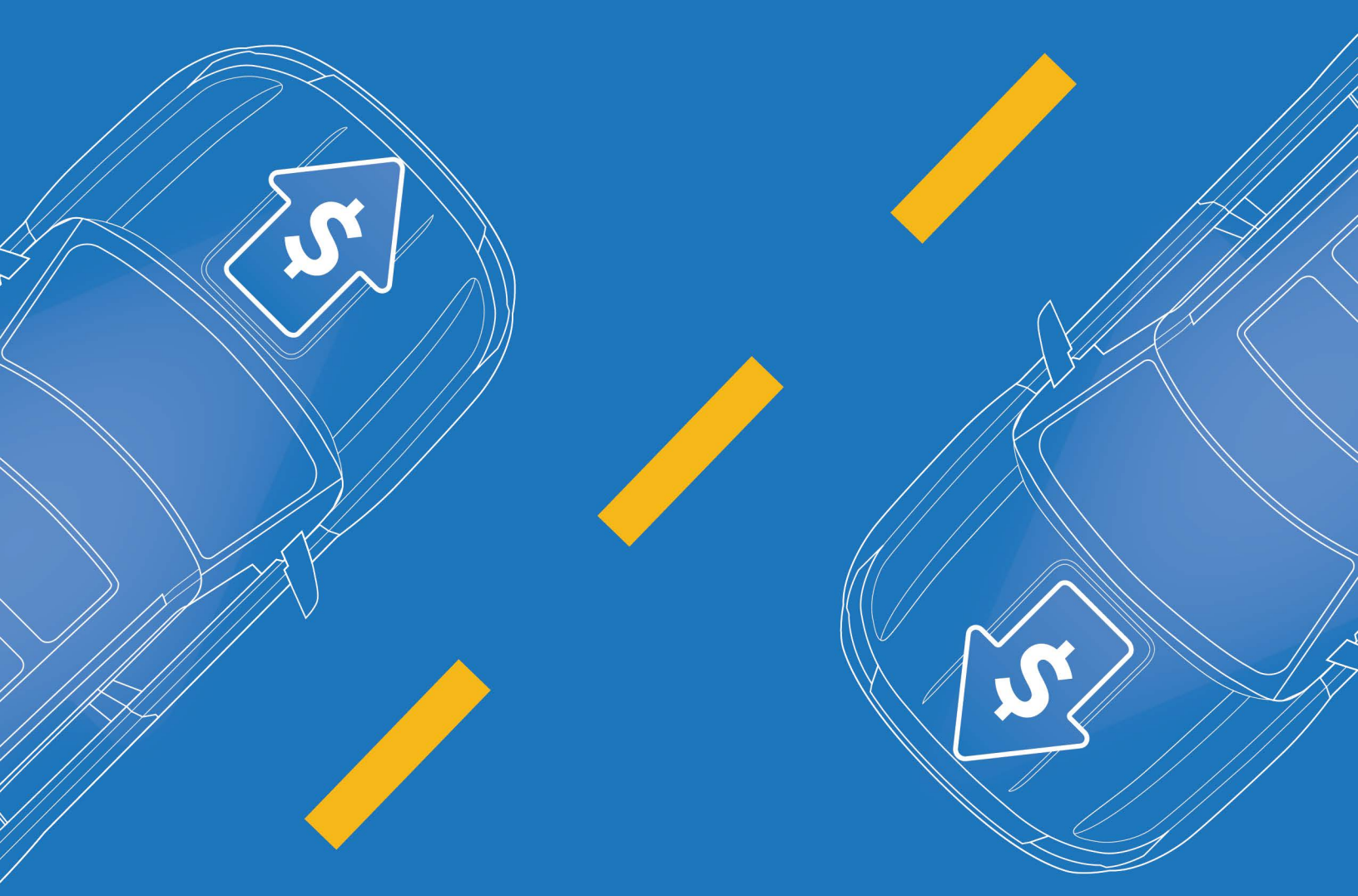

Vehicle Price Trends

Fuel Economy and Safety Improvements Come Standard

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CR Consumer Reports®

Executive Summary

Consumer Reports has a robust data set of real-world vehicle purchases made for our testing program over the past 40 years. A statistical analysis of this data from model years 2003 to 2021 found no systemic, statistically significant increase in inflation-adjusted vehicle prices across either vehicle classes or vehicle nameplates. Over this same time period, average fuel economy improved 30%, resulting in an average of $7,000 in per-vehicle lifetime fuel savings for model year 2021 vehicles compared with model year 2003. Safety also significantly improved as crash-test procedures were strengthened, electronic stability control and backup cameras were mandated on new vehicles, and advanced driver assistance systems became more widely available. Commonly reported changes in average transaction prices appear to be primarily driven by shifts toward larger, more expensive SUVs and away from smaller and cheaper cars, rather than from the cost of technology improvements in individual models. These findings prove that regulators can and should be aggressive in ensuring that automakers continue to deliver cost-effective technology improvements that save dollars and lives.

1. Introduction

Consumers frequently say that safety and fuel economy are two of the most important features to them when purchasing a vehicle.[1] Yet opponents of strong efficiency, emissions, and safety standards often point to techno-economic analyses showing that adding technology to improve vehicles in these ways will increase vehicle prices and thereby harm consumers. These types of analyses are nearly always theoretical, estimating the incremental costs of specific technologies and extrapolating those cost increases into the future.[2] However, there have been very few studies that have attempted to look back at how real-world vehicle prices have changed over time in relation to efficiency, emissions, or safety standards. This study attempts to do just that, using data from Consumer Reports' (CR) automotive testing program. Each year CR purchases around 50 vehicles directly from dealers in the U.S. at retail prices. Records from these vehicle purchases over a nearly 40-year period provide a unique data set with which to study the evolution of vehicle prices over time.

[1] Consumer Reports, "Car Buying: A National Representative Multi-Mode Survey, 2022 Results," May 2022. Available at: https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer_Reports_Car_Buying_March_2022.pdf.

[2] National Highway Traffic Safety Administration, "Cost and Weight Added by The Federal Motor Vehicle Safety Standards for MY1968-2012 Passenger Cars And LTVs," November 2017. Available at: https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812354, and
David Shepardson, "Trump finalizes rollback of Obama-era vehicle fuel efficiency standards," Reuters, March 31, 2020. Available at: https://www.reuters.com/article/us-usa-autos-emissions/trump-finalizes-rollback-of-obama-era-vehicle-fuel-efficiency-standards-idUSKBN21I25S, and
Thomas Pyle, "The Hidden Costs of Obama's Fuel Efficiency Standards," U.S. News and World Report, August 11, 2011. Available at: https://www.usnews.com/opinion/blogs/on-energy/2011/08/11/new-fuel-standards-threaten-safety-affordability-and-comfort-for-consumers.

2. Methodology

Vehicle purchase price data was collected from Consumer Reports' Auto Test Center (ATC) from as far back as 1983 until 2021. CR representatives purchase vehicles directly from U.S. dealers without identifying themselves as such, and generally select a popular, well-equipped trim version of each model, which is subsequently tested. To investigate whether or not vehicle prices have increased with vehicle fuel economy and greenhouse gas standards over time, the scope was limited to vehicles purchased by CR ATC with model years between 2003 and 2021, which overlaps with a period of significant improvement in both fuel economy and safety technology. The sample was further limited to vehicle nameplates that had been in existence for most of the selected time period. Vehicles with special trims that might skew the sample in one direction or another were removed from the sample. This resulted in a total sample of 362 vehicles.

The study period was ended after model year 2021 for two reasons. First, federal fuel economy and greenhouse gas regulations were significantly rolled back for model years 2021 and 2022, when automakers were required to make only negligible improvements.[3] Second, this cutoff also enabled us to avoid the influence of significant supply chain disruptions from the COVID-19 pandemic, which have led to major short-term effects on vehicle prices.

All vehicles in the sample were categorized into seven classes: Compact Cars, Midsized Cars, Compact SUVs, Midsized SUVs, Large SUVs, Minivans, and Pickups. Vehicle purchase prices were adjusted to 2021 dollars using inflation factors taken from the consumer price index for all urban consumers (CPI-U) provided by the Bureau of Labor Statistics[4] to allow for comparison over time. It is important to note that the prices of vehicles purchased by CR are only a proxy for market data on vehicle prices over time and are not necessarily representative of the entire market.

A simple linear regression model for vehicle purchase price in 2021 dollars vs. time in years was considered for each vehicle class as well as for individual makes/models. Hypothesis tests were used to evaluate whether or not CR ATC's vehicle purchase price had changed in a statistically significant manner ($\alpha = 0.05$) over time, grouped by vehicle class and by individual makes/models. With the sample data, it is not possible to causally link any significant changes in price with more stringent fuel economy or greenhouse gas standards. Thus, there is no statistical evidence to support the idea that the price has changed over time due to these causes.

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[3] Consumer Reports, "EPA Trends Report Shows Automakers Failed To Deliver Fuel Economy Gains Between Model Years 2020 and 2021," December 12, 2022. Available at: https://advocacy.consumerreports.org/press_release/epa-trends-report-shows-automakers-failed-to-deliver-fuel-economy-gains-between-model-years-2020-and-2021.

[4] All vehicle prices were adjusted using the CPI value from January of their production year to January of 2021 using: U.S. Bureau of Labor Statistics, CPI for All Urban Consumers. Available at: https://data.bls.gov/timeseries/CUUR0000SA0.

We also considered a simple linear regression model for vehicle purchase price in 2021 dollars vs. vehicle fuel economy. Hypothesis tests were used to evaluate whether or not CR ATC's vehicle purchase price had changed significantly ($\alpha = 0.05$) with regard to changes in fuel economy, grouped by vehicle class. Again, it is not possible to determine a causal relationship between changes in vehicle purchase price and changes in vehicle fuel economy. However, in most cases, we do not observe increase in prices with increase in fuel-economy standards.

3. Vehicle Price Trend Results

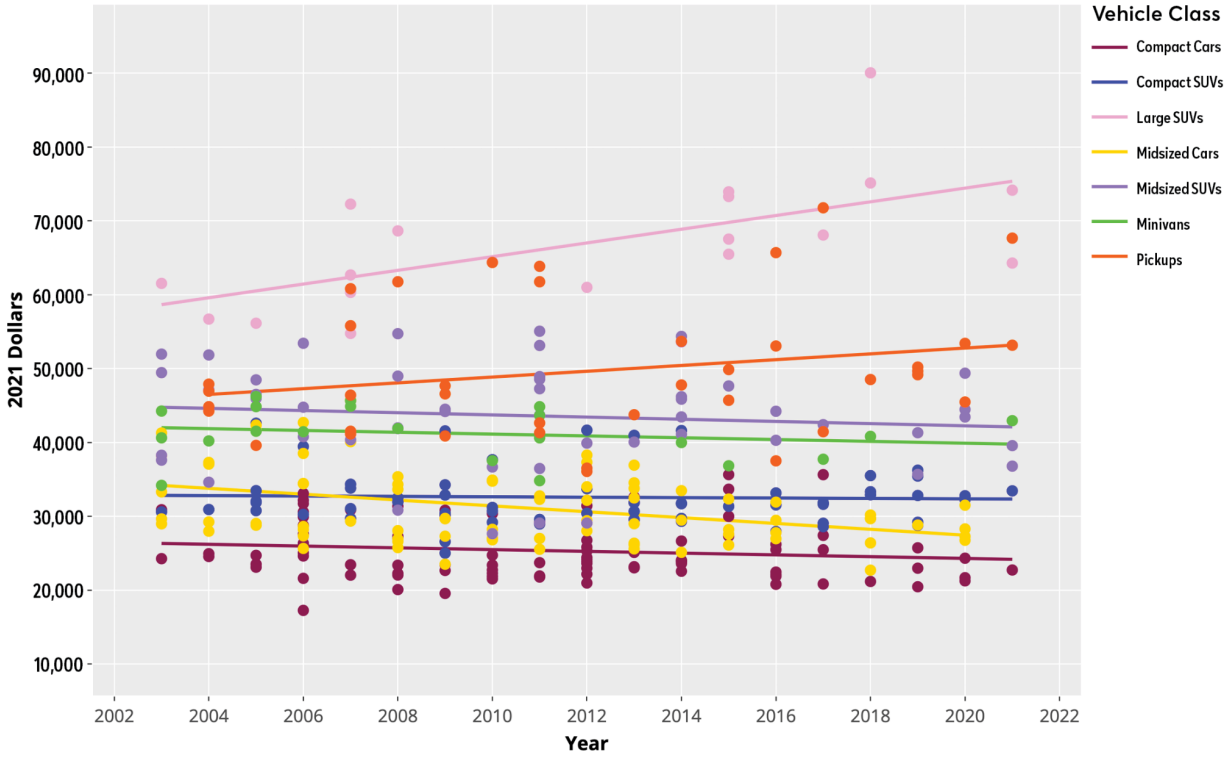
Statistical analysis of CR's purchase data from model years 2003 to 2021 showed no systemic, statistically significant change in vehicle prices over the period. Among seven vehicle classes, five showed no statistically significant change in price, one (Large SUVs) showed a statistically significant increase in price, and one (Midsized Cars) showed a statistically significant decrease in price.

In the instances where we did find a statistically significant change in vehicle price over time, there are other explanatory variables. For the Large SUVs class, it is posited that the observed increase in prices is likely due to more costly aesthetic and technological improvements. The Large SUVs class actually has seen the smallest improvement in fuel economy over the study period, even as many of these vehicles have been transformed from utilitarian blue-collar workhorses into near-luxury vehicles.

Figure 3.1 shows a scatter plot of the purchase data by vehicle class. Looking at the data from a vehicle nameplate perspective, 47 of 51 nameplates showed no statistically significant change in price, while two (the Ford Explorer, a midsized SUV, and the Ford F-150 pickup) showed a statistically significant price increase and two (the compact Volkswagen Jetta and midsized Volkswagen Passat) showed a statistically significant decrease.

See Appendix for details of the statistical analysis.

Figure 3.1 - Vehicle Purchase Price by Model Year in $2021 by Vehicle Class



4. Market Trends

The results of the statistical analysis are counter to broadly reported narratives about increases in new-vehicle average transaction prices and "unaffordability" of new vehicles.[5] The sorts of analysis that lead to those conclusions often rely on an overall average transaction price, and typically do not adjust for inflation. While average transaction price can be a useful metric, it doesn't capture many of the underlying dynamics in the market.

One of the key dynamics that is missed when focusing on averages is the rapid shift in the market away from less expensive smaller cars to larger and more expensive crossovers and SUVs. Figure 4.1 illustrates changes in market share by different vehicle classes from the Environmental Protection Agency's annual Automotive Trends Report.[6] The EPA data uses slightly different vehicle classes: It relies on regulatory categories. All types of cars are lumped together in one vehicle class. SUVs are separated into "car SUV" and "truck SUV." Car SUVs include smaller SUVs that are 2-wheel drive, while truck SUVs include larger/heavier SUVs and SUVs that have certain offroad capabilities, including 4-wheel drive. Sales of both types of SUVs combined have more than doubled from 26% to 56% of the overall auto market over the study period, while car sales have fallen by nearly half from 50% to 26% of the market. Given the higher average prices of SUVs than cars, this appears to be one of the primary reasons that average transaction prices have increased over the years.

How much of this shift from cars to SUVs has been driven by automakers vs. consumer preferences is still an open question that this report does not attempt to answer. Whatever the underlying reason, some automakers have virtually stopped selling small cars.[7]

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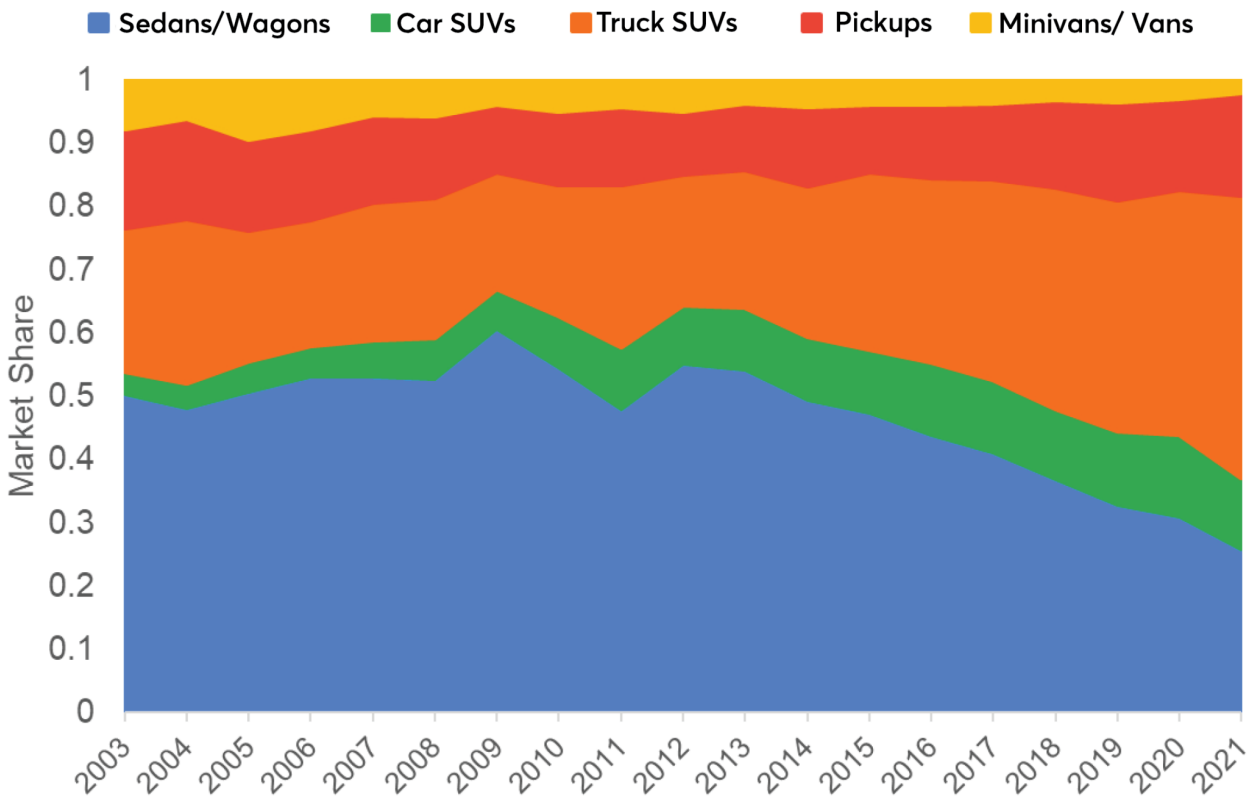
[5] Sean Szymkowski, "Average new car price crosses $40,000 in 2020 and that's nuts," CNET, January 13, 2021. Available at: https://www.cnet.com/roadshow/news/average-new-car-price-2020, and
Anna Hecht, "Car prices are increasing—here's how that can hurt Americans," CNBC, October 22, 2019. Available at:
https://www.cnbc.com/2019/10/22/car-prices-are-rapidly-increasing-heres-why-thats-bad-for-americans.html, and
Kelley Blue Book, "Average New-Car Prices Rise Nearly 4 Percent For January 2018 On Shifting Sales Mix, According To Kelley Blue Book," February 1, 2018. Available at:
https://mediaroom.kbb.com/2018-02-01-Average-New-Car-Prices-Rise-Nearly-4-Percent-For-January-2018-On-Shifting-Sales-Mix-According-To-Kelley-Blue-Book.

[6] U.S. Environmental Protection Agency, 2022 EPA Automotive Trends Report. Data available at: www.epa.gov/automotive-trends/explore-automotive-trends-data. Accessed January 23, 2023.

[7] Erik Shilling, "Ford And GM's Decision To Abandon Small Cars Is Already Costing Them," Jalopnik, November 14, 2019. Available at:
https://jalopnik.com/ford-and-gms-decision-to-abandon-small-cars-is-already-1839858417.

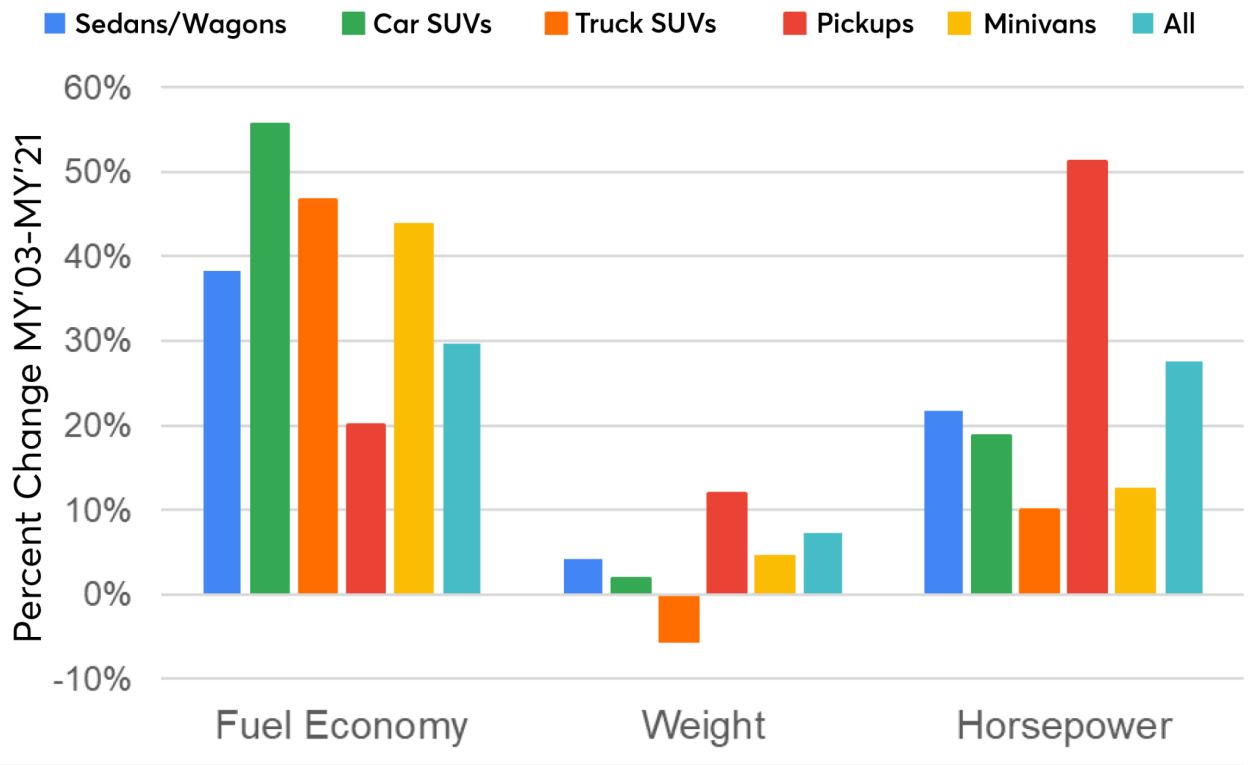
Figure 4.1 - Market Share by Vehicle Class From MY'03 to MY'21



The EPA Automotive Trends Report also tracks changes in vehicle fuel economy, weight, and horsepower. Changes in these characteristics over the study period are shown in Figure 4.2.[8] It illustrates that vehicles in every class have gotten significantly more efficient while simultaneously becoming more powerful. The data also shows that vehicles in most classes have gotten slightly heavier, which likely translates into slight increases in size, with the exception of truck SUVs, which have gotten slightly lighter. This is potentially due to a shift from more truck-like body-on-frame SUVs to more car-like, unibody crossovers.[9]

[8] U.S. Environmental Protection Agency, 2022 EPA Automotive Trends Report. Data available at: www.epa.gov/automotive-trends/explore-automotive-trends-data. Accessed January 23, 2023.
[9] Consumer Reports, "The Rise of the Crossover: The segment that's really driving the auto industry's sales," December 19, 2019. Available at: https://advocacy.consumerreports.org/research/the-rise-of-the-crossover-the-segment-thats-really-driving-the-auto-industrys-sales.

Figure 4.2 - Changes in Vehicle Fuel Economy, Weight, and Horsepower From MY'03-MY'21



This general market shift toward larger vehicle classes has come with more than just an increase in sticker prices. The shift from smaller, more efficient vehicles to larger, less efficient vehicles has also eroded some of the potential fuel savings and emissions benefits of the efficiency improvements made on a vehicle-by-vehicle basis. If the fleet mix had remained the same as it was in 2003, overall fleet-wide average fuel economy would have improved by 43% instead of 30%. There are also potential safety implications. CR has found that larger vehicles generally have a harder time avoiding crashes and perform worse in our emergency handling and braking tests. Further, CR and other research have found that larger vehicles pose greater risks to both pedestrians and people in other cars than smaller cars do.[10]

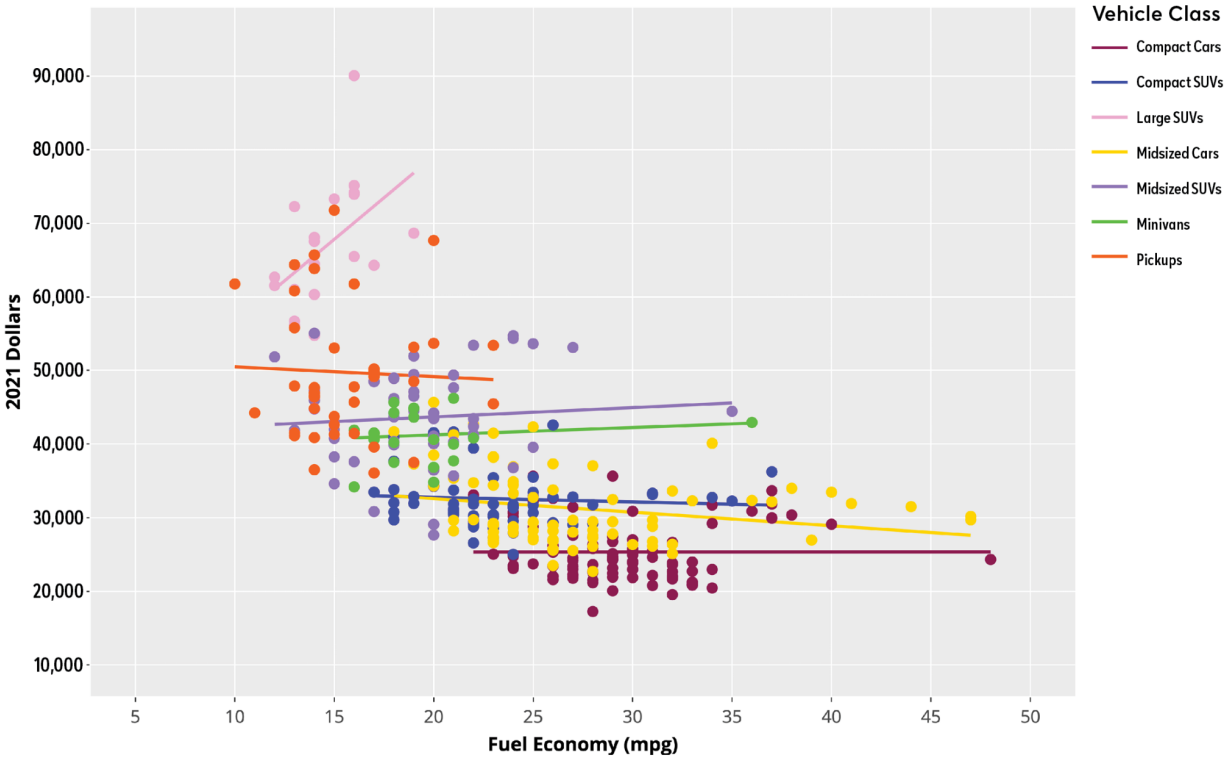
[10] Consumer Reports, "The Hidden Danger of BIG Trucks," June 8, 2021. Available at: https://www.consumerreports.org/car-safety/the-hidden-dangers-of-big-trucks.

5. Improvements in Fuel Economy

Statistical analysis of price vs. fuel economy comes to similar conclusions as the statistical analysis of price vs. time as described in section 3—namely, little to no change in vehicle price relative to increased fuel economy.

Results of this analysis are shown in Figure 5.1. Of the seven vehicle classes analyzed, one (Large SUVs) showed a statistically significant increase in price as fuel economy increases, and one (Midsized Cars) showed a statistically significant decrease in price as fuel economy increases. The remaining vehicle classes showed no statistically significant change in price relative to fuel economy.

Figure 5.1 - Statistical Analysis of Vehicle Purchase Price vs. Fuel Economy



Given that there is likely to be a strong correlation between fuel economy and model year—due to strong fuel economy and greenhouse gas standards in place during most of the study period—it is not surprising that the results for fuel economy and model year are similar.[11] This is illustrated in Figure 5.2, which shows improvements in average fuel economy by vehicle class over the study period. Every vehicle class shows nearly continuous incremental improvements in fuel economy over this period (these results are also presented numerically in Table 5.1). Fuel-economy improvement over the study period ranged from 20% for pickups to 56% for car SUVs.

These improvements were also translated by CR into an estimated lifetime fuel cost savings for model year 2021 vehicles, assuming a constant gasoline price of $3/gallon and a vehicle lifetime of 200,000 miles. In terms of fuel savings, the cumulative improvements result in consumers spending between $6,200 less on fuel for pickups to almost $11,600 less on fuel for truck SUVs than they would have if fuel economy had remained flat at 2003 levels.

The historical data indicates that flat fuel economy is exactly what automakers would have delivered if not for strong fuel economy and greenhouse gas standards. Going back to the beginning of the CAFE program in the mid-'70s, there have been three distinct periods:

1. From the mid-'70s to the mid-'80s, a large increase in CAFE standards drove an increase in average passenger vehicle fuel economy from about 13.5 mpg in 1975 to 21.3 mpg in 1985.[12]
2. Standards stagnated in the mid-'80s with no required improvement until 2005. Over this period average fuel economy dropped from 21.3 mpg in 1985 to 19.3 mpg in 2004.[13]
3. Standards began increasing again in 2005 and have continued increasing through 2021, despite efforts to roll back standards.[14]

The data is clear that strong federal fuel economy and greenhouse gas standards work, and deliver huge savings to consumers. Based upon the statistical analysis in this study, we can now conclude that these savings have come with no statistically significant, inflation-adjusted cost to consumers in terms of vehicle purchase price.

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[11] U.S. Department of Energy, Alternative Fuels Data Center, "Vehicle Fuel Efficiency (CAFE) Requirements by Year." Available at: https://afdc.energy.gov/data/10562, accurate through model year 2020. See Federal Register, "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks," April 30, 2020. Available at: https://www.federalregister.gov/d/2020-06967, for standards through model years 2021 and 2022.
[12] PEW, "Driving to 54.5 MPG: The History of Fuel Economy," Fact Sheet, April 20, 2011. Available at: https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2011/04/20/driving-to-545-mpg-the-history-of-fuel-economy.
[13] U.S. Environmental Protection Agency, 2022 EPA Automotive Trends Report. Data available at: www.epa.gov/automotive-trends/explore-automotive-trends-data. Accessed January 23, 2023.
[14] Consumer Reports, "Consumer Reports: White House roll back of gas mileage rules compounds financial problems for consumers with economy on brink of recession," March 31, 2020. Available at: https://advocacy.consumerreports.org/press_release/consumer-reports-white-house-roll-back-of-gas-mileage-rules-compounds-financial-problems-for-consumers-with-economy-on-brink-of-recession.

Figure 5.2 - Average Fuel Economy by Vehicle Class by Model Year

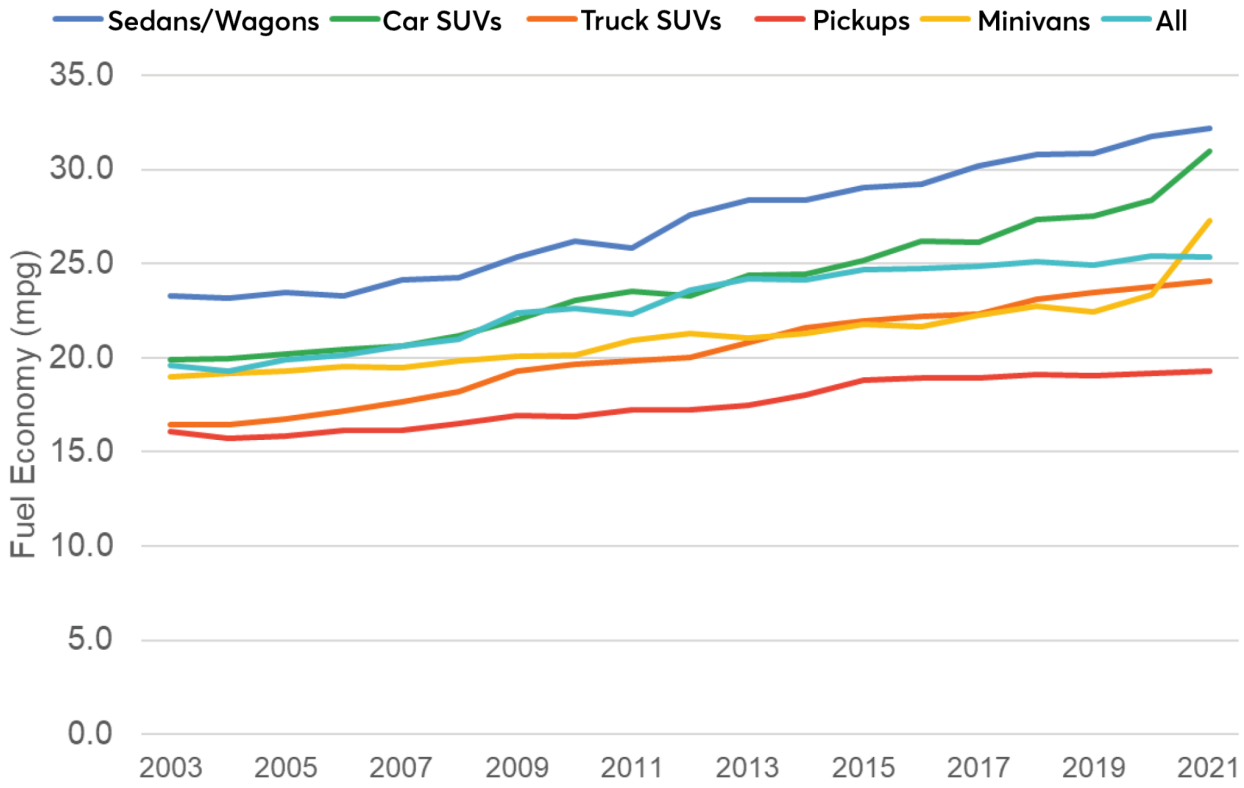

Table 5.1 - Fuel Economy Improvements and Consumer Savings From MY'03 to MY'21

Vehicle Class	2003 Fuel Economy	2021 Fuel Economy	Percent Change	Lifetime Fuel Savings
Sedans/Wagons	23.3	32.2	38%	$7,100
Car SUVs	19.9	31.0	56%	$10,800
Truck SUVs	16.4	24.1	47%	$11,600
Pickups	16.1	19.3	20%	$6,200
Minivans	19.0	27.3	44%	$9,600
All	19.6	25.4	30%	$7,000[9]

6. Improvements in Safety Technology

Fuel economy is not the only attribute of vehicles that has improved over the course of the study period. Safety has improved significantly as well. The fatality rate per 100 million vehicle miles traveled decreased 25% from 2003 to 2019.[15] In terms of population, the fatality rate decreased from 14.78 per 100,000 people in 2003 to 11.07 in 2019, which also marks a 25% decrease.[16] Fatality rates did increase significantly in 2020 and remained high in 2021, but the National Highway Traffic Safety Administration (NHTSA) attributes this increase largely to an increase in risky behavior—including reduced seatbelt usage, increased speeding, and increased impaired driving—during the COVID-19 pandemic.[17] According to the latest data from NHTSA, traffic deaths remained stubbornly high for the first nine months of 2022, though they were 0.2% lower compared with the same time frame in 2021.

Numerous new safety features have been developed and widely deployed on new vehicles throughout the study period. Electronic stability control, which helps drivers maintain control of their vehicles in difficult conditions, was required to be standard on all new passenger vehicles starting in September 2011.[18] Backup cameras, which increase rear visibility and can prevent backover incidents, were required to be standard on all new passenger vehicles starting in May 2018.[19] While frontal airbags started being widely deployed in the late 1980s and were first mandated for both the driver and passenger in the 1999 model year, automakers have continued to expand the use of airbags to include side airbags, which are now standard on most vehicles in order to meet federal side-impact protection standards, even though they are not specifically required by law.[20]

Advanced driver assistance systems (ADAS) have also been developed and more widely adopted in recent years, and are showing real-world benefits.[21] Some of the most common

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[15] National Highway Traffic Safety Administration, Motor Vehicle Traffic Fatalities and Fatality Rates 1899-2020, June 2022. Available at: https://cdan.nhtsa.gov/tsftables/Fatalities%20and%20Fatality%20Rates.pdf.
[16] National Highway Traffic Safety Administration, FARS Data Tables. Available at: https://www-fars.nhtsa.dot.gov/Main/index.aspx.
[17] National Highway Traffic Safety Administration, "2020 Fatality Data Show Increased Traffic Fatalities During Pandemic," June 3, 2021. Available at: https://www.nhtsa.gov/press-releases/2020-fatality-data-show-increased-traffic-fatalities-during-pandemic, and National Highway Traffic Safety Administration, "Newly Released Estimates Show Traffic Fatalities Reached a 16-Year High in 2021," May 17, 2022. Available at: https://www.nhtsa.gov/press-releases/early-estimate-2021-traffic-fatalities.
[18] National Highway Traffic Safety Administration, "Newer Cars Are Safer Cars." Available at: https://www.nhtsa.gov/newer-cars-are-safer-cars.
[19] National Highway Traffic Safety Administration, "Newer Cars Are Safer Cars." Available at: https://www.nhtsa.gov/newer-cars-are-safer-cars.
[20] *Id.;* Insurance Institute for Highway Safety, "Airbags." Available at: https://www.iihs.org/topics/airbags#overview.
[21] Insurance Institute for Highway Safety, "Real-world benefits of crash avoidance technologies," December 2020. Available at: https://www.iihs.org/media/259e5bbd-f859-42a7-bd54-3888f7a2d3ef/e9boUQ/Topics/ADVANCED%20DRIVER%20ASSISTANCE/IIHS-real-world-CA-benefits.pdf.

ADAS systems are automatic emergency braking (AEB), pedestrian detection, lane departure warning, and blind spot warning. Consumer Reports estimates that the inclusion of all four of these safety systems on all vehicles could save around 11,800 lives per year.[22] While these safety systems are not yet required to be installed on vehicles—NHTSA is currently drafting proposed rules to require AEB with pedestrian detection and lane departure warning/lane keeping assistance systems on passenger vehicles, pursuant to the 2021 Infrastructure Investment and Jobs Act[23]—as of May 2018, at least one ADAS system was available on 92.7% of all new vehicles on the market in the U.S.[24] A total of 20 automakers voluntarily committed to installing city-speed AEB on at least 95% of the passenger vehicles they sell for the U.S. market. As of 2021, twelve automakers had met that commitment, and by 2022, fifteen had done so.[25]

Crash-test protocols were also significantly strengthened after model year 2010. NHTSA enhanced its crash-test ratings system by adding an additional crash test, adding a smaller dummy to some tests to approximate the size of a 5th-percentile adult female, adding additional sensors to the dummies, and introducing a new overall 5-star safety rating.[26] Together these changes made it more difficult for automakers to achieve the top rating, encouraging further improvements in vehicle crashworthiness.

Given the findings of this study, it appears that all of these life-saving improvements in vehicle safety technology have been delivered without any statistically significant increase in inflation-adjusted vehicle cost.

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[22] Consumer Reports, "New Consumer Reports analysis finds existing vehicle safety technologies could cut road deaths in half if they came standard on every vehicle," June 29, 2020. Available at: https://advocacy.consumerreports.org/press_release/new-consumer-reports-analysis-finds-existing-vehicle-safety-technologies-could-cut-road-deaths-in-half-if-they-came-standard-on-every-vehicle.

[23] Office of Management and Budget, Office of Information and Regulatory Affairs, "Light Vehicle Automatic Emergency Braking (AEB) with Pedestrian AEB." Available at: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202210&RIN=2127-AM37, and Office of Management and Budget, Office of Information and Regulatory Affairs, "Minimum Performance Standards for Lane Departure Warning and Lane-Keeping Assist Systems." Available at: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202210&RIN=2127-AM52.

[24] American Automobile Association, "Advanced Driver Assistance Technology Names," January 2019. Available at: https://www.aaa.com/AAA/common/AAR/files/ADAS-Technology-Names-Research-Report.pdf.

[25] Insurance Institute for Highway Safety, "Two more automakers cross finish line in race to fulfill autobrake pledge," December 17, 2021. Available at: https://www.iihs.org/news/detail/two-more-automakers-cross-finish-line-in-race-to-fulfill-autobrake-pledge, and Insurance Institute for Highway Safety, "Three more automakers fulfill pledge to make autobrake nearly universal," December 8, 2022. Available at: https://www.iihs.org/news/detail/three-more-automakers-fulfill-pledge-to-make-autobrake-nearly-universal.

[26] Consumer Reports, "NHTSA crash test 101: How crash worthiness is measured and how crash ratings can help you choose your next car," April 2014. Available at: https://www.consumerreports.org/cro/2011/08/crash-test-101/index.htm, and Ronald Montoya, "NHTSA Revises Five-Star Safety Ratings," Edmunds, October 1, 2010. Available at: https://www.edmunds.com/car-safety/nhtsa-revises-five-star-safety-ratings.html.

Conclusions

The data is clear that strong federal fuel economy and greenhouse gas standards work, and deliver huge savings to consumers. Based upon the statistical analysis in this study, we can now conclude that these savings have come with no statistically significant, inflation-adjusted cost to consumers in terms of increased vehicle purchase price. In addition to more efficient vehicles, consumers are also getting safer vehicles as the result of improved safety standards—all without paying more on an inflation-adjusted basis.

Reported changes in average automotive transaction prices appear to be primarily driven by automaker and consumer shifts toward larger, more expensive SUVs and away from smaller and cheaper cars, rather than by improvements in fuel economy or safety technology. The CR data presented illustrate that on a same vehicle nameplate or same vehicle class basis, new vehicle prices have seen no systemic increase. At the same time, these vehicles have become safer, less polluting, more efficient, and more capable.

While significant improvements have been made, the work is not done. These findings demonstrate that regulators can and should be aggressive in ensuring that automakers continue to deliver cost-effective technology improvements that save dollars and lives.[27]

[27] Consumer Reports, “Vehicle Emissions Standards Fact Sheet,” March 2021. Available at: https://advocacy.consumerreports.org/wp-content/uploads/2021/03/Consumer-Reports-Vehicle-Emissions-Standards-Fact-Sheet-3.22.21-FINAL.pdf, and
National Highway Traffic Safety Administration, Motor Vehicle Traffic Fatalities and Fatality Rates 1899-2020, June 2022. Available at: https://cdan.nhtsa.gov/tsftables/Fatalities%20and%20Fatality%20Rates.pdf.

Appendix

Table A.1 Results of the Regression Analysis of Vehicle Price vs. Year by Vehicle Class

Vehicle Class	Slope Estimate for Year	95% Confidence Interval	p-Value
Compact Cars	-120	(-303, 64)	0.1994
Compact SUVs	-27	(-226, 171)	0.7830
Large SUVs	928	(355, 1501)	0.0033
Midsized Cars	-396	(-613, -180)	0.0005
Midsized SUVs	-147	(-516, 221)	0.4258
Minivans	-123	(-432, 186)	0.4143
Pickups	393	(-163, 949)	0.1609

Table A.2 Results of the Regression Analysis of Vehicle Price vs. Year by Vehicle Nameplate

Make/Model	Slope Estimate for Year	95% Confidence Interval	p-Value
Compact Cars			
Ford Focus	525	(-113, 1163)	0.0957
Honda Civic	-323	(-646, 1)	0.0505
Hyundai Elantra	-69	(-199, 61)	0.2512
Kia Forte	-188	(-589, 213)	0.2327
Mazda Mazda3	-23	(-390, 345)	0.8889
Nissan Sentra	-288	(-736, 159)	0.1481
Subaru Impreza	-408	(-1223, 408)	0.2758
Toyota Corolla	-4	(-391, 382)	0.9763
Volkswagen Golf	420	(-689, 1530)	0.3750
Volkswagen Jetta	-609	(-1180, -38)	0.0392
Compact SUVs			

Chevrolet Equinox	118	(-608, 844)	0.6928
Ford Escape	-174	(-759, 412)	0.5136
Honda CR-V	-5	(-197, 188)	0.9535
Hyundai Tucson	-162	(-467, 142)	0.1485
Jeep Cherokee	-43	(-26219, 26133)	0.9867
Kia Sportage	-84	(-1821, 1652)	0.8543
Mazda CX-5	179	(-2520, 2878)	0.5549
Nissan Rogue	76	(-1259, 1411)	0.6017
Subaru Forester	-142	(-716, 432)	0.5768
Toyota RAV4	-3	(-580, 575)	0.9918
Volkswagen Tiguan	-1032	(-5733, 3668)	0.2190
Large SUVs			
Chevrolet Suburban	1187	(-69, 2442)	0.0555
Chevrolet Tahoe	254	(-1326, 1834)	0.6447

Ford Expedition	827	(-169, 1823)	0.0701
Lincoln Navigator	1310	(-13544, 16164)	0.4639
Nissan Armada	844	(-2158, 3846)	0.1738
Midsized Cars			
Chevrolet Malibu	274	(-239, 786)	0.2580
Honda Accord	-369	(-955, 217)	0.1956
Hyundai Sonata	-63	(-519, 393)	0.7640
Mazda Mazda6	-702	(-10150, 8747)	0.5184
Nissan Altima	-381	(-1205, 443)	0.3172
Subaru Legacy	-429	(-1301, 443)	0.2740
Toyota Camry	-424	(-1174, 327)	0.2335
Volkswagen Passat	-862	(-1424, -300)	0.0071
Midsized SUVs			
Dodge Durango	-158	(-2609, 2293)	0.8508

Ford Explorer	587	(32, 1143)	0.0435
Honda Pilot	-558	(-1427, 311)	0.1337
Hyundai Santa Fe	6	(-1149, 1161)	0.9891
Jeep Grand Cherokee	669	(-667, 2006)	0.2367
Kia Sorento	366	(-240, 972)	0.2011
Nissan Murano	-253	(-1895, 1389)	0.5755
Toyota Highlander	-521	(-1079, 38)	0.0637
Minivans			
Dodge Grand Caravan	244	(-873, 1360)	0.2202
Honda Odyssey	-301	(-625, 24)	0.0600
Kia Sedona	51	(-1697, 1799)	0.9116
Toyota Sienna	-221	(-817, 375)	0.4098
Pickups			

Chevrolet Silverado	285	(-880, 1450)	0.5881
Dodge Ram	-8	(-1188, 1172)	0.9880
Ford F-150	928	(137, 1720)	0.0269
Ford F-250	1192	(-4058, 6442)	0.2124
Nissan Titan	-80	(-3803, 3643)	0.9346
Toyota Tacoma	-226	(-3085, 2634)	0.4992

Table A.3 Results of the Regression Analysis of Vehicle Price vs. Fuel Economy by Vehicle Class

Vehicle Class	Slope Estimate for Fuel Economy	95% Confidence Interval	p-Value
Compact Cars	0	(-194, 195)	0.9963
Compact SUVs	-63	(-304, 178)	0.6035
Large SUVs	2257	(202, 4312)	0.0332
Midsized Cars	-184	(-365, -4)	0.0457
Midsized SUVs	127	(-361, 614)	0.6040
Minivans	100	(-303, 503)	0.6102
Pickups	-133	(-1191, 925)	0.8001