Supreme Court Ruling Concerns Antitrust Fines And Evidence of Economic Effects

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A recent Supreme Court decision that addresses the degree of proof required to increase criminal fines beyond statutory limits is likely

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to increase the importance of economic analysis in price-fixing cases. It has long been assumed that to raise antitrust fines above the Sherman Act's $100 million maximum for companies, the Department of Justice (DOJ) only had to prove the amount of gain or loss from the crime by a preponderance of evidence. The decision in *Southern Union v. United States* raises that standard of proof.

In 2000, the Supreme Court in *Appendi v. New Jersey* held that the Sixth Amendment guarantee of a right to a trial by jury requires that any fact that increases the maximum punishment authorized by statute for a particular crime be proved to a jury beyond a reasonable doubt. Thus, judges may not increase prison sentences beyond the statutory maximum based on facts that aren't submitted to a jury. Ever since *Appendi*, courts have struggled with the question of how far that holding applies. In particular, it was not clear if the holding applied only to prison sentences for individuals or also applied to fines for corporations. Recently, in *United States v. AU Optronics Corporation*, the district court judge ruled that the standards in *Appendi* would apply in the price-fixing context, where the primary form of punishment sought for corporate defendants was a fine.

The Supreme Court's *Southern Union* decision confirms this higher standard for cartel fines. The Court held that the rule of *Appendi* applies to the imposition of criminal fines and not just prison sentences. Specifically, a jury must determine any fact necessary to increase a fine beyond the maximum a judge may impose. According to the Court, this holding preserves the historic function of a jury in determining whether the prosecution has proven every element of an offense beyond a reasonable doubt.

The Supreme Court's ruling has several implications for the role of economic analysis in cartel cases. Evidence of the effects of a cartel may significantly affect the fines levied against its members. Thus, both the DOJ and defendants will need to present a sound economic analysis of those effects at trial. Such evidence will be particularly important if the DOJ is seeking more than $100 million in fines. Even in pre-trial and negotiation stages, the parties' assessment of the strength of their respective cases and the amount of damages that can be proven at trial will be critical. In this regard, economic analysis can be crucial in helping defendants assess the appropriate amount of a settlement to avoid litigation.

Also In This Issue

The Curious Case of Mobil Pipe Line

John R. Morris discusses a D.C. Circuit decision involving the refusal of the Federal Energy Regulatory Commission (FERC) to allow a crude oil pipeline, Pegasus, to charge market-based rates. FERC's policy is to exempt oil pipelines that do not have market power from rate caps. The court reasoned that Pegasus did not have market power and thus remanded the case to FERC. Both the court and FERC, however, defined the geographic market at the origin of the pipeline too broadly. Neither the court nor FERC addressed the fundamental market power question for Pegasus or pipelines in general: whether a restriction in transportation services would be profitable for the pipeline.

Empirical Data on "Comparable Licenses" in Patent Infringement Suits

Thomas R. Varner discusses research that may be useful in determining reasonable royalty rates in patent infringement suits. Determining a reasonable royalty often involves evaluating the financial terms of "comparable licenses." That evaluation requires determining the relevant economic differences between licenses. Research conducted on thousands of technology licenses sheds light on these differences and their influence on royalty rates. For example, patent plus know-how licenses generally have median royalty rates 30 percent to 50 percent higher than median royalty rates of bare patent licenses. Patent license royalty rates are generally higher when the licensor is a commercial entity, but there is little or no statistically significant difference in patent license royalty rates across different types of non-commercial licensors.

The Curious Case of Mobil Pipe Line

John R. Morris

On April 17, 2012, the D.C. Circuit handed down a curious decision in *Mobil Pipe Line Company v. FERC*. The case concerns Mobil's application before the Federal Energy Regulatory Commission (FERC) for authorization to charge market-based rates for the Pegasus crude oil pipeline. FERC's policy is that pipelines that do not have market power can charge market-based rates and not be subject to the rate caps that FERC administers for oil pipelines. To determine whether pipelines have market power, FERC examines competition in origin markets where pipelines receive products to be transported and in destination markets where the products are delivered. If pipelines do not have market power in both their origin and destination markets, then FERC will authorize market-based rates.

FERC did not grant market-based rates for Pegasus. The main issue in the case centered on potential market power in the origin market. FERC used Mobil's term of an "Upper Midwest" origin market in its decision, but it did not overturn the Initial Decision's "Extended Hardisty" origin market that ran from Hardisty, Alberta to Ohio in the east and to Oklahoma in the south. The Initial Decision and FERC, however, concluded that all the other pipelines and refineries within that origin market were not good alternatives to Pegasus because they offered lower net-back prices to the sources of the oil in Western Canada than did Pegasus. Because it did not face competition from good alternatives, Pegasus could substantially increase its rates. The ability to raise rates was not denied by Mobil.

Mobil appealed FERC's decision. The D.C. Circuit decision on appeal appears to be a straightforward application of principles common to assessing whether a company has market power. The court reasoned that Pegasus transports mostly Western Canadian crude oil, and it transports only 66,000 barrels per day of the 2.2 million barrels produced in Western Canada, giving Pegasus about a 3 percent market share. Given the small market share, the court reasoned that Pegasus could not have market power. Accordingly, the court remanded the case to FERC.

The curious part of the D.C. Circuit decision is that Pegasus

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does not transport crude oil from Western Canada. Pegasus runs from a pipeline hub in Patoka, Illinois to the Gulf Coast. Several of the pipelines between Western Canada and Patoka were full and had to prorate shipments in accordance with their tariffs. Thus, only a small share of the crude oil produced in Western Canada could physically reach Pegasus. Moreover, Pegasus mainly transported heavy sour crude, which is lower quality with less value than lighter, sweeter crude oils. Hence, the amount of heavy sour crude oil that could economically reach Patoka was even less than the physical capacity of the pipelines to Patoka. Price data indicated different prices for crude oil at different locations, consistent with the limited pipeline capacity's restricting shipments and depressing prices upstream of the pipeline constraints. Under these circumstances, the fact that Pegasus shipped 3 percent of Western Canadian crude oil is irrelevant to assessing market power for Pegasus. The apparent logic in the circuit court decision suggests that virtually all crude oil pipelines in the United States should be allowed to charge market-based rates. Every crude oil pipeline ships a small share of the oil produced in a region as large as one stretching from Alberta to Ohio, so all origin markets would be deemed competitive. Moreover, the logic of the *Mobil* decision is that every refinery in the interior of the United States is part of one large destination market for crude oil, so all destination markets would also be competitive.

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The flaw in the reasoning of both FERC and the circuit court stems from overly broad geographic markets at the origin of the pipeline. In the case of FERC, it claimed the origin market is geographically broad, but then it excluded all alternatives to Pegasus within its origin market based on the fact that no other alternative would provide comparable net-back oil prices to the shippers. The circuit court went to the opposite extreme. It reasoned that every alternative within FERC's broad market was an equally good alterna-

Empirical Data on "Comparable Licenses" in Patent Infringement Suits

Thomas R. Varner

Economic damages experts in patent infringement suits are often called upon to determine a reasonable royalty arising from a hypothetical negotiation for a license for the patents-in-suit. Determining a reasonable royalty often involves evaluating, among other factors, the financial terms of "comparable licenses." A number of recent court decisions in patent infringement suits have highlighted the importance of correctly determining which licenses are comparable for purposes of determining a reasonable royalty. For example, in *Wordtech Systems v. Integrated Networks Solutions* (2010), the Federal Circuit stated, "Comparisons of past patent licenses to the infringement must account for 'the technological and economic differences' between them." Other recent cases addressing this issue include *Lucent v. Gateway* (Fed. Cir. 2009), *ResQNet.com v. Lansa* (Fed. Cir. 2010), *Uniloc v. Microsoft* (Fed. Cir. 2011), and *Oracle v. Google* (N.D. Ca. 2012).

What should experts consider as relevant "economic differences" when deciding which licenses are comparable and which are not? Courts have described several economic differences as relevant to the patent infringement cases before them. These differences include whether an agreement had a lump-sum payment versus a running royalty payment, whether the license was exclusive or nonexclusive, whether the parties were competitors, and the number and nature of patents licensed and products covered.

Research conducted on thousands of technology licenses sheds light on the economic differences between license agreements and their royalty rates. Information from a dataset of over 4,000 complete technology licenses collected from material agreements submitted to the U.S. Securities and Exchange Commission (SEC) over the past 20 years indicates that a number of factors are relevant to the financial consideration specified in patent licenses.

One of the first steps in analyzing technology licenses is to identify the general nature of the agreement, e.g., is it a product license, a development agreement, a research agreement, a joint venture agreement, a bare patent license, a patent plus know-how license, or some other type of agreement? The median and average royalty rates observed in technology licenses can vary significantly across

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agreement types. Not surprisingly, product licenses generally have among the very highest royalty rates, whereas bare patent licenses generally have among the very lowest royalty rates. Courts have found that software rebundling or repackaging agreements are not comparable to software bare patent licenses. The research supports this finding: the median royalty rate of software product licenses in the dataset is approximately 10 percent, whereas the median royalty rate of software bare patent licenses is approximately 3 percent. Moreover, bare patent licenses have among the lowest median royalty rates compared to other agreement types regardless of the nature of the licensed technology (e.g., software, hardware, pharmaceutical, medical, and telecommunications).

In analyzing the comparability of different licenses, the question often arises of how to apportion the value of the patented technology from other technologies included in the licenses, such as technology "know-how." The research shows a statistically significant difference between royalty rates found in patent plus know-how licenses and royalty rates found in bare patent licenses. Although the premium for technology know-how varies across different industries, patent plus know-how licenses generally have median royalty rates 30 percent to 50 percent higher than median royalty rates of bare patent licenses.

Courts also have found that the nature of the licensor is relevant in assessing whether agreements are comparable. The research only partially supports that view. The median royalty rates of patent licenses are generally higher when the licensor is a commercial entity rather than a non-commercial entity. However, there was little or no statistically significant difference in patent license royalty rates across different types of non-commercial licensors (i.e., universities, non-profits, government agencies, and individuals).

While many experts focus on a single royalty rate expressed

Mobil Pipe Line Decision

tive to Pegasus. Neither decision addressed the fundamental market power question for Pegasus or pipelines in general: whether a restriction in transportation services would be profitable for the pipeline.

A recent book published by the American Bar Association, *Market Definition in Antitrust: Theory and Case Studies*, addresses the fundamental market definition issues for a wide range of industries, including pipelines. A fundamental requirement for pipelines to have market power is that they be able to change commodity prices at either the origin or the destination of the pipelines. When delineating an origin geographic market for crude oil pipelines, the question is whether a group of pipelines and refineries could depress the price of crude oil at some location or region. Following the principles articulated in the federal antitrust agencies' *Horizontal Merger Guidelines*, the smallest region in which a threshold crude oil price decrease would be profitable for the pipelines would delineate the proper origin market. Once such a region is defined, then one can properly assess a particular pipeline's market share.

With time, we will be able to know the significance of the *Mobil* decision. It may become a landmark decision that leads to market-based rates for most crude oil pipelines in the United States, or it may become an aberration that has no lasting significance for the analysis of market power for pipelines. For now, the decision appears to provide a new opportunity for crude oil pipelines to seek market-based rates, and FERC and the courts will decide the significance of *Mobil*.

Comparable Licenses

as a percentage of sales, just one-third of patent licenses in the dataset specify only a running royalty rate. The remainder of these agreements specify a running royalty plus a fixed fee, a fixed fee only, or are royalty-free. Additionally, many agreements that specify a running royalty in terms of a percentage of sales specify not just one royalty rate but a tiered structure of royalty rates (e.g., a royalty rate of 2 percent on the first $10 million dollars of sales then a royalty rate of 1 percent thereafter). This declining structure of tiered royalty rates (e.g., 2 percent to 1 percent as sales increase) is by far the most common form of tiered royalties in the high-tech and medical device industries. Patent licenses in the pharmaceutical industry, however, generally specify increasing tiered royalty rates (e.g., 1 percent to 2 percent as sales increase).

Experts also need to consider the terms in license agreements that modify base royalty rates. Licenses can contain terms that specify conditions in which a base royalty rate will be reduced. Approximately 30 percent of all patent licenses observed in the dataset included such royalty reduction provisions. For example, a "royalty stacking" provision lowers the base royalty rate if the licensee subsequently needs to take a license from a third-party and is required to pay royalties to that third-party. Almost two-thirds of the patent licenses in the dataset that included a royalty stacking provision specified a maximum royalty reduction of 50 percent of the base royalty rate.

Basic economic principles suggest that an exclusive license would command a higher royalty rate than the rate for a nonexclusive license. Nonetheless, little significant difference in royalty rates was observed between exclusive and nonexclusive patent licenses in the dataset, even accounting for other factors such as the nature of the licensor, the nature of the licensed technology, and the inclusion of know-how in the agreement. Other researchers who have studied royalty rates in technology licenses have made similar observations as well. Determining how exclusivity affects royalty rates is complicated by the presence of other factors that are difficult to observe, such as the established commercial success of products incorporating the licensed technology or the availability of alternative technologies. However, a number of license agreements in the dataset include a royalty reduction provision giving the licensor the option to convert the license from an exclusive basis to a semi-exclusive or nonexclusive basis. In these agreements, because the technology and the parties remain constant, the effect of the conversion from exclusive to nonexclusive can be isolated. In such agreements, the typical royalty reduction for converting an exclusive license to a nonexclusive license is 50 percent of the base royalty rate.

Research involving thousands of technology licenses filed with the SEC provides empirical support for recent patent infringement decisions that addressed the economic differences between licenses. Courts, and damages experts, will likely give added scrutiny to these differences in the future.

EI News and Notes

New Special Consultants Strengthen EI Financial Markets Practice

Two financial economists with significant government and academic experience have affiliated with EI as Special Consultants: Dr. Chester Spatt and Dr. Dean Furbush. Drs. Spatt and Furbush join other EI economists and Special Consultants with significant government experience at the major financial regulatory bodies and deep private sector expertise in finance- and securities-related litigation matters.

Chester Spatt is the Pamela R. and Kenneth B. Dunn Professor of Finance at the Tepper School of Business at Carnegie Mellon University. He served for three years as Chief Economist of the Securities and Exchange Commission and Director of its Office of Economic Analysis. Professor Spatt's co-authored paper in the *Journal of Finance* won TIAA-CREF's Paul Samuelson Award for the Best Publication on Lifelong Financial Security. He has served as Executive Editor and a founding editor of the *Review of Financial Studies*, President of the Society for Financial Studies, and President of the Western Finance Association. He also is currently a member of the Federal Reserve's Model Validation Council, a Research Associate of the National Bureau of Economic Research, and Senior Economic Adviser to Kalorama Partners. He earned his Ph.D. in economics from the University of Pennsylvania.

Dean Furbush previously was the Chief Economist of the Nasdaq Stock Market and then Executive Vice President of Nasdaq Transaction Services. In the latter post, he had executive oversight and authority over the entire exchange. Dr. Furbush also has served as Economic Advisor to the Chairman of the Commodity Futures Trading Commission, as Financial Economist at the Securities and Exchange Commission, and as an economist at the President's Council of Economic Advisors. He taught at Virginia Polytechnic Institute and State University and at the University of Maryland. He received a Ph.D. in Economics from the University of Maryland.

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