

***Moneyball* and Price Gouging**

By

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Like many people, I am a big fan of the book *Moneyball*.¹ In part, it is because I like baseball; but I don't think my fascination with the book is really about sport. It is about management; and, since the principles of sound public policy resemble the principles of sound management, the book provides insights into public policy as well. Today, I'll talk about the lessons I see in *Moneyball* for oil and gas policy in the wake of disasters like Katrina or a terrorist attack. As is always the case when I speak publicly these days, I must hasten to add that when I say "I," I mean "I." In fact, if I slip and say, "we," I still mean "I." What I say today reflects my views. It does not necessarily reflect the views of the Federal Trade Commission or any individual Commissioner.

It used to be that when you went to Fenway Park, the scoreboard reported three statistics about a batter: batting average, home runs, and RBIs. Now, we see more, including the famous OPS, the sum of the on-base and slugging percentages. The appearance of OPS reflects a fundamental management insight that has two essential pieces. If you are unclear about the objective, you will focus on the wrong statistics; and, if you focus on the wrong statistics, you will make bad decisions. Obvious though it might seem in retrospect, analysis of offense in baseball must begin with the observation that the objective is to score runs. That insight led to the development of the OPS, because team OPS is a better predictor of runs scored than is team batting average; and, while team RBI presumably predict runs scored quite accurately, an individual's RBI statistic is not the best predictor of an individual's contribution to the team's runs scored. The problem with focusing on batting average and runs batted in rather than OPS is that you end up, as the Red Sox once did, unloading players like Jeff Bagwell. Fortunately for Red Sox fans, the new Red Sox management has learned this lesson, as evidenced by the decision to find a spot in the line up for Kevin Youkilis.

A similar principle applies to energy policy. Prior to Katrina, the average price of gasoline in the United States was just over \$2.00 per gallon. Gasoline prices had been increasing gradually since the beginning of 2002 when the national average was about \$1.10 per gallon. These increasing prices reflected increases in the price of crude oil to nearly \$60 per barrel at the time of Katrina, up from about \$20 per barrel at the beginning of 2002. In the days immediately after Katrina, the average price of gasoline throughout most of the country increased to over \$3 per gallon. There were reports of some gasoline stations charging as much as \$6 per gallon. When the major integrated oil companies next released quarterly profits figures in the fall, the numbers were eye-popping, at least to people unaccustomed to thinking about the oil business. The Senate Committees on Commerce, Science and Transportation and on Energy and Natural Resources summoned the CEOs of major oil companies for a set of hearings. That was the morning session. In the afternoon, FTC Chairman Majoras and three state attorneys general testified.² All three of the latter argued for federal price gouging regulation.

¹ Lewis, Michael, *MONEYBALL: THE ART OF WINNING AN UNFAIR GAME* (2003).

² U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION, AND COMMITTEE ON ENERGY AND NATURAL RESOURCES, JOINT HEARING ON ENERGY PRICES AND PROFITS, (November 9, 2005) at <http://commerce.senate.gov/hearings/witnesslist.cfm?id=1671>.

Price gouging legislation would, in my view, be an example of a bad decision resulting from focusing on the wrong statistics. The wrong statistics to focus on are the price of gasoline and the profits of the oil companies. Of course, I am well aware of why people focus on the price. We see the price of gasoline every day when we drive past a gas station, and of course we feel the price of petroleum products every time we fill up our cars or pay our heating bills. For most of us in this room, the extra money spent on gasoline and heating does not prevent us from buying enough food to eat or other necessities. But make no mistake about it. Many of our fellow citizens are not so fortunate.

I have drawn the analogy between baseball and energy policy to try to make the talk a bit more interesting, but we should be clear that what is at stake is not a game. What we are talking about is how we deal with catastrophes. With Katrina, the catastrophe was a natural disaster. It would be naïve to think that natural catastrophes of similar or greater magnitudes are not possible in the future. And it would be naïve to think that the risk of catastrophe is limited to natural disasters. When catastrophe hits, nothing will make the situation good. But sound public policy, which is part of good catastrophe planning, will determine how bad the outcome will be.

To get the policy right, we have to focus on the right statistic. Like batting average and RBIs in baseball, prices are not irrelevant to the problem. But they should not be the focus. From the standpoint of energy policy, the problem created by Katrina was that it shut down 95% of the crude oil production in the Gulf Coast, 13% of the refining capacity in the United States, and major pipelines, particularly those bringing supplies from the Gulf Coast to the mid-Atlantic seaboard. When Rita hit the next month, the combined impact of the two storms was to knock out 25% of U.S. refining capacity. Given the reduction in the amount of gasoline available for consumption, additional supplies needed to be diverted to affected regions, actual consumption had to drop, or both. The statistic to focus on was not the price but, rather, the shortfall of supply relative to demand. Figuring out how best to eliminate that shortfall is the problem we need to confront.

One of the issues associated with price gouging legislation is how to define price gouging. Prior to the Senate hearings this winter, I thought there were only two possibilities. Gouging might be defined by reference to margin between price and some measure of cost. The other possible measure I had considered was some pre-defined percentage increase. A third definition came out at the Senate hearings. One attorney general suggested that price gouging be defined as charging an “unconscionable” price. Just down the road at Boston University, where I have taught for many years, we do not teach “unconscionable” as a well-defined economic term. There are of course other fine schools in the area. I know less about the details of what they teach, but I would be surprised if they teach their students an economic definition of “unconscionable.” As far as I can tell, placing the term in a statute gives a district attorney or, in the case of a federal statute, a US attorney the right to go after whichever gas stations charge the highest prices.

No matter how price gouging is defined, it is a price cap. I have heard politicians say that they do not want to impose price caps, they just want to stop gouging. But what else would you call a law that a company violates by charging a price above the level defined as gouging and that it does not violate by charging a lower price? If the statistic you focus on is price and you think of price as being the central problem, then you might make the mistake of thinking that price caps are a good idea. Once you recognize that the problem is the shortfall in supply, you should see immediately that the focus on price is exactly the wrong approach.

Capping the price of gasoline during catastrophic events that would otherwise cause the price to rise will have two predictable consequences. First, when there is threat of a disaster, people will rush to the gas station to fill up. They might, if they think they have time, rush to Home Depot to buy a few containers to store gasoline in. Lines at gasoline stations will be long. Not only will these lines waste precious time, but the supplies will run out. Those who get to the gasoline station too late will find no gas available. Some of these people will be unable to evacuate. Others will try to try to get as far as they can and run out of gas on the road, possibly clogging escape routes, thus exacerbating the catastrophe.

This is not mere economic theorizing. Hoarding behavior is real. One might think that when a shortage looms, the governor of the state or perhaps the President should urge people not to stock up unnecessarily. That, in my view, is worse than naïve. When politicians say, “There is no reason to stock up,” citizens hear, “There is every reason to stock up.” When a big snow storm is about to hit in Boston, people rush to the stores for essential supplies. Reluctant to alienate customers, merchants do not raise the price of D batteries or ice melt, so they run out. Some people are unable to buy supplies they want. Snow storms like Boston got a few weeks ago and the shortages that occur during them are, in the scheme of things, minor annoyances. In a true catastrophe, the ill effects of hoarding could be increased by several orders of magnitude. By allowing the price of gasoline to rise, individuals have an incentive to buy just the gasoline they really need rather than to make sure to have a full tank in every car and a few gallons of inventory to boot. Of course, each individual choice to limit gasoline purchases is undetectable within the broader market. Magnify that choice over a substantial fraction of consumers in an area and the effect can make the difference between the maintenance of social order and chaos.

The other predictable consequence of price caps is to blunt the incentives to divert supplies from less affected to more affected areas. In 2003, for example, a pipeline outage between Phoenix and Tucson caused a shortage of gasoline supplies. As is described in the FTC’s gas price factors report, the price in Phoenix increased;³ and, in relatively short order, supplies previously intended for other parts of the region were diverted to Phoenix. Similarly, in the wake of Katrina, we know that gasoline supplies

³ FEDERAL TRADE COMMISSION, GASOLINE PRICE CHANGES: THE DYNAMIC OF SUPPLY, DEMAND, AND COMPETITION. (2005).

were diverted to the US from Europe, Canada and South America.⁴ The companies that did so did not act out of benevolence. The higher prices created a profit opportunity, and companies responded. When you focus on the right statistic – the difference between demand and supply – you ask the right questions about policy responses. Will price caps make it more likely or less likely that companies will divert needed supplies to areas hit by a catastrophe? And will price caps speed the restoration of normal life or slow it down?

What I have said so far about price gouging is straight out of econ 101. To me and I believe to all or virtually all the very talented people who work in the Bureau of Economics, the answers to these questions seem obvious. Apparently, though, they are not self-evident to everyone. Congress has mandated that the Federal Trade Commission study price gouging after Katrina. It has even required the Commission to spend \$1 million in the investigation. Pressure to pass federal price gouging regulation persists. Let me discuss, therefore, what I take to be the three most serious arguments against the proposition that sound public policy is to let the market work without interfering with the price mechanism.

Argument 1 is that prices might increase to levels where some people – indeed, the neediest among us – will not be able to afford the minimum they need to survive. They might not have the money to get enough gasoline to evacuate their families. In the longer run, they might not be able to afford enough heating oil to avoid freezing. As an analytical point, this argument can be completely correct. Indeed, it is straight out of econ 101. Freshmen students of economics learn that even when competitive markets are “efficient,” the economic definition of “efficient” has a very precise meaning that falls short of what society as whole might deem optimal.⁵ In particular, society might find unacceptable the distribution of income from an “efficient” market. Large price changes of necessities in the wake of a disaster can alter the distribution of real incomes away from the poorest members of society; and we might ideally like to make some correction. The practical problem is how to do that. For price increases caused by what are likely to be long run supply disruptions, one might consider rationing as has been done previously in war time. In theory, that can ameliorate the income distribution problems. It raises a host of practical problems. As a solution to allocating scarce gasoline supplies in the immediate aftermath of Katrina or other such unforeseen catastrophes, however, it is entirely impractical. Looking somewhat longer term at issues associated with home heating oil, some sort of additional heating oil assistance might well be appropriate.

Of course, any additional heating fuel subsidy for the poor must be financed; and there would pressure to levy an additional tax on the oil company profits to provide the needed funds. Such a tax would no doubt be labeled a “windfall profits tax,” but the term

⁴ U. S. Department of Energy, Energy Information Administration, U.S. Net Imports by Country, *at* http://tonto.eia.doe.gov/dnav/pet/pet_move_impcus_a2_nus_epm0f_im0_mbb1_m.htm.

⁵ Given certain assumptions, competitive outcomes are “Pareto efficient,” which means that it is impossible to reallocate resources to make one person better off without making someone else worse off. (The term refers to Vilfredo Pareto, a late-nineteenth, early-twentieth century Italian industrialist who made fundamental contributions to both economics and statistics.) A Pareto efficient outcome can entail a distribution of income that society finds undesirable.

“windfall” is a misnomer. Oil production requires large risky investments. Companies undertake these investments in the presence of substantial uncertainty about what price they will ultimately receive. The prospect that sometimes prices will be like the current \$60/barrel is what makes companies willing to take the risk that sometimes prices will be as low as \$10/barrel, as we saw in the late 1990’s, and the \$20/barrel that we saw just a few years ago.⁶ Placing an additional tax when prices are high will discourage domestic oil production.⁷ We have a corporate profits tax. Oil companies are paying taxes on the high profits due to the recent price increases.⁸ If we focus on the right statistic – the extent to which demand exceeds supply – a so-called windfall profits tax will restrict supply and thereby make the problem worse, not better.

Argument 2 is what I call the Potter Stewart theory of price gouging after Justice Stewart’s famous observation that he could not define pornography, but he knew it when he saw it. The analog to price gouging is, I can’t define it, but \$6/gallon after Katrina was price gouging. First of all, reports of \$6/gallon gasoline were very isolated. Proponents of this view would have us believe that were it not for state price gouging legislation, everyone would have charged \$6/gallon. In thinking about price gouging, it is useful to distinguish between what happened on average and the outliers. What happened on average was that prices went up to the \$3 to \$4 range depending on the area. Given our understanding of the supply disruption and past experience on the short run responsiveness of demand to changes in gasoline prices, that is about what we would have expected from a competitive outcome.⁹ I simply do not see how we can label charging a competitive market price as gouging. What about the extremes? As we all know from driving about town, not all gas stations charge the same price. Still, it would appear that the variation we observed after Katrina was greater than normal. Could we use that to infer price gouging? In my view, we cannot. In catastrophes, areas that are

⁶ BUREAU OF ECONOMICS, FEDERAL TRADE COMMISSION, THE PETROLEUM INDUSTRY : MERGERS, STRUCTURAL CHANGE, AND ANTITRUST ENFORCEMENT (2004) 63, 77 [hereinafter PETROLEUM MERGERS REPORT] at <http://www.ftc.gov/os/2004/08/040813mergersinpetrolberpt.pdf>.

⁷ The Congressional Research Service estimated that the 1980 Windfall Profits Tax reduced domestic oil production by between 3 and 6 percent. CONGRESSIONAL RESEARCH SERVICE, THE WINDFALL PROFIT TAX ON CRUDE OIL: OVERVIEW OF THE ISSUES, Report No. 90-442 (1990.)

⁸ Press Release, Exxon Mobil Corporation Announces Estimated Fourth Quarter 2005 Results *available at* http://library.corporate-ir.net/library/11/115/115024/items/181178/xom_013006news.pdf; Press Release, BP p.l.c. Group Results 4th Quarter and Full Year 2005, *at* http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/B/bp_fourth_quarter_and_full_year_2005_results.pdf; Press Release, Chevron Reports Net Income of \$4.1 Billion in Fourth Quarter and \$14.1 Billion for Year, *at* http://www.chevron.com/news/press/2006/docs/earnings_27jan2006.pdf; and ConocoPhillips Earnings Report Fourth Quarter, *at* <http://www.conocophillips.com/NR/rdonlyres/0934231C-1BAD-41D9-B16C-E024BAAA584A/0/4q05earningstablefinal.pdf>.

⁹ Studies indicate that the short-run demand elasticity for gasoline is about -0.23 implying that it requires a 10% price increase to reduce quantity demanded by just 2.3 percent. Extrapolating from the small price changes underlying the elasticity estimate to apply this estimate to the situation following Katrina this fall which resulted in a 13% reduction in U.S. refining capacity, suggests that we would have expected prices to increase by about 57%. Since prices prior to Katrina averaged slightly more than \$2.00 per gallon, this implies that prices would have been expected to rise to about \$3.15 on average. Hilke A. Kayser, *Gasoline Demand and Car Choice: Estimating Gasoline Demand Using Household Information*, 22 ENERGY ECON. 331 (2000).

normally linked in a common market can become isolated. When conditions prevent gas stations from replenishing new supplies, different gas stations will start out with different inventory levels and will need to charge different prices to avoid running out. Moreover, you have to make allowance for general uncertainty. In the wake of Katrina, no one really knew when new supplies would become available and what the long run impact would be. Each station owner had to make a judgment based on his or her best guess. The fact that the guesses varied so widely should reassure us that gas stations were not colluding. Finally, I suspect some gas stations deliberately chose to keep prices below market clearing levels to build good will. They might have risked running out, but they were willing to take that risk to develop and maintain a loyal customer base.

Argument 3 is what we have come to call “rockets and feathers,” a term that describes the different time frames in which the prices of refined petroleum products reflect increases and decreases in the price of crude oil. Increases in crude oil prices cause the prices of gasoline and other refined products to increase almost immediately. Decreases in crude oil prices do cause the prices of refined products to drop, but the process takes longer.¹⁰ This is not econ 101. It is a way in which textbook theory does not capture the full richness of real markets. Let me make three points about rockets and feathers. First, the “rockets and feathers” phenomenon was not unique to Katrina. It was documented before Katrina and it might not even be unique to petroleum markets.¹¹ Second, even if the rockets and feathers phenomenon is puzzling as a market response to cost shocks, it should not have been a surprise at all with respect to Katrina. The storm knocked out capacity virtually overnight, and that should have led to an immediate increase in oil and gas prices. The process of restoring capacity, which is what causes the prices to come back down, would naturally take more time. Third, even if we treat the phenomenon as an imperfection, it is not clear what to do about it. As I said, it appears to be a very general phenomenon. If there were reason to believe that it reflected collusion, then it could be an antitrust problem. While the phenomenon is not completely understood, I do believe it is a feature of price adjustments in competitive markets.

Having mentioned the possibility of collusion, let me be clear about what would, I am sure, engender a vigorous response from the Federal Trade Commission. As I mentioned, we are currently undertaking an investigation of the oil industry. Indeed, even before Katrina, Congress had mandated that we study the increase in oil prices and, in particular, whether there is any evidence that refining capacity has been manipulated to increase prices.¹² If that investigation uncovers evidence of attempts to collude to restrict output to increase prices – whether in the wake of Katrina or at some other time – that is, if the investigation uncovers evidence of antitrust violations, I have no doubt that the Commission will enforce the law.

¹⁰ Severin Borenstein, A. Colin Cameron, and Richard Gilbert. *Do Gasoline Prices Respond Asymmetrically to Crude Oil Price Changes?* 112 Q. J. ECON. 305 (1997). For a survey of the “rockets and feathers” literature see JOHN GEWEKE, ISSUES IN THE “ROCKETS AND FEATHERS GASOLINE PRICE LITERATURE (Report to Federal Trade Commission, Mar. 2004) at <http://www.ftc.gov/bc/gasconf/comments2/gewecke2.pdf>

¹¹ Sam Peltzman, *Prices Rise Faster Than They Fall*, 108 J. POLITICAL ECON. 466 (2000).

¹² Energy Policy Act of 2005, Pub. L. No. 109-58 § 1809, _ Stat._ (2005).

Indeed, the Commission has a proud history of being vigilant in the defense of competition in the oil and gas industry. Throughout the past quarter century and particularly in the wave of major oil mergers in the late 1990's, the Commission carefully reviewed all major oil mergers. Where competitive problems existed, it sought divestitures or other forms of relief. In four cases since 1981, parties canceled deals they were considering rather than resolve FTC objections. If you are interested in the details, our oil mergers report provides them.¹³ In some cases, the parties abandoned the deals. Outside the realm of mergers, the Commission took action against Unocal for misleading the California Air Resources Boards about its patents that were essential for its reformulated gasoline standard.¹⁴ When Chevron recently purchased Unocal, a condition of merger clearance was that it stop seeking royalties on its CARB gasoline patents. We estimate that this action will save California consumers \$500 million per year.¹⁵

I began by talking about *Moneyball*, and the importance of focusing on the right statistics to make decisions. In concluding, let me shift sports to football; and, as I am giving this talk in Boston, let me ask you to recall the very start of the 2003 season. Popular Patriots defensive back Lawyer Malloy made salary demands that the Patriots found unacceptable. They released him the week before the first regular season game and he signed with the Buffalo Bills. The first game of the season was against those same Bills. For a New England fan, it was not a pretty sight. The Bills won 31-0. Bill Belichick was not a popular man that week. Two Super Bowl wins later, we now know that Coach Belichick understood better than most New England sports fans, newspaper columnists, and sports talk show hosts the implications of salary caps, and he made his decisions with the right statistics in mind.

As we formulate public policy in the wake of Katrina, that decision can serve as a model for making a wise, if unpopular choice. Again, do not let the sports analogy confuse us about the stakes. We pray that catastrophes will not occur, but we know that they can. Price gouging legislation will increase the risk of a breakdown of social order when they do. It would be a tragic mistake.

¹³ PETROLEUM MERGERS REPORT, *supra* note 6.

¹⁴ *Union Oil Co. of California*, FTC Docket No. 9305 (Mar. 4, 2003) (complaint), at <http://www.ftc.gov/os/2003/03/unocalcmp.htm>.

¹⁵ *Union Oil Co. of California*, FTC Docket No. 9305 (Aug. 2, 2005) (statement), at <http://www.ftc.gov/os/2003/03/unocalcmp.htm>.