

ECONOMICS AND PRICE FIXING : When the Price is Right

DANIEL L. MCFADDEN
WINS NOBEL PRIZE

Congratulations to our friend

Professor Daniel L. McFadden, recipient of this year's Nobel Prize in Economic Sciences. Dr. McFadden, a Senior Advisor of The Brattle Group, is the E. Morris Cox Professor of Economics at the University of California at Berkeley. Professor McFadden has worked with The Brattle Group on cases involving price fixing, property value impacts, and commercial damages.

In this newsletter, we assess various methods for measuring market performance. Using examples based on our recent experience, we consider how these approaches have been used – and abused – in assessing whether elevated prices or margins constitute evidence of collusion or damages. In addition, we discuss briefly the importance of firm conduct in developing a complete liability argument in price-fixing cases.

INTRODUCTION

Economic evidence is becoming increasingly important for establishing liability in price-fixing cases. In part, this development has been driven by a shift from claims of meetings in “smoke-filled” rooms to allegations of “tacit collusion.” Attempts to premise liability on tacit collusion involve claims that anticompetitive agreements were reached without face-to-face meetings. Absent evidence of direct contact, plaintiffs’ liability arguments often rest on econometric evidence of elevated prices or margins combined with practices that allegedly facilitate inter-firm communication.

MARKET PERFORMANCE

Measuring market performance is important for establishing both liability and damages in cases of alleged collusion. An “event study” often is used to determine whether an alleged agreement has produced higher prices or margins. The event-study analysis may take on several forms:

- comparing the subject product’s price behavior in a competitive benchmark period against the alleged collusive period;
- comparing the subject product’s margin behavior in a competitive benchmark period against the alleged collusive period;
- comparing the price ratio (or differential) between the subject product and a benchmark product over the competitive period and the alleged collusive period.

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The Brattle Group consults on economic, financial, environmental, engineering, and management matters to corporations, law firms, and public agencies world-wide.

A. Comparison of Prices Between Allegedly Collusive and Noncollusive Periods

Two techniques, the predictive approach and the indicator-variable approach, are used to assess whether pricing behavior has changed between the collusive and benchmark periods. The predictive approach relies on a statistical (econometric) model of the market that is fit to data for the benchmark period. Predictions from the model are generated for the collusive period. If prices in the alleged collusive period exceed the model's predictions, and the difference is economically and statistically significant, then the party alleging collusion will argue that the results are consistent with collusive behavior. In most cases, the price differential forms the basis of the damages analysis.

The indicator-variable approach combines data from the benchmark and alleged collusive periods. Variables are included that permit the price-determination process to change over the collusive period. If the variables are economically and statistically significant, and indicate that prices are elevated during that period, then the party alleging collusion will argue that the results are consistent with collusion.

Both the predictive approach and the indicator-variable approach require a model that describes market behavior. Ideally, the model should capture the impact on prices of changes in relevant cost and demand factors. These factors may include:

- input prices;
- capacity utilization;
- consumer characteristics;
- macroeconomic conditions;
- conditions in import or export markets.

Since perfect information is not available, certain cost or demand influences invariably are missing. However, to obtain reliable results, the omitted variables cannot bias the outcome. As the following examples show, leaving out significant cost or demand factors is a common problem in these analyzes that can lead to unreliable results.

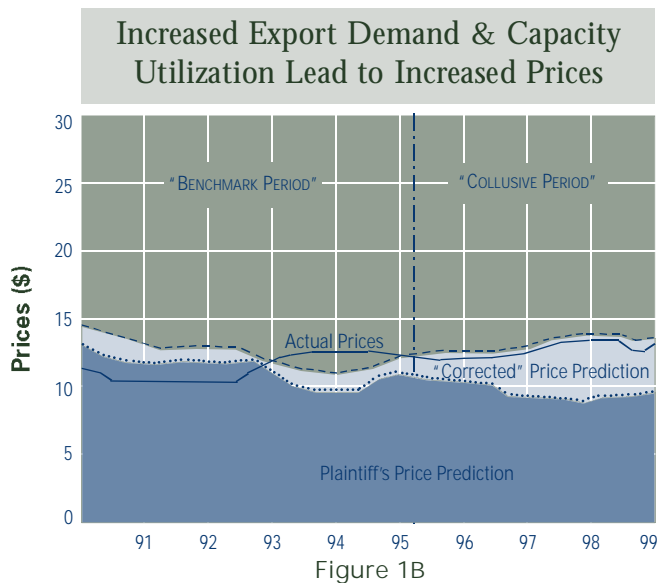
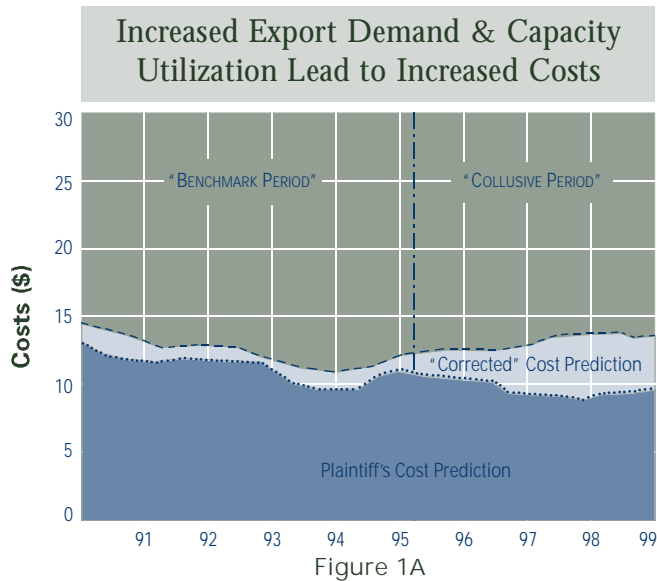
Example 1: Omission of Significant Economic Factors Leads to Biased Results

Consider an example, based on a recent case, involving manufacturers of a specialized high-technology product. The plaintiff's experts performed a statistical analysis of prices over a benchmark period. The model, which included prices of productive inputs and domestic demand variables, was used to predict prices during the collusive period. The positive gap between actual and predicted prices was offered as evidence of collusion.

Two factors omitted from the statistical model were a measure of export demand and capacity utilization. In this case, overseas demand increased dramatically during the alleged collusive period. Efforts to meet the increased demand resulted in nearly full capacity utilization. Consequently, incremental costs for production increased sharply.

Figures 1A and 1B illustrate how the analysis was affected by the omission of export demand and capacity utilization. Plaintiff expert's cost predictions are denoted by the dotted line in Figure 1A. Another dotted line in Figure 1B indicates the price predictions for the collusive period that were generated from plaintiff's model. Since the price predictions lie below actual prices during the alleged collusive period, plaintiff's experts concluded that the market's pricing performance had changed over time in a manner consistent with collusive behavior.

By including capacity utilization as a factor that influences cost, the cost predictions in Figure 1A change. The dashed line in Figure 1B indicates the price predictions over the alleged collusive period, based on a model that includes both capacity utilization and export demand as explanatory factors.



The price predictions change from underestimating actual prices, as indicated by plaintiff's model, to predicting prices that slightly exceed actual prices. Hence, the gap between plaintiff's experts' predicted prices and the actual prices prevailing during the alleged collusive period was likely attributable to omitted cost and demand factors, rather than to collusive behavior.

B. Comparison of Margins Between Allegedly Collusive and Noncollusive Periods

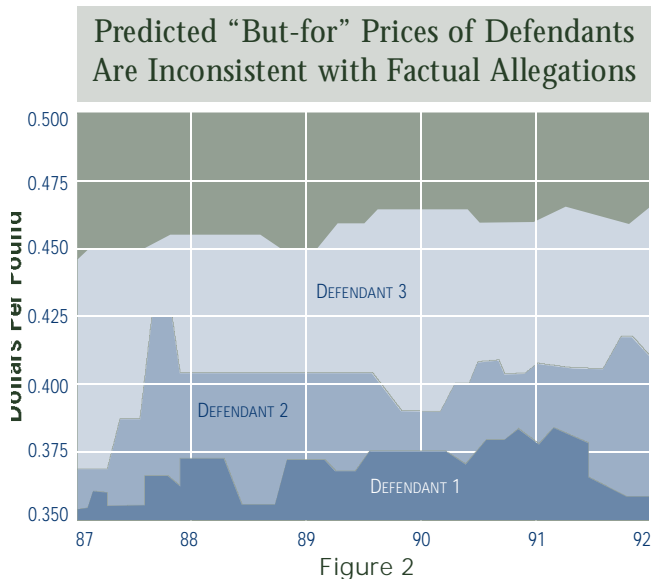
This approach, similar to the comparison of prices, requires econometric estimation of a model that accounts for changes in demand and cost factors. Rather than directly estimating prices, the statistical model estimates changes in profitability, measured in terms of a price-cost margin.

Defendants may question whether this analysis is consistent with an alleged "price-fixing" conspiracy. Typically, the conspirators are alleged to set prices, not price-cost margins. In certain instances, this approach may predict pricing patterns that are inconsistent with other factual allegations.

Example 2: Predicted Prices are Inconsistent with Factual Allegations

In a recent price-fixing case involving a semifinished industrial product, plaintiff's experts argued during class certification that the product was a standard, or commodity, product. As a result, he argued, the product should sell within a narrow range of prices regardless of the producer.

During trial, one of plaintiff's experts offered a damages model involving a statistical analysis of price-cost margins. The model, separately estimated for each defendant, was used to predict price-cost margins that would have prevailed "but for" the alleged collusion. These predicted margins for each defendant could be applied to the defendant's actual cost data, with the result being estimates of prices that would have prevailed "but for" the alleged collusion. Although plaintiff's experts had not translated his margin predictions into the implied price predictions, one defendant's expert did perform this analysis and submitted the results. Figure 2 offers a stylized illustration of these price predictions.



As shown in Figure 2, the price predictions and pricing patterns implied by the plaintiff’s expert’s model differ substantially across producers. These results were contrary to evidence indicating that the product was a standard or commodity good with essentially one price. They also contradicted plaintiff’s contention that the homogeneity of the product made it easier to form a collusive pricing agreement.

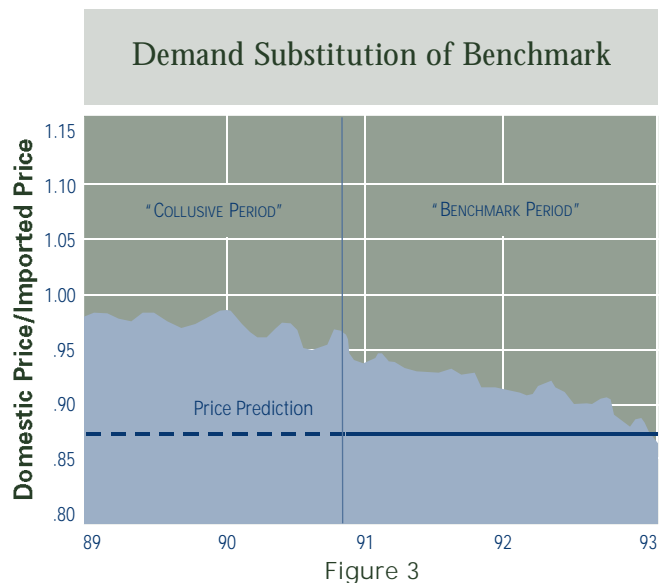
Defendants may argue that the margin-comparison approach is flawed for other reasons. They may point out that this approach requires a reliable measure of profitability. Often, such a measure may not be obtained without detailed firm-specific cost data. Further, margins for individual firms can change for reasons unrelated to collusion, such as adoption of new technology, changes in vertical integration, shifts in consumer preferences, or unilateral (*i.e.*, noncollusive) exercises of market power.

C. Comparison of Prices Against a Benchmark Product

This approach compares the price of the subject product relative to a benchmark product that faces apparently competitive market conditions. If the price of the subject product increases relative to the benchmark product over the alleged collusive period, the party alleging collusion will argue that the pricing evidence is consistent with collusion.

The ease of implementation makes this approach appealing, but it does not control specifically for differences in cost or demand conditions affecting the two products. Ideally, a benchmark product would face similar cost conditions to the subject product. On the demand side, the issue is much thornier. As the benchmark product becomes an increasingly close substitute for the product that is the subject of the alleged collusion, one would expect that the two prices would move together. Conversely, if the two markets are completely isolated, then the subject product and the benchmark product are affected by different demand conditions over time.

To demonstrate liability and assess damages in a price-fixing case in the metals industry, one of plaintiff’s experts performed a statistical analysis comparing the price of domestic metal relative to imported metal over the benchmark and alleged conspiracy periods.



As a stylized representation of the expert’s argument, Figure 3 shows the price predicted for the domestic product over the alleged conspiracy period, assuming that the same average ratio of domestic to imported prices would prevail during that period as during the benchmark “post-conspiracy” period. Since the actual price ratio exceeded the “predicted” price ratio during the alleged conspiracy period, the plaintiff contended that this evidence was consistent with the presence of collusion.

By failing to account for substitutability and quality issues, plaintiff's comparison of the prices of imported and domestic products was inherently flawed. Because domestic purchasers substitute imported metal for domestic metal, the prices for imported and domestic metal should move closely together if the quality of the two products is similar, regardless whether collusion is present or absent. On the other hand, changes in the ratio of domestic to imported prices may result from changes in the quality and, therefore, substitutability of the domestic and imported products. These quality distinctions can relate not only to physical product differences, but differences in the reliability and speed of delivery and other transactional features.

EXAMINING INDUSTRY CONDUCT IS IMPORTANT

There may be a crucial missing link if the overall analysis of a price-fixing conspiracy focuses only on determining whether prices or margins are higher during an alleged conspiracy period in comparison to an alleged period of competition. Ideally, the analysis also should attempt to identify whether firm behavior has changed in an anticompetitive manner. Frequently, the econometric models offered in these cases do not go that far.

In the absence of an econometric approach showing that firm behavior actually changed, a greater burden falls on other evidence to show how the conspiracy worked and how firms changed their strategies in a manner that allowed the cartel to function effectively.

For instance, cartels must be policed for defections from the explicit or implicit pricing agreements. Detection of "cheating," by itself, is not sufficient for an effective cartel. The cheater must be punished sufficiently to render it unprofitable to diminish prices from the agreed-upon levels.

CONCLUSION

Increasingly, evidence of a price-fixing conspiracy relies on econometric evidence of elevated prices or margins. As the above examples show, alternate explanations for the market's performance may be more compelling. Thus, whether statistical evidence of increased prices or margins constitutes evidence of collusion depends in large part on the quality of the model producing that result. In many cases, such models are flawed.

This highlights the importance of couching the empirical findings in a broader analysis addressing whether the industry is a fertile ground for collusive behavior and whether firm interaction has changed identifiably. That analysis should consider evidence of industry structure and conduct that is conducive to collusion, and evidence of practices that facilitate information exchanges among firms. When collusion cases are not supported by an economic analysis that incorporates relevant cost and demand factors and that provides evidence of an effective mechanism for collusion, the market price may just be right.

PROFESSORS SCHWARTZ AND SAPPINGTON JOIN *THE BRATTLE GROUP*

The Brattle Group is pleased to announce the expansion of our antitrust and telecommunications practices with the additions of Professors Marius Schwartz and David E. M. Sappington as Senior Advisors. *The Brattle Group's* antitrust experience includes mergers and acquisitions, price fixing, attempted monopolization, and other matters. Our telecommunications practice combines economic and financial expertise in the area of regulatory design, network access, and the analysis of competitive conditions for mergers and joint ventures.

MARIUS SCHWARTZ

Marius Schwartz is Professor of Economics at Georgetown University. Professor Schwartz most recently was Acting Deputy Assistant Attorney General for Economics and Economics Director of Enforcement at the Department of Justice. In these positions, he was responsible for overseeing the economic analysis of such mergers as Ameritech-SBC, Bell Atlantic-GTE, Aetna-Prudential, and MCI/WorldCom-Sprint.

Professor Schwartz has served on the President's Council of Economic Advisers as the Senior Economist responsible for industrial organization matters. His duties included providing economic analyzes related to the Telecommunications Act of 1996, competition in international telecommunications services, and electric industry restructuring. He has appeared as an economic expert on competition and regulatory matters for the U.S. Department of Justice, international agencies, and private clients. Professor Schwartz holds a B.Sc. from the London School of Economics and a Ph.D. from UCLA.

DAVID E. M. SAPPINGTON

David E. M. Sappington is the Lanzillotti-McKethan Eminent Scholar in Economics at the University of Florida. Professor Sappington's research focuses on regulatory policy, including the design and implementation of incentive regulation. He has applied his findings to regulatory and competition issues in the telecommunications, energy, postal, and healthcare sectors. Professor Sappington has consulted and provided expert testimony for private clients and various regulatory agencies in the United States and abroad, including the World Bank and the Antitrust Division of the U.S. Department of Justice.

Professor Sappington has served as an editor of *The American Economic Review*, *The Rand Journal of Economics*, *The Journal of Regulatory Economics*, and the *Journal of Economics & Management Strategy*. He has previously taught at Princeton University, the University of Pennsylvania, and the University of Michigan. He is the author of over eighty articles appearing in academic journals, as well as the books, *Designing Regulatory Policy with Limited Information* and *Designing Incentive Regulation for the Telecommunications Industry*. Professor Sappington holds a B.A. from Haverford College and a Ph.D. from Princeton University.

Next Issue: Antitrust Issues in the Communications Industries

We examine the need for cooperation among competitors and identify exclusion concerns in the communications industries.

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