inefficient vehicles,” said Gillis

“What’s ironic is that the current standards are not ‘one-size fits all’ and were specifically crafted to respect the vehicle mixes among manufacturers as well as consumer choice,” continued Gillis. Acknowledging the fuel efficiency challenges inherent in larger vehicles, the standard incorporates two separate calculations, one for cars and one for light trucks, SUVs, and most crossovers. Furthermore, within those calculations, a sliding scale further reduces the requirements on larger vehicles. Finally, automakers meet requirements on an average basis across their entire fleet, which means that not all of the manufacturer’s models have to meet a given year’s target. This enables automakers to produce a mix of vehicles in response to consumer demand. The result: the standards have helped create a much more efficient U.S. auto fleet while preserving both manufacturer and consumer choice on size, weight and performance.

“The bottom line is that [consumers want higher fuel economy](#), whether they’re driving a compact or pickup, and the current MPG standards are delivering it for them,” said Gillis.

“It’s no surprise that consumers want better gas mileage since the typical household spends over \$1,500 on gasoline each year, which is about as much as

the they spend on electricity or telephone services,” said CFA’s Senior Fellow, Mark Cooper.

[The Consumer Federation of America](#) is a nonprofit association of more than 250 consumer groups that was founded in 1968 to advance the consumer interest through research, advocacy, and education.

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Appendix F



Consumer Federation of America

**An Analysis of Consumer Savings and Automaker Progress
On the Road to 2025 CAFE Standards**

*Increasing Fuel Economy Saves Consumers Money, Sells Vehicles, Keeps
American Companies Competitive and, Most Importantly, is Achievable*

Jack Gillis

Richard Eckman

Consumer Federation of America

July 24, 2017

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INTRODUCTION

This report evaluates the direct consumer savings, and automaker progress, associated with the 2025 CAFE standards. It is in response to current efforts by certain members of Congress and the current Administration to roll back those standards. The rationale for the rollback is that it costs too much to comply with the standards and, as a result, vehicle prices will increase, thus dissuading consumers from buying new cars. The fact is, rolling back the standards would not only cause great harm to consumer pocketbooks, but, because of consumer demand for fuel efficiency, would also harm sales.

Public opinion surveys, including one recently conducted by the Consumer Federation of America, demonstrate unquestionably that consumers want more fuel efficient vehicles and that they strongly support standards requiring them. Consumers understand that gasoline costs are a major household expenditure and improvements in vehicle fuel economy puts money directly back into their pocketbooks. Furthermore, while gas prices are currently low, they understand the cyclical nature and volatility of those prices.

Our analysis shows that Congress and the Administration would be making a serious mistake in rolling back the standards. Not only would the impact be immediately felt by already financially strapped Americans, but it would put the U.S. car companies at a distinct disadvantage, both nationally and globally, in competing with the Asian manufacturers, who are quite capable of complying with the standards. As this report will demonstrate, not only do fuel economy standards pay off in lower ownership and operating costs, but the carmakers are fully capable of meeting the standards at a reasonable cost, and improving fuel economy improves sales.

We examined the current progress in meeting fuel economy standards by analyzing the performance of 2017 and 2016 vehicles from a variety of perspectives. On

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July 24, 2017, CFA released its most recent survey of consumer attitudes towards fuel economy in [link](#).

NEARLY HALF OF “ALL-NEW” 2017 VEHICLES COST LESS TO BUY AND FUEL THAN THEIR 2011 COUNTERPARTS

25% of the 2017 All-New Vehicles Cost Less Than Their 2011 Counterparts AND Got Better Fuel Economy

Manufacturers have the greatest opportunity to improve vehicle fuel economy when they introduce a truly new vehicle.¹ For this analysis, we compared the cost and fuel economy of 19 of the 27 “all-new” 2017 models which had a 2011 version, the year before the current standard was put in place.² These 19 models included 79 different EPA designated engine/drive train/transmission/MPG configurations (or what are called “trims”). When we compared the cost difference between the “all-new” 2017 models and their 2011 version, after factoring in inflation, 21 or 27% actually went down in price, yet every one of these vehicles saw a 1 to 10 MPG increase. Vehicles that improved their fuel economy while going down in price ranged from the Subaru Impreza and GMC Acadia to the Mercedes E Series, clearly demonstrating that improvements in fuel economy do not have to generate higher prices.

FUEL SAVINGS EXCEEDED FUEL ECONOMY TECHNOLOGY COSTS FOR 94% OF ALL- NEW 2017 MODELS

Annual vehicle price increases (less inflation) cover many different improvements such as new safety technology, convenience items, design changes, as well as upgraded fuel economy technology. By separating out the cost of fuel economy improvements from these other costs, we were able to get a more accurate look at the impact of the

¹Each year only about 10 percent of the fleet is made up of truly “all-new” vehicles. Typically, when a new model is introduced, that vehicle essentially stays the same for 5-6 years. This is called a “model series” and while there may be some style and feature changes during a model’s series, the mechanics of the vehicle generally stay the same

² There were 27 all new vehicles introduced in 2017, 19 of them had a previous version available in 2011. These 19 vehicles were the ones we included in this analysis.

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standards on consumer pocketbooks. Overall, for 74 of the 79 vehicles (94%), the added cost of new fuel efficient technology was far exceeded by the resulting fuel cost savings over the first 5 years of ownership.

EVEN IF THE PRICE OF THE VEHICLE GOES UP, FUEL ECONOMY SAVINGS CAN OFFSET THE INCREASE

For 12 of the 58 vehicles whose cost went up, the savings in fuel costs exceeded the entire price increase for that vehicle, even though only part of that increase can be attributed to fuel efficiency.

Each mile per gallon of improvement is estimated to cost about \$100 in improved fuel economy technology.³ For 41 of the 58 vehicles whose cost went up, the savings in fuel costs outweighed the cost of the fuel economy technology. Finally, for the few vehicles whose fuel economy stayed the same or actually decreased, all experienced an increase in price.

Figure 1: 2011 vs. 2017 "All-New" Price Comparison (Accounting for Inflation)		
	"All-New" Trims¹²³	Percent of "All- New Trims"
Total "All-New" Vehicles with 2011 Counterpart	79	100%
2011 Vehicles Which Were LESS Expensive in 2017 Dollars and Had Higher MPG	21	27%
2011 Vehicles Which Were MORE Expensive in 2017, Who's Fuel ⁴ Savings Offset the Entire Price Increase	12	15%
2011 Vehicles Which Were MORE Expensive in 2017, Whose Fuel ⁴ Savings Offset the \$100/MPG Cost of Fuel Economy Technology ⁵	41	52%
2011 Vehicles Which Were MORE Expensive in 2017, Who's Fuel Economy Stayed the Same or Decreased	5	6%

¹Inflation was calculated using BLS average inflation numbers from 2011-2016.

²Average "All-New" Vehicle Price from the New Car Cost Guide.

³ CFA bases its estimate of the cost of fuel economy on a review of the literature including historical, market-based and engineering studies, as described in Appendix B.

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³Fuel Economy of "All-New" Vehicles based on EPA combined estimates.

⁴ Gas costs from AAA \$2.27 (7/19/17) and driving an average of 14,000 miles per year.

⁵ CFA bases its estimate of the cost of fuel economy on a review of the literature including historical, market-based and engineering studies, as described in Appendix B.

OVERALL, FUEL ECONOMY IMPROVEMENTS FAR EXCEED THEIR COST, AND PARTIALLY OFFSET THE COST OF OTHER IMPROVEMENTS

The average “all-new” vehicle increased in price from \$37,808⁴ in 2011 to \$39,723 in 2017, (4.8%). Their increase in fuel economy went from an average of 21.0 to 24.2 MPG, (13.2%). Considering that every mile per gallon of improvement costs about \$100, the average cost of these improvements was \$320. However, this fuel economy increase saved owners of these “all-new” vehicles an average of \$946 in gas costs over 5 years. The difference between the cost of these improvements and their benefit provided consumers with an average savings of \$626 over 5 years in gasoline costs. These savings go directly into consumer pocketbooks and back into the economy or offset about 40% of the non-fuel efficiency technology component of the average price increase of “all-new” cars from 2011-2017.

⁴ 2017 Dollars

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ON THE ROAD TO 2025 CAFE STANDARDS**

Figure 2: 2011 & 2017 Average "All-New" Vehicle Price and Fuel Economy (Accounting for Inflation)			
Year	Ave. "All-New" Vehicle Price¹²	Ave. Fuel Economy of "All-New" Vehicles³	Gas Cost for 5 Years⁴
2011 Price in 2017 Dollars	\$37,808	21.0	\$7,567
2017 Price	\$39,723	24.2	\$6,621
Change in Price	\$1,915	3.2	-\$946
% Change	4.8%	13.2%	-14.3%
COST: \$100 per MPG Increase for Fuel Economy Technology ⁵	-\$320		
BENEFIT: Gas Savings Due to Fuel Efficient Technology	\$946		
SAVINGS: Average Savings for "All-New" Car Buyers	\$626		

¹Inflation was calculated using BLS average inflation numbers from 2011-2016 averaging 1.4% per year.

²Average "All-New" Vehicle Price is from the New Car Cost Guide for the 79 vehicles.

³Average Fuel Economy of 79 "All-New" Vehicles is based on EPA combined mileage estimates.

⁴Gas costs from AAA \$2.27 (7/19/17) and driving an average of 14,000 miles per year.

⁵ CFA bases its estimate of the cost of fuel economy on a review of the literature including historical, market-based and engineering studies, as described in Appendix B.

CAFE COMPLIANCE AMONG "ALL-NEW" VEHICLES SHOW MANUFACTURERS ARE ON THEIR WAY TO 2025 COMPLIANCE

The introduction of "all-new" vehicles is the best barometer of a manufacturer's ability to comply with CAFE standards. Changing the fuel economy of existing vehicles is difficult, as the vehicle is already designed and is being manufactured to its original specifications. With "all-new" vehicles, manufacturers can incorporate their latest fuel-saving technologies.

In comparing the CAFE compliance of "all-new" models introduced in 2015, 2016 and 2017, there was a significantly higher percentage of CAFE-compliant vehicles in 2017. In fact, 70 percent of the "all-new" 2017 vehicles had a CAFE-compliant trim, compared to 41 percent of the "all-new" 2015 vehicles (Figure 3). Particularly noteworthy was the fact that 78% of the "all-new" light duty trucks had a CAFE

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compliant trim for 2017. Interestingly, percentage-wise, trucks beat cars for CAFE compliance in 2017.

Figure 3: Percentage of CAFE Compliant Vehicles Among "All-New" Models 2015-2017			
	2015	2016	2017
Total "All-New" Vehicles	34	32	27
Total CAFE Compliant	14 (41%)	19 (60%)	19 (70%)
Percentage of CAFE Compliant Vehicles Among "All-New" Model Cars 2015-2017			
	2015	2016	2017
Total "All-New" Cars	19	19	18
Total CAFE Compliant	8 (42%)	15 (80%)	12 (67%)
Percentage of CAFE Compliant Vehicles Among "All-New" Model Trucks 2015-2017			
	2015	2016	2017
Total "All-New" Trucks	15	13	9
Total CAFE Compliant	6 (40%)	5 (40%)	7 (78%)

MANY MODELS EXCEED CURRENT YEAR CAFE REQUIREMENTS – SOME COMPLYING TO 2025

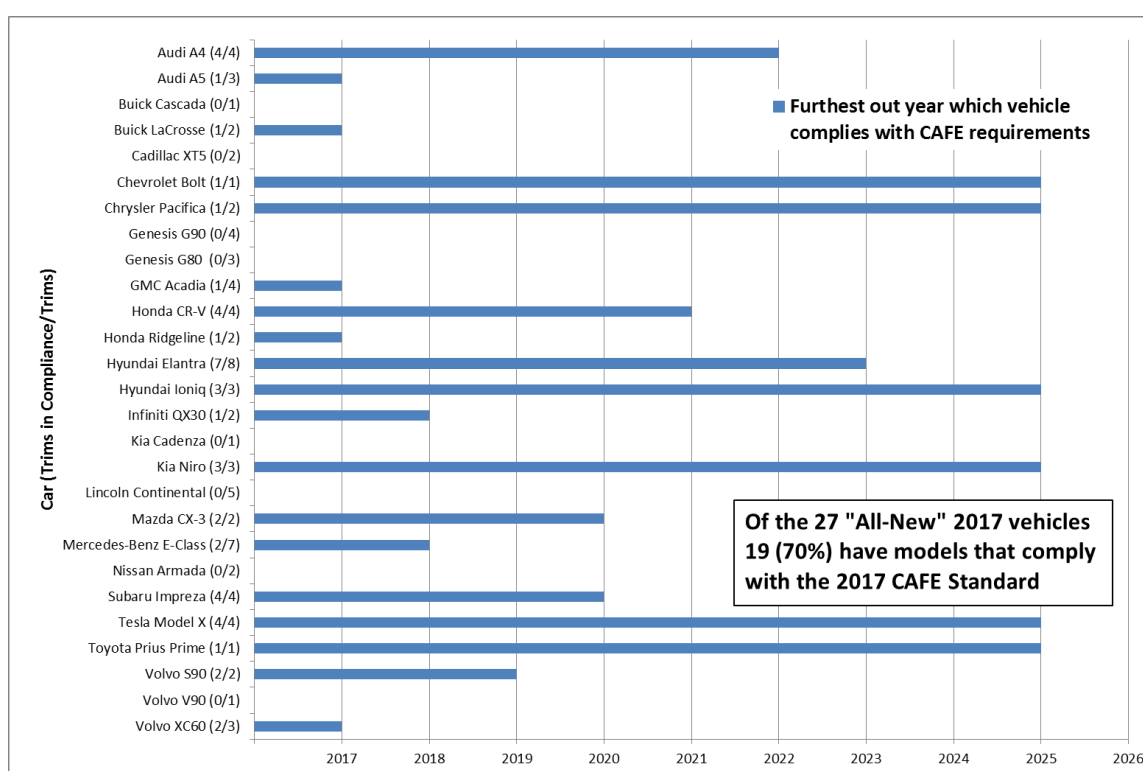
In reviewing the “all-new” vehicles, we also determined how many years into the future each model would comply with the *gradual increase* in CAFE requirements. Current vehicles that meet CAFE requirements for future years indicate that manufacturers are actually “ahead of the game” in terms of compliance.

70% (19) of the 27 “all-new” vehicles for 2017 had models which met, at the minimum, the 2017 CAFE standard. In fact, from 2015-2017, the majority of these compliant cars actually exceeded the minimums required for that year. Figure 4a shows that 6 of the 2017 vehicles are already CAFE compliant with the 2025 standard—a record number.

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Figure 4a: Among the "All-New" Vehicles – How Many Will Continue Their CAFE Compliance Until:											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2015	14	10 (71%)	8 (57%)	6 (43%)	5 (36%)	3 (21%)	3 (21%)	2 (14%)	0	0	0
2016	-	19	18 (95%)	18 (95%)	15 (79%)	14 (74%)	11 (58%)	7 (37%)	6 (32%)	4 (21%)	2 (11%)
2017	-	-	19	14 (74%)	11 (58%)	10 (53%)	8 (42%)	8 (42%)	7 (37%)	6 (32%)	6 (32%)

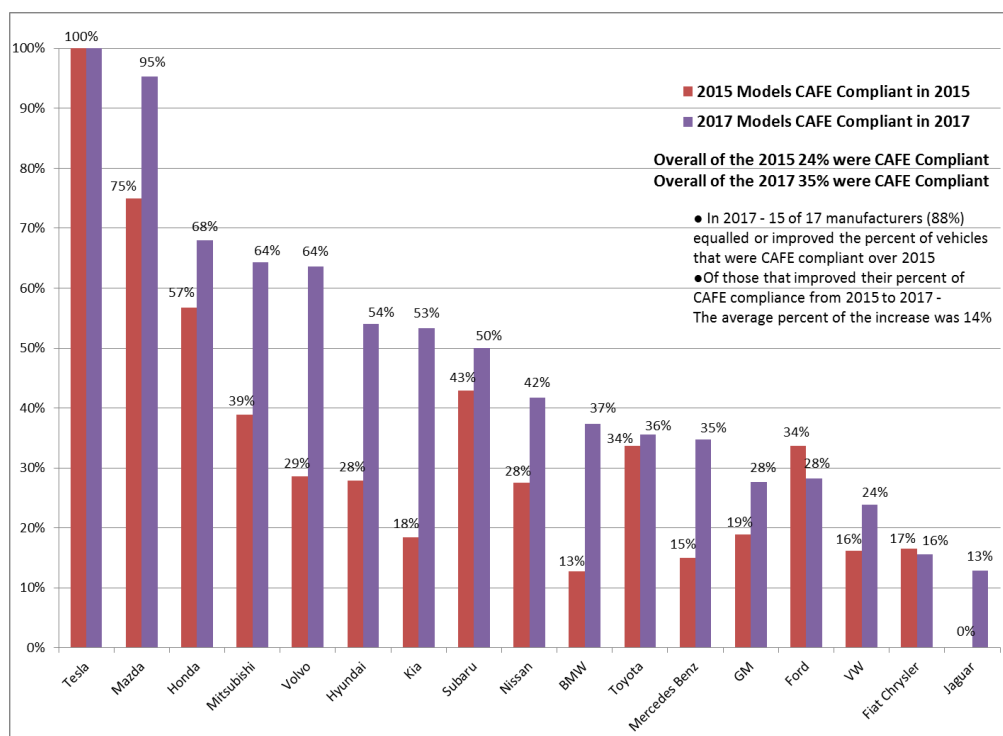
Figure 4b. 2017 "All-New" Vehicles and Their CAFE Compliance



What is particularly remarkable is the improvements in CAFE compliance by each of the manufacturers. 14 of the 17 major manufacturers improved the percent of their vehicles that were CAFE compliant from 2015 to 2017. (Tesla at 100% compliance matched its 2015 compliance.) While Ford and Fiat Chrysler lost ground, many of the other manufacturers actually doubled the percent of CAFE compliant vehicles. (Figure 4c)

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Figure 4c. Percent of 2015 and 2017 Vehicle Trims that were CAFE Compliant by Manufacturer



GAS GUZZLERS DECLINE SIGNIFICANTLY IN 2017 - VEHICLES GETTING OVER 30 MPG STAYS STEADY

Fuel economy progress is going well. In looking at all of the 2017 models, “gas guzzlers” getting below 14 MPG are a miniscule 0.4% in 2017, down from 8.5% in 2011. At the other end, there was a small increase in vehicles getting over 38 MPG, going from 4% last year to 4.3% in 2017. (Figure 5a)

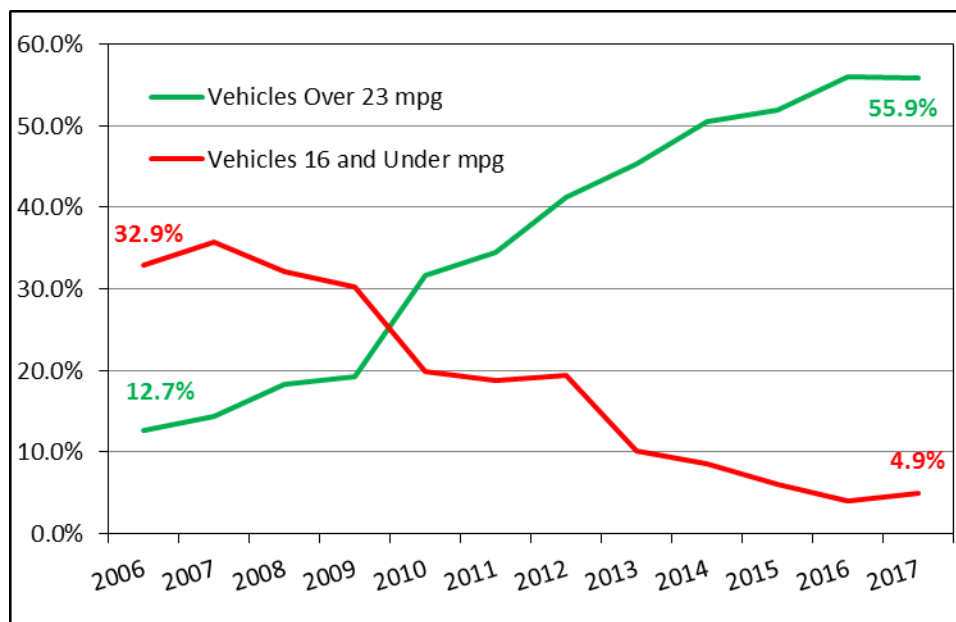
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**Figure 5a: On the Road to 40 mpg by 2025:
Carmakers Demonstrate Significant Progress**

EPA Grade	MPG	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
10	38+	0.4%	0.2%	0.2%	0.2%	0.6%	1.0%	1.1%	2.9%	3.1%	3.0%	4.0%	4.3%
9	31-37	0.7%	0.4%	0.8%	1.1%	2.1%	3.2%	4.7%	6.4%	8.5%	8.7%	9.3%	8.8%
Over 30MPG		1.1%	0.6%	1.0%	1.3%	2.7%	4.2%	5.8%	9.3%	11.6%	11.7%	13.4%	13.0%
8	27-30	2.4%	3.0%	3.5%	4.4%	7.3%	7.8%	9.2%	12.0%	14.8%	16.5%	17.3%	15.8%
7	23-26	10.3%	10.2%	12.8%	12.4%	18.9%	18.3%	20.4%	25.0%	24.1%	23.8%	25.4%	27.1%
Acceptable		12.7%	14.4%	18.3%	19.3%	31.6%	34.5%	41.2%	45.3%	50.5%	52.0%	56.1%	55.9%
6	22	10.4%	10.4%	7.2%	11.7%	8.4%	8.0%	7.0%	7.7%	6.1%	8.0%	7.5%	7.7%
5	19-21	28.2%	26.5%	28.5%	27.6%	29.2%	30.4%	26.9%	26.5%	24.3%	22.2%	21.8%	21.1%
4	17-18	14.7%	13.7%	14.9%	12.5%	13.8%	12.5%	11.3%	9.4%	10.6%	11.7%	10.7%	10.5%
3	15-16	24.4%	24.6%	16.6%	15.6%	11.4%	10.3%	9.8%	6.7%	6.1%	4.7%	3.7%	4.5%
2	13-14	5.0%	5.9%	9.9%	8.2%	6.7%	6.8%	7.8%	3.0%	2.4%	1.4%	0.3%	0.4%
1	0-12	3.5%	5.2%	5.7%	6.4%	1.7%	1.7%	1.8%	0.4%	0.0%	0.0%	0.0%	0.0%
Poor		86.2%	86.3%	82.8%	82.0%	71.2%	69.7%	64.6%	53.7%	49.5%	48.0%	43.9%	44.1%
# of Trims¹		1076	1184	1198	1182	1101	1053	901	1057	1091	1194	1094	1097

¹We did not include large passenger vans or exotic vehicles.

Figure 5b. Percent of Gas Guzzlers and Misers



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SUVs, CROSSOVERS AND PICKUPS WITH HIGHER MPG INCREASES SELL BETTER

A key concern among U.S. automakers is the impact of fuel economy standards on sales. Rolling back the standards, they say, is necessary to maintain sales. Our analysis specifically demonstrates just the opposite.

SUVs, pickups and crossovers, whose MPGs (miles per gallon) increased by over 10% between 2011 to 2016, had a 59% increase in sales. On the other hand, those same vehicles with less than a 10% increase in MPGs from 2011 to 2016 experienced only a 41% increase in sales, almost 20% less. (Figure 6) This analysis completely debunks automaker claims that consumers don't value good gas mileage. Clearly, the more improvement in MPG, the better the sales. NOTE: 2011 was the year prior to when the current CAFE requirements went into effect.

Figure 6: SUVs, Crossovers, Light Trucks - 2011-2016					
Percent Increase in MPG 2011 - 2016	Number of Vehicles	2011 Average Sales Per Model	2016 Average Sales Per Model	Average Change in Sales (Units)	2011 - 2016 Average % Change in Sales
10% or More	29	95,143	150,828	55,685	59%
Under 10%	37	63,423	89,696	26,273	41%
Mileage figures from EPA and Sales from Auto News					

The Toyota RAV4, which increased by 10 MPG from 2011 to 2016 and saw a sales increase of almost 220,000 or a 166% increase in annual vehicle sales. Meanwhile, the GMC Terrain which had a 1 MPG decrease saw only a 6% increase in sales from 2011 to 2016. And even though consumers are increasingly choosing crossover models over sedans, the typical crossover now gets 10% better gas mileage than in 2011, thanks to fuel economy standards which are currently under threat of a rollback.

CONCLUSION: ROLLING BACK FUEL ECONOMY STANDARDS WILL HURT BOTH THE U.S. CAR COMPANIES AND THE AMERICAN CONSUMER—THERE'S NO NEED FOR A ROLL BACK

CFA REPORT: AN ANALYSIS OF CONSUMER SAVINGS AND AUTOMAKER PROGRESS ON THE ROAD TO 2025 CAFE STANDARDS

Not only do consumers want more fuel efficiency, but this data and analysis make it abundantly clear that manufacturers are fully capable of meeting the current standard and that fuel economy helps sales. This should be no surprise, because the standard was specifically designed to help manufacturers meet the challenges they face with improving fuel efficiency. The current standards are not “one-size fits all” and were specifically crafted to respect the differing vehicle mixes among manufacturers as well as consumer choice. Acknowledging the fuel economy challenges inherent in larger vehicles, the standard incorporates two separate calculations, one for cars and one for light trucks, SUVs, and most crossovers. Furthermore, within those calculations, a sliding scale further reduces the requirements on larger vehicles. Finally, automakers meet requirements on an average basis across their entire fleet, which means that not all of the manufacturer’s models have to meet a given year’s target. This enables automakers to produce a mix of vehicles in response to consumer demand. The result: the standards have helped create a much more efficient U.S. auto fleet while preserving both manufacturer and consumer choice on size, weight and performance.

It is also evident that increased fuel economy plays an important role in vehicle sales. That was made clear in the mid 2000’s when auto dealer lots were filled with gas guzzlers they simply couldn’t sell, resulting in government bailouts for the industry. Rolling back the standards today would not only hurt U.S. automakers as the Asian companies roar ahead with vehicles in compliance, but would be a big blow to American pocketbooks, especially as gas prices rise in the future.

In spite of their current compliance with the standards and the positive impact on sales, the auto manufacturers want to roll-back the requirements. They’ve lobbied the President to reopen the final determination on fuel economy standards for 2025, inviting a rollback from the Environmental Protection Agency. In addition, Congress is now working on bills (S.1273 and an anticipated House Bill) that will lower mileage requirements for these larger vehicles. While the automakers may try to “lay the blame” on their customers for “needing” to roll back the standards, consumers are voting for the higher mileage vehicles with their dollars. This shortsighted thinking by certain members

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of Congress, the Administration and the auto companies ignores consumer demand for more fuel efficiency. As gas prices creep back up, car companies will be in the same spot they were back in 2009 when they had to be bailed out by the government, with lots filled with larger, fuel inefficient vehicles they can't sell.

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APPENDIX A: VEHICLE AND PRICE CHANGES AMONG “ALL-NEW” MODELS 2011 TO 2017

The following information was used to analyze the performance of “all-new” vehicles in the 2017 fleet with their 2011 counterparts. 2011 was the year before the current standard was implemented. The 2011 vehicle pricing was adjusted for inflation in order to fairly compare price changes with the 2017 models. There were 27 “all new” models in 2017. For 19 of those models, there was a corresponding vehicle available in 2011. Those are the vehicles we were able to compare. Among the 19 models, there were 79 different trim configurations each having a separate cost and MPG rating. Using current gas prices and assuming 14,000 miles driven in a typical year, the savings from increased fuel economy was determined for all 79 different trim configurations.

Vehicle Price Change From 2011 to 2017 Compared to Gas Savings Due to Increased Fuel Efficiency

Division	Model	Trim	2011 Price in 2017 Dollars ¹²	2017 Price	Change in Price	Change in MPG ³	Cost of FE Tech (\$100/ MPG) ⁴	Change in 5 Yr. Gas Costs ⁵	Price Difference Plus Gas Savings	FE Tech Cost Plus Gas Savings
GMC	Acadia FWD	2011 - SL [3.6, V6, A(A6)] 2017 - SL [2.5, I4, A(A6)]	\$34,005	\$29,070	-\$4,935	4	\$400	-\$1,474	-\$6,409	-\$1,074
GMC	Acadia FWD	2011 - SLE [3.6, V6, A(A6)] 2017 - SLE-1 [2.5, I4, A(A6)]	\$36,809	\$32,450	-\$4,359	4	\$400	-\$1,474	-\$5,832	-\$1,074
GMC	Acadia AWD	2011 - SLE [3.6, V6, A(A6)] 2017 - SLE-1 [3.6, V6, A(A6)]	\$38,945	\$34,450	-\$4,495	1	\$100	-\$424	-\$4,918	-\$324
Honda	Ridgeline 4WD	2011 - RTS [3.5, V6, A(A5)] 2017 - RTS [3.5, V6, A(A6)]	\$33,754	\$31,515	-\$2,239	5	\$500	-\$2,152	-\$4,392	-\$1,652
GMC	Acadia FWD	2011 - SLT [3.6, V6, A(A6)] 2017 - SLT-1 [2.5, I4, A(A6)]	\$40,782	\$38,350	-\$2,432	4	\$400	-\$1,474	-\$3,905	-\$1,074
Honda	Ridgeline 4WD	2011 - RT [3.5, V6, A(A5)] 2017 - RT [3.5, V6, A(A6)]	\$30,865	\$29,475	-\$1,390	5	\$500	-\$2,152	-\$3,543	-\$1,652
Honda	Ridgeline 4WD	2011 - RTL [3.5, V6, A(A5)] 2017 - RTL [3.5, V6, A(A6)]	\$36,825	\$35,580	-\$1,245	4	\$400	-\$1,804	-\$3,049	-\$1,404
Subaru	Impreza Wagon	2011 - 2.5i Premium [2.5, I4, A(S4)] 2017 - Premium [2.0, I4, A(AV-S7)]	\$20,287	\$19,895	-\$392	10	\$1,000	-\$2,287	-\$2,679	-\$1,287
Subaru	Impreza AWD	2011 - 2.5i [2.5, I4, A(S4)] 2017 - Base [2.0, I4, A(AV-S7)]	\$19,753	\$19,395	-\$358	10	\$1,000	-\$2,287	-\$2,645	-\$1,287
Mercedes	E-Series	2011 - E 350 4MATIC [3.5, V6, A(A5)] 2017 - 300 4MATIC [2.0, I4, A(A9)]	\$55,429	\$54,650	-\$779	5	\$500	-\$1,765	-\$2,545	-\$1,265
Cadillac	SRX/XT5 AWD	2011 - Luxury [3.0, V6, A(S6)] 2017 - Luxury [3.6, V6, A(S8)]	\$49,229	\$47,390	-\$1,839	2	\$200	-\$807	-\$2,646	-\$607
Hyundai	Elantra	2011 - Eco [1.4, I4, A(AM7)] 2017 - Eco [1.4, I4, A(AM7)]	\$21,675	\$20,650	-\$1,025	9	\$900	-\$1,592	-\$2,617	-\$692
Chrysler	T&C/Pacifica	2011 - Touring [3.6, V6, A(A6)] 2017 - Touring [3.6, V6, A(A9)]	\$32,211	\$30,495	-\$1,716	2	\$200	-\$732	-\$2,448	-\$532
GMC	Acadia AWD	2011 - SLT [3.6, V6, A(A6)] 2017 - SLT-1 [3.6, V6, A(A6)]	\$42,918	\$41,450	-\$1,468	1	\$100	-\$424	-\$1,891	-\$324
GMC	Acadia AWD	2011 - Denali [3.6, V6, A(A6)] 2017 - Denali [3.6, V6, A(A6)]	\$48,295	\$46,920	-\$1,375	1	\$100	-\$424	-\$1,799	-\$324
Hyundai	Elantra	2011 - Touring SE [2.0, I4, M(M5)] 2017 - Value Edition [2.0, I4, A(S6)]	\$20,821	\$20,250	-\$571	6	\$600	-\$1,161	-\$1,732	-\$561
GMC	Acadia FWD	2011 - Denali [3.6, V6, A(A6)] 2017 - Denali [3.6, V6, A(A6)]	\$46,159	\$44,920	-\$1,239	1	\$100	-\$424	-\$1,663	-\$324
Mercedes	E-Series	2011 - E 350 Coupe [3.5, V6, A(A5)] 2017 - 300 [2.0, I4, A(A9)]	\$52,172	\$52,150	-\$22	5	\$500	-\$1,610	-\$1,632	-\$1,110
Mercedes	E-Series	2011 - E 550 [5.5, V8, A(A7)] 2017 - 550 (coupe) [4.7, V8, A(A7)]	\$60,983	\$60,650	-\$333	3	\$300	-\$1,278	-\$1,611	-\$978
Mercedes	E-Series	2011 - E 550 (CONVERTIBLE) [5.5, V8, A(A7)] 2017 - 550 (convertible) [4.7, V8, A(A7)]	\$69,206	\$69,100	-\$106	3	\$300	-\$1,421	-\$1,527	-\$1,121
Hyundai	Elantra	2011 - GLS [1.8, I4, A(A6)] 2017 - SE [2.0, I4, A(S6)]	\$18,241	\$18,150	-\$91	1	\$100	-\$152	-\$244	-\$52
Subaru	Impreza Wagon	2011 - 2.5i Premium [2.5, I4, A(S4)] 2017 - Premium [2.0, I4, A(AV-S7)]	\$21,355	\$21,695	\$340	10	\$1,000	-\$2,287	-\$1,947	-\$1,287
Subaru	Impreza AWD	2011 - 2.5i [2.5, I4, A(S4)] 2017 - Base [2.0, I4, A(AV-S7)]	\$20,821	\$21,195	\$374	10	\$1,000	-\$2,287	-\$1,913	-\$1,287
Mazda	CX-9 2WD	2011 - Sport [3.7, V6, A(S6)] 2017 - Sport [2.5, I4, A(S6)]	\$31,116	\$31,520	\$404	5	\$500	-\$1,765	-\$1,362	-\$1,265

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Division	Model	Trim	2011 Price in 2017 Dollars ¹²	2017 Price	Change in Price	Change in MPG ³	Cost of FE Tech (\$100/MPG) ⁴	Change in 5 Yr. Gas Costs ⁵	Price Difference Plus Gas Savings	FE Tech Cost Plus Gas Savings
Volvo	XC60 FWD	2011 - 3.2 R [3.2, V6, A(S6)] 2017 - T5 Inscription [2.0, I4, A(S8)]	\$40,637	\$40,950	\$313	5	\$500	-\$1,474	-\$1,162	-\$974
Volvo	XC60 AWD	2011 - 3.2 R [3.2, V6, A(S6)] 2017 - T5 Inscription [2.0, I4, A(S8)]	\$42,773	\$42,950	\$177	3	\$300	-\$1,050	-\$873	-\$750
Mazda	CX-9 4WD	2011 - Sport [3.7, V6, A(S6)] 2017 - Sport [2.5, I4, A(S6)]	\$32,601	\$33,320	\$719	4	\$400	-\$1,474	-\$754	-\$1,074
Honda	CR-V 4WD	2011 - EX-L [2.4, I4, A(A5)] 2017 - EX-L [1.5, I4, A(AV)]	\$29,792	\$30,495	\$703	6	\$600	-\$1,448	-\$745	-\$848
Honda	CR-V 2WD	2011 - EX [2.4, I4, A(A5)] 2017 - EX [1.5, I4, A(AV)]	\$28,457	\$29,195	\$738	6	\$600	-\$1,342	-\$604	-\$742
Chrysler	T&C/Pacifica	2011 - Touring L [3.6, V6, A(A6)] 2017 - Touring L [3.6, V6, A(A9)]	\$34,347	\$34,495	\$148	2	\$200	-\$732	-\$584	-\$532
Honda	CR-V 4WD	2011 - EX [2.4, I4, A(A5)] 2017 - EX-L [1.5, I4, A(AV)]	\$26,962	\$27,995	\$1,033	6	\$600	-\$1,448	-\$415	-\$848
Honda	CR-V 2WD	2011 - EX-L [2.4, I4, A(A5)] 2017 - EX [1.5, I4, A(AV)]	\$25,627	\$26,695	\$1,068	6	\$600	-\$1,342	-\$273	-\$742
Honda	CR-V 2WD	2011 - LX [2.4, I4, A(A5)] 2017 - LX [2.4, I4, A(AV)]	\$23,170	\$24,045	\$875	4	\$400	-\$958	-\$84	-\$558
Mazda	CX-9 2WD	2011 - Touring [3.7, V6, A(S6)] 2017 - Touring [2.5, I4, A(S6)]	\$33,167	\$35,970	\$2,803	5	\$500	-\$1,765	\$1,038	-\$1,265
Mazda	CX-9 2WD	2011 - Grand Touring [3.7, V6, A(S6)] 2017 - Grand Touring [2.5, I4, A(S6)]	\$35,399	\$40,470	\$5,071	5	\$500	-\$1,765	\$3,306	-\$1,265
Buick	Lacrosse	2011 - CXS [3.6, V6, A(A6)] 2017 - Premium [3.6, V6, A(S8)]	\$36,061	\$41,065	\$5,004	5	\$500	-\$1,610	\$3,394	-\$1,110
Buick	Lacrosse	2011 - CXL [3.6, V6, A(A6)] 2017 - Essence [3.6, V6, A(S8)]	\$31,565	\$38,665	\$7,100	5	\$500	-\$1,610	\$5,490	-\$1,110
Mazda	CX-9 4WD	2011 - Touring [3.7, V6, A(S6)] 2017 - Touring [2.5, I4, A(S6)]	\$34,651	\$37,770	\$3,119	4	\$400	-\$1,474	\$1,645	-\$1,074
Mazda	CX-9 4WD	2011 - Grand Touring [2.5, I4, A(S6)] 2017 - Grand Touring [3.7, V6, A(S6)]	\$36,883	\$42,270	\$5,387	4	\$400	-\$1,474	\$3,913	-\$1,074
Volvo	XC60 FWD	2011 - 3.2 [3.2, V6, A(S6)] 2017 - T5 Dynamic [2.0, I4, A(S8)]	\$34,603	\$40,950	\$6,347	5	\$500	-\$1,474	\$4,872	-\$974
Volvo	XC60 AWD	2011 - T6 [3.0, V6, A(S6)] 2017 - T6 Inscription [2.0, I4, A(S8)]	\$41,011	\$46,350	\$5,339	3	\$300	-\$1,156	\$4,183	-\$856
Volvo	XC60 AWD	2011 - T6 R [3.0, V6, A(S6)] 2017 - T6 R-Design [2.0, I4, A(S8)]	\$44,375	\$51,000	\$6,625	3	\$300	-\$1,156	\$5,469	-\$856
Volvo	S80/S90 FWD	2011 - 3.2 [3.2, V6, A(S6)] 2017 - T5 Momentum [2.0, I4, A(S8)]	\$39,463	\$46,950	\$7,487	5	\$500	-\$1,355	\$6,132	-\$855
Volvo	S80/S90 AWD	2011 - T6 [3.0, V6, A(S6)] 2017 - T6 Momentum [2.0, I4, A(S8)]	\$43,468	\$52,950	\$9,482	4	\$400	-\$1,227	\$8,256	-\$827
Volvo	XC60 AWD	2011 - 3.2 [3.2, V6, A(S6)] 2017 - T5 Dynamic [2.0, I4, A(S8)]	\$36,739	\$42,950	\$6,211	3	\$300	-\$1,050	\$5,161	-\$750
Hyundai	Equus/G90	2011 - Signature [4.6, V8, A(A6)] 2017 - Premium [3.3, V6, A(S8)]	\$61,944	\$68,100	\$6,156	2	\$200	-\$894	\$5,262	-\$694
Nissan	Armada AWD	2011 - SV [5.6, V8, A(A5)] 2017 - SV [5.6, V8, A(S7)]	\$46,469	\$47,800	\$1,331	1	\$100	-\$767	\$565	-\$667
Nissan	Armada AWD	2011 - SL [5.6, V8, A(A5)] 2017 - SL [5.6, V8, A(S7)]	\$48,744	\$52,550	\$3,806	1	\$100	-\$767	\$3,040	-\$667

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Division	Model	Trim	2011 Price in 2017 Dollars ¹²	2017 Price	Change in Price	Change in MPG ³	Cost of FE Tech (\$100/MPG) ⁴	Change in 5 Yr. Gas Costs ⁵	Price Difference Plus Gas Savings	FE Tech Cost Plus Gas Savings
Nissan	Armada AWD	2011 - Platinum [5.6, V8, A(A5)]	\$56,487	\$60,490	\$4,003	1	\$100	-\$767	\$3,237	-\$667
		2017 - Platinum [5.6, V8, A(S7)]								
Honda	CR-V 4WD	2011 - LX [2.4, I4, A(A5)]	\$23,170	\$25,345	\$2,175	4	\$400	-\$1,037	\$1,138	-\$637
		2017 - LX [2.4, I4, A(AV)]								
Cadillac	SRX/XT5 AWD	2011 - Premium [3.0, V6, A(S6)]	\$51,841	\$54,390	\$2,549	2	\$200	-\$807	\$1,742	-\$607
		2017 - Premium Luxury [3.6, V6, A(S8)]								
Nissan	Armada 2WD	2011 - SL [5.6, V8, A(A5)]	\$45,753	\$49,650	\$3,897	1	\$100	-\$671	\$3,226	-\$571
		2017 - SL [5.6, V8, A(S7)]								
Nissan	Armada 2WD	2011 - Platinum [5.6, V8, A(A5)]	\$53,496	\$57,590	\$4,094	1	\$100	-\$671	\$3,423	-\$571
		2017 - Platinum [5.6, V8, A(S7)]								
Nissan	Armada 2WD	2011 - SV [5.6, V8, A(A5)]	\$40,488	\$44,900	\$4,412	1	\$100	-\$671	\$3,741	-\$571
		2017 - SV [5.6, V8, A(S7)]								
Cadillac	SRX/XT5 FWD	2011 - Performance [3.0, V6, A(S6)]	\$45,337	\$51,895	\$6,558	2	\$200	-\$732	\$5,827	-\$532
		2017 - Premium Luxury [3.6, V6, A(S8)]								
Cadillac	SRX/XT5 FWD	2011 - Base [3.0, V6, A(S6)]	\$36,130	\$38,995	\$2,865	2	\$200	-\$732	\$2,133	-\$532
		2017 - Base [3.6, V6, A(S8)]								
Cadillac	SRX/XT5 FWD	2011 - Luxury [3.0, V6, A(S6)]	\$40,862	\$44,895	\$4,033	2	\$200	-\$732	\$3,302	-\$532
		2017 - Luxury [3.6, V6, A(S8)]								
Chrysler	T&C/Pacifica	2011 - Limited [3.6, V6, A(A6)]	\$41,289	\$42,495	\$1,206	2	\$200	-\$732	\$474	-\$532
		2017 - Limited [3.6, V6, A(A9)]								
Audi	A4 Quattro	2011 - Prestige [2.0, I4, A(S8)]	\$45,646	\$48,000	\$2,354	3	\$300	-\$745	\$1,608	-\$445
		2017 - Prestige [2.0, I4, A(AM-S7)]								
Audi	A4 Quattro	2011 - Premium [2.0, I4, A(S8)]	\$36,462	\$39,400	\$2,938	3	\$300	-\$745	\$2,193	-\$445
		2017 - Premium [2.0, I4, A(AM-S7)]								
Audi	A4 Quattro	2011 - Premium Plus [2.0, I4, A(AM-S7)]	\$40,093	\$43,200	\$3,107	3	\$300	-\$745	\$2,362	-\$445
		2017 - Premium Plus [2.0, I4, A(S8)]								
Audi	A4	2011 - Premium [2.0, I4, A(AV)]	\$34,123	\$34,900	\$777	3	\$300	-\$690	\$87	-\$390
		2017 - Premium [2.0, I4, A(AM-S7)]								
Audi	A4	2011 - Premium Plus [2.0, I4, A(AV)]	\$37,807	\$41,100	\$3,293	3	\$300	-\$690	\$2,603	-\$390
		2017 - Premium Plus [2.0, I4, A(AM-S7)]								
Hyundai	Equus/G90	2011 - Ultimate [4.6, V8, A(A6)]	\$68,886	\$69,700	\$814	1	\$100	-\$471	\$343	-\$371
		2017 - Ultimate [5.0, V8, A(S8)]								
Buick	Lacrosse	2011 - CX [2.4, I4, A(S6)]	\$28,831	\$36,065	\$7,234	2	\$200	-\$560	\$6,674	-\$360
		2017 - Preferred [3.6, V6, A(S8)]								
Lincoln	MKS/Continental FWD	2011 - FWD [3.7, V6, A(S6)]	\$44,076	\$44,560	\$484	1	\$100	-\$424	\$60	-\$324
		2017 - Premiere [3.7, V6, A(S6)]								
Audi	A4 Quattro	2011 - Prestige [2.0, I4, M(M6)]	\$44,269	\$48,000	\$3,731	2	\$200	-\$477	\$3,254	-\$277
		2017 - Prestige [2.0, I4, M(M6)]								
Audi	A4 Quattro	2011 - Premium [2.0, I4, M(M6)]	\$35,084	\$39,400	\$4,316	2	\$200	-\$477	\$3,839	-\$277
		2017 - Premium [2.0, I4, M(M6)]								
Audi	A4 Quattro	2011 - Premium Plus [2.0, I4, M(M6)]	\$38,715	\$43,200	\$4,485	2	\$200	-\$477	\$4,008	-\$277
		2017 - Premium Plus [2.0, I4, M(M6)]								
Hyundai	Genesis/G80	2011 - V6 [3.8, V6, A(A6)]	\$35,244	\$41,400	\$6,156	1	\$100	-\$348	\$5,808	-\$248
		2017 - 3.8L V6 [3.8, V6, A(S8)]								
Audi	A5 Quattro	2011 - Premium [2.0, I4, A(S8)]	\$40,360	\$42,200	\$1,840	1	\$100	-\$268	\$1,572	-\$168
		2017 - Sport [2.0, I4, A(S8)]								
Audi	A5 Quattro	2011 - Premium [2.0, I4, M(M6)]	\$38,982	\$41,200	\$2,218	1	\$100	-\$248	\$1,970	-\$148
		2017 - Sport [2.0, I4, M(M6)]								

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Hyundai	Elantra	2011 - Touring GLS [2.0, I4, A(A4)]	\$18,364	\$19,800	\$1,436	1	\$100	-\$229	\$1,206	-\$129
		2017 - GT [2.0, I4, A(S6)]								
Hyundai	Elantra	2011 - Touring GLS [2.0, I4, M(M5)]	\$17,083	\$18,800	\$1,717	1	\$100	-\$229	\$1,488	-\$129
		2017 - GT [2.0, I4, M(M6)]								
Audi	A5 Cabriolet Quattro	2011 - Premium [2.0, I4, A(S8)]	\$47,195	\$48,600	\$1,405	0	\$0	\$0	\$1,405	\$0
		2017 - Sport [2.0, I4, A(AM-S7)]								
Hyundai	Elantra	2011 - Limited [1.8, I4, A(A6)]	\$21,339	\$22,350	\$1,011	0	\$0	\$0	\$1,011	\$0
		2017 - Limited [2.0, I4, A(S6)]								
Lincoln	MKS/Continental AWD	2011 - AWD [3.7, V6, A(S6)]	\$46,095	\$46,560	\$465	0	\$0	\$0	\$465	\$0
		2017 - Premiere [3.7, V6, A(S6)]								
Hyundai	Elantra	2011 - GLS [1.8, I4, M(M6)]	\$15,838	\$17,150	\$1,312	-3	\$0	\$520	\$1,832	\$520
		2017 - SE [2.0, I4, M(M6)]								
Hyundai	Genesis/G80	2011 - V8 [4.6, V8, A(A6)]	\$45,924	\$54,550	\$8,626	-2	\$0	\$894	\$9,520	\$894
		2017 - 5.0L V8 [5.0, V8, A(S8)]								

¹Inflation was calculated using BLS average inflation numbers from 2011-2016.

²Vehicle Price is from the New Car Cost Guide.

³Fuel Economy of Vehicles is from the EPA.

⁴CFA bases its estimate of the cost of fuel economy on a review of the literature including historical, market-based and engineering studies, as described in Appendix B.

⁵Gas costs based on driving the vehicle 14,000 miles per year for 5 years and using gas prices from AAA (7/10/17).

	2011 Vehicles Which Were Less Expensive in 2017 Dollars and Had Higher MPG
	2011 Vehicles Which Were More Expensive in 2017, but Who's Fuel Savings Offset the Entire Price Increase
	2011 Vehicles Which Were More Expensive in 2017, but Who's Fuel ⁴ Savings Offset the \$100 per MPG Cost of Fuel Efficient Technology
	2011 Vehicles Which Were More Expensive in 2017 and Whose Fuel Economy Stayed the Same or Decreased

Appendix B: The Cost of Increasing Fuel Economy: Support for Identifying an Average of \$100 as the Cost Per Mile of Fuel Economy Improvement

Estimating the cost of increasing fuel economy has been a matter of great debate for decades. Empirical analyses that look at actual costs show that regulators overestimate the cost by a factor of two and automakers overestimate it by much more.

David Greene, one of the leading experts on fuel economy, recently conducted a review of the literature in which he concluded that an estimate of 27% of the increase in vehicle cost, or about \$150 for every mile per gallon improvement, was too high. He gave two reasons for this.

First, backward looking analysis of cost increases that included used vehicles (as his analysis did), were double counting the cost of increasing fuel economy because the sellers of vehicles were capturing a significant part of the capitalized value of better fuel economy equal to about 20% of the estimated cost of efficiency, in their sales price. This factor alone would lower the estimate to 21.6% of the increase in price or about \$120 for each 1 mile improvement in the MPG.

Second, real world experience showed that there was a learning process in which costs fell as automakers gained more experience with increasing fuel economy. He suggested that 2% per year was a reasonable estimate. Over the redesign cycle of vehicles (e.g. five years) this learning rate would lower the cost by about 10%. Thus, one might argue that the appropriate numbers would be about 20% per year and \$108 dollars per MPG, as shown in Table 1.

There is a third factor that is implicit in Greene's analysis. The distribution of the cost of vehicles is skewed. The much more expensive vehicles purchased by upper income households are likely to include a larger amount of costs incurred to upscale the vehicles, rather than for fuel economy.

In a subsequent analysis Greene estimated the cost of improving fuel economy directly with an econometric model that corroborated the above concerns, as shown in Table 1. The simple adjustment to a constant 20% of total cost moves the estimate much closer to

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the empirical evidence offered by Greene suggesting costs that are about two thirds of the literature review—about 18% or \$99/MPG.

EPA's analysis of the cost of the National Program currently yields an estimated cost for fuel savings that is similar, \$97/MPG. This estimate reflects considerable technological progress over the early years of the National Program, which is consistent with the historical pattern. A recent study by the ICCT offers an estimate of going forward costs of improvement close to the rate of the national program (national program = 3.3%, ICCT = 4% per year). The ICCT study also includes continuing technological progress.

Moreover, our data on new models since the National Program reducing emissions/fuel economy, supports the key problem with using a simple percentage of the total cost of the vehicle to approximate the cost of improving fuel economy, as shown in the charts below. There is a strong, negative correlation ($r = -.7$) between the cost of a vehicle and the mileage and a moderate, negative correlation ($r = -.4$) between the cost of the vehicle and the change in mileage. A fixed percentage makes no sense.

In light of this analysis, we believe a cautious estimate of the cost of fuel economy improvements is \$100/MPG improvement.

TABLE 1: HISTORICAL AND ENGINEERING ESTIMATES OF THE COST OF INCREASING MILEAGE

	Greene Literature Review	Simple Adjustment Approach	Greene Direct	EPA Final 2017- 2025	ICCT Estimate for 2025-2030 4.5%/year
Annual Cost	\$213	na	\$141	\$97	\$110
% of Total Cost Increase	27%	20%	18%	na	na
\$/MPG	\$150	\$108	\$99	\$97	\$86

Sources: Greene 1,2, EPA Determination, ICT

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VEHICLE COST AND MILEAGE

