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# THE MOUNTING DANGERS OF THE "CAFE" MILEAGE STANDARDS

## INTRODUCTION

Responding to concerns raised by the 1973 Arab oil embargo and OPEC's quadrupling of oil prices, Congress in 1975 mandated minimum fuel economy levels for cars sold in the United States. Known as Corporate Average Fuel Economy, or CAFE, standards, these require auto manufacturers to maintain certain minimum fuel efficiency averages among cars sold in the U.S. The standard for passenger cars was set at 18 miles per gallon in 1978, rising to 27.5 mpg by 1985. The Secretary of Transportation, however, has discretion to raise or lower this standard within certain limits.

Transportation Secretary James Burnley last week acted to limit the CAFE level for passenger cars to 26.5 mpg for 1989 and is now soliciting public comment on CAFE levels for 1990 and beyond. He should take that opportunity to reduce future CAFE levels to 26 mpg or lower.

**Harming Consumers.** It was believed by its sponsors, and many others at the time, that CAFE was necessary to ensure that Americans could buy fuel efficient cars. Over the past thirteen years, however, it has become apparent that CAFE regulations are not necessary. Worse, they actually harm American consumers, possibly endanger drivers, and penalize U.S. auto makers at a time when they face tough foreign competition.

Although CAFE was first proposed to foster more fuel efficient cars, the average fuel efficiency of cars driven in the U.S. actually began to increase even before standards were enacted. The reason was simple. With gasoline prices rising from 36 cents per gallon in 1972 to 53 cents per gallon in 1974, consumers began to demand more efficient

automobiles. The average price of leaded gasoline reached a high of $1.31 per gallon in 1981.[1] No federal regulation was needed to tell auto makers to improve fuel economy — the market was sending an unmistakable signal.

As fuel prices began to drop in the early 1980s, however, consumers began to look for other important qualities in their cars, like size, comfort, and safety. The effect of CAFE, however, was to limit consumer choice by preventing auto companies from making sufficient numbers of larger cars available. This is unfair to the consumer and damaging to the U.S. economy.

**Forcing Auto Makers Abroad.** Retaining CAFE restrictions, for example, could leave Americans no choice but to turn increasingly to foreign cars; it could force U.S. manufacturers to take more of their auto production abroad. According to one recent study, enforcing a 27.5 mpg CAFE standard in 1990 could destroy close to 20,000 U.S. jobs, while actually increasing U.S. gasoline consumption by about 200 million gallons.[2]

Of even greater concern, CAFE could cost lives if it forced consumers to buy lighter, more dangerous cars. As a result, some believe that each year CAFE could cause hundreds of highway deaths and thousands of injuries.

The Department of Transportation's power to amend CAFE standards is limited: it can lower CAFE levels, but it cannot abolish them altogether. The Reagan Administration and its successor thus should press Congress to repeal the regulations altogether. While several bills to do this were introduced in the 100th Congress, such as S. 1654, introduced by Senator Don Nickles, the Oklahoma Republican, and H.R. 2181, by Representatives Bob Carr, the Michigan Democrat, and Michael Oxley, the Ohio Republican, there has been little action on any of the bills. Congress thus should act swiftly in 1989 to consider the repeal of CAFE.

## HOW CAFE WORKS

The CAFE program was enacted in 1975 as part of the Energy Policy and Conservation Act (EPCA) and took effect with the 1978 auto model year. The program requires all car manufacturers to maintain certain minimum fuel mileage averages for their fleet of cars sold in the U.S. The aim was to reduce the consumption of gasoline and thus the need for oil imports. While the average was set at 18 mpg for 1978 and was to rise to 27.5 mpg by 1985, the Secretary of Transportation has used his authority to brake the increase. The Act gives the Secretary authority to adjust annual standards to "the maximum feasible average fuel economy level" for each model year, using four broad criteria:

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1 Energy Information Administration, *Annual Energy Review 1987*, DOE/EIA-0384(87), p. 145.

2 *Comments of the Staff of the Bureau of Economics of the Federal Trade Commission* before the National Highway Traffic Safety Administration on Passenger Automobile Average Fuel Economy Standards for 1989 and 1990, Docket No. FE-88-01 Notice 2 (September 15, 1988), p. 2.

**1) Technological feasibility.**

**2) Economic practicability.**

**3) The impact of other federal standards (such as emissions controls) imposed on the auto industry.**

**4) The need to conserve energy.**

The exact meaning of these factors was not defined. Using his authority, however, the Secretary can lower the standard to 26 mpg for any model year without congressional approval. The statute also allowed the Secretary to lower CAFE levels below 26 mpg or raise them above 27.5 mpg, unless such action were disapproved by either house of Congress. Such "one-house vetoes," however, have since been held by the Supreme Court to be unconstitutional.[3] As a result, the Secretary's authority in this area is now unclear.

CAFE standards apply to U.S. sales by any manufacturer, domestic or foreign, who sells over 10,000 cars per year in the U.S. Each of these manufacturers must satisfy CAFE requirements for each of several separately defined fleets. For instance, vehicles manufactured abroad are considered separately from those manufactured in the U.S. A manufacturer with an overall passenger automobile fleet average of 30 mpg thus would fall short of CAFE requirements if its domestically built passenger automobiles averaged only 25 mpg, since the domestic fleet would not satisfy the CAFE minimum. Different CAFE standards also apply to different types of vehicles. For instance, the CAFE level for passenger automobiles is more stringent than that for light trucks. Each of these fleet averages is calculated from the combined average of city and highway mileage of each vehicle sold, according to tests conducted by the Environmental Protection Agency. The recent Department of Transportation actions have involved the imported and domestic passenger automobile fleets.

**Penalties and Credits.** If a manufacturer's fleet average falls below the mandated levels, a penalty is imposed, amounting to $50 for each mpg below the required CAFE level, multiplied by the number of cars in the fleet sold. Conversely, if a manufacturer's fleet average exceeds the target figure in a given year, a corresponding credit is granted, which may be applied to offset penalties incurred over the preceding, or the following, three-year period.

For the first few years of lowered gas prices, most auto makers were able to avoid paying any civil penalties under CAFE by applying past credits or "borrowing" against anticipated future credits.[4] As the price of gasoline in the 1980s began falling to relatively low levels, however, consumers have been demanding larger, more comfortable — and safer — cars. Ford and General Motors fell short of the standard in 1983, and relied upon credits from prior years to avoid penalties. Beginning in 1985, car makers have avoided penalties because of DOT action that set the standard at 26 mpg rather than letting it rise to 27.5 mpg,

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3 *Immigration and Naturalization Service v. Chanda,* 462 U.S. 919 (1983).

4 In fact, only one auto maker, Jaguar, has so far been forced to pay a fine.

based on the Department's determination that the criteria set down in the legislation permitted such a relaxation of the standard.

In a case decided this June, a federal appeals court upheld DOT's action.[5] Although it was technologically feasible for auto makers to meet the 27.5 mpg standard, the court found that DOT legitimately took market forces and consumer demand into account in finding a higher standard to be economically impractical.

## THE QUESTIONABLE IMPACT ON FUEL EFFICIENCY

The fuel economy of new cars sold in the U.S. has risen substantially since CAFE was enacted, from about 20 mpg in 1978 to about 28 mpg in 1987. Yet it appears that CAFE actually had little to do with this dramatic increase. Rather, fuel economy rose in response to market demand because of higher fuel prices.

Although CAFE did not take effect until 1978, new car fuel economy already had risen 40 percent from 1974 levels, following the gasoline price increases of 60 percent triggered by the Arab oil embargo. When CAFE went into effect, its mandated 18 mpg standard actually was below the average at the time of almost 20 mpg. From 1978 through 1982, new car mpg averages improved by another 35 per cent. These increases, too, followed fuel price increases. In fact, according to research by Brookings Institution economist Robert Crandall, these efficiency improvements were almost exactly what could have been predicted from changes in gas prices alone.[6]

Predictably, therefore, since oil prices began their decline in 1982, fuel efficiency improvement of new model cars has slowed, reflecting the rise in demand for larger cars. Even so, the average has increased 8 percent. There are several reasons why fuel efficiency has not declined with gas prices in recent years. First, CAFE standards finally have begun to restrict the car market, preventing auto makers from responding to the turnaround in consumer demand. Second, and perhaps more important, many of the gains in fuel economy have been achieved through technological advances in engine and body design. Once the huge capital investment was made to achieve these advances, it is unlikely that manufacturers would return to older, less efficient technologies.

## ECONOMIC COSTS OF CAFE

While the efficiency benefits actually resulting from CAFE have been few, its costs soon could become enormous if the standards forced manufacturers to improve fuel efficiency beyond the level demanded by consumers. Not only would this severely limit consumer choice, which itself is an economic cost, but thousands of jobs could be lost.

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5 *Public Citizen v. National Highway Traffic Safety Administration*, 848 F.2d 256 (D.C. Cir. 1988).

6 Robert Crandall and Theodore E. Keeler, "Public Policy and the Automobile," in Richard L. Gordon, Henry D. Jacoby, and Martin Zimmerman, eds, *Energy: Markets and Regulation* (Cambridge, Mass.: MIT Press, 1987).

## How CAFE Is Anti-Consumer

When auto makers find it technically more difficult to increase the efficiency of cars, they are forced to meet CAFE requirements by changing the "mix" of cars in their fleets. Since CAFE is based on the fleet's average performance, the sale of a less efficient (though perhaps more desirable) large car in the fleet must be offset by the sale of a more efficient small car. Auto makers can change the mix of the cars that they sell by increasing the prices of low-efficiency cars to reduce their sales and by lowering the price of high fuel economy cars. Thus, in effect, CAFE acts as a tax on low-mpg cars, which can be used to subsidize high-mpg cars.

This skewed pricing system imposes burdens on consumers because it limits their ability to purchase the car of their choice. Thus, many legitimate desires or needs of consumers can go unfulfilled. Large families, for example, may need a larger car, or an older citizen may desire a car that is easier to get in and out of. The CAFE standards make it more expensive for these buyers to exercise their choices.

In addition to restricting choice, CAFE increases can harm consumers economically. For one thing, they have to pay for the increased costs for building in greater fuel efficiency that they may not desire. For another, and perhaps more important reason, these higher car costs could prompt many Americans not to buy new cars at all. This defeats the conservation goals of the CAFE laws by encouraging drivers to keep their older, less efficient automobiles longer. According to the recent study by the staff of the FTC's Bureau of Economics, the total loss to consumers from a CAFE increase to 27.5 mpg would be approximately $950 million.[7] If for some reason CAFE were raised even more, consumer losses would be much higher. According to a February 1988 study by Andrew Kleit of the Federal Trade Commission, a 2.5 mpg increase could cost consumers an estimated $8.8 billion.[8]

## How CAFE Could Destroy American Jobs

The staff of the Bureau of Economics also calculates that a CAFE increase to 27.5 mpg, a jump of about 1.0 mpg above the averages now being achieved by Ford and General Motors, would reduce U.S. auto sales and jobs as well. Overall, according to the study, about 20,000 U.S. auto industry jobs would be lost if DOT allowed the rate to rise to 27.5 mpg. And Kleit estimates that a larger increase of 2.5 mpg in the CAFE standard would result in the loss of 121,900 auto industry-related jobs.[9]

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7 FTC Comments, *op. cit.*, p. 2.

8 Andrew N. Kleit, *The Impact of Automobile Fuel Economy Standards*, Federal Trade Commission Working Paper No. 160 (February 1988), p. 21. Since Kleit's study uses slightly different assumptions and data than the later FTC staff study, their conclusions cannot be directly compared.

9 *Ibid.*

**Decreased Demand.** There are several specific reasons for these job losses. First, a great number of potential large-car buyers simply would decide not to purchase a new car if its price were raised beyond a certain amount. Past studies of automobile demand indicate that a 10 percent increase in the price of large cars decreases demand by 30 percent.[10] Second, many buyers who prefer large cars, a market in which the U.S. industry specializes, would turn to foreign manufacturers. A car buyer who normally preferred to buy a mid-size Buick, for instance, might turn to a Honda instead.

Third, higher CAFE standards would encourage American manufacturers to move some of their production facilities overseas, cutting their U.S. payroll while employing foreign workers. Car makers might be induced to do this because the CAFE law divides each manufacturer's production into two separate "fleets," domestic and foreign. The domestic fleet is composed of those models manufactured in the U.S. and Canada.[11] Each fleet must meet CAFE requirements independently. U.S. manufacturers currently find it difficult to do so with their domestically-built fleets. By contrast, their foreign-built fleets more than meet the requirements because this category includes most of their small car offerings. Thus moving some domestic production abroad could help U.S. manufacturers meet more stringent CAFE requirements. The result: fewer U.S. jobs, but no savings in U.S. fuel consumption. Finally, job losses could occur simply because large car production requires more labor per car built than small car production. Replacing large cars with small cars alone thus could lead to fewer auto industry jobs, even if the total number of cars built were to stay the same.

## Effect on Fuel Consumption

Despite these harmful economic effects, CAFE would appear to save little or no fuel. The Bureau of Economics staff, in fact, concluded that an increase of CAFE to 27.5 mpg in 1990 would actually increase gasoline consumption in America by about 200 million gallons over the fifteen-year period from 1990 to 2005.[12] This adverse impact would be caused by consumers keeping their old, less fuel efficient cars longer, as well as increases in the number of miles driven by the owners of the more fuel efficient small cars, who would find driving less expensive.

In his earlier study, Kleit concluded that a CAFE standard increase of 1.5 mpg would outweigh these effects and would reduce overall consumption of gasoline. But it would do so at a huge cost to the economy. According to Kleit, such an increase would ultimately reduce gasoline consumption by about 700 million gallons of gasoline out of an annual passenger automobile consumption level of about 64 billion gallons.[13] This constitutes only about 3

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10 *Ibid.,* Technical Appendix, p. 3.

11 "Domestically manufactured" is defined as automobiles for which at least 75 percent of the cost to the manufacturer is attributable to value added in the U.S., or in Canada if the car is sent to the U.S. within 30 days. Because Japanese cars assembled in U.S. plants rely on imported parts for more than 25 percent of their value, Japanese manufacturers have no "domestic fleet" for CAFE purposes, allowing them to average the fuel efficiency of the cars they build on both sides of the Pacific.

12 FTC Comments, *op. cit.,* p. 11.

13 Kleit, *op. cit.,* pp. 23-24.

percent of annual automobile gasoline use and less than 1 percent of total annual U.S. oil consumption.

**Modest Gains.** The price of these modest gains would be huge. Using Kleit's figures for the total costs of CAFE, each gallon of gasoline saved by CAFE would cost the economy $4.00 to $5.00 above the cost of the gasoline itself.[14]

This cost undermines the rationale for the CAFE regulations. The intended purpose is to reduce U.S. reliance on foreign oil. To do this at a cost of $4.00 per gallon or over $150 per barrel makes no sense. There are many cheaper ways by which the U.S. can devise substitutes for foreign oil. There is, for example, a tremendous amount of oil left in the ground after the most easily extracted oil has been depleted. There is an estimated 300 billion barrels of oil available in existing oil fields that could be pumped out, but at a cost of $35 to $45 per barrel. The technology to extract it is available, but it is too costly to remove in light of today's $14 per barrel world oil prices. In addition, it is estimated that over 400 billion barrels of oil are trapped in the oil shales of several Western states. Transforming this into usable oil products would cost around $45 per barrel.

**Hidden Cost.** Since the U.S. only imports about 3 billion barrels of oil per year, either of these alternatives could make the nation completely self-sufficient in oil — at a cost about one-third that of CAFE. The U.S. is not developing these other sources of oil because the cost is too high, which would make the U.S. economy noncompetitive. The even higher cost of CAFE-induced reduction of oil imports, of course, is hidden from the consumer; it is, for instance, incorporated as part of an auto's sale price. If the CAFE cost were not hidden, U.S. consumers and policy makers would reject it just as they do the hard-to-get-at oil and oil from uneconomic oil fields.

There are a number of alternative, and more sensible, methods of reducing U.S. dependence on unstable sources of imported oil. The best method already is being used and has greatly reduced the world price of oil by increasing overall supplies. This is using oil from non-OPEC countries, such as Britain and Canada, which promise to be more secure suppliers.

Greater use of resources found on federally owned lands is another way of reducing dependence on unstable suppliers. Two areas of high oil production potential are the waters off California and the federal lands on the North Slope of Alaska. Another option is to remove some of the tax and regulatory burdens on the U.S. domestic oil industry, which discourage the investment necessary to maintain adequate production levels.[15]

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14 *Ibid.*

15 Many of these alternatives are highlighted in Milton R. Copulos, "The Hidden Cost of Imported Oil" (National Defense Council, 1988).

## HOW CAFE REDUCES AUTO SAFETY

Tightening CAFE standards could decrease safety significantly. By forcing auto makers to design vehicles with fuel economy foremost in mind, other important goals, including safety, would be downgraded in importance. Many safety innovations introduced over the last fifteen years, ranging from anti-lock brakes to improved bumpers, reduce fuel economy. Under the CAFE rules, U.S. auto makers could face fines for exceeding the standards if they introduced similar lifesaving improvements in the future.

**Lighter Cars.** CAFE already may be reducing safety by encouraging the use of smaller automobiles. Mileage improvements over the past ten years have come from two major developments: weight reduction and technical improvements. Overall, the weight of the average U.S. automobile has been reduced 23 percent since 1974.[16] Cars over 4,000 pounds accounted for about a quarter of all cars sold during the 1978 model year; they constitute only 1 percent of the cars built since 1984. Cars of more than 3,500 pounds made up over 70 per cent of the 1978 fleet, but are only 36 percent of the 1987 fleet.[17]

While some reduction of car weight would have occurred without CAFE, the standards have had a significant effect in recent years. According to a study by the Brookings Institution's Crandall and John Graham of the Harvard School of Public Health, the average weight of passenger automobiles for the 1989 model year will be about 500 pounds less than would have been the case without CAFE regulations.[18]

**Generally Less Safe.** This decline in vehicle weight has serious implications for safety, since these lighter cars are generally less safe. Crandall and Graham note that "the negative relationship between weight and occupant fatality risk is one of the most secure findings in the safety literature."[19] Using two measures of this relationship developed by economist Leonard Evans, Crandall and Graham estimate that the 500-pound decrease in vehicle weight caused by CAFE will increase highway fatalities by 14 to 27 percent.[20] This translates into 2,200 to 3,900 lives lost in model year 1989 cars over the lifetime of the vehicles.[21] An additional 11,000 to 19,500 serious injuries are likely to occur in those cars because of CAFE regulations.[22]

This safety issue curiously has received little attention. This may be because U.S. auto makers, who should be making the main case against CAFE, understandably are reluctant to argue that their products are less than perfectly safe. The Department of Transportation, meanwhile has not considered CAFE a detriment to safety, but recently has been sued over

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16 Robert W. Crandall and John D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety," March 1988 draft [Forthcoming in *The Journal of Law and Economics* (1989)], p. 7.

17 R.M. Heavenrich, *et al.*, "Light-Duty Automotive Fuel Economy and Technology Trends Through 1987," Society of Automotive Engineers, Inc., Technical Paper Series, May 1987, p. 12.

18 Crandall and Graham, *op. cit.*, p. 19.

19 *Ibid.*, p. 20.

20 *Ibid.*, p. 27.

21 *Ibid.*

22 *Ibid.*

this issue by the Competitive Enterprise Institute, a public interest research group. CEI claims that the Department acted arbitrarily in ignoring arguments pertaining to safety when it established a 26 mpg standard for 1987.

Safety deserves much more serious consideration by policy makers. If Crandall and Graham are correct, CAFE could be a large contributor to U.S. highway deaths.

## CONCLUSION

Corporate Average Fuel Economy Standards are unnecessary for saving fuel. Worse, they harm the U.S. economy, restrict consumer choice, and destroy tens of thousands of U.S. automobile manufacturing jobs. Worse still, CAFE restrictions may lead to thousands of additional highway deaths.

To be sure, U.S. dependence on foreign sources of oil is a serious concern. CAFE standards, however, are not an effective method of addressing the problem. CAFE saves a minuscule fraction of U.S. oil consumption at an enormous cost. And policy makers should explore alternative methods for decreasing America's dependence on foreign oil.

Secretary of Transportation James Burnley should be commended for acting to limit CAFE to 26.5 mpg for the 1989 model year. He now should move to keep it at 26.0 mpg or less for future years. Even better, the new Congress should recognize that CAFE has been a costly mistake and repeal the legislation altogether.

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