

Disrupting the Auto Industry

Potential winners and losers as the cost of vehicle ownership increases

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Several decades ago, General Motors was making cars to quality standards that would have embarrassed the Russians. When GM's market research chief tried to inform Chairman Roger Smith of this problem, Smith is reported to have put his hands over his ears so he wouldn't hear the bad news. After all, who's going to buy a new car if the old one is still running? The rest, as they say, is history.

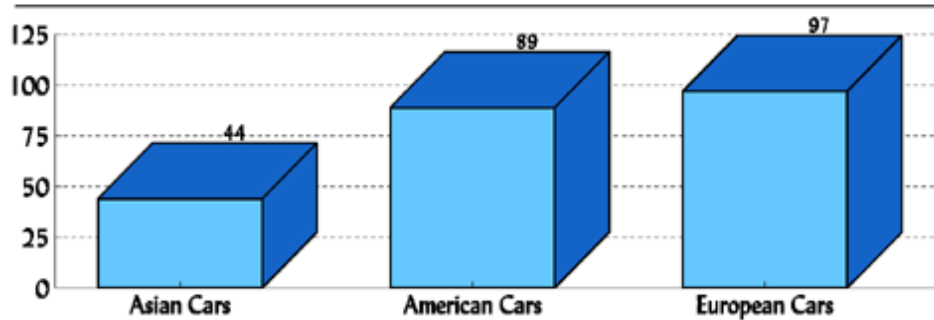
There's little doubt that increasing gasoline prices will change the driving habits of some people. However, improving your gas mileage may not lead to spending less to drive a car. With some cars, being on a first name basis with your mechanic or watching your car lose value like an internet stock after the bubble can do a lot more damage to your pocketbook than \$3.50 gasoline. All sides of the equation need to be considered and, in that regard, there have been some surprising changes in the auto industry in the last few years.

Reliability

The most comprehensive and objective measure of auto reliability comes from a survey done by Consumer Reports which measures reliability problems by region over a five year period. It will probably come as a surprise to some people that America no longer builds the world's least reliable cars. That dubious distinction now belongs to Europe whose cars also carry the highest price tag. For what it's worth, of all the cars in the most recent survey, Mercedes Benz had the most problems reported while Lexus had the fewest.

Problems Per 100 Vehicles

Five Year Old Cars as of 2005



Source: Consumer Reports April 2006

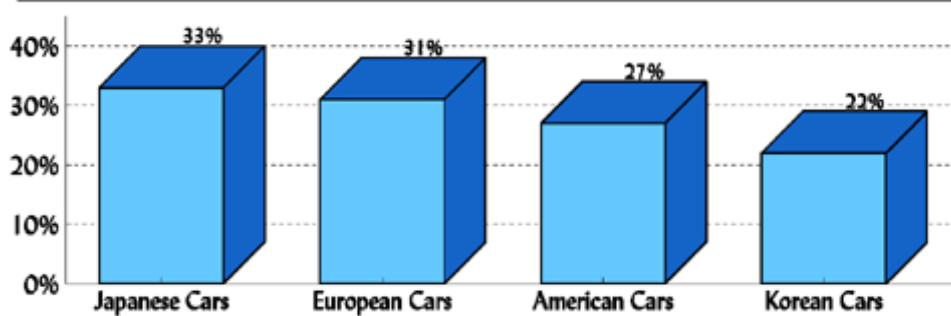
One caveat here is that Korean cars are included in the Asian category, and reliability ratings for these are still below average. If these are excluded, the big 3 Japanese manufacturers (Toyota, Honda, & Nissan), averaged about 33 problems per 100 vehicles, which appears to be a quality gap that America and Europe may never be able to close. Another way of looking at this data is that eight year old Toyotas and Hondas are about as reliable as three year old Fords and Chryslers and two year old Volkswagons and Mercedes.

Depreciation

Of all the costs of car ownership, depreciation is the major expense for most people. This is the silent killer, you won't notice it until you trade in your car. When you do, a five year warranty on parts and service will probably seem relatively insignificant in comparison.

Five Year Depreciation

Value as a % of MSRP after 5 Years and 75,000 Miles



Source: *Automotive Lease Guide*

Depreciation should mirror reliability, as used vehicles likely to need a lot of expensive repairs should be worth less than more reliable cars. What's puzzling here is that perception appears to be lagging reality when it comes to European cars. Okay, some of these are beautifully designed and fun to drive and are probably the car equivalent of supermodels. They're gorgeous and great for your image, but maintenance can be a killer.

Not that long ago, some European car makers ranked among the best in overall quality and relatively low depreciation rates were justified. Now that they're the worst, it's an open question how long these companies will continue to live off past glories before depreciation rates become more realistic.

Because European car makers have the highest manufacturing costs and price their cars accordingly, 69% depreciation in a European car over 5 years will amount to a lot more dollars than 73% depreciation in an American car or 78% depreciation in a Korean car. In addition, when perception finally catches up with reality, we expect European cars to depreciate faster in the future.

Gas Mileage

The classic warning from the EPA is that your gas mileage may vary. It will, and the chances of it being higher than EPA estimates are zero. The best rule of thumb is to give the EPA estimates a 15–20% haircut when computing real world gas mileage. If you're considering a new car and drive about 15,000

miles per year, here's the annual cost of driving with gasoline at \$3.50 per gallon:

Miles Driven Per Year	Miles Per Gallon	Cost of Gasoline Per Gallon	Annual Cost of Driving
15,000	10	\$3.50	\$5,250
15,000	15	\$3.50	\$3,500
15,000	20	\$3.50	\$2,625
15,000	25	\$3.50	\$2,100
15,000	30	\$3.50	\$1,750
15,000	35	\$3.50	\$1,500
15,000	40	\$3.50	\$1,313
15,000	45	\$3.50	\$1,167
15,000	50	\$3.50	\$1,050

As you can see, the difference between an MPG of 10 and 20 is over \$200 per month. Although this isn't the biggest driving expense, it's the most visible. However, our guess is that, even with the recent spike, gasoline costs are just getting back to where they were a decade or two ago as a percentage of total household expenses. This will be enough to change the driving habits of some people, but it will probably take significantly higher prices to change the behavior of the majority.

If this country's solution to the supply/demand imbalance that created high gasoline prices is to blame oil companies for price gouging, we expect current gasoline prices to look cheap in a few years. Given that few in Washington seem to understand the source of this problem, we have low expectations of a successful solution being found. As a result, we're factoring increasing gasoline prices into our expectations for the future and expect a gradual shift to more fuel efficient vehicles as a result.

It's been fascinating to watch the world's auto makers respond to high gasoline prices. Japanese car makers appear to have seen this coming a long time ago

and came up with the most elegant solution, American manufacturers are offering various solutions, and Europeans aren't doing anything new and would rather just keep talking about their high performance sedans.

Living or Dying with SUVs

American car makers appear to have tied their fortunes to SUVs as about the best that can be said for American passenger cars is they're fairly cheap. It's hard to turn on the TV without seeing commercials touting the big SUV that will go from zero to sixty in under 6 seconds, is big enough to carry a small village, and probably has annual gasoline costs that rival its depreciation. We don't think SUVs are going away, but expect to see a gradual switch to hybrid SUVs based on the Toyota technology.

Ford currently appears to be best positioned of an unimpressive group of domestic auto makers. Their cars have the highest reliability ratings, and Ford is the only domestic offering multiple options for responding to rising energy prices. They've licensed the Toyota hybrid technology for some of their SUVs and also offer a variety of flexible fuel vehicles. GM and Chrysler, in contrast, offer only flexible fuel vehicles. Overall, we wouldn't be surprised to see American car makers lose more market share and can't help wondering how General Motors will continue to survive the cumulative effects of decades of mismanagement.

Europe the Unreliable

As builders of the least reliable cars, some European car makers remind us of General Motors 20 years ago. These cars are also the world's most expensive and, to add insult to injury, many of these manufacturers believe that anyone willing to spend a lot on a car should also pay through the nose for repairs. As a result, repair costs border on the absurd for many of these models once warranties have expired. As far as responding to higher fuel costs, European manufacturers are ignoring hybrid technology completely, and only Mercedes offers a small selection of flexible fuel vehicles. Overall, for what you get,

ownership costs are way too high and we expect significant losses in world market share for the Europeans in the future.

Still Doing it Right

It's hard to think of anything that's a worse investment than a new car, and the Japanese have been successful by minimizing that damage to your pocketbook. The larger question is why other manufacturers haven't been able to duplicate their formula. Japanese vehicles need the fewest repairs, hold their value better than anything else, and are the most fuel efficient. As more people begin to pay attention to the cost of driving, the Japanese share of the auto market will continue to grow. In the next decade, we wouldn't be surprised if the Big 3 includes at least two Japanese auto makers.

The Pick of the Litter

This is an easy one, it's Toyota. In the last quality survey from Consumer Reports, Lexus ranked #1 and their parent, Toyota, ranked #2. In addition to doing everything well, they had the vision to anticipate higher gasoline prices and come up with the most practical solution. Toyota's hybrid gas/electric vehicle technology can be used to increase gas mileage dramatically or provide better gas mileage AND more horsepower. Best of all, Americans won't have to change their driving habits and try to squeeze into little cars as Toyota's hybrid technology can be used in comfortable sedans and SUVs.

Although Honda has a competing hybrid technology, it's no contest. Honda's hybrid technology carries a shorter warranty and they can't even seem to get Acura, their semi-luxury car division, to adopt this technology. Meanwhile, Toyota's hybrid vehicle technology has been licensed by arch rival Nissan as well as Ford and Mercury and that may be only the start. We're even willing to predict that, when General Motors finally declares bankruptcy, Toyota will be the one picking up the pieces. For disclosure purposes, it should be mentioned that Odyssey Advisors LLC has invested in Toyota Motor (TM) for a select group of clients.

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