



Calculating “Pass-Through” Rates in Price-Fixing Cases – What’s in the Economist’s Toolbox?¹

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Despite calculations by damages experts retained by Best Buy that it had sustained up to \$770 million in damages as a result of a price-fixing conspiracy involving TFT-LCDs, a California jury recently awarded it only \$7.5 million dollars after determining that Best Buy had not sustained any indirect purchaser damages.² The jury award was consistent with the opinion of the defense’s economic expert that Best Buy had “passed-through” the vast majority of any overcharges it sustained to its own customers. The degree of “pass-through,” which is the proportion of an overcharge that the purchaser of a product subject to price-fixing passes on to its own customers, has been an important question in numerous other price-fixing lawsuits, including those involving vitamins, hydrogen peroxide, CRTs, high fructose corn syrup, and DRAMs.³ Because the issue of pass-through is likely to arise in any substantial case involving price-fixing of a product acting as an input into the production of other final products, it will surely be of importance in a multitude of future price-fixing lawsuits as well. The ever expanding list of conspiracies being uncovered in the automotive industry (now numbering over thirty separate parts which are inputs into automotive manufacturing) alone demonstrates this.⁴

Below, I explain the non-statistical and statistical evidence that economists have used in recent price-fixing cases to address the pass-through issue. In other words, I explain “what’s in the economist’s toolbox.” While economic theory has long been applied to the issue of how firms pass along cost increases like overcharges, theory alone provides clear answers on the amount of “pass-through” only in specialized circumstances. Economists have employed statistical methods in numerous studies of pass-through rates and have developed a fairly comprehensive set of econometric tools. As is typically the case in litigation, however, economic experts can apply these tools in different (and not always appropriate) ways.

Non-Statistical Evidence on Pass-Through Rates

It is unclear whether (and under what circumstances) future courts will accept non-statistical evidence of pass-through rates when it is used in lieu of statistical methods (as opposed to when it is used in conjunction with statistical findings). In the recent trial in *In Re: Urethane Antitrust Litigation*, the plaintiffs’ economic expert testified that overcharges for some sales were fully passed-on based on “historical documents and testimony” without any statistical evidence of a pass-through rate.⁵ The court in *In Re: Cathode Ray Tube Antitrust Litigation* referred to the plaintiffs’ expert’s use of documentary evidence and economic theory in assessing pass-through rates when recently denying the motion to exclude the testimony of that expert.⁶ However, the plaintiffs’ economic expert had also performed econometric estimates of pass-through rates.

Non-statistical evidence on pass-through rates may come from several sources. Economists may apply economic theory on pass-through rates to prevailing industry conditions to draw conclusions about likely pass-through rates. The use of mark-up pricing rules by industry participants can provide evidence regarding pass-through rates. Although such rules will often not be available, when firms employ pricing rules that apply a fixed percentage mark-up on costs, then pass-through will exceed 100%. Evidence from deposition testimony, company documents, industry publications, or some combination of these may

provide some guidance on whether pass-through occurs but will often not provide a precise estimate of pass-through rates by itself. Evidence that firms examine downstream pricing in setting their own pricing may also provide some evidence regarding the existence of pass-through but will also often not be sufficient in isolation to allow an inference of the precise pass-through rate.

With regard to the application of economic theory to assess pass-through rates, economists developed the theory of how firms “pass-through” cost increases in the context of the incidence of a tax long before “pass-through” became an issue in price fixing cases.⁷ The literature on the incidence of a tax is focused on determining the extent to which a new tax or an increase in an existing tax results in higher prices (*i.e.*, is “passed-through”) to consumers. Determining the pass-through of a price-fixing overcharge is analogous. Thus, the framework that economists have utilized to examine the pass-through of a tax for decades can be applied to understand whether or not a direct purchaser will pass-through an overcharge, and if so, to what degree.

For simplicity, consider the case in which a price-fixing overcharge occurs on a product which passes through only one additional stage, retailers, before reaching final consumers. In other words, the firms selling a product to retailers raise the price of this product through a price-fixing agreement and retailers then sell the product to final consumers. The degree to which retailers will be able to pass-on the price-fixing overcharge they sustain will depend on the responsiveness of the demand and supply of the product sold by the retailer (economists call this the “elasticity” of the supply and demand curves). Other things equal, when the quantity demanded of the good that the retailer sells is less sensitive to changes in price (when the demand curve is less “elastic”), the retailer will be able to pass-on a greater amount of the overcharge to final consumers. Also, other things equal, when the quantity supplied is more sensitive to price changes (and is therefore more “elastic”), a greater proportion of an overcharge will be passed-on to final consumers. Thus, how much of an overcharge is passed-on to indirect purchasers depends upon the elasticity of supply and demand for the final product.

Economic theory demonstrates that pass-through can range from a low of zero to over 100%. It can be zero (or near zero) in some circumstances in which not all direct purchasers face an overcharge. In this case, competitive pressure from suppliers who did not experience an increase in costs may limit the ability of direct purchasers to pass through an overcharge. The pass-through can be more than 100% in some circumstances when direct purchasers participate in an industry that is less than perfectly competitive. Consider, for example, a retailer with a pricing strategy of marking-up prices to be 50% above costs. Suppose the initial marginal cost of this retailer is \$50. The price that the retailer charges to its final consumers is therefore \$100 ($(\$100 - \$50) / \100 equals a margin of 50%). Now suppose that, due to a price-fixing agreement by its suppliers, the marginal cost of this retailer increased by \$10 to \$60. In order to maintain a constant margin of 50%, this retailer will now increase the price to the final consumer by \$20 – to \$120 ($(\$120 - \$60) / \$120$ equals 50%). In this case, the final consumer faces a pass-through rate of 200% as the \$10 overcharge resulted in a \$20 increase in the price of the final product.

Under competitive conditions and constant marginal costs, profit-maximizing firms will pass-on 100% of any increase in costs. Thus, evidence that an industry is highly competitive and characterized by constant costs is support for concluding that there is a high pass-through rate. Without knowledge of the elasticity of demand and supply (measures that are often difficult to come by in practice), however, economic theory alone can provide a conclusion regarding the pass-through

rate only in specialized circumstances. In a variety of circumstances (e.g., firms possessing monopoly power), economic theory alone cannot yield a precise estimate of the pass-through rate although it may provide a sense of the magnitude (i.e., whether it is likely to be high or low).

Econometric Tools for Calculating “Pass-Through”

Substantial consideration of economists’ ability to calculate pass-through rates accurately in price-fixing cases began in the academic literature after the Supreme Court’s decision in *Illinois Brick* in 1977.⁸ Consistent with economic theory indicating that pass-through is determined by the elasticity of both the demand curve and the supply curve, Landes and Posner argued that calculating pass-through rates would be extremely difficult in practice due to the difficulty of calculating both of these elasticities.⁹ Contrary to this opinion, Harris and Sullivan argued that the pass-through rate would be 100% (or nearly so) due to competitive conditions and constant costs in most instances and, therefore, that determining pass-through rates would often be a reasonably simple endeavor.¹⁰

Further work in the area of pass-through rates has demonstrated that both of these extreme viewpoints were incorrect. Over the past several decades, studies have calculated pass-through rates for numerous products ranging from gasoline to processed cheese.¹¹ The large number of price-fixing cases involving an assessment of pass-through rates has also given birth to numerous academic articles specifically investigating pass-through rates in the context of price-fixing.¹² Contrary to Landes and Posner’s assumption that it is necessary to calculate the elasticities of demand and supply in order to calculate pass-through rates, numerous researchers have directly calculated pass-through rates in a variety of industries by using what economists label a “reduced form specification” that doesn’t rely on calculating elasticities.¹³ Contrary to the arguments by Harris and Sullivan that the pass-through rate could often be presumed to be 100%, empirical studies on pass-through rates have found pass-through rates from far less than 50% to over 100% depending on the product and whether or not the pass-through rate was for an individual firm or for an industry.¹⁴ Thus, courts should be reluctant to allow economic testimony that pass-through rates simply cannot be calculated reliably (which may arise in the class certification context). They should also not allow expert testimony that simply presumes a 100% pass-through rate.

There are several issues that should be assessed in determining an appropriate statistical model of the pass-through of overcharges and which will often be subjects of contention between experts. For example, there will often be a time lag between a price increase for an input (e.g., an LCD screen) and the pass-through of a price change in that input to the final product price (e.g., a computer monitor containing that LCD screen). The way such time lags are accounted for can importantly influence the results of a pass-through study. When prices of different products are combined into one overcharge model, it may be important to account for product differences. Whether a pass-through rate is calculated on an absolute basis (e.g., for each \$1 increase in cost, there is a 90 cent increase in the price) or a percentage basis (e.g., for each 1% increase in cost there is a .5% increase in price) can be important. In addition, technical econometric considerations like the treatment of “serial correlation” can come into play, and there are often divergent opinions between economists on the appropriate treatment of such technical statistical issues. There have been more articles calculating pass-through rates in the academic literature than articles calculating price-fixing overcharges. This will tend to narrow the disagreements between experts with regard to the pass-through issue, but it certainly will not eliminate them.

Conclusion

Many price-fixing conspiracies involve the production and sale of inputs and, thus, many price-fixing lawsuits involve the assessment of “pass-through” in the determination of damages. While non-statistical tools exist for examining the issue of pass-through, these tools will often be available only in limited cases and, even then, may not allow a precise calculation of the pass-through rate (as opposed to simply a sense of the order of magnitude of pass-through). The statistical toolbox for calculating pass-through rates has been refined over many decades and is substantial. Nevertheless, statistical tools can be applied in different ways (sometimes yielding very different results). Economic experts will likely continue offering highly divergent views of the magnitude of pass-through (and, therefore, the magnitude of damages) in numerous future price-fixing lawsuits in which the pass-through rate will surely be a critical issue.

1. Jonathan T. Tomlin, Ph.D., Principal, Navigant Economics.
2. Beth Winegarner, *Best Buy Loses LCD Price-Fixing Trial Against Toshiba*, Law360, September 3, 2013.
3. “Pass-on” denotes “the process by which a middleman in the chain of distribution who has been overcharged by a manufacturer or by a producer adjusts his prices upward so as to pass on his increased costs to his own customers.” *Vacco v. Microsoft Corp.*, 793 A.2d 1048, 1052 (Conn. 2002) (quoting Elaine K. Zipp, Annotation, *Right of Retail Buyer of Price-Fixed Product to Sue Manufacturer on Federal Antitrust Claim*, 55 A.L.R. FED. 919, 922 n. 3 (1981)).
4. Department of Justice, Office of Public Affairs, *Nine Automobile Parts Manufacturers and Two Executives Plead Guilty to Fixing Prices on Automobile Parts Sold to U.S. Car Manufacturers and Installed in U.S. Cars*, Press Release, September 26, 2013.
5. *In Re: Urethane Antitrust Litigation*, Case No. 04-1616, Transcript of Trial Proceedings before Honorable John W. Lungstrum on February 6, 2013, at 3142-3143.
6. *In Re: Cathode Ray Tube (CRT) Antitrust Litigation*, Order Adoption Special Master’s Reports and Recommendations on Defendants’ Motion to Exclude Expert Testimony and Indirect-Purchaser Plaintiffs’ Motion for Class Certification, Filed September 24, 2013.
7. See, e.g., EDGAR K. BROWNING & JACQUELENE M. BROWNING, *PUBLIC FINANCE AND THE PRICE SYSTEM* (1983).
8. *Illinois Brick Co. v. Illinois*, 431 U.S. 720 (1977).
9. William M. Landes & Richard A. Posner, *Should Indirect Purchasers Have Standing to Sue Under the Antitrust Laws? An Economic Analysis of the Rule of Illinois Brick*, 46 U. CHI. L. REV. 602 (1979).
10. Robert G. Harris & Lawrence A. Sullivan, *Passing on the Monopoly Overcharge: A Comprehensive Policy Analysis*, 128 U. PA. L. REV. 269 (1979).
11. Lance J. Bachmeier & James M. Griffin, *New Evidence on Asymmetric Gasoline Price Responses*, 85 *The Review of Economics and Statistics* 772 (2006); Donghun Kim & Ronald W. Cotterill, *Cost Pass-Through in Differentiated Product Markets: The Case of U.S. Processed Cheese*, 55 *The Journal of Industrial Economics* 32 (2008).
12. See, e.g., Chris S. Coutroulis & D. Matthew Allen, *The Pass-on Problem in Indirect Purchaser Antitrust Litigation*, 44 *ANTITRUST BULL.* 179 (1999); George Kosicki & Miles B. Cahill, *Economics of Cost Pass Through and Damages in Indirect Purchaser Antitrust Cases*, 51 *ANTITRUST BULL.* 599 (2006).
13. See, e.g., Anne Gron & Deborah L. Swenson, *Cost Pass-Through in the U.S. Automobile Market*, 82 *The Review of Economics and Statistics* 316 (2000).
14. See Orley Ashenfelter, David Ashmore & Jonathan B. Baker, *Identifying the Firm-Specific Cost Pass-Through Rate*, US FTC, Bureau of Economics (1998) (finding a pass-through rate of 15%); Larry S. Karp and Jeffrey M. Perloff, *Estimating Market Structure and Tax Incidence: The Japanese Television Market*, 37 *The Journal of Industrial Economics* 225 (1989) (finding a pass-through rate of over 100%).