

THE GAS MILEAGE GAME – A POLICY SIMULATION

Nathan Bos
University of Michigan
nbos@umich.edu

Why aren't cars more fuel efficient? Why does the average American-made vehicle have worse gas mileage than those produced in 1987, even and technology has improved (Hellman & Heavenrich, 2004)? The Gas Mileage Game is a role-playing simulation that helps students better understand the dynamics that govern the American automobile market. Students play one of three roles:

- **Companies** have a choice of new technologies that can improve fuel efficiency, but also affect fleet average mpg, average price, and consumer preference for their vehicles. There are three companies in the game, two American and one Japanese. Companies must anticipate what other players in the market will do, because sales will suffer if one company unilaterally increases their cost or decreases preferences too much. Companies can also lobby Congress using political action committees, consulting reports, and other forms of persuasion.
- **Congresspeople** can pass legislation to increase fuel efficiency standards, but this may cost them with their constituencies. Each of the five Congresspersons (Michigan, Tennessee, New York, Colorado and California) has a profile of how much their constituencies are concerned with the environment, the American automobile companies, and the preferrability of cars sold. Each congressperson stands for re-election at the end of the game, and can be ousted if their constituencies are unhappy with their performance.
- **Non-governmental advocacy groups** (NGO's) try to influence companies and congress to raise fuel efficiency standards. NGO's can conduct a limited number of grass-roots political or consumer actions to try to influence Congresspersons and Companies. They can also provide consulting reports to the government with cost estimates.

Although the basic interactions of the games remain fairly simple, each role has a variety of realistic, winnable strategies they can pursue. While companies usually lobby for lower standards to keep their costs down, they can sometimes be in a competitive position where higher standards benefit them. NGO's can use either rewards or threats, and can focus on providing the most accurate information or leveraging the most political power, but not both. Congresspersons must choose their alliances carefully and keep an eye on their home district popularity at all times. The dynamics are designed to mimic realistic dynamics and strategic possibilities present in the American

automobile market. The game was developed collaboratively by a former auto executive, a policy expert, and a game specialist. This simulation has been used twice in MBA level classes with good student and instructor feedback.

The ABSEL demonstration will show the interface and a 'game within a game' spreadsheet simulator used by players. Design considerations and feedback from classroom usage will be discussed.

REFERENCES

- Hellman K.H. & Heavenrich, R.M. (April 2004). Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2004. EPA420-R-05-001. Environmental Protection Agency. <http://www.epa.gov/otaq/fetrends.htm>