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Statistical Evidence and a Daubert Challenge in a Recent Discrimination Case

By Jonathan L. Walker

A class of customers frequenting certain KB Toy Stores recently sued, alleging violation of 42 U.S.C. § 1981. The class challenged KB's policy of not accepting personal checks as payment at some but not all of its stores. Plaintiffs alleged that the toy chain selected "no-check" stores based on the racial profile of stores' customers or neighborhoods. Such a practice would violate 42 U.S.C. § 1981, which prohibits intentionally discriminatory practices against racial minorities. KB prevailed in the action on summary judgment by showing that it acted for legitimate non-discriminatory business reasons and not from racial animus. Further, KB demonstrated that plaintiffs' statistical evidence purportedly refuting the business justification was scientifically unreliable and inadmissible under Daubert/Kumho standards.

KB began refusing checks at certain of its stores in 1992 to reduce bad-check expense. KB asserts that it selected "no-check" stores based on check return expenses and also check usage. Check usage was relevant because lost sales from discontinuing to accept checks at stores where a large share of purchases are made by check would potentially be higher than at stores where fewer checks are used.

The plaintiffs attempted to refute this explanation through statistical evidence. First, the plaintiffs showed that there was a statistically significant correlation between stores' local black population percentage and stores' likelihood of not accepting checks. Second, they attempted to show that KB continued to accept checks at stores in white communities where bad-check expense was also high. Third, they conducted a statistical analysis of the no-check decision purportedly controlling for bad-check expense and race at the same time. Not one of these studies could reliably refute KB's evidence that it selected no-check stores on a color-blind basis.

KB did not dispute that there was a statistical relationship between stores' black population percentage and stores' likelihood of not accepting checks. Such a relationship was not inconsistent with KB choosing "no-check" stores based on bad-check expense. It would be reasonable to expect a statistical relationship between income and likelihood of bouncing a check, especially in light of the size of the typical KB transaction. The correlation between race and income could cause a correlation between race and "no-check" status if KB discontinued accepting checks at stores where bad-check expense were high.

A proper analysis must control for race, income, and bad-check expense rate simultaneously. Such an analysis done for KB found no statistically significant relationship between race and "no-check" status once the other factors were controlled for. Moreover, bad-check expense was the primary factor explaining "no-check" status.

The plaintiffs' second study concerned stores that plaintiffs characterized as exceptions to KB's no-check policies. Plaintiffs identified a set of KB stores that accepted personal checks and that had bad-check expense rates above ten percent and check usage rates

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Price Discrimination as a Criterion for Identifying Market Power

By Gloria J. Hurdle and Henry B. McFarland

Antitrust regulators and plaintiffs often seek specific criteria to identify market power. Price discrimination, which occurs when a seller charges buyers different prices that are not related to differences in costs for the same good, has long been suggested as evidence of market power. Many authors state that price discrimination can only exist with market power. Those authors, however, define market power as a firm facing a downward sloping demand curve. Antitrust economists generally use a narrower definition: market power is the ability of a firm, if efficiently managed, to persistently earn profits above the competitive level.

Given the antitrust definition, price discrimination does not infallibly indicate market power. Price discrimination can exist in a market where easy entry prevents a firm from earning supracompetitive profits. Even in such a market, there may be substantial fixed costs, and the most efficient way for a firm to earn revenues to cover them may be to charge high prices to certain customers. Nonetheless, the existence of price discrimination is an important fact that should be carefully considered when determining whether or not there is market power.

Under some circumstances, price discrimination is very strong evidence of market power. Suppose, for example, price discrimination is practiced by a small group of firms selling a homogeneous product in a market with significant barriers to entry. Price discrimination in those circumsances almost surely indicates market power. Furthermore, in any industry, lasting price discrimination implies that two types of entry are not possible–the entry of resellers who would arbitrage (buy at the low-price and sell to the high-priced customers) and the entry of cream skimmers who would sell only to the most profitable customers.

While price discrimination can exist in a competitive market, easy entry often will reduce the extent of price discrimination, or even make it impossible. An equilibrium can be described that exists with no super-competitive profits and without price discrimination, even though equilibria with discriminatory prices are theoretically possible. Nevertheless, the threat of entry prevents the most highly discriminatory equilibria.

To illustrate this point, suppose a delivery service serves both fast-food and luxury restaurants. The luxury restaurants are willing to pay a maximum of $4000 and fast-food restaurants are willing to pay a maximum of $500. There are 5 luxury restaurants and 15 fast-food restaurants. The delivery service has a fixed cost of $4000 serving both types of restaurant and $3000 serving only one type. The marginal cost of serving an additional restaurant is $300. If all restaurants are served, the total costs will be $10,000. A monopolist with perfect information will charge discriminatory prices–$4000 to the luxury restaurants and $500 to the fast-food restaurants, resulting in revenues of $27,500 and substantial profits.

Suppose, however, that there are no entry barriers, so any market equilibrium must have revenues equal to costs. Furthermore, for efficiency, no price can be below marginal costs and all restaurants must be served by someone. Moreover, to minimize costs, only one firm should actually provide services. This market may reach a competitive equilibrium without price discrimination; the service might charge each restaurant a price of $500. Alternatively, there could be an equilibrium with price discrimination, the service might charge the luxury restaurants $800 and the fast-food restaurants $400. Either set of prices results in revenues that equal total costs, which are $10,000.

The threat of entry, however, limits the amount of price discrimination that is feasible. While a price of $1100 to luxury restaurants and $300 to fast-food restaurants would meet all the requirements for equilibrium set out in the preceding paragraph, that set of prices cannot be an equilibrium. A new entrant could come in and sell only to luxury restaurants. Its total revenues would be $5500, and its total costs would be $4500. The threat of entry by a cream skimmer prevents any price for luxury restaurants above $900 from being an equilibrium.

Price discrimination is important information not just in determining the existence of market power but also in defining markets. The existence of price discrimination indicates that firms profitably may raise prices in certain circumstances. For example, in the Staples-Office Depot case, the FTC found chains of office supply superstores to charge higher prices in geographic markets where they owned the only superstores, as compared to markets where two or three stores had chains. This evidence of price discrimination between areas with different numbers of office supply superstores suggested that competition from other retailers was insufficient to protect consumers from post-merger price increases.

Determining the presence or absence of market power requires considering many different types of evidence in the context of the market where they are found. Evidence concerning price discrimination will not be an infallible indicator of the existence of market power. Nonetheless, it is important information and deserves full consideration.

Gloria J. Hurdle and Henry B. McFarland, EI Senior Economist and Vice President respectively, wrote Criteria for Identifying Market Power: A Comment on Baumol and Swanson, 70 ANTITRUST LAW JOURNAL. 687.

Analyzing the Long-term Prospects of a Nuclear Power Plant

By Manny A. Macatangay

The owner of a nuclear power plant nearing the expiration of its operating license is likely to want an analysis of whether or not continued operation is economically viable. Such an analysis will be needed to determine whether the cost of renewing the license would be a prudent investment. Moreover, an analysis of economic viability is required in the renewal application. Analyzing the long-term prospects of a nuclear power plant requires evaluating long-term forecasts for electric power generation. Long-term energy market forecasts analyze currently available information to estimate future trends in energy markets over several years or a few decades, and typically account for long-term fundamental drivers of energy markets, such as resource availability, power market developments, technology, and economic growth, among others.

Determining the economic viability of a nuclear power plant requires characterizing the most likely future scenario for electric power markets and assessing the future role of nuclear generation. An important step in that analysis is to consider the forecasts compiled in Annual Energy Outlook 2003, a report produced by the Energy Information Administration (EIA). An independent statistical agency in the Department of Energy, the EIA makes forecasts based on simulations of the National Energy Modeling System (NEMS). EIA forecasts based on NEMS are developed through a market-based approach to energy analysis. For each fuel and consuming sector, NEMS balances energy supply and demand and accounts for competition among the various energy fuels and sources.

In evaluating long-term forecasts, one should compare the consistency, reliability, and modeling approach of the EIA to those of alternative sources, such as commercial forecasters and other government agencies. Annual Energy Outlook 2003 compares the EIA forecasts to those of Global Insight Inc. (GII) and Energy and Environmental Analysis Inc. (EEA). That comparison shows that EIA, GII, and EEA offer a consistent set of forecasts regarding the contribution of nuclear power generation to total electricity generation.

EIA, GII, and EEA are reliable sources of forecasts in the energy industry and are used to understand future trends in energy markets. Congress, government agencies, and non-government organizations, such as the Electric Power Research Institute and several private consulting firms, rely on EIA forecasts. GII, formed through a merger of two well-known economic and financial information companies, DRI and WEFA, has a strong reputation for conducting energy market and related studies for large energy companies. EEA is a specialist provider of technical, analytical, and management consulting services to various clients in the energy and environmental fields. And like NEMS, the models of GII and EEA are designed to incorporate an analysis of energy supply and demand, including the effects of policy and government regulation.

Finally, it is valuable to determine the robustness of NEMS forecasts. The results of NEMS can be compared to those of the GII and EEA models, whose specifications differ from those of NEMS. For example, the forecasts of NEMS, GII, and EEA consistently indicate that nuclear generation is expected to remain one of the three largest sources of electricity generation in 2020. The forecasts produced by NEMS are therefore robust to alternative specifications found in different power market models.

NEMS forecasts are also robust to uncertainty. NEMS forecasts are made for three cases, low, medium, and high, corresponding respectively to three scenarios (2.5%, 3%, and 3.5%) for the annual growth in Gross Domestic Product. The underlying market relationships implied by the medium or reference forecasts are consistent with those implied by the low and high forecasts. The NEMS forecasts are therefore robust to uncertainty concerning future economic growth.

These forecasts indicate that nuclear energy will play an important role in the

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EI News and Notes

Steve Stockum Joins EI

J. Stephen Stockum has joined EI as a Senior Vice President. Steve previously was a Senior Vice President at Glassman-Oliver. Prior to joining Glassman-Oliver in 1993, he worked at the Federal Trade Commission as a staff economist and economic advisor to both a Commissioner and the Director of the Bureau of Competition. Steve, who has a Ph.D. in economics from the University of Pennsylvania, specializes in the analysis of antitrust and regulatory issues, intellectual property issues, consumer protection issues, and damages. He has submitted testimony as an expert witness to U.S. District Court, in federal administrative court, and to federal and state regulatory agencies.

Gregory Rosston Joins EI Board

Gregory L. Rosston has joined EI's Board of Directors. Greg is currently Deputy Director and Senior Research Fellow at the Stanford Institute for Economic Policy Research. He is also a Visiting Lecturer at the Stanford Economics Department. Prior to his return to Stanford, Greg was Deputy Chief Economist at the Federal Communications Commission.

El Paso Eagle Point Refinery

The Federal Trade Commission has agreed to the sale of El Paso's Eagle Point refinery to Sunoco for $111 million. Philip B. Nelson and John R. Morris worked with attorneys from Fried Frank and Howrey Simon to persuade the FTC not to challenge the sale. They showed that there were no grounds to believe that the sale would reduce competition in markets for refined petroleum products.

Alan D. Gordon, M.D. v. Lewistown (PA) Hospital

Barry C. Harris testified on behalf of Lewistown Hospital, which received favorable judgment on all counts in this case involving a doctor whose admitting privileges had been revoked. Plaintiff alleged un-reasonable restraints of trade, illegal tying and attempted monopolization in various markets for eye surgery in the Lewistown area. Tracking Harris's testimony, the court found that Lewistown Hospital lacked market power, the geographic scope of the alleged markets was too small, and Lewistown Hospital's actions did not cause any anticompetitive effects. Harris' testimony included an analysis of pricing, an analysis of market definition based on the hospital's and physicians' Critical Loss, and an evaluation of entry into the alleged markets.

Statistical Evidence and a Daubert Challenge . . . . . (Continued from Page 1)

below five percent for at least one month. Plaintiffs asserted that these "exceptions" stores had higher white population percentages than the "no-check" stores and that this implied that KB was making its no-check decisions based on race.

Stores that were exceptions by plaintiffs' definition were not necessarily exceptions to the policy KB claimed to be implementing. A single month's data would not reliably indicate a genuine bad check problem given the seasonality of the toy business and consequent errors in monthly bad-check expense rates. KB did not compare stores' bad-check expense and monthly check usage rates to any static measures but rather compaired them to the rest of the KB chain over a lengthy reporting period. If that comparison indicated a store with high bad-check expense, KB would attempt to lower costs by other measures before starting to refuse checks. If those measures worked, the store continued accepting checks. The court excluded plaintiffs' exceptions analysis because it was factually and methodologically flawed.

Finally, in response to KB's analysis controlling for income, check usage, and bad-check expense, plaintiffs conducted their own analysis controlling for other factors besides race. However, plaintiffs' methodology was unsound. Data were not available to include all of KB's stores in the statistical analysis. As a supposed correction, plaintiffs' expert restricted the dataset in a way that increased the ratio of "no-check" to "check" stores.

Econometric analyses often encounter incomplete information. Generally, the observations for which complete information is available are a usable dataset capable of yielding valid statistical inferences. Problems arise when observations are missing for some reason that is systematically related to the phenomenon being examined. In the KB matter, the dataset based on all available information was statistically acceptable, but the dataset from which plaintiffs purposely excluded observations was not.

Complete data were available for seventeen "no-check" stores. Plaintiffs excluded six of these seventeen from their statistical analysis. Ranking the "no-check" stores from smallest to highest based on percentage of black people in the local neighborhood, plaintiffs excluded from their analysis those stores ranked first through fifth plus the store ranked seventh. When the core issue is whether "no-check" stores are limited to neighborhoods with many black people, excluding from the analysis those "no-check" stores that are in neighborhoods with the fewest black people materially influences the statistical results and renders the conclusions invalid. The court gave this analysis no weight in its order granting summary judgment for KB.

Schottenstein Zox & Dunn retained Jonathan L. Walker, EI's President, to conduct statistical analyses on the defendant's behalf in the KB Toys matter.

Long-term Prospects of a Nuclear Power Plant . . . . . (Continued from Page 3)

2001, nuclear power accounted for 20% of all electricity generated and was the second largest source of electricity generation. According to the EIA, nuclear power generation is expected to increase by 5%, from 769 billion KWh in 2001 to 807 billion KWh in 2020, and then to remain at that level until 2025. EIA expects that in 2020 nuclear generation will provide 15% of all U.S. electricity generation.

EIA also expects nuclear generation capacity to rise by 2 GW from 98 GW in 2001 to 100 GW in 2020. No new nuclear plants are likely to be added between 2003 and 2025, but EIA expects capacity additions among existing plants to more than offset expected capacity losses from retirements of uncompetitive plants. Finally, nuclear generation capacity utilization is expected to rise and remain above 90%, a historical high, through 2025. According to the Nuclear Energy Institute, the net capacity factor in the nuclear power generation industry, or the ratio of net electricity generated to the energy that could have been generated at full and continuous operation over a period of time, has nearly doubled from 58% in 1980 to 92% in 2002. Thus, nuclear power apparently will continue to be an important source of energy.

A more detailed analysis is needed to determine the economic viability of a specific plant. Such an analysis can reveal the economic incentives and underlying market conditions, among other factors, that affect the firm's decision as regards continued plant operation. A software tool for the analysis of electricity markets and particular plants is the Optimal Pricing Simulation (OPS) model. OPS has been used in FERC merger reviews and can be used in determining the economic viability of a specific plant.

Manny Macatangay, a Senior Economist at EI's office in Emeryville, California, studies competition and regulation in energy markets. He recently testified in the U.S. Court of Federal Claims in Washington DC on long-run conditions of energy markets, the prospects for nuclear power generation, and electric power simulation models.

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