Consumer Federation of America

Still Stuck in Neutral: America's Continued Failure to Improve Motor Vehicle Fuel Economy

A Look at the Changes in Top Selling Models 2005-2007

Jack Gillis
Director of Public Affairs

Dr. Mark Cooper
Director of Research

with
David Iberkleid

Consumer Federation of America

July 2007

INTRODUCTION

The most intense energy policy debate in Washington D.C. in three decades is being shaped by high gasoline prices, oil imports, and the dwindling market share of the U.S. "Big 3" automakers. The link between fuel economy and auto industry performance – between rising gasoline prices and auto production decisions – is receiving close scrutiny because Congress is close to enacting the first major increase in CAFE standards in thirty years.

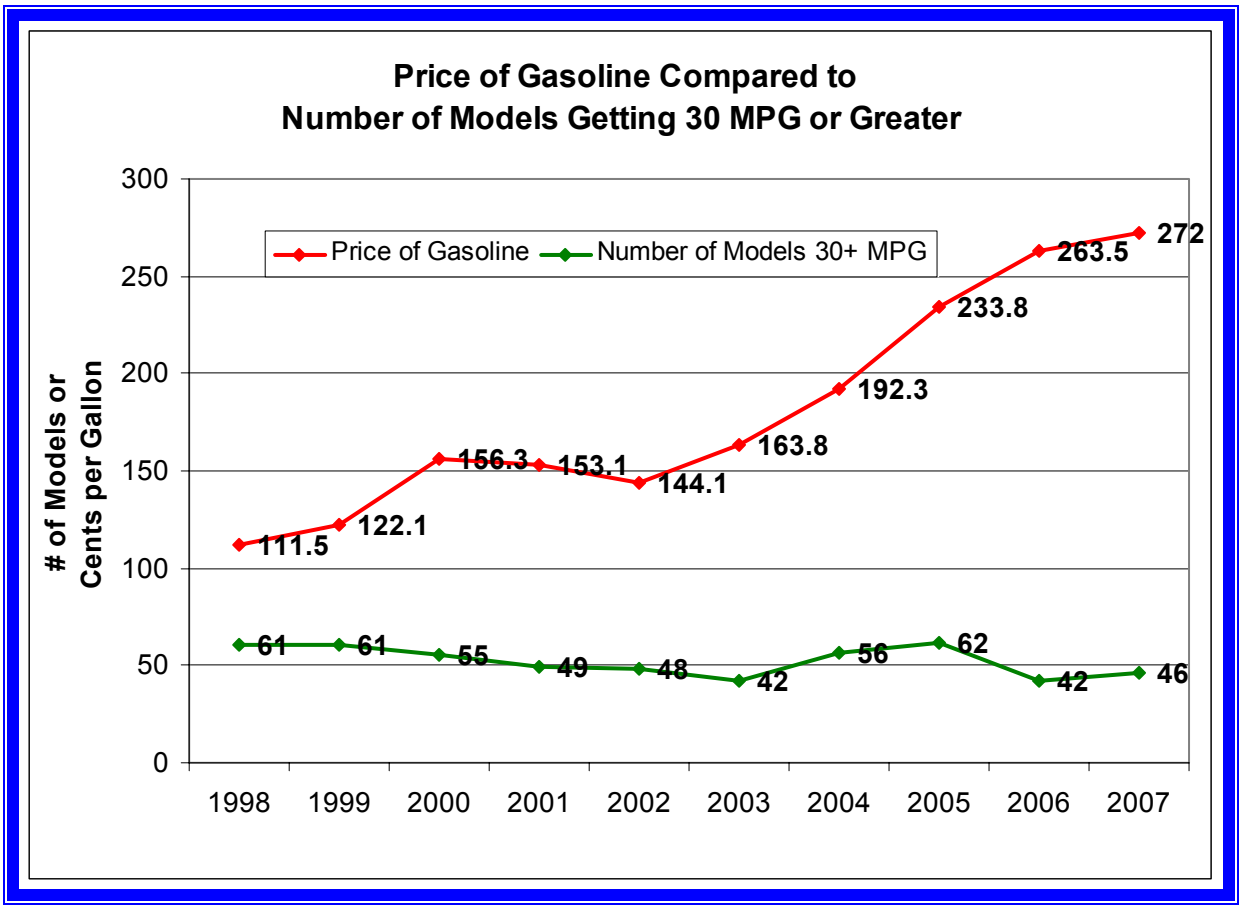
In 2000, the U.S. experienced significant increases in the cost of gasoline. Shortly thereafter, carmakers promised voluntary fuel economy improvements while strongly opposing increased CAFE regulations. This report looks at how the car companies responded to the gas price increases by examining the model by model fuel economy offered by manufacturers between 1998 and 2007 and the fuel economy performance of the top 50 selling vehicles in the U.S. in 2005 and 2007. These dates were well after the onset of the gasoline price spiral and well after improvements in fuel economy promised by the automakers would be evident in their product line.

FUEL ECONOMY TEN YEARS LATER: More Models, Poorer Choices

During the past ten years, as gas prices have gone up, the number of models (trims) with 30 MPG or higher have gone down (61 – 46). The exhibit below compares the price of gasoline and the number of high efficiency (30 or more MPG) models offered by the auto makers. In 2001, as gasoline prices maintained their 33 percent increase over the 1990s, the car makers promised more fuel efficient vehicles.[1] Prices remained well above 1990s levels for three years and then began another march upward. In spite of their promises, the number of high efficiency models offered by the auto makers to the public actually declined.

[1] Jeffry Ball, "GM to Produce Hybrid Trucks, Burses in Scramble to Build "Green' Vehicles, *Wall Street Journal,* August 3, 2000: *U.S. auto makers, who used to argue in lockstep that they didn't have the technology to affordably improve the fuel economy of their cars and trucks, now are stomping all over each other in a scramble to build the latest and greatest green vehicles. Another sign of the race came Wednesday, when General Motors Corp. Vice Chairman Harry Pearce confirmed that the No. 1 auto maker will begin producing "hybrid" versions of its full-size pickup trucks and buses…. Mr. Pearce was trying to best Ford Motor Co., which last week announced it will improve the fuel economy of its sport-utility-vehicle lineup by 25% during the next five years.* The Ford comment was made in a National Press Club speech by Ford President and CEO, Jacques Nasser, as reported on by the Associated Press, July 28, 2000. The Alliance of Auto Manufacturers, claimed to be "taking a proactive leadership role in researching and developing advanced fuel economy technologies for passenger cars and light trucks" two years later in comments to the National Academy of Sciences (see Request for Comments: *National Academy of Science Study on Future Economy Improvements Model Years 2005-2010*, Docket No. 2002-11419, May 8, 2002. (see generally Richard Byrne, *Life in the Slow Lane: Tracking Decades of Automaker Roadblocks to Fuel Economy* (Union of Concerned Scientists, July 2003).

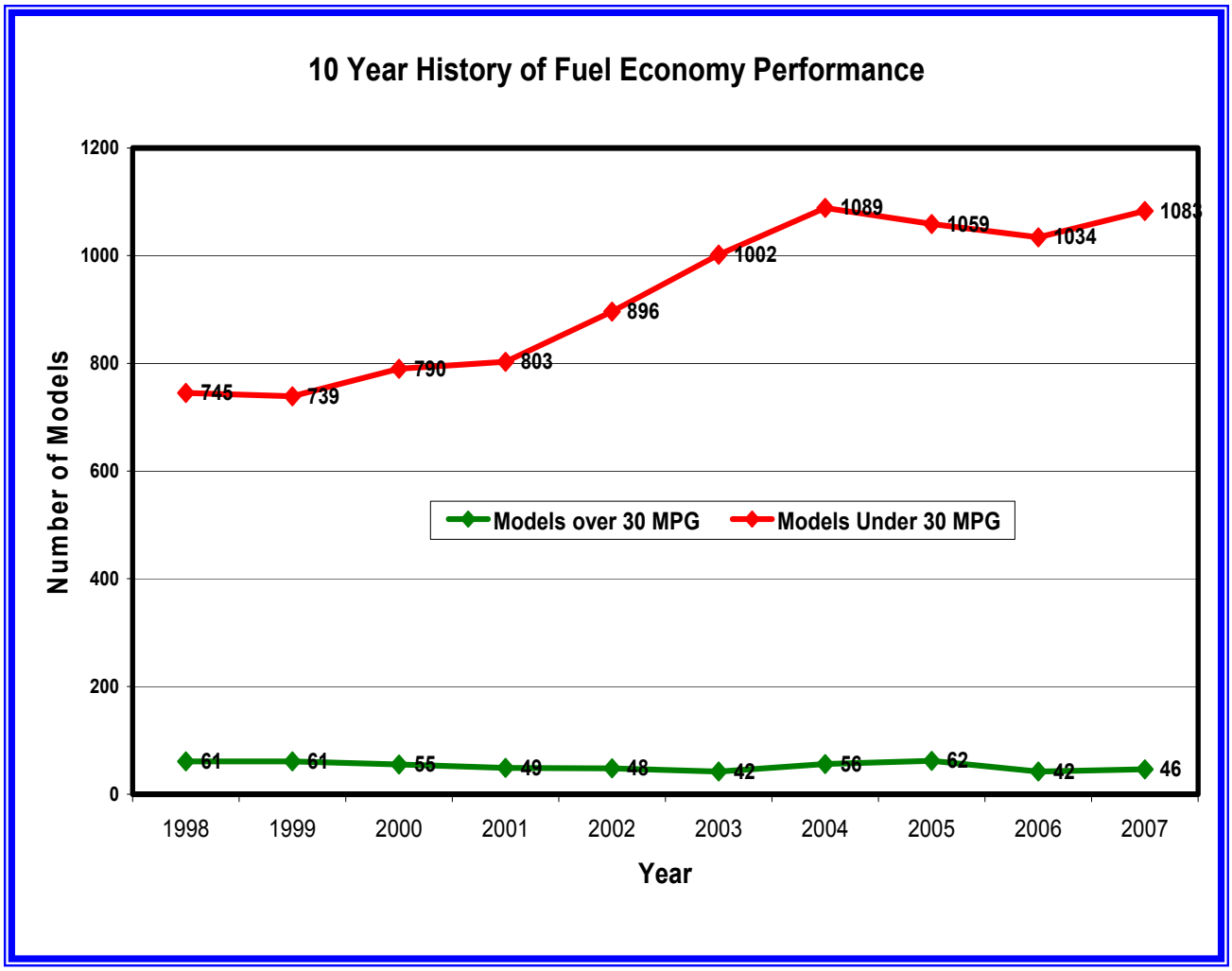
1. As the Price of Gas Goes Up, the Number of Good Performers Goes Down



Source: Gas Prices—Energy Information Institute; Models—U.S. EPA; available at http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_dcus_nus_m.htm

Not only did the car makers fail to increase the number of efficient models offered, but the number of inefficient models jumped sharply (see Exhibit 2). While the number of different models increased dramatically during the past 10 years (806-1129), as mentioned above, the number of vehicle models getting over 30 MPG actually declined from 61 in 1998 to only 46 in 2007. In 1998, one out of 13 models on the market got 30 mpg or more. By 2007, that ratio had declined to one in 24. Efficient models have been swamped by inefficient models. During this time period, the domestic manufacturers used extraordinary (and profit eating) incentives to induce consumers to keep buying large fuel-inefficient vehicles rather than improve the fuel efficiency of their product offerings.

2. Poor Performers Increase—Good Performers Decline

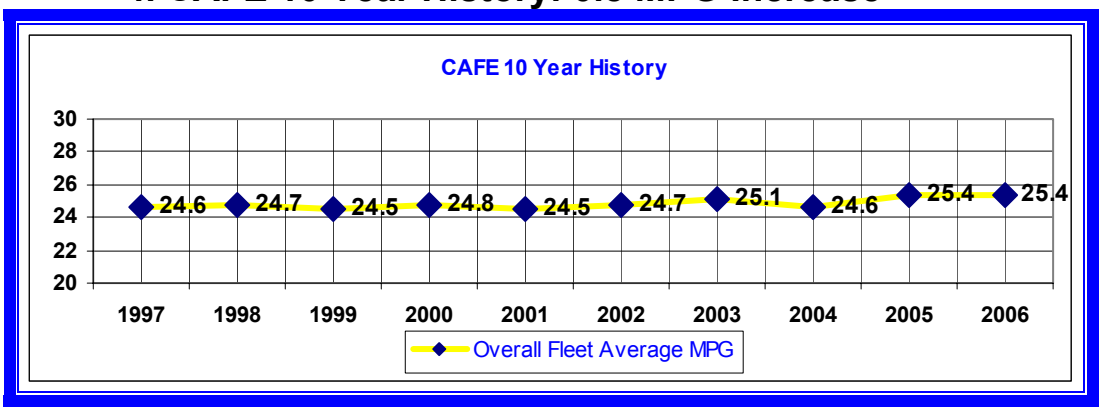


3. Models Getting 30 MPG: Going Backwards for 10 Years

Year	Models Over 30 MPG	%	Models Under 30 MPG	%	Total Models
1998	61	8%	745	92%	806
1999	61	8%	739	92%	800
2000	55	7%	790	93%	845
2001	49	6%	803	94%	852
2002	48	5%	896	95%	944
2003	42	4%	1002	96%	1044
2004	56	5%	1089	95%	1145
2005	62	6%	1059	94%	1121
2006	42	4%	1034	96%	1076
2007	46	4%	1083	96%	1129

As the exhibit below shows, the prevalence of poor performing models has resulted in a combined average fuel economy in the new vehicle fleet that has been essentially flat for over a decade.

4. CAFE 10 Year History: 0.8 MPG Increase



COMPARING RESULTS: U.S. vs. Asian Manufacturers

For a closer look at manufacturer response to gas price increases, well after they became established, we examined the changes in fuel economy performance of the top selling 2005 and 2007 vehicles. As noted in Exhibit 1, gas prices spiked in 2000 and began a steady march upward in 2003. Looking at the popular 2005 and 2007 models

provides the opportunity to examine car company reaction after they had plenty of time to improve efficiency.

First, we compared the top selling Asian models with those from the U.S. manufacturers. Asian car companies improved the fuel economy of a much higher percentage of their popular models than did the U.S. manufacturers. In fact, the fuel economy of the majority (52%) of the most popular U.S. manufacturer models in 2005 actually declined two years later. In contrast, over two-thirds (68%) of the most popular Asian models the top improved during the same time.

5. Overall: The U.S. vs. Asian Carmakers 2005-2007

	Improved	Declined or Stayed the Same
Asian[2]	13 (68%)	6 (32%)
U.S.[3]	15 (48%)	16 (52%)

As the Exhibit 6 below shows, two manufacturers, GM and Ford, had more of their popular vehicles decrease than increase. Ford was able to offset the number of models that decreased in MPG with substantial increases of those fewer models whose MPG went up. GM was not able to offset increases with decreases. (Ford had four models that together improved by 4.6 MPGs, and five that together subtracted only 1.3 MPGs, while GM had six models that together improved 4.3 MPGs but seven that together subtracted 4.7 MPGs.)

The other top selling manufacturers went up with Toyota, Hyundai and Nissan increasing dramatically. Honda increased the number of models with better fuel efficiency but its net mileage decreased.

[2] Toyota, Honda, Nissan, Hyundai
[3] GM, Ford, Chrysler

6. Changes in Manufacturers' Top Selling Models[4] 2005-2007

Sales Rank in 2007	Manufacturer	MPG Change from 2005 to 2007	Number of Models	Percent of Most Popular Models	MPGs added or subtracted
1	GM	↑ Increased	6	46%	4.3
		↓ Decreased/Same	7	54%	-4.7
		Balance	**-1**		**-0.4**
2	Ford	↑ Increased	4	44%	4.6
		↓ Decreased/Same	5	56%	-1.3
		Balance	**-1**		**3.3**
3	Toyota	↑ Increased	6	67%	8.2
		↓ Decreased/Same	3	33%	-1.1
		Balance	**3**		**7.1**
4	Chrysler	↑ Increased	6	56%	2.3
		↓ Decreased/Same	4	44%	-0.6
		Balance	**1**		**1.7**
5	Honda	↑ Increased	3	60%	0.5
		↓ Decreased/Same	2	40%	-2.4
		Balance	**1**		**-1.9**
6	Nissan	↑ Increased	2	67%	5.0
		↓ Decreased/Same	1	33%	-0.6
		Balance	**1**		**4.4**
7	Hyundai	↑ Increased	2	100%	5.7
		↓ Decreased/Same	0	0%	0.0
		Balance	**2**		**5.7**

NOTE: for more details on the changes of the top 50 vehicles in 2005 and 2007, see Exhibit 8 following.

CONSUMER DEMAND: When It Comes To Sales, Fuel Economy Matters

In mid-2001, when it became clear that the gasoline price spike of 2000 would continue, the leading U.S. auto manufacturers declared their intention to increase the fuel economy of light trucks and SUVs. While they had enjoyed a decade of increasing sales of these vehicles, they were vulnerable to rising gasoline prices. Unfortunately, the manufacturers did not keep their promise and, as gasoline prices continued to rise, consumers shied away from these gas guzzlers. In 2006, sales declined dramatically. Overall from 2004 to 2006, sales of SUVs and light trucks declined (9,175,183 to

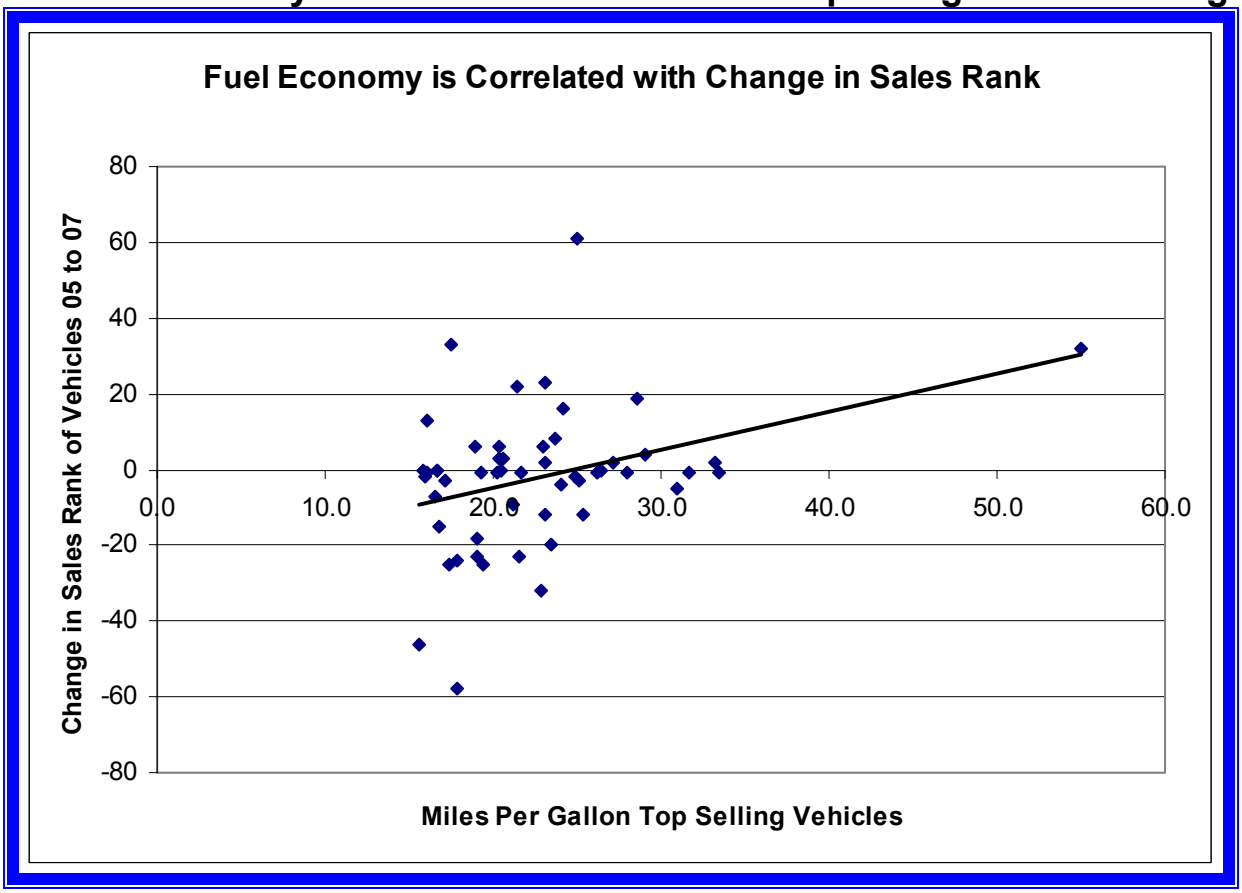
[4] BMW and VW are not included as they only had one model each in the most popular models. BMW's 3 series improved and VW's Jetta declined.

8,430,043) by 8%. From 1997 to 2007, sales of mid-size SUVs, once one of the most profitable vehicle segments, went down by 43%, from 9.1% in May 1997 to 5.2% in May 2007.[5]

Clearly, auto makers need time to incorporate significant changes in fuel efficiency. However, if they had followed through on their promises of 2001, we would certainly expect to see improvements in fuel economy of new cars by 2005 or 2007. Furthermore, in the short run, auto manufactures can adjust their production runs and marketing to sell more efficient cars.

In order to determine the impact of fuel economy on sales ranking, we compared the change in sales ranking of the top fifty models from 2005 to 2007 with their fuel economy rating. Using regression analysis we determined, as shown in Exhibit 7 below, that there is a significant, positive relationship between fuel economy and change in rank between 2005 and 2007.

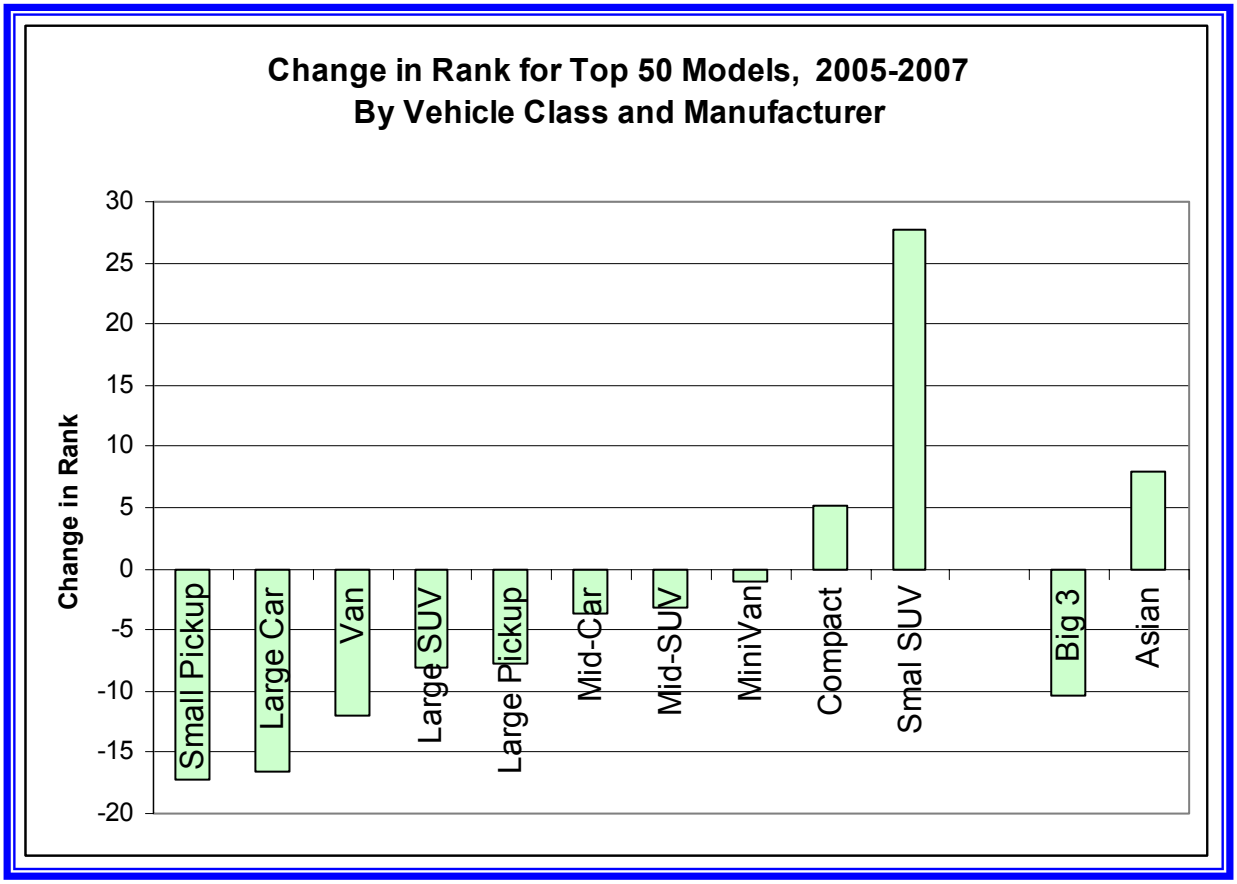
7. Fuel Economy Matters when It Comes to Improving Sales Ranking



[5] Power Information Network, J.D. Power & Associates, June 25, 2007.

We also observed two other factors that are related to changes in popularity of models – size class and manufacturer. Small SUVs increased dramatically in popularity, while small and large pickups, vans, large cars and large SUVs declined. The "Big 3" manufacturers suffered a significant decrease in popularity, while Asian manufacturers enjoyed an increase in the popularity of their models.

8. Consumer Demand Shifts



These three factors (sales ranking, size class, and manufacturer) are interrelated. The "Big 3" product lines emphasize pickups and larger vehicles that get less miles per gallon.[6] When these three factors are combined in a multiple regression, they account for about one-third of the variance in change in rank.[7]

---

[6] Simple correlations among theses three factors show

	SSUV	BIG 3	MPG '07	Change in Rank
SSUV	-	-.122	.053	.379**
Big 3			-.475**	-453**
Mpg '07				.340*

** p <..01 *p<.05

[7] A multiple regression shows each has an effect on rank as expected.

Rank Change = -7.674 +.495 (MPG) + 27.894 (SSUV) – 13.397 (Big 3)
(.406) (10.004) (5.383)

R = .577
Adjusted R^2 = .333

CONCLUSION

The pattern of behavior of the auto makers in the past decade, particularly since the onset of the gasoline price spiral beginning in 2000, has special importance because Congress is in the midst of a major energy policy debate. The U.S. auto makers, in particular, claim that an increase in fuel economy standards will hurt the industry. While the U.S. car companies blame high labor and legacy costs for their current problems, our review of the relationship between fuel economy performance and sales ranking provides powerful evidence that the Big 3's failure to follow through on their promises to increase fuel economy is a major cause of its current problems. Interestingly, the cash incentives being offered mainly by the "Big 3" to sell fuel inefficient vehicles are often larger than the claimed labor cost disadvantage.[8] In addition, the incentives being offered are larger than the investments necessary to produce much more fuel efficient vehicles.[9]

Had the "Big 3" followed through on their stated intention to improve the fuel economy of their fastest selling vehicles, likely those vehicles would have continued to be consumer favorites and their financial sheets would have been much healthier. It appears that the domestic car companies viewed previous CAFE requirements as a "ceiling" rather than a minimum level of performance.

Today, by passing a strong CAFE requirement, without loopholes, Congress will be providing a blueprint to help the "Big 3" become competitive again by building the vehicles that the American consumer really wants.

###

[8] This is most evident in the dramatic difference in large cash discounts being offered on many of the larger less fuel efficient models sold by the Big 3 – ranging as high as $3,000 to $5,000. In contrast, the Asian manufacturers offer no cash discounts, although they have begun to offer finance incentives on some of the less fuel efficient models. (see http://www.edmunds.com/incentives/RebateController?step=1&setzip=20815&tid=edmunds.n.incentivesindex.incentives.1.1.*)

[9] Consumer Federation of America, A Consumer Pocketbook And National Cost-Benefit Analysis Of "10 In 10": Increasing Cafe Standards 10 Miles Per Gallon Over Ten Years Will Save Consumers Money And Help Cure The National Oil Addiction (Consumer Federation of America, June 2007), available at: http://www.consumerfed.org/pdfs/CFA_Cost-Benefit_Analysis_of_10_in_10,_June_07.pdf, citing cost estimates from National Academy of Sciences, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards* (January 2002).

APPENDIX: DETAILS ON CHANGES IN THE MOST POPULAR MODELS FROM 2005 AND 2007 AND THE CFA MILEAGE RATING SYSTEM

Following is a detailed look at the performance of the top 50 selling vehicles in 2005 and 2007 as well as an explanation of the Consumer Federation of America's Mileage Rating System (MRS) which is designed to quickly point out the fuel misers from the guzzlers.

10. Changes in the EPA MPG for Most Popular Models 2005-2007[10]

(Colors indicate CFA's Mileage Rating Scale. See key below.)

Make	Model	2005 MPG (Sales Rank 2005)	2007 MPG (Sales Rank 2007*)	FE Change U = up D = Down or No Change	Rank Change + = up - = Down 0 = No Change
Ford	F150	16.0 (1)	15.8**(1)	D	0
Chevrolet	Silverado**	16.9 (2)	16.7 (2)	D	0
Toyota	Camry	26.8 (3)	26.4 (3)	D	0
Dodge	Ram pickup**	15.5 (4)	16.1 (5)	U	-
Honda	Accord	26.1 (5)	26.2 (6)	U	-
Toyota	Corolla/Mat.	32.8 (6)	33.2 (4)	U	+
Honda	Civic	34.2 (7)	33.5 (8)	D	-
Nissan	Altima	25.6 (8)	28.0 (9)	U	-
Chevrolet	Impala	24.5 (9)	23.1 (7)	D	+
Chevrolet	TrailBlazer	16.7 (10)	17.8 (34)	U	-
Ford	Explorer	16.0** (11)	16.8 (26)	U	-
GMC	Sierra**	16.8 (12)	16.7 (12)	D	0
Dodge	Cara./Grand	20.5** (13)	20.6 (10)	U	+
Jeep	Gr. Cherokee	17.4 (14)	17.4** (39)	D	-
Chevrolet	Cobalt	27.0 (15)	27.1 (13)	U	+
Chevrolet	Malibu	25.9 (16)	25.4 (28)	D	-
Ford	Taurus**	22.3 (17)	—		
Ford	Focus	27.9 (18)	29.1 (14)	U	+
Chrysler	T&C	20.4 (19)	20.5 (19)	U	0
Honda	Odyssey	21.9 (20)	20.2 (21)	D	-
Toyota	Tacoma	19.9 (21)	20.4 (15)	U	+
Jeep	Liberty	19.2 (22)	19.0 (45)	D	-

[10] NOTE: Automotive News data was used to determine the top selling models in 2005 and 2007. CAFE sales data was used to determine a sales-weighted EPA MPG for each model. CAFE 2006 sales data was used to project sales for 2007 models. When a top selling 2005 vehicle subsequently dropped from the top fifty in 2007, we continued to track its fuel economy rating. Also, when a car was added to the top fifty in 2007, we went back and developed a fuel economy rating for the corresponding 2005 model. This resulted in the list containing more than 50 vehicles. Chevrolet Trailblazer includes EXT model, Chevrolet Impala does not include Monte Carlo model.

Make	Model	2005 MPG (Sales Rank 2005)	2007 MPG (Sales Rank 2007*)	FE Change U = up D = Down or No Change	Rank Change + = up - = Down 0 = No Change
Ford	Escape	21.1 (23)	23.0 (17)	U	+
Toyota	Sienna	20.8 (24)	21.7 (25)	U	-
Ford	Mustang	20.7 (25)	20.4 (22)	D	+
Chevrolet	Tahoe**	16.4 (26)	17.1 (29)	U	-
Honda	CR-V	24.1 (27)	24.2 (11)	U	+
Ford	E-series van	16.4 (28)	—*** (23)		+
Chrysler	300	21.5 (29)	21.2 (38)	D	-
Honda	Pilot	19.0 (30)	19.3 (31)	U	-
Toyota	Highlander	21.5 (31)	24.1 (35)	U	-
Chrysler	PT Cruiser	23.2 (32)	23.1 (44)	D	-
Chevrolet	Equinox	21.0 (33)	21.6 (56)	U	-
Hyundai	Sonata	22.8 (34)	24.9 (36)	U	-
Chevrolet	Colorado	20.0 (35)	19.4 (60)	D	-
Chevrolet	Exp./G van	17.1 (36)	16.6** (43)	D	-
Toyota	Tundra	16.8 (37)	16.1 (24)	D	+
Pontiac	G6	25.1 (38)	23.7 (30)	D	+
Pontiac	Grand Prix	22.9 (39)	23.5 (59)	U	-
Ford	Ranger	19.6 (40)	19.1 (58)	D	-
Nissan	Sentra	29.1 (41)	31.7 (42)	U	-
Hyundai	Elantra	27.4 (42)	31.0 (47)	U	-
Dodge	Durango	15.4 (43)	15.6 (89)	U	-
Ford	Expedition	16.0 (44)	16.0 (46)	D	-
Dodge	Neon	28.1 (45)	—		
Lexus	RX	21.4 (46)	25.1 (49)	U	-
Ford	Five Hundred	23.1 (47)	22.8 (79)	D	-
Toyota	Prius	55.0 (48)	55.0 (16)	D	+
GMC	Envoy	16.6 (49)	17.8 (107)	U	-
BMW	3 series	21.6 (50)	23.1 (27)	U	+
VW	Jetta	26.9 (51)	25.4 (48)	D	+
Mazda	Mazda3	27.9 (56)	28.6 (37)	U	+
Jeep	Wrangler	16.2 (65)	17.5 (32)	U	+
Nissan	Murano	22.0 (72)	21.4 (50)	D	+
Toyota	RAV4	24.9 (79)	25.0 (18)	U	+
Dodge	Charger	—	21.0 (33)		
Dodge	Caliber	—	28.0~ (40)		
Ford	Fusion	—	24.3 (20)		
Ford	Edge	—	20.5~ (41)		

*Based on Jan-May sales (Auto News)
**In the case of dual fuel vehicles we assumed that 10% of the users would be using ethanol E85 and the remainder gasoline.

***Not reported by EPA
~Estimate not based on sales

Key for CFA: Mileage Rating Scale	Excellent Over 40 MPG	Good 30-39 MPG	Fair 20-29 MPG	Poor Under 20 MPG

CFA'S MILEAGE RATING SCALE (MRS): A New Way to Categorize Performance

CFA has developed a Mileage Rating Scale (MRS) to help consumers quickly identify which new or used vehicles are Excellent, Good, Fair or Poor, in terms of gas mileage.

11. Consumer Federation of America's Mileage Rating Scale

Mileage	Mileage Rating Scale
Over 40 MPG	Excellent
30-39 MPG	Good
20-29 MPG	Fair
Under 20 MPG	Poor

By helping consumers to easily identify which new or used vehicles are Excellent, Good, Fair or Poor, in terms of gas mileage, the Mileage Rating Scale enables them to make more informed vehicle purchases. As we saw with safety ratings, when consumers are able to easily compare performance, they quickly vote with their dollars.

CFA's Mileage Rating Scale (MRS) also provides a method of tracking the overall change in fuel economy performance over time. The following exhibit shows the decline in the percent of "Good" and "Excellent" vehicles during the past 10 years and an increase in the percent of "Poor" vehicles. The percentage rated "Fair" remains about the same. This gradual decline in vehicle fuel economy, along with the increased vehicle population, is a major factor in America's increasing dependence on foreign oil.

We've included a look at 2001, because that was the second year gas prices increased considerably and car makers indicated they'd respond voluntarily with better performers without regulations. While they increased the numbers of models they offered, overall, they chose to decrease the number of good performers

12. Charting the Changes in Fuel Economy: More Models, Poorer Performance

Year	1998	2001	2007
Excellent	7 (1%)	5 (1%)	2 (<1%)
Good	54 (7%)	44 (5%)	44 (4%)
Fair	462 (57%)	491 (58%)	621 (55%)
Poor	283 (35%)	312 (37%)	462 (41%)
Total	806	852	1129

F:\WordDocs\CFA\Motor Vehicle Fuel Efficiency Project\Studies\STILL Stuck in Neutral--America's Continued Failure to Improve MVFE 2005-2007.doc