



POLICY & ACTION FROM CONSUMER REPORTS

National Highway Traffic Safety Administration  
U.S. Department of Transportation  
West Building, Ground Floor, Room W12-140  
1200 New Jersey Avenue SE.  
Washington, DC 20590

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Consumers Union Comments on NHTSA's Notice of Intent  
To Prepare an Environmental Impact Statement for Model Year 2022–2025  
Corporate Average Fuel Economy Standards  
(Docket No. NHTSA-2017-0069)  
Submitted via: [www.regulations.gov](http://www.regulations.gov)

## Introduction

Consumers Union (“CU”), the policy and mobilization division of Consumer Reports,<sup>1</sup> submits the following comments to the National Highway Traffic Safety Administration (“NHTSA”) in the above-referenced matter. CU represents the interests of consumers and has provided comments on fuel economy-related public dockets for over a decade, including the setting of the 2017-2025 standards in 2012, the Draft Technical Assessment Report in 2016, and the final determination in 2017.<sup>2</sup> During the course of these rulemaking procedures, CU collected 31,973 signatures in support of strong fuel economy standards.<sup>3</sup>

Gradual improvements to fuel economy and emission standards, like those in place today, are part of a practical and tested program to reduce fuel consumption, improve the vehicle fleet, protect public health, and save consumers trillions of dollars in fuel costs. Automakers have developed the technology to make better, safer, and more efficient vehicles, and federal agencies should now set standards at a higher level to continue this progress in increasing consumer savings and protection. Both our subscriber and nationally representative surveys demonstrate overwhelming public support for continuing to strengthen fuel economy standards,<sup>4</sup> and our recent analyses indicate that doing so will improve consumer welfare through greater owner satisfaction,<sup>5</sup> and is unlikely to impact the entry-level price of new vehicles or

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<sup>1</sup> Consumers Union works for pro-consumer energy policies, health reform, food and product safety, financial reform, and other consumer issues in Washington, D.C., the states, and in the marketplace. Consumer Reports is the world’s largest independent product-testing organization. Using its more than 50 labs, auto test center, and survey research center, the nonprofit rates thousands of products and services annually. Founded in 1936, Consumer Reports has over 8 million subscribers to its magazine, website, and other publications.

<sup>2</sup> EPA-420-R-17-001 January 2017 and EPA- HQ-OAR-2010-0799 2012 Comments, Sept. 21, 2016, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-3511>, Sept. 26, 2016 - <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-3997>; Dec. 23, 2016, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-6028>; Comments, February 10, 2012, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0799-9454>.

<sup>3</sup> <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-6028>.

<sup>4</sup> "Nearly 9 in 10 Americans want automakers to raise fuel efficiency, according to latest Consumers Union survey." Consumers Union. June 29, 2017. <http://consumersunion.org/news/2017-fuel-economy-survey/>.

<sup>5</sup> Investigation of Relationship between Fuel Economy and Owner Satisfaction. Consumers Union. June 2016. <http://consumersunion.org/wp-content/uploads/2016/06/CU-MPG-Satisfaction-report-final.pdf>.

affordability of used vehicles<sup>6</sup> (which constitutes 70 percent of light-duty vehicle purchases).<sup>7</sup>

In addition to the environmental and health benefits, consumers are likely to see significant net savings from strong standards, especially light truck buyers.<sup>8</sup> The comments below address the range of alternatives that should be under consideration, key consumer and other impacts that should be considered, and important matters for in-depth analysis in the EIS, with a focus on those that the Secretary of Transportation must consider when setting "maximum feasible" average fuel economy standards.

### **1. Consumers support strong fuel economy standards.**

In a nationally representative survey published in June 2017, Consumers Union found that fuel economy is the number one attribute vehicle owners would like to see improved.<sup>9</sup> Fuel economy topped the list of attributes that American drivers think have the most room for improvement, beating out: purchase price, connectivity, range, vehicle comfort, passenger room, safety, cargo space, reliability, horsepower, vehicle size, off-road capability, style, and handling. Fuel economy was flagged as needing improvement more than three times as much as horsepower, connectivity, or off-road capability, and more than four times as much as vehicle size. This finding was consistent regardless of vehicle type, and across low- to moderate- income vehicle owners. Every segment based on consumers' current vehicle type (small, midsize, large, and pick-up truck) identified fuel economy as the number-one attribute that needs improvement, as did all household income segments under \$100,000.

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<sup>6</sup> "More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable." Consumers Union. March 15, 2017. <http://consumersunion.org/wp-content/uploads/2017/03/Synapse-CU-Affordability-Report-3-15-corrected-1.pdf>.

<sup>7</sup> *Id.*

<sup>8</sup> "Efficiency technology and cost assessment for U.S. 2025–2030 light-duty vehicles." International Council on Clean Transportation. March 22, 2017. [http://theicct.org/sites/default/files/publications/US-LDV-tech-potential\\_ICCT\\_white-paper\\_22032017.pdf](http://theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf).

<sup>9</sup> Press Release: "Nearly 9 in 10 Americans want automakers to raise fuel efficiency, according to latest Consumers Union survey." Consumers Union, June 29, 2017. <http://consumersunion.org/news/2017-fuel-economy-survey/>

Thinking about your current vehicle, which aspects of this vehicle have the most room for improvement?	Total %	Household Income			Region				Political Party Affiliation	
		Under \$50,000 %	\$50,000-\$99,999 %	\$100,000 or more %	Northeast %	Midwest %	South %	West %	Republican %	Democrat %
<i>Respondents selected UP to three responses</i>										
Fuel economy	35	31	36	38	35	37	32	38	34	36
Purchase price	26	25	28	24	30	22	27	24	25	28
Passenger room	14	13	15	12	14	15	12	14	14	13
Range	13	14	16	11	12	12	16	11	12	14
Vehicle comfort	12	14	9	12	9	13	14	9	11	13
Cargo space	11	10	9	12	9	11	12	10	10	11
Horsepower	11	11	12	11	14	8	9	15	8	14
Connectivity	10	9	9	13	11	9	12	10	12	10
Off-road capability	10	11	9	10	13	4	12	11	12	9
Style	9	11	7	8	10	6	10	7	7	10
Reliability	8	11	7	5	11	7	6	9	7	9
Vehicle size	8	9	9	7	7	10	9	7	8	8
Safety	6	8	7	3	8	4	8	3	6	6
Handling	6	6	5	6	5	6	4	9	6	6
Base: Respondents who said their household owns a vehicle and they drive	892	300	289	302	150	197	339	205	400	457

In the same nationally representative survey published in June 2017, Consumers Union also found strong majority support for robust fuel economy standards.<sup>10</sup> Highlights from the survey include:

- 87% of Americans agreed automakers should continue to improve fuel economy.
- 73% of Americans agreed that government should continue to set higher standards for vehicle efficiency.
- 76% of Americans agreed that increasing average on-road fuel economy from 25 miles per gallon today to 40 miles per gallon by 2025 is a worthwhile goal.
- 79% of Americans agreed that making larger vehicles, such as SUVs or trucks, more fuel-efficient is important.
- 60% of Americans are willing to pay extra for a more fuel-efficient vehicle if they can recover the additional cost through fuel savings within 5 years.
- The automotive brands perceived as the best overall were also those perceived as the best in delivering fuel economy.
- Compared to their current vehicles, over half (53%) of adult American drivers expect better fuel economy with their next car purchase.

<sup>10</sup> *Id.*

## 2. Consumer welfare is enhanced by strong fuel economy standards.

### *a. Higher fuel economy is correlated with higher owner satisfaction.*

As another measure of consumer interest in and benefits from better fuel economy, Consumers Union investigated the relationship between fuel economy and owner satisfaction, and the results of the two-part analysis showed that when holding other factors constant, higher fuel efficiency is positively associated with higher owner satisfaction.<sup>11</sup> Though many factors determine owner satisfaction, the analysis evaluated the relationship between owner satisfaction and the following vehicle attributes: fuel economy, acceleration, horsepower, reliability, CR's road-test score, and CR's tested price. All six attributes examined in the first analysis show significant association with owner satisfaction for cars and SUVs. Fuel economy was second only to reliability in the strength of the association with higher owner satisfaction. The dataset for this analysis included vehicles from model years 2012-2015, and so it includes many fuel-efficient technologies and designs that were identified in the joint TAR. While the analysis does not break out individual technologies, it seems clear that consumer welfare is likely improved from the shift to greater efficiency.

### *b. Stronger fuel economy standards are likely to provide positive effects for low- and moderate-income car buyers.*

Low- and moderate-income households are particularly sensitive to gas price changes, as they spend more on fuel as a percentage of their income than do higher-income households.<sup>12</sup> In fact, low-to-moderate-income households spend more on gasoline to fuel their vehicles than they do on the vehicle purchases, as shown by the Consumer Expenditure Survey (CES) survey data, and as noted in EPA's Technical Support Document (TSD) for its proposed determination.<sup>13</sup> Therefore, improvements to fuel efficiency deliver higher-than-average net benefits to low- and moderate-income households.

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<sup>11</sup> Investigation of Relationship between Fuel Economy and Owner Satisfaction. Consumers Union. June 2016. <http://consumersunion.org/wp-content/uploads/2016/06/CU-MPG-Satisfaction-report-final.pdf>

<sup>12</sup> More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable. Consumers Union. March 15, 2017. <http://consumersunion.org/wp-content/uploads/2017/03/Synapse-CU-Affordability-Report-3-15-corrected-1.pdf>.

<sup>13</sup> Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation: Technical Support Document. Environmental Protection Agency. November 2016. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100Q3L4.pdf>, pg 4-47.

The majority of cars sold each year are in the used car market, accounting for about 70% of annual vehicle sales.<sup>14</sup> And according to CES data, households in the two lowest income quintiles are far more likely to buy used vehicles than new.<sup>15</sup> Fuel efficiency technology introduced in new vehicles makes its way to the used vehicle market and, as noted in the proposed determination, used vehicle buyers benefit from the depreciation of new vehicles, which reduces the cost of fuel economy technologies. A recent University of Tennessee (UT) study demonstrates that used car buyers access fuel economy improvements at a lower cost than for new car buyers.<sup>16</sup> Fuel economy decreases very little over time, even as a vehicle depreciates, so used car buyers reap even greater net benefits, even after accounting for the fact that vehicles are driven fewer miles as they age. The UT study also found that savings on fuel, due to increases in fuel efficiency standards, amounted to 4.3% of annual income for the lowest income quintile but only 0.9% for the highest quintile.<sup>17</sup>

Further, used cars have become more affordable over time. Adjusting for inflation, average used car prices have fallen slightly over the last 20 years, even as cars have benefited from fleet-wide improvements to safety, fuel economy, performance, reliability and other attributes.<sup>18</sup> Fuel economy in particular has been improving since 2012, as both new and used vehicle sales have been at or near record highs. And while there has been a small increase in the real new-vehicle price on average, this increase has been largely driven by a trend towards larger vehicles and luxury features, and has not changed the price point for entry-level vehicles.<sup>19</sup>

This difference in the benefits and costs between new and used car markets highlights both that the full lifetime of benefits should be included in evaluating different alternatives, and that there are clear market imperfections in the new car market for which strong standards can help compensate.

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<sup>14</sup> Used Vehicle Market Report. Edmunds.com. February 2017.

[https://dealers.edmunds.com/static/assets/articles/2017\\_Feb\\_Used\\_Market\\_Report.pdf](https://dealers.edmunds.com/static/assets/articles/2017_Feb_Used_Market_Report.pdf)

<sup>15</sup> Consumer Expenditure Survey, New and Used Vehicle Purchases by Income Quintile, 1995-2015, [www.bls.gov/cex/](http://www.bls.gov/cex/).

<sup>16</sup> Greene, D. and J. Welch. 2016. The Impact of Increased Fuel Economy for Light-Duty Vehicles on the Distribution of Income in the United States. Report Prepared for Oak Ridge National Laboratory and the Energy Foundation. [http://bakercenter.utk.edu/wp-content/uploads/2016/09/EquityImpacts-of-Fuel-Economy-Report\\_final.pdf](http://bakercenter.utk.edu/wp-content/uploads/2016/09/EquityImpacts-of-Fuel-Economy-Report_final.pdf).

<sup>17</sup> *Id.*

<sup>18</sup> More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable. Consumers Union. March 15, 2017. <http://consumersunion.org/wp-content/uploads/2017/03/Synapse-CU-Affordability-Report-3-15-corrected-1.pdf>.

<sup>19</sup> "Affordability of Vehicles Under the Current National Program in 2022-2025 for Detroit Three Automakers." Ceres. December 19, 2016. <https://www.ceres.org/resources/reports/affordability-vehicles-under-current-national-program-2022-2025-detroit-three>.

### **3. The statutory factors required by EPCA dictate that even more stringent standards than the augural<sup>20</sup> ones should be considered.**

The Energy Policy and Conservation Act of 1975 (“EPCA”) requires that the Secretary of Transportation (who delegated authority to NHTSA) consider the four statutory factors of “technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need for the United States to conserve energy.”<sup>21</sup> As shown below, the data underlying each of the mandatory statutory factors for setting of “maximum feasible” standards indicate that standards at least as stringent as the augural standards set in 2012 are warranted, and that “reasonable alternatives” should include significantly higher levels as part of the analysis.

Keeping in mind that the “overarching goal of EPCA is energy conservation,”<sup>22</sup> and that “[c]onsiderations such as pricing, consumer choice, safety for the consumer, and dealer profitability are not goals or objectives in and of themselves, they are factors against which the possibility of increased fuel efficiency is weighed in order to determine feasibility,”<sup>23</sup> CU makes the following recommendations with regard to each of the four factors.

#### *a. Technological feasibility*

The technology needed to meet the augural standards for 2022-2025 is already available, and the standards can largely be met with improvements to vehicle design and the internal combustion engine powertrain. There are many pathways to compliance, even without accounting for advances in technology and manufacturing over the last five years.<sup>24</sup> According to EPA’s Light-Duty Fuel Economy Trends Report from 2016, 17% of the MY 2016 fleet already meets MY 2020 targets, and 3.5% of the MY 2016 fleet (on a fleet-wide average basis) already meets or exceeds MY 2025 targets, as set in 2012.<sup>25</sup> And according to Union of Concerned Scientists’ (UCS)

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<sup>20</sup> Because the Energy Independence and Security Act of 2007 limited NHTSA from setting standards covering more than 5 years at a time, the standards for 2022-2025 were predictive of future standards, not final standards in and of themselves.

<sup>21</sup> 49 U.S.C. §§ 32902(a), 32902(f).

<sup>22</sup> *Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1177 (E.D. Cal. 2007), citing *Center for Biological Diversity, v. NHTSA*, 508 F.3d 508, 551-52 (9th Cir. 2007).

<sup>23</sup> *Id.*, citing *Massachusetts v. EPA*, 127 S.Ct. 1438, 1461 (2007).

<sup>24</sup> Draft TAR: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF>

<sup>25</sup> <https://www.epa.gov/sites/production/files/2016-11/documents/420r16010.pdf>, at p. 118; <https://www.epa.gov/fueleconomy/light-duty-automotive-technology-carbon-dioxide-emissions-and-fuel-economy-trends-1975-0>.



analysis, there were already at least two truck models (Ford F-150 and Ram 1500) in 2015 that could already meet the augural standards out to 2023.<sup>26</sup> Those models have further improved their fuel economy since the UCS analysis, with Ford announcing that its 2018 F-150 would improve both fuel economy and towing capacity.<sup>27</sup> In the 2016 EPA Trends report, light trucks had demonstrated the greatest annual improvement,<sup>28</sup> and while the EPA trends report for 2016-17 is not yet complete, many trucks are likely to have seen further improvement.

Automaker announcements over the past year also indicate that fuel-saving technologies are poised to see even greater market penetration in the very near future. In August 2017, Mazda announced that it has cracked the code on a variation of an homogeneous charge compression ignition (HCCI) engine, and will be introducing this technology in its 2019 line-up, greatly improving efficiency and showing that significant improvements to gasoline internal combustion engine are still going strong.<sup>29</sup> In a similar vein, Infiniti announced it will be introducing the “world’s first production-ready variable compression ratio engine” that “combines the power of a high-performance 2.0-liter turbo gasoline engine with the torque and efficiency of an advanced diesel powertrain – without the equivalent emissions.”<sup>30</sup>

Independent analyses make it clear that meeting or exceeding targets for MY 2022-2025 set for the U.S. fleet in 2012 is technologically feasible with net savings.<sup>31</sup> The 2017 ICCT study in particular estimates that the technology costs from EPA’s former analysis are overstated by 37 percent, which indicates that net savings from the augural standards would be greater than predicted and that higher standards would also yield net benefits. In light of these studies, EPA’s past technical assessments, and the

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<sup>26</sup> "Tomorrow's Clean Vehicles, Today." Union of Concerned Scientists. May 2015.

<http://www.ucsusa.org/sites/default/files/attach/2015/05/tomorrows-vehicles-today.pdf>.

<sup>27</sup> Ford Motor Company. "New Ford F-150: Most Advanced F-150 Powertrain Lineup Ever Enables Best-In-Class Payload, Towing And Gas Mileage." News release, August 9, 2017.

<https://media.ford.com/content/fordmedia/fna/us/en/news/2017/08/09/new-ford-f150-most-advanced-powertrain-lineup-ever.html>.

<sup>28</sup> <https://www.epa.gov/sites/production/files/2016-11/documents/420r16010.pdf>, at p. 21-22, table 3.2.

<sup>29</sup> Mazda. "Mazda Announces Long-Term Vision For Technology Development, 'Sustainable Zoom-Zoom 2030'." News release, August 8, 2017. <https://insidemazda.mazdausa.com/press-release/mazda-announces-long-term-vision-technology-development-sustainable-zoom-zoom-2030/>.

<sup>30</sup> "Infiniti VC-Turbo Engine Technology." Infiniti USA. September 2016.

<https://www.infinitiusa.com/now/technology/vc-turbo-engine>.

<sup>31</sup> See "Efficiency technology and cost assessment for U.S. 2025–2030 light-duty vehicles." International Council on Clean Transportation. March 22, 2017. [http://theicct.org/sites/default/files/publications/US-LDV-tech-potential\\_ICCT\\_white-paper\\_22032017.pdf](http://theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf). See also ACEEE comments ACEEE comments at <https://www.regulations.gov/document?D=NHTSA-2016-0068-0098>. See also "Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles," National Academy of Sciences (2015) at <https://www.nap.edu/catalog/21744/cost-effectiveness-and-deployment-of-fuel-economy-technologies-for-light-duty-vehicles>.

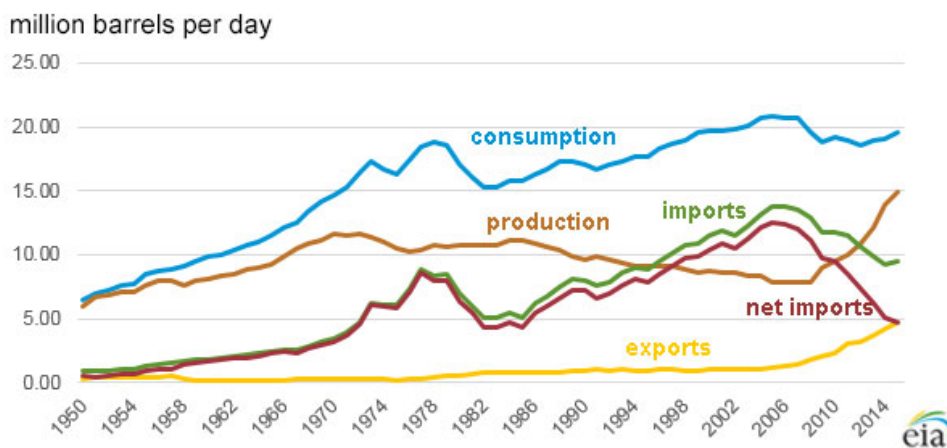


competitive world market, technological feasibility should not be a significant limiting factor.

### *b. Economic Practicability*

As part of its consideration of economic practicability, NHTSA should consider the potential costs to the industry of under-investing in fuel efficiency. Fuel economy standards were first put in place in reaction to price spikes from the oil embargo.<sup>32</sup> At the time, the United States had net oil import levels similar to today's, as shown in the graph below. While low levels of imports help reduce our vulnerability to price spikes, they are not a shield against such spikes, as prices are set on a world market.

### **U.S. petroleum consumption, production, imports, exports, and net imports (1949–2016)**



Note: Production includes total petroleum field production, renewable fuels and oxygenate plant net production, and refinery processing gain. Consumption is petroleum products supplied.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 3.1, March 2017, preliminary data for 2016

When placing value on the importance of economic practicability of a given standard, NHTSA cannot focus solely on steady state fuel pricing and should evaluate not just EIA oil and gasoline price scenarios, but also price spikes and recessions on the order of how they have actually occurred over the last forty years.

Automakers' ability to survive and invest are hit hard when they are not prepared for unpredictable (yet likely, based on historical patterns) price spikes. For example, General Motors has indicated that one of the risk factors required to be disclosed to its

<sup>32</sup> "History of Fuel Economy." Pew Environment Group. April 2011. <http://www.pewtrusts.org/~media/assets/2011/04/history-of-fuel-economy-clean-energy-factsheet.pdf>.

investors is that “the success of our full-size pick-up trucks and SUVs ... may be affected by increases in the price of oil,” and further that:

“Our profitability is dependent upon the success of full-size pick-up trucks and SUVs. While we offer a balanced and complete portfolio of small, mid-size and large cars, crossovers, SUVs and trucks, we generally recognize higher profit margins on our full-size pick-up trucks and SUVs. Our success is dependent upon consumer preferences and our ability to sell higher margin vehicles in sufficient volumes. *Any increases* (emphasis added) in the price of oil or any sustained shortage of oil, including as a result of global political instability, could cause a shift in consumer demand towards smaller, more fuel efficient vehicles, and weaken the demand for our higher margin full-size pick-up trucks and SUVs.”<sup>33</sup>

Improving efficiency is the demand-side equivalent to boosting oil supply, and thus efficiency serves to *reduce* oil prices and the related risk of price spikes. These macro-economic and risk-reduction benefits of robust standards, particularly for the light-truck category, must be adequately considered in order to accurately assess economic impacts of proposed standards.

The ability of automakers to pass on technology costs is an important consideration in assessing whether a standard is economically practicable. Automakers’ net profit margins indicate that, especially for SUVs and luxury vehicles, they are able to pass on a significant portion of costs to consumers.<sup>34</sup> However, as NHTSA and EPA look at their pricing models, they should not assume that profit is proportional to the cost of equipment and should recognize that markups vary by technology, automaker offerings, efficiency in sales (“upward of 15 percent of a car’s cost typically goes to distribution”),<sup>35</sup> brand packaging choices (automakers frequently “upsell” fuel economy into higher trim levels), and broader macroeconomic trends (average sales prices have increased, mainly attributable to luxury features and larger vehicles).<sup>36</sup> NHTSA should not “bake in” automaker inefficiencies of the past in order to further mark up the presumed cost of

<sup>33</sup> P. 40, General Motors 2017 10-K, <http://www.gm.com/investors/sec-filings.html>.

<sup>34</sup> See “Crossovers and SUVs fatten profit margins,” Automotive News, July 24, 2017, <http://www.autonews.com/article/20170724/RETAIL01/170729911/crossovers-suvs-fatten-profit-margins>

<sup>35</sup> “2017 Automotive Trends.” Strategy& - the global strategy consulting team at PwC. May 2017. <https://www.strategyand.pwc.com/trend/2017-automotive-industry-trends>.

<sup>36</sup> “Affordability of Vehicles Under the Current National Program in 2022-2025 for Detroit Three Automakers.” Alan Baum & Dan Luria, December 19, 2016.

fuel efficiency improvements in its consumer cost analysis. Further, the pricing structure for fuel efficient technology is different from other attributes or features because fuel economy often pays for itself.

In a similar vein, NHTSA should not give weight to claims of significant impacts of price elasticity for fuel-efficient features in evaluating economic practicality and automaker sales. Consumers have shown that they are willing to pay significantly higher prices for better cars and luxury features, as evidenced by rising vehicle sales along with rising vehicle prices. Reductions in vehicle affordability over time are tied to such features, not fuel economy.<sup>37</sup> Further, new-vehicle buyers have shown they are not very sensitive to price increases as long as they see a reasonable value proposition and the overall economy is strong. Fuel economy is valuable, and our surveys show consumers are willing to pay for it, but a very imperfect market significantly affects the ability of this willingness to translate into commensurate marketplace impacts. Vehicle sales levels are primarily driven by macroeconomic trends, with fuel economy increasing affordability.<sup>38</sup> Expanding incomes result in consumers being able to spend more, but if fuel economy stalls, then conversely, consumers will have less money to spend. At the same time, when fuel prices rise and the economy slows, consumer demand for fuel efficiency rises, but vehicle sales typically fall due to the weaker economy.

On the other hand, increasing fuel economy, with the net consumer benefits that result, provides a larger discretionary budget, enabling consumers to purchase things they value, like better cars and other goods and services. As a result, because oil is one of the least labor-intensive industries and has economic rents that are not feeding money back into the economy as much as money spent on other goods and services, including vehicles and components that enhance fuel economy, increased fuel economy standards can strengthen the economy overall, while supporting more jobs both within and outside the auto industry.<sup>39</sup>

NHTSA's modeling should also include scenarios with the most updated and appropriate cost estimates, such as the EPA estimates from the draft technical

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<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> See "More Jobs Per Gallon: How Strong Fuel Economy/GHG Standards Will Fuel American Jobs," Ceres (July 2011), at p. 5, <https://www.ceres.org/resources/reports/more-jobs-gallon-how-strong-fuel-economyghg-standards-will-fuel-american-jobs>. See also "Improving Vehicle Fuel Economy to Create 570,000 Jobs," Blue-Green Alliance, <https://www.bluegreenalliance.org/the-latest/improving-vehicle-fuel-economy-to-create-570000-u-s-jobs/>. See also "Creating Creating Jobs, Saving Energy, and Energy, and Protecting the Environment Environment An Analysis of the Potential Benefits Potential Benefits of Investing in Efficient Cars and Trucks Cars and Trucks A 2007 Update" Union of Concerned Scientists, at 3-4, <http://www.ucsusa.org/clean-vehicles/fuel-efficiency/jobs-energy-fuel-economy#.WZXfPFNuL-Y>.

assessment report (TAR) from 2016 and an updated ICCT study from 2017.<sup>40</sup> The National Academy of Sciences found EPA's tear down studies and modeling to be the "gold standard" for determining technology costs.<sup>41</sup> The EPA technical support document issued in 2016 showed that many of the technologies EPA anticipated as likely pathways to compliance in 2012 are now cheaper, more effective, and more widely used than was assumed in its 2012 projections.<sup>42</sup> In fact, there are additional cost-effective technologies, such as CVT, HCCI, and Atkinson-cycle engines, that EPA did not include in its initial analysis, but are deployed in the current fleet. And in mid-2017, the ICCT found that technology prices had dropped still further since EPA's analysis, estimating the average added vehicle cost to meet for MY 2025 at \$543 (compared to MY 2021 standards).<sup>43</sup>

Further, in evaluating consumer acceptability, NHTSA must consider all vehicle purchaser categories in order to appropriately estimate consumer welfare, especially buyers of used vehicles and buyers who finance their vehicle purchase. The vehicle market is dominated by used vehicle sales purchased with a loan and is segmented by income, so it is essential to include these categories of vehicle buyers in NHTSA's cost-benefit analysis.<sup>44</sup> Two-thirds of used and new car buyers obtain loans for their purchase.<sup>45</sup> Modeling the impacts on a small portion of the market (e.g. new car buyers who pay in cash) would not capture the lifetime benefits of the standards for used vehicle buyers. Further, for those who finance their new and used vehicles, the added monthly payment for fuel efficient technologies is more than offset by the fuel savings within the very first month of ownership.<sup>46</sup>

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<sup>40</sup> "Efficiency technology and cost assessment for U.S. 2025–2030 light-duty vehicles." International Council on Clean Transportation. March 22, 2017. [http://theicct.org/sites/default/files/publications/US-LDV-tech-potential\\_ICCT\\_white-paper\\_22032017.pdf](http://theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf).

<sup>41</sup> "Cost, Effectiveness and Deployment of Fuel Economy Technologies for Light-Duty Vehicles." National Academy of Sciences. June 2015. [http://sites.nationalacademies.org/cs/groups/depssite/documents/webpage/deps\\_166210.pdf](http://sites.nationalacademies.org/cs/groups/depssite/documents/webpage/deps_166210.pdf)., at p. 1.

<sup>42</sup> EPA TSD.

<sup>43</sup> "Consumer benefits of increased efficiency in 2025-2030 light-duty vehicles in the U.S." International Council on Clean Transportation. June 21, 2017. [http://www.theicct.org/sites/default/files/publications/US-LDV-Efficiency-Consumer-Benefits\\_ICCT\\_Briefing\\_21062017\\_vF.pdf](http://www.theicct.org/sites/default/files/publications/US-LDV-Efficiency-Consumer-Benefits_ICCT_Briefing_21062017_vF.pdf)., at p. 4.

<sup>44</sup> Greene, David. "The Impact of Increased Fuel Economy for Light-Duty Vehicles on the Distribution of Income in the United States." Howard H. Baker Jr. Center for Public Policy. September 2016. [http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report\\_final.pdf](http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report_final.pdf).

<sup>45</sup> Federal Reserve's "Report on the Economic Well-Being of U.S. Households in 2015," dated May 2016, pp. 41-42, at <https://www.federalreserve.gov/2015-report-economic-well-being-us-households-201605.pdf>

<sup>46</sup> "Efficiency technology and cost assessment for U.S. 2025–2030 light-duty vehicles." International Council on Clean Transportation. March 22, 2017. [http://theicct.org/sites/default/files/publications/US-LDV-tech-potential\\_ICCT\\_white-paper\\_22032017.pdf](http://theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf)., at p. 6; "More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable." Consumers Union. March 15, 2017. <http://consumersunion.org/wp-content/uploads/2017/03/Synapse-CU-Affordability-Report-3-15-corrected-1.pdf>.

New vehicle purchasers who pay with cash have relatively low price sensitivity to either vehicle or gasoline prices, as compared with used vehicle purchasers who finance their vehicle (and pay a larger portion of their income on gasoline than on monthly vehicle payments) and are therefore very sensitive to fuel cost fluctuations.<sup>47</sup> NHTSA's analysis of impacts should differentiate between high-income households, which are more often buying new vehicles and have relatively low price-sensitivity to purchase price and fuel costs, and low-income and moderate households, which are more often buying used vehicles and have a greater sensitivity to both purchase price and fuel costs). Assuming that low-income households are buying new vehicles and are highly sensitive to purchase price fluctuations in new vehicles would not reflect a realistic model of consumer purchasing behavior. Further, the economic gap between used car buyers, the purchasers of the vast majority of vehicles each year, and new car buyers highlights why NHTSA should emphasize the total, lifetime benefits, for consumers and society, from standards in evaluating economic practicality.

NHTSA should also model the cost of lagging behind global standards for major automotive markets. A recent Ceres report notes that, "In 1985, more than two-thirds of Detroit Three unit sales were in North America. By 2025, we project that only one-third will be sold in North America, while two-thirds of sales will be overseas."<sup>48</sup> If domestic automakers and suppliers (which employ more Americans than the automakers themselves) are part of a bifurcated market wherein U.S. fuel economy targets are lower than international markets, vehicles sold in the United States could become more expensive due to manufacturing scale inefficiencies and missed opportunities for spreading out technology costs and development. In contrast, shared global platforms and powertrains could be good for American consumers, as higher volumes and standardized features help lower per-vehicle costs, and domestic automakers remain competitive in developing new technology instead of importing it. The costs of falling behind the global market and technology curves could be significant, and NHTSA should include these impacts as part of its economic practicability analysis.

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<sup>47</sup> Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation: Technical Support Document. Environmental Protection Agency. November 2016.

<https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100Q3L4.pdf>, p 4-47.

<sup>48</sup> "What's Driving the U.S Auto Industry's Financial Performance?" Ceres. August 7, 2017.

[https://www.ceres.org/sites/default/files/reports/2017-08/Ceres%20Analysis%208\\_10.pdf](https://www.ceres.org/sites/default/files/reports/2017-08/Ceres%20Analysis%208_10.pdf).

*c. The effect of other motor vehicle standards of the Government on fuel economy*

In “formulating the highest possible fuel efficiency standards” under EPCA, NHTSA is required to consider emissions standards from EPA and from states operating under a waiver granted under Sections 177 and 209 of the Clean Air Act. Regarding the EPA, the court found in *Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151 (E.D. Cal. 2007), “[t]he factors EPA must consider to discharge its duty to formulate regulations necessary to protect public health and welfare overlap with the factors NHTSA is required to consider in formulating the highest possible fuel efficiency standards,”<sup>49</sup> and concluded that “the ‘shall consider’ requirement in section 32902(f) evinces Congress's intent to empower NHTSA to adapt its regulations developed through EPCA to accommodate emissions restrictions imposed by EPA as necessary for the public's health and welfare.”

NHTSA also must consider emissions standards from states operating under a waiver granted under Sections 177 and 209 of the Clean Air Act. In *Central Valley*, the court also held that “... when a California regulation is granted waiver of preemption pursuant to section 209 of the Clean Air Act, the California regulation ... becomes an ‘other motor vehicle standard of the government’ that affects fuel economy and that the Secretary of Transportation must consider in formulating maximum feasible average fuel economy standards under EPCA.”<sup>50</sup> Under the Clean Air Act section 209, California was granted a waiver for its advanced clean cars program through MY 2025, and 13 states have adopted standards following Clean Air Act Section 177. Therefore, NHTSA must consider state emission standards as the baseline in NHTSA’s analysis because they represent “other motor vehicle standard of the government,” and because they will be driving the market both in the presence and absence of NHTSA’s regulations.

*d. The need for the United States to conserve energy*

NHTSA’s discretion in weighing the four statutory factors is circumscribed by the requirement that it serve the fundamental purpose of energy conservation. In *Central Valley*, the court noted that, “The EPCA clearly requires the agency to consider these four factors, but it gives NHTSA discretion to decide how to balance the statutory factors--as long as NHTSA's balancing does not undermine the fundamental purpose of the EPCA: energy conservation.”<sup>51</sup> The *Central Valley* case also referenced *Center for*

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<sup>49</sup> 529 F. Supp. 2d at 1169.

<sup>50</sup> *Id.* at 1173.

<sup>51</sup> *Id.* at 1177.



*Auto Safety v. NHTSA*, which held that “Congress intended energy conservation to be a long term effort that would continue through temporary improvements in energy availability. Thus, it would clearly be impermissible for NHTSA to rely on consumer demand to such an extent that it ignored the overarching goal of fuel conservation.”<sup>52</sup> Therefore, NHTSA must give primacy and ample weight to energy conservation as the core purpose of EPCA.

Based on the latest data (2016), transportation accounts for 71 percent of oil use,<sup>53</sup> and cars and light-trucks account for 56 percent of transportation energy use.<sup>54</sup> While rising fuel economy standards have helped dampen demand, domestic gasoline consumption has continued to grow, and in fact, reached an all-time high this year.<sup>55</sup> While net imports have decreased over the past decade, oil extracted in the U.S. is sold on the global market (and not necessarily to Americans), and so Americans pay the price set by that market, regardless of domestic production versus imports. Because long-term commodity price forecasts are inherently unreliable,<sup>56</sup> NHTSA should consider the economic and security impacts of much higher gasoline prices in its cost-benefit analysis, in line with the price spikes nearing double current prices that have occurred an average of once every decade since the oil embargo.<sup>57</sup> The exclusive use of EIA forecasts is not sufficient.

Earlier this year, the EIA estimated a significant decrease in projected oil demand due to the fuel economy standards and trends, including the standards in place for MY 2022-2025. EIA noted, “The net effect of these fuel economy trends is that light-duty vehicle energy consumption is projected to decrease 12%, from 16.1 quadrillion British thermal units (Btu) in 2017 to 14.2 quadrillion Btu in 2025 in the AEO2017 Reference case, despite projected growth in vehicle-miles traveled of 5% over the same period.”<sup>58</sup> Nearly all of this energy consumption reduction is in gasoline, with gasoline consumption by light-duty vehicles projected to fall from 8.7 million barrels per day in

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<sup>52</sup> 793 F.2d 1322, 1338 (D.C. Cir. 1986).

<sup>53</sup> “Oil: Crude and Petroleum Products Explained.” Energy Information Administration. 2017. [https://www.eia.gov/energyexplained/index.cfm?page=oil\\_home#tab3](https://www.eia.gov/energyexplained/index.cfm?page=oil_home#tab3).

<sup>54</sup> *Id.*

<sup>55</sup> EIA estimates that U.S. gasoline consumption reached a record high of 9.7 million barrels per day (b/d) in July 2017. EIA Short-Term Energy Outlook, Release Date: August 8, 2017, accessed August 8, 2017 at [https://www.eia.gov/outlooks/steo/report/us\\_oil.cfm](https://www.eia.gov/outlooks/steo/report/us_oil.cfm).

<sup>56</sup> Husain, Mr Aasim M., and Chakriya Bowman. Forecasting commodity prices: Futures versus judgment. No. 4-41. International Monetary Fund, 2004. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.165.6075&rep=rep1&type=pdf>., at p. 3.

<sup>57</sup> U.S. Retail Gasoline Prices 1993-2017, accessed on August 8, 2017, [https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM\\_EPMR\\_PTE\\_NUS\\_DPG&f=M](https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPMR_PTE_NUS_DPG&f=M).

<sup>58</sup> “Fuel Economy Improvements Are Projected to Reduce Future Gasoline Use.” Energy Information Administration. May 23, 2017. <https://www.eia.gov/todayinenergy/detail.php?id=31332>.



2017 to 7.5 million barrels per day in 2025.” NHTSA should calculate how changing these projected standards could increase consumption, and thus undermine the nation’s need to conserve energy.

**4. Safety considerations require that light-duty truck standards increase by at least as much as passenger car standards, and stronger truck standards can enhance both safety and fuel savings benefits.**

There is a strong body of evidence showing that mass and size can be decoupled through the use of advanced high-strength materials, thus preserving or even enhancing safety while improving fuel economy by maintaining vehicle size while reducing mass.<sup>59</sup> Further, there is the potential for negative societal safety impacts if the mass differential among vehicle classes increases, as shown by NHTSA’s own prior analysis.<sup>60</sup> For example, if the standards incentivize manufacturers to lighten trucks at a slower rate than passenger vehicles or add weight to light trucks, then the net effect would be more fatalities and injuries. Light trucks have the greatest room for fuel efficiency improvement,<sup>61</sup> provide the greatest return on investment for improved fuel efficiency, and have the most weight to lose; all these factors indicate that increasing stringency for light trucks relative to passenger vehicles would enhance both safety and consumer value.

**5. “Reasonable alternatives” should cover a range between the augural standards and 8% annual improvement compared to 2016 levels.**

NHTSA is required to consider “direct, indirect, and cumulative impacts of the proposed action and alternatives,”<sup>62</sup> and must therefore consider total costs and total societal benefits in evaluating alternative and determining the final stringency.

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<sup>59</sup> "Lightweighting Technology Development and Trends in U.S. Passenger Vehicles." International Council on Clean Transportation. December 16, 2016.

[http://www.theicct.org/sites/default/files/publications/ICCT\\_PVtech\\_lightweighting\\_wp2016-25.pdf](http://www.theicct.org/sites/default/files/publications/ICCT_PVtech_lightweighting_wp2016-25.pdf);

"Lightweight Materials for Cars and Trucks." Department of Energy. 2014.

<https://energy.gov/eere/vehicles/lightweight-materials-cars-and-trucks>.

<sup>60</sup> Relationships between Fatality Risk, Mass, and Footprint in Model Year 2003-2010 Passenger Cars and LTVs. No. NHTSA-2016-0068. National Highway Traffic Safety Administration, June 2016.

<https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/2016-prelim-relationship-fatalityrisk-mass-footprint-2003-10.pdf> at p. 8.

<sup>61</sup> "Annual Energy Outlook 2017." Energy Information Administration. January 5, 2017.

[https://www.eia.gov/outlooks/aeo/pdf/0383\(2017\).pdf](https://www.eia.gov/outlooks/aeo/pdf/0383(2017).pdf). at p. 94; "Fuel economy improvements are projected to reduce future gasoline use." Energy Information Administration. May 23, 2017.

<https://www.eia.gov/todayinenergy/detail.php?id=31332>.

<sup>62</sup> 40 CFR §§ 1502.2(b), 1508.25(b)-(c).

The augural standards for MY 2022-2025 are at the low end of what should be considered a reasonable alternative for a maximum feasible standards because technology cost forecasts have decreased faster than EIA oil price forecasts since the augural standards were set in 2012. EIA oil price forecasts for 2025, adjusted for inflation, dropped about 31 percent between 2012<sup>63</sup> and 2017<sup>64</sup>, which is less than the 37 percent drop in technology costs forecast by ICCT.<sup>65</sup> Given these factors, the upper bound to be considered should be growth of at least 8 percent per year, as ACEEE analysis in 2012 found that was the highest rate of increase that “stabilized within the time horizon of the model” when running the Volpe model, and was projected to deliver \$136 billion in net benefits.<sup>66</sup>

Finally, NHTSA should not consider decreasing the standards from one year to the next. The technical record in the draft TAR and the factors outlined above all indicate that the augural standards (which increase from one year to the next) should be maintained or strengthened, so it is perplexing that NHTSA would equivocate on whether “maximum feasible” standards could “for some or all model years [[that]] *decrease* or remain the same as compared to the immediately prior model year,” (emphasis added).<sup>67</sup> Reducing the standard from one year to the next would create market uncertainty and is in direct conflict with consumers’ interest in continually improving fuel economy and the need to conserve energy.

## **6. Other important parameters also influence the creation of “reasonable alternatives.”**

NHTSA should also use appropriate parameters for other factors that affect the outcome of consumer welfare analysis, such as rebound effects and discount rates. The peer-reviewed literature on the rebound effect for efficiency gains generally shows that rebound effects above 10% represent outliers in the research.<sup>68</sup> Standard Office of Management and Budget (OMB) guidance, to use a range of 3 to 7 percent discount rate,<sup>69</sup> should be maintained in order to provide a range of net present values. In 2017,

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<sup>63</sup> EIA AEO 2012. [https://www.eia.gov/outlooks/aeo/pdf/0383\(2012\).pdf#page=117](https://www.eia.gov/outlooks/aeo/pdf/0383(2012).pdf#page=117)

<sup>64</sup> EIA AEO 2017. <https://www.eia.gov/outlooks/aeo/pdf/appc.pdf>.

<sup>65</sup> "Efficiency technology and cost assessment for U.S. 2025–2030 light-duty vehicles." International Council on Clean Transportation. March 22, 2017. [http://theicct.org/sites/default/files/publications/US-LDV-tech-potential\\_ICCT\\_white-paper\\_22032017.pdf](http://theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf).

<sup>66</sup> ACEEE comments at <https://www.regulations.gov/document?D=NHTSA-2016-0068-0098>.

<sup>67</sup> Notice of Intent to Prepare an Environmental Impact Statement for Model Year 2022-2025 Corporate Average Fuel Economy. National Highway Traffic Safety Administration. July 2017. <https://s3.amazonaws.com/public-inspection.federalregister.gov/2017-15701.pdf?1500986776>

<sup>68</sup> Nadel, Steven. "The Rebound Effect: Large or Small?." American Council for an Energy-Efficient Economy, August 2012. <http://aceee.org/sites/default/files/pdf/white-paper/rebound-large-and-small.pdf>.

<sup>69</sup> OMB Circular 2003 at [https://www.whitehouse.gov/omb/circulars\\_a004\\_a-4](https://www.whitehouse.gov/omb/circulars_a004_a-4) [OMB 2003].

auto loans carry an average interest rate of less than 5 percent,<sup>70</sup> while inflation is projected to be on the order of 1.8 percent, yielding a real interest rate of about 3 percent, so the lower end of the range would be most appropriate. The lower rate should also be used given OMB guidance and the likelihood that the added cost of fuel saving technology will be passed onto consumers.<sup>71</sup>

Payback periods are only important for buyers who are paying cash, which as noted above, is a very small portion of the market, and should not be used to judge the reasonableness of a standard. While in our surveys a majority of prospective vehicle buyers are willing to pay more for fuel efficient technologies if the payback is within five years,<sup>72</sup> NHTSA should be looking at the full vehicle lifetime of benefits and costs that are experienced by all consumers, not just new car buyers, who represent a minority of the vehicle-buying public and therefore do not represent the entirety (or even the majority) of the consumer benefits from the standards. And as noted earlier, for many consumers who finance their vehicles, the payback period is immediate because the additional monthly payment to cover fuel-efficiency improvements is outweighed by the monthly fuel savings. Further, the purpose of standards is not to replicate the market conditions; it is to compensate for limitations in the market that prevent consumers and society from achieving desired outcomes and realizing the greatest benefits while leaving consumers at least as well off as they are today.

### **Conclusion**

For the reasons stated above, Consumers Union urges NHTSA to consider the consumer-focused factors described above, to exclude reconsideration of MY 2021, to include in the range of reasonable alternatives standards that increase by at least 8 percent per year, and, in setting final standards, to move forward with the stringencies for MY 2022-2025 at a level equal to or stronger than those drafted in 2012.

Respectfully Submitted,

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<sup>70</sup> Strohm, Mitch. "June car loans remain surprisingly cheap." Interest.com. June 14, 2017. <http://www.interest.com/car-loans/news/car-loans/>.

<sup>71</sup> "The effects of regulation do not always fall exclusively or primarily on the allocation of capital. When regulation primarily and directly affects private consumption (e.g., through higher consumer prices for goods and services), a lower discount rate is appropriate. [OMB 2003].

<sup>72</sup> CU survey 2016.