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**Allocating Costs in Ninth Circuit Predatory Pricing Cases:
Marsann Co. v. Brammall, Inc. and its Problematic Progeny, *Inglis
v. Continental Baking* and *Thales v. Matsushita****

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In U.S. antitrust, pricing below some level of cost has become almost necessary to a finding of predatory pricing. The case law is ambiguous on this, and the Circuits have differing standards, but many courts require a showing that price is, or was, below marginal (sometimes called incremental) costs as a threshold issue. This necessitates using reasonable economic and accounting techniques to estimate marginal cost. A similar issue arises in the calculation of lost profits in much commercial litigation. In the case *Marsann Co. v. Brammall, Inc.*, the Ninth Circuit interpreted the estimate of marginal cost in a narrow formalistic way that is inconsistent with ordinary cost accounting and economic analysis. That ruling, which was adopted by *Inglis v. Continental Baking*, makes a finding of predatory pricing almost impossible and provides incentives for would-be predators to structure their accounting systems to evade liability. The consequences of *Marsann* and *Inglis* are illustrated by *Thales Avionics, Inc. v. Matsushita Avionics Systems Corporation* where the Court's application of *Marsann* and *Inglis* precluded plaintiff from establishing estimates of marginal cost and therefore the existence of predatory pricing.

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I. INTRODUCTION

Predatory pricing remains an active area in antitrust law and cases continue to be brought before U.S. Courts causing the economics of predatory pricing to be revisited with some frequency.¹ Recent cases include *Bay Guardian Company, Inc. v. NT Media LLC*; *Kinetic Concepts, Inc. v. Hillenbrand Industries*.; *LePage's Inc. v. 3M*; and *United States v. AMR Corp.*² A key concept in these cases is whether prices were set below some measure of costs, a threshold issue in predatory pricing analysis.³ Despite the fact that the Supreme Court has recently given considerable attention to predatory pricing, it has still not resolved Circuit splits in the lower courts regarding the appropriate measure for determining when a price is “below cost.”⁴ The Supreme Court has in fact declined in three recent, important cases to decide what is the appropriate measure of cost below which prices must be set in order to be condemned as predatory – see *Brooke Group* 509 U.S. at 222 n.1; *Cargill*, 479 U.S. at 117–18 n.12; and, *Matsushita*, 475 U.S. at

¹ Daniel Crane indicates that “hundreds” of predatory cases have been filed since the restrictive Supreme Court decisions. Crane, Daniel A., “The Perverse Effects of Predatory Pricing Law,” *Regulation*, Winter 2005- 2006. For a list of reported cases since 1993, see Daniel A. Crane “The Paradox of Predatory Pricing,” *Cornell Law Review*, Volume 91 Number 1, November 2005m fn. 118.

² *Bay Guardian Company, Inc. v. NT Media LLC et. al.* Superior Court of the State of California (County of San Francisco) (Case No. 04-435584), complaint filed October 19, 2004. *Kinetic Concepts, Inc. v. Hillenbrand Indus., Inc.*, 262 F. Supp. 2d 722, 725–26 (W.D. Tex. 2003); *LePage's Inc. v. 3M*, 324 F.3d 141, 145 (3d Cir. 2003); *United States v. AMR Corp.*, 335 F.3d 1109, 1115 (10th Cir. 2003).

³ See, e.g., *Brook Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 222 n.1 1993.

⁴ The treatment of prices above average variable cost, but below average total cost varies greatly. In the Sixth and Ninth Circuits, the plaintiff has the burden to prove such prices are predatory; in the Eighth Circuit such prices are presumptively illegal, in the Tenth Circuit such prices between are presumptively lawful absent other evidence of predation; in the Eleventh Circuit such prices above AVC create circumstantial evidence of predatory intent. In the Third, Fourth, Seventh and the District of Columbia Circuits there is no established rule. See, Richard O. Zerbe, Jr., and Michael T. Mumford. “Does predatory pricing exist? Economic theory and the courts after *Brooke Group*.” *Antitrust Bulletin*. 41. n4 (Winter 1996): 949-985.

584–85 n.8.⁵ In *Brooke*, the Court contented itself with requiring prices to be below “some measure of incremental cost”.⁶ This paper will briefly discuss the economics of predatory pricing and will focus on how the developing case law in the Ninth Circuit on the measurement of costs potentially leads to improper decisions from an economic perspective and we use *Thales v. Matsushita* as a case study.⁷

As a matter of economics, predatory pricing is a particular type of strategic behavior. Pricing is considered predatory when it is below the short-run profit maximizing price and it is designed to influence a rival’s behavior.⁸ In the extreme, the rival is induced to leave the market, or a potential entrant is discouraged from entering. Less extreme, but still anti-competitive, outcomes include less aggressive competition, higher costs for the rival or a reduction in innovation. The predator expects to recover its costs from this strategy by earning more in the future because of less vigorous rivals, or perhaps no rivals at all.

While the definition of predatory pricing is straightforward (in principle if not in practice), one difficulty lies in determining what the short-run profit maximizing

⁵ *Brooke Group LTD. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993)

⁶ *Brooke Group LTD. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993); *Cargill v. Monfort*, 479 U.S. 104 (1986); *Matsushita Electric Industrial Co., Ltd. v. Zenith Ratio Corp.*, 475 U.S. 574 (1986).

⁷ *Thales Avionics, Inc. v. Matsushita Avionics Systems Corporation, et al.*, Before the United States District Court, Central District of California, Southern Division, Case No. SA CV 04-424-JVS (MLGx), June 7, 2005.

⁸ For a statement of the strategic nature of predation, see William S. Comanor & H.E. Frech III, *Predatory Pricing and the Meaning of Intent*, *Antitrust Bulletin*, 293, 294-295 (Summer 1993), or Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* 352-353 (4th ed. 2005). For a more detailed analysis, see Patrick Bolton, Joseph F. Brodley & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, *Georgetown Law Journal*, August 2000, at 88 *Geo. L.J.* 223, or Zerbe & Mumford, *supra* note 4, at 4, and also a comment, Kenneth G. Elzinga & David E. Mills, *Predatory Pricing and Strategic Theory*, *Georgetown Law Journal*, August 2001, at 89 *Geo. L.J.* 2475 and response Patrick Bolton, Joseph F. Brodley, & Michael H. Riordan, *Predatory Pricing: Response to Critique and Further Elaboration*, *Georgetown Law Journal*, August 2001, at 89 *Geo. L.J.* 2495.

price would be absent predatory pricing. Typically, the short-run profit maximizing price can be defined relative to some benchmark of cost (*e.g.*, marginal cost, average variable cost, average total cost) such that a profit margin is established. Unfortunately, the calculations of these various cost measures (and the related benchmark profit margins) are typically not straightforward. For example, the determination of which costs to include can be quite difficult, and even at the conceptual level this determination is ambiguous in the law.

In theory, the correct approach is to use marginal (also called incremental) cost which is defined as the increase in cost that results from producing one extra unit of output. In some applications this would just be the cost of the marginal unit, *e.g.*, one more car or one more pair of shoes. In some others, like In-Flight Entertainment (“IFE”) which is the provision of in-flight entertainment services on commercial aircraft such as overhead video or in-seat video and audio, the product market at issue in *Thales v. Matsushita*, it would be the cost of the marginal sale or contract, which might involve multiple units (*e.g.*, IFE systems for several planes that were part of a single contract). In addition, in the IFE context, marginal cost includes the engineering costs of customizing and debugging the systems. This was the approach required by the *Thales* court, and we accordingly focus our discussion on that approach and the computation of marginal costs.

A. Estimating Marginal Costs

Accounting records and reports do not normally estimate or report marginal costs and moreover the calculation of marginal costs is likely to be quite difficult. Hence, as an approximation, courts have ordinarily substituted average variable

costs.⁹ In concept, variable costs are well-defined as the costs that vary with output. But, here again, this cost concept does not directly appear in accounting records and consequently, the analyst must choose which accounting costs to include in full or in part. For example, even though several types of bread may be produced on the same baking processing line in the same processing plant, the building lease costs or the oven costs are not likely to be directly attached to each particular bread type.

Costs listed on a standard income statement as “costs of goods sold” (sometimes called “product costs”) can often, as a reasonable approximation, be taken to be variable.^{10,11} However, there are additional costs, sometimes called operating costs or sales, general and administrative (“SG&A”) or overhead costs that should be considered in marginal costs. We will ordinarily refer to these as overhead costs. While these overhead costs are often called fixed costs on income statements, this can be a misnomer. These costs generally vary to some extent with output, so a portion of these costs may appropriately be included as variable costs.¹² In other words, it is not sufficient to simply assume that all costs labeled

⁹ See, e.g., *McGahee v. Northern Propane Gas Co.*, 858 F.2d 1487, 1504 (11th Cir. 1988), *cert denied*, 490 U.S. 1084 (1989); *Northeastern Telephone Co. v. AT&T*, 651 F.2d at 87, 88; *Chillicothe Sand & Gravel Co. v. Martin Marietta Corp.*, 615 F.2d 427, 432 (7th Cir. 1980).

¹⁰ But note that cost of goods sold includes fixed manufacturing costs. Thus, the cost of goods sold is not quite a correctly defined lower bound on variable costs. See Maher, Michael, *Cost Accounting: Creating Value for Management* 44-45 (Irvin 1997).

¹¹ Interestingly, cost of goods sold was not a reasonable first approximation to variable costs in Matsushita’s accounts. All labor, even including direct labor, was labeled by Matsushita as fixed overhead in its accounting records and statements.

¹² In this paper, we set aside the issue of the relevant time horizon. In a longer time horizon, more costs are variable. See Kenneth L. Danger & H.E. Frech III, *Critical Thinking about Critical Loss in Antitrust*, 46:2 *Antitrust Bulletin*, 339, 352-354. For an argument that for computer software, the time horizon should longer than the immediate short run, see Bolton et al., *supra* note 7, *Georgetown Law Journal*, August 2000. Their concept was followed in *United States v. Microsoft*, 87 F. Supp. 2d 30 (D.D.C. 2000) where all parties agreed that the short-run marginal cost for producing an operating system (or any major piece of software) was near zero and that was not an appropriate cost basis on which to determine predatory prices. In fact the question of the correct time horizon was so thorny that the whole issue of predatory pricing (particularly

as fixed or overhead in accounting statements are fixed in the economic sense. A formalistic approach will not work. Economic realities are what matter, not the accounting labels.

Moreover, certain sales may be tied to additional costs which also warrant inclusion. In the IFE industry, for instance, the successful sale of an IFE system often requires that the supplier have pre-established maintenance and service centers located around the world in order to repair and service existing systems. It would be appropriate to include the variable component of the costs to establish and operate these centers in the determination of relevant costs for a predatory pricing analysis.¹³

The following single-product example is illustrative of the necessity of allocating fixed costs (some portions of which are often called overhead) to variable costs. Assume that it costs \$10 to make a widget in terms of costs of goods sold (*e.g.*, the direct labor and material required for that specific widget). Assume that overhead costs of \$4,000/year are necessary to keep the widget factory running (*e.g.*, rent, capital equipment lease costs, management costs, unallocated utilities) at an expected output of 1,000 units per month. Suppose that if the firm fully adjusts to a higher output of 1,100 units these overhead costs rise to \$4,300. Therefore, the average variable cost of expanding output is \$13 per unit. While the average total cost is \$13.90 per unit. Even for single-product firms, the extent to which these overhead costs vary with output is not known with certainty and

selling Internet Explorer for a zero price) was dropped. See Franklin M. Fisher, & Daniel L. Rubinfeld, *United States v. Microsoft: An Economic Analysis*, Antitrust Bulletin, (2001).

¹³ An alternative to adjusting cost up would be to adjust the price down because of the related service.

must be estimated, using some combination of expertise and experience and sometimes statistical analysis.¹⁴

The analysis is further complicated for multiple-product firms. Often, some overhead costs are related to the volume produced of multiple products. For these costs (often called common costs), there is the additional issue of allocating costs among products. Unfortunately, this multiple-product situation is the rule, not the exception. The allocation of variable overhead across products is the key issue that determined the *Thales* ruling.¹⁵

A similar issue arises in the allocation of “common” costs among multiple products in regulated industries. Here the policy focus is different-- setting prices to avoid regulatory cross-subsidization. Further, in the regulatory context, common costs are ordinarily taken to be fixed with respect to output of any of the products.¹⁶

A special case of the multiple-products problem arises if costs of services essential to making the sale are borne by the firm but are not directly tied to the product. For example, suppose that in order to sell widgets the firm must provide mobile widget servicing trucks to repair broken widgets. These costs, although not necessarily appearing on the separate accounting statements for widgets (*e.g.*, the service trucks are used to service multiple products) must be allocated, in part, to the widget sales.

¹⁴ See Maher, Michael, *Cost Accounting: Creating Value for Management* 71-72 (Irvin 1997).

¹⁵ See, *e.g.*, Louis Kaplow and Carl Shapiro, *Antitrust*, 575 Harvard Law and Economics Discussion Paper, Jan. 9, 2007, at 118-119 for a discussion of the allocation of costs in an antitrust predatory pricing context.

¹⁶ See, *e.g.*, Gerald R. Faulhaber, *Cross-Subsidization: Pricing in Public Enterprises*, 65:5 American Economic Review, 966-977 (December 1975).

B. The Areeda -Turner Test

The modern literature on predatory pricing dates from a 1975 article by Phillip Areeda and Donald Turner. They were concerned that if the courts were too quick to condemn low prices as predatory, antitrust law would deter aggressive price cutting, to the detriment of competition and consumer welfare. So, Areeda and Turner suggested a simple cost-based test: prices below marginal costs would be presumed to be predatory.¹⁷ Areeda and Turner were aware that this test did not exactly fit the economic definition of predation, but they thought that the test would be approximately right and would avoid chilling competition. Areeda and Turner reasoned that a firm would not set price this low, incurring short-term losses, unless it had predatory intentions. Further, they suggested that marginal costs could be approximated by average variable costs.¹⁸ Any observed pricing below that level would be presumed to be predatory under the Areeda-Turner metric. Symmetrically, any observed pricing above that level would be presumed to not be predatory. The Areeda-Turner approach was adopted by various Courts in relatively short order.¹⁹ The rule has recently been used to provide a sort of safe harbor for low, but above-marginal-cost pricing.²⁰

¹⁷ Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Issues Under Section 2 of the Sherman Act*, 88 Harvard Law Review, 697-733 (1975) *supra* note 142, at 712 n. 37; see also *McGahee v. Northern Propane Gas Co.*, 858 F.2d 1487, 1504 (11th Cir. 1988), *cert. denied*, 490 U.S. 1084 (1989); *Northeastern Tel. Co.*, 651 F.2d at 87,88; *Chillicothe Sand & Gravel Co. v. Martin Marietta Corp.*, 615 F.2d 427, 432 (7th Cir. 1980); *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 858 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); *International Air Indus. v. American Excelsior Co.*, 517 F.2d 714, 724 (5th Cir. 1975), *cert. denied*, 424 U.S. 943 (1976).

¹⁸ Areeda & Turner, *supra* note 15, at 10. See also the Ninth Circuit's decision in *Cascade Health Solutions fka McKenzie-Williamette Hospital v. PeaceHealth*, U.S. 9th Cir., (Sept. 4, 2007) No. 05-35627 DV No. CV-02-06032-ALHI, p. 11223. The *Cascade* approach is consistent with the views of Areeda and Turner. See *op. cit.*, at 811, 712.

¹⁹ See, *e.g.*, L. Philips, *Competition Policy: A Game-Theoretic Perspective* 231 (Cambridge University Press 1995).

²⁰ See the discussion in *Cascade Health Solutions fka U.S. 9th Cir.*, (Sept. 4, 2007) No. 05-35627 DV No. CV-02-06032-ALHI, p. 11223.

Of course the definition of “average variable costs” is open to interpretation and depends on the economics of the relevant sales as described above. Moreover, the Areeda-Turner metric only produces a presumption. Further economic analysis is necessary to determine whether the observed pricing is actually predatory and will lead to consumer harm. As such, a number of alternative methods to determining the existence of predatory pricing have been suggested as alternatives or supplements.²¹

C. Controversies

The Areeda-Turner rule has been controversial and their original article spawned a number of competing tests. Williamson (1979) proposed an output-based rule for response to entry - raising output when faced with entry would be considered predatory.²² Baumol (1979) suggested that a low price that is maintained for a long period (*e.g.*, five years) would be deemed competitive and not predatory, regardless of the price-cost margin.²³ Scherer (1976) criticized the Areeda-Turner test (and any test based on short-run price-cost margins) and suggested a full analysis which precludes a formulaic test.²⁴ Moreover, Scherer rejects Areeda and Turner’s assertion that their test is a good rough approximation for a complex full analysis.

Though they still use the Areeda-Turner test as hurdle, modern Courts have gone beyond Areeda and Turner to analyze the economics of each particular case. This

²¹ See, *e.g.*, L. Philips, *supra* note 17, at 11.

²² Oliver Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 213 Yale Law Journal (Dec. 1979).

²³ William Baumol, *Quasi-Permanence of Price Reduction: A Policy for Prevention of Predatory Pricing*, 1 Yale Law Journal (Nov. 1979).

²⁴ F.M. Scherer, *Predatory Pricing and the Sherman Act A Comment*, 869 Harvard Law Review (March 1976). More recently, see C. Scott Hemphill, *The Role of Recoupment in Predatory Pricing Analyses*, 56:6 Stanford Law Review, 1581-1612 (July 2001).

broader approach is in the spirit of Scherer's argument. For example, in order for a firm to be guilty of predation, it is necessary for the firm to be able to "recoup" its losses.²⁵ The logic behind this is simple. Predatory pricing causes short-term profits to be lower than profit maximization would call for. This is a loss, relative to the situation if there is no predatory behavior, even if prices are not below marginal costs. The lower initial profits are an investment in altering the behavior of rivals.

In order to recoup this investment, a firm must have the ability to exploit or create market power such that it could charge higher prices in the future than it could in the absence of predation. Recoupment requires that the predatory pricing create more market power for the predator than it would have had otherwise. It also requires that entry not be so easy or quick as to undermine the predator's market power.

Another controversy concerns the role of evidence on intent. We believe that evidence on the strategic intent of the alleged predator is often helpful in distinguishing aggressive competition from predation.²⁶ Strategically relevant intent can sometimes be inferred from excess capacity, a history of price wars or excessive liquidity. In this context, statements of executives or strategic planning documents can sometimes be helpful in inferring whether the observed behavior

²⁵ The necessity of recoupment would seem to have been implicit in the theory of predatory pricing. Indeed, the classic paper arguing that predatory pricing is rare argues that recoupment would be unlikely. See John McGee, *Predatory Price Cutting: The Standard Oil Case*, *Journal of Law and Economics*, (October 1958). The Supreme Court made the recoupment issue explicit in also, *Brooke Group LTD. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993). For the argument that this decision sharply reduced the likelihood of plaintiffs winning these predatory pricing cases, see Bolton et al., *supra* note 7, *Georgetown Law Journal*, August 2000. For a detailed analysis of the law and economics of recoupment, see Hemphill, *supra* note 22, at 12.

²⁶ See e.g., Bolton et al., *supra* note 7, *Georgetown Law Journal*, August 2000; Bolton et al., *supra* note 7, *Georgetown Law Journal*, August, 2001.

is predatory. Indeed, it often makes sense for a predator to communicate its commitment to aggressive behavior to actual and potential rivals.²⁷

The purpose of this paper is to analyze: 1) the arguments put forth with respect to a predatory pricing claim, and in particular the determination of pricing relative to a cost benchmark; 2) the interpretation of the Ninth Circuit in *Marsann Co. v. Brammall, Inc.* (“*Marsann*”) and its progeny *William Inglis & Sons Baking Co. v. Continental Baking Company, Inc.* (“*Inglis*”) with respect to cost allocation; and 3) the economic and legal implications of those rulings on *Thales*.²⁸ Note that *Inglis* actually predates *Marsann* but the relevant predatory pricing claims in *Inglis* were decided subsequent to, and in reliance on, *Marsann*.²⁹ While the

²⁷ See, e.g., William S. Comanor & H.E. Frech III, *Strategic Behavior and Antitrust Analysis*, 74:2 AEA papers and proceedings, 372-376 (May 1984); and William S. Comanor & H.E. Frech III, *Predatory Pricing and the Meaning of Intent*, XXXVIII The Antitrust Bulletin, 293-308 (Summer 1993).

²⁸ *Marsann Co. v. Brammall, Inc.*, 788 F.2d 611, 612 (9th Cir. 1986); *William Inglis & Sons Baking Company, v. Continental Baking Company, Inc.* 942 F.2d 1332; 1991 U.S. App. In *Marsann*, as in *Thales v. Matsushita*, the predatory sales were alleged to have been made to only select customers (e.g., Launch or Reference customers in the *Thales* case). Other relevant Ninth Circuit cases include: *Transamerica Computer v. IBM*, 698 F.2d 1377 (9th Cir.), cert. denied, 464 U.S. 955 (1983); *Janich Bros. v. American Distilling Co.*, 570 F.2d 848 (9th Cir. 1977), cert. denied, 439 U.S. 829 (1978); *California Computer Products v. IBM*, 613 F.2d 727 (9th Cir. 1979); *Vollrath Co. v. Sammi Corp.*, 9 F.3d 1455 (9th Cir. 1993), cert. denied, 511 U.S. 1142 (1994).

²⁹ The timing of *Inglis* is somewhat complex as *Inglis* started before *Marsann*, but the key decision on cost measurement follows *Marsann*. The chronology is as follows: *Inglis* was a baking company in the San Joaquin Valley, selling bread in the San Francisco Bay Area and neighboring areas. In 1971, *Inglis* and several other bakers brought action against competing wholesale bakers alleging antitrust violations in the Northern California, Southern California and the Northwest markets. Trial for the Northern California market commenced in March 1978. The jury returned for *Inglis*. Defendant Continental then moved for a Judgment Notwithstanding the Verdict (“JNOV”) and for a New Trial. The District Court granted a JNOV and, in the alternative, a new trial on the Federal Sherman Act and Robinson-Patman claims and a new trial on the State claims. See, *William Inglis & Sons Baking Co. v. ITT Continental Baking Co.*, 461 F. Supp. 410 (N.D.Cal.1978). *Inglis* appealed to the Ninth Circuit, which reversed the District Court’s grant of JNOV for Continental and affirmed the grant of a new trial. See, *William Inglis & Sons Baking Co. v. ITT Continental Baking Co., Inc.*, 668 F.2d 1014 (U.S. App. 1982). The entire case was tried a second time. The jury again returned for *Inglis*. After this second full trial, the District Court denied Continental’s motions for JNOV or a new trial. Continental then appealed a second time to the Ninth Circuit. It was unsuccessful. The Ninth Circuit affirmed on

Marsann and *Inglis* decisions are somewhat cryptic (in terms of the economics), the *Thales* decision in contrast, is thoroughly laid out by the Court and will be described in detail below.

II. A DISCUSSION OF *MARSANN* AND *INGLIS*

As previously noted, the Supreme Court has declined to establish firm guidelines regarding the appropriate measure for determining when a price is below cost. In *Marsann*, the Ninth Circuit held that average variable cost “must be determined from costs uniquely incurred in the production of the particular items purchased at the allegedly predatory price.”³⁰ The “product” here was actually a service: straightening rolls of sheet steel for a U.S. Steel plant in Pittsburg, California.

In this case, we must decide what is a plaintiff’s burden of proof for establishing the element of predation in a predatory pricing claim when the alleged predatory price is afforded only to a select customer. The principal question presented is whether the average variable cost of a product, the standard against which a price is compared to establish predation, must be determined from costs uniquely incurred in the production of the particular items purchased at the allegedly predatory price, or from costs associated with the production of the total output of the product. We hold that the relevant costs are the former, viz. those uniquely incurred to produce the items sold at the challenged price.³¹

the predatory pricing issues. In reaching this, its second decision, the Ninth Circuit cited *Marsann* and the language “uniquely incurred.” See *William Inglis & Sons Baking Company, v. Continental Baking Company, Inc.* 942 F.2d 1332; 1991 U.S. App. This decision contains the key holding on the measurement of costs. Two subsequent related decisions are essentially concerned with *Inglis*’ application for attorneys’ fees. See, *William Inglis & Sons Baking Company v. Continental Baking Co., Inc.*, No. C-71-1906-JPV United States District Court For The Northern District of California 1993 U.S. Dist. LEXIS 17496; and *William Inglis & Sons Baking Company v. Continental Baking Company, Inc.*, No. 93-16648 United States Court of Appeals for the Ninth Circuit 1996 U.S. App. LEXIS 9769.

³⁰ *Marsann Co. v. Brammall, Inc.*, 788 F.2d 612; 1986 U.S. App.

³¹ *Id.* at 611.

The Court further held that plaintiffs' expert incorrectly "assumed that the variable costs attributable to each unit of production were the same without regard to the particular circumstances under which that unit of production took place."³² And finally, the Court held that plaintiff's failed the legal requirement that only "uniquely incurred" costs be utilized despite plaintiffs claim that the "cost figures per job would be impossible to ascertain because of the nature of [defendant's] accounting system."³³ In effect, *Marsann* held that costs could not be allocated across products; the accounting distinctions made by the defendants controlled.

The logic (and specific language) used in *Marsann* was carried over into *Inglis*, where the Court of Appeals for the Ninth Circuit held that plaintiff's expert incorrectly allocated marketing expenses uniformly across branded and store-brand bread:

Inglis' principal evidence of intent was also the centerpiece of its entire case, a study prepared by the accounting firm of Ernst & Whinney ("E&W") that compared Continental's price for private label bread with different measures of Continental's cost for producing (We mean "production costs" to include expenses for distribution and marketing and any other expenses required to bring the bread to market) that bread. E&W calculated one measure of cost by (i) identifying the expenses that varied with Continental's total output, (ii) assigning to private label bread a percentage of each of those expenses, the percentage corresponding to private label bread's share of total Continental output, and (iii) dividing the amount resulting from step (ii) by the number of loaves of private label bread sold by Continental. (*Inglis* and E&W referred to this measure as the "average variable cost" of Continental's private label bread.) The study showed that, between 1970 and 1976, Continental repeatedly sold private label bread at prices that were below this measure of cost. Contrary to

³² *Id.* at 613.

³³ *Id.* at 614.

Inglis' contentions at trial and on appeal, this data could not serve as sufficient evidence of intent.

In order for such a price/cost comparison to support a finding of specific intent to monopolize, the cost measure would have had to include only expenses that were "uniquely incurred" in the production of private label bread. See *Marsann Co. v. Brammall, Inc.*, 788 F.2d 611, 612, 613 (9th Cir. 1986). By a "uniquely incurred" expense, we mean one that Continental would not have incurred had it not produced private label bread. See *id.* at 613. The methodology of the E&W study, however, was to include expenses that Continental may have incurred regardless of its private label bread production. Inglis' cost expert, who supervised the study, testified at trial that he included in private label cost a portion of some expenses, such as those for heating, telephone, supervisors, display space, sanitation labor and supplies, even though these expenses may have been exactly the same had Continental produced no private label bread. In this way, the study failed to identify the unique cost of producing private label bread, and consequently failed to show that Continental's prices were below that cost. This flaw rendered the accounting study insufficient evidence of intent to monopolize.³⁴

It should be noted that Continental's accounting system did not allocate these expenses to any particular type of bread, a not uncommon practice.³⁵ Nevertheless, and we agree, the Court concluded that an equal allocation overstates costs for store-brand bread, since, for example, Continental would not need to spend very much on marketing it. The expert in Inglis may have been better served by allocating marketing expenses in some economically reasonable manner such as revenue or profit or perhaps by allocating all the marketing costs to branded bread.

³⁴ *William Inglis & Sons Baking Company, v. Continental Baking Company, Inc.* 942 F.2d 1332; 1991 U.S. App.

³⁵ Cost accountants argue that crude allocations may be economically rational. More accurate information may not be worth the extra cost. See Maher, *op. cit.*, pp. 71-72.

It is useful here to distinguish *Inglis* from *Marsann*. It is our opinion that in *Inglis*, the problem is not that the expert used judgment to allocate overhead to the two different types of bread, but that he did it in a facially inaccurate and biased way. That is, he assigned marketing costs to a product for which the bakery obviously incurred little or no marketing costs—store brand bread. Indeed, the lack of spending on marketing is one of the reasons that store brand goods are generally sold at lower prices, both wholesale and retail. Even worse, the expert could have avoided this problem by simply not allocating any marketing costs to the store brand bread. Of course, this reduces the estimate of marginal cost for store brand bread, making a finding that price was below marginal cost less likely. The allocation of costs by the *Inglis* expert was clearly biased in favor of the plaintiff.

Marsann is quite different and the decision is more difficult to justify on economic grounds. In *Marsann*, the expert performed an analysis of accounting data, analytically separating fixed from variable costs. But, that data did not distinguish among the different plants, and indeed, the accounting system did not provide enough information to so distinguish. The expert in *Marsann*, then, simply allocated the variable costs proportionally to output. In accounting jargon, output was considered the “cost driver.” This is a reasonable and common approach in cost accounting and, as is discussed above, something like this is ordinarily necessary for allocating overhead costs.³⁶ Other methods for allocation of costs could include: labor, square footage, or machine time. It should be noted

³⁶ See, e.g., Malcolm E. White, Middle City—Online Accounting Tutorial, Ch. 17, p. 3, <http://www.middlecity.com/ch17.shtml> (last visited Sept. 21, 2007).

that in concept, these are closely related to allocation by output.³⁷ Thus, the *Marsann* decision is more difficult to make sense of than *Inglis*.

These two cases were relied upon to a large degree in *Thales* where the Court effectively interpreted “uniquely incurred” to preclude the allocation of costs on a formulaic basis.

III. THALES V. MATSUSHITA

A. Brief Description of the In-Flight Entertainment Industry

The first use of IFE occurred in the early 1960’s with films projected on a single screen in the cabin. Later, the IFE industry developed in-seat audio, broadcasting multiple channels of audio to each seat. In 1988, video was added. As time went on, the systems became more sophisticated; allowing passengers to play video games or select on-demand video.³⁸

IFE systems combine equipment and software to provide power, connectivity, audio, video, telephony and/or games to passengers. An IFE system is usually sold as a complete “ship set” which refers to the head-end players (*e.g.*, a computer server) combined with the seat-end equipment (*e.g.*, a screen).

³⁷ The most commonly-used cost driver in Japanese cost accounting is labor hours. See Takeo Yoshicawa, *Cost accounting, standard and cost accounting systems in Japan: Lessons from the past—recovering lost traditions*, 11:3 Accounting, Business & Financial History, 269, 272-273 (Nov. 2001).

³⁸ See, *e.g.*, “Historical Firsts,” World Airline Entertainment Association, <http://www.waea.org/ife.htm> (last visited on December 2, 2005).

Moreover, IFE systems require significant servicing and maintenance in various locations around the world. For example, Thales operates a maintenance and support operation called Aerospace Services Worldwide.³⁹ Much of the maintenance is bundled with the products through warranties and is not separately priced. Therefore, some of the cost associated with service is a cost of an IFE system sale. Unfortunately, identifying these costs is decidedly difficult. For example, Thales, sells IFE systems, avionics equipment and other electronic systems. All of these systems are serviced at the same centers. Moreover, as commercial aircraft are often sold from carrier to carrier and moved from region to region, it is impossible to predict which IFE systems will be serviced where.

At the time of *Thales v. Matsushita*, there were only three major manufacturers of IFE systems: Thales, Matsushita, and Rockwell Collins, Inc. (“Rockwell”). Several other companies, including Delta Beta, General Dynamics and Ibyes International offered IFE systems but they were very minor and accounted for less than 5 percent of the industry in total. One additional company, LiveTV LLC, sold a system limited to broadcast television within the continental United States and Canada. There were also a number of companies that sold IFE-related equipment. Moreover, Rockwell had decided not to design products for new model aircraft and, therefore, could be considered as slowly exiting.⁴⁰ As a result, looking forward from 2006, the industry was essentially down to two major systems manufacturers.

B. Thales Avionics

³⁹ Third Quarter 2006 AVION.

⁴⁰ While Rockwell had been a relatively large supplier in the past, it is believed in the industry that it is reducing efforts in IFE. Rockwell has not attempted to develop a system for the next generation Airbus A380 or the Boeing 787.

Thales entered the IFE industry when it acquired Sextant In-Flight Systems in 1999 for \$58.7 million.⁴¹ Since entering the market, Thales developed new products and by 2006 was marketing a broad series of systems ranging from the minimal (in-seat power) to highly capable advanced systems (e.g., digital video and audio on-demand using a wireless network). Until 2006, Thales's line of products was less complete than Matsushita's.

C. Matsushita

Matsushita is the largest major supplier of IFE equipment, producing a full line of systems. Thales and Matsushita are the only firms that produce systems for the new generation of Airbus A380 and Boeing 787 aircraft. While the determination as to what constitutes a relevant market for antitrust purposes was disputed by the parties in *Thales v. Matsushita*, a precise definition is not central to the Court's decision with respect to cost estimation.⁴²

D. *Thales v. Matsushita* – the litigation

On April 15, 2004, Thales Avionics, Inc., (“Thales”) filed suit in the U.S. District Court for the Central District of California, Southern Division, against Matsushita Avionics Systems Corporation (“MAS”), which was subsequently renamed Panasonic Avionics Corporation (“PAC”). The suit was ultimately amended to include parent company Matsushita Electronics Inc., (“MEI”). For simplicity, we

⁴¹ See Thales S.A. - Company Profile, Information, Business Description, History, Background Information on Thales S.A., 173, Boulevard Haussmann, 75008 Paris Cedex 08, France. Note that Thales was known at that time as Thomson-CSF.

⁴² Matsushita alleged that the relevant product market was broad, comprised of (at a minimum): in-seat audio/video systems; overhead audio/video systems; portable audio/video systems; satellite television systems; in-seat audio only; and even passengers supplying their own personal audio or video. Thales argued for a definition was narrower and consisted of just in-seat audio/video systems. The parties agreed that the relevant geographic market was worldwide.

refer to these entities collectively as “Matsushita.” The suit alleged that Matsushita attempted to monopolize the IFE marketplace through predatory pricing such that Thales and others would be driven from the market or marginalized.

The key allegations were stated in the complaint:

This action relates to MEI/MAS’ monopolization and attempted monopolization of in-flight entertainment (“IFE”) systems manufactured for installation into new and existing airplanes belonging to commercial airlines doing business in California and around the world. MEI/MAS has attempted to monopolize and has monopolized the IFE market by pricing its systems below average variable cost and by other acts of monopolization as described herein.⁴³

Thales asserted four causes of action: 1) monopolization under Section 2 of the Sherman Act; 2) attempted monopolization under the Sherman Act; 3) unlawful pricing under the California Cartwright Act; and 4) unfair competition under Section 17200 of the California Business & Professions Code.

The Court indicated in its preliminary rulings that Thales had adequately demonstrated that Matsushita would have market power and the ability to charge monopolistic prices were Thales forced to exit the market. Reversing its preliminary position the Court ultimately found that Thales did not meet its burden in showing actual predatory pricing because part of the analysis of

⁴³ Third Amended Complaint Jury Trial Demand, Thales Avionics, Inc. v. Matsushita Avionics Systems Corporation; Matsushita Electric Industrial Co. Ltd., and Does 2 through 100, Before the United States District Court, Central District of California, Southern Division, Case No. SA CV 04-424-JVS (MLGx), June 7, 2005, (hereinafter “Complaint”), ¶ 2

Thales's accounting expert was judged inadmissible as a matter of law. Summary Judgment was therefore granted on behalf of Matsushita.⁴⁴

In order to provide a basic factual background for the analysis of the Court's decision on cost estimation, the fundamental arguments of the case are summarized in brief.

First, Thales alleged that if they were forced from the market, Matsushita would then have market power in in-seat audio/video systems and would therefore be able to recoup at the expense of consumers. Matsushita countered that even if Thales were to exit the market, Matsushita would not capture market power since their ability to increase prices was constrained by the sellers of the other types of products (*e.g.*, overhead systems).

Second, Thales alleged that Matsushita's selective predatory pricing strategy had prevented Thales from obtaining "launch" and "reference" customers. Thales maintained that it is generally important to establish one's IFE system as acceptable to the industry. This is accomplished by securing: 1) a launch customer who can demonstrate the viability of the system under live conditions⁴⁵; and 2) a reference customer (generally accepted in the IFE industry to be an upper echelon airline such as Emirates, JAL or Lufthansa) that other airlines can refer to.⁴⁶ Once launch and reference customers are obtained sales to other customers

⁴⁴ Thales v. Matsushita, Order Granting Defendant Panasonic Avionics Corp.'s Motion for Summary Judgment, U.S. District Court, Central District of California, Case No. SACV 04-454 JVS(MLGx), Mar. 30, 2006. See also, *Antitrust Win for Panasonic and Matsushita*, 4 Dewey Ballantine LLP Litigation, 1, 9-11 (Spring 2007).

⁴⁵ See Thales v. Matsushita, Order Granting Defendant Panasonic Avionics Corp.'s Motion for Summary Judgment, U.S. District Court, Central District of California, Case No. SACV 04-454 JVS(MLGx), Mar. 30, 2006, p. 11.

⁴⁶ The economic rationale behind a reference customer is quite similar to that of the launch customer. Many airlines do not have the ability or willingness to independently evaluate an IFE system. As such

are easier to achieve. In short, Thales alleged that Matsushita could successfully implement a predatory pricing scheme by targeting just the most important sales. Thales alleged below cost pricing on some of these important sales. In the event, Thales was not, in fact, driven from the market. Instead, it claimed that the introduction of its new products was substantially delayed.

In its key response, Matsushita alleged that there was no evidence of predatory pricing on their part for those targeted programs (or other programs for that matter) and that Thales' determination of below-cost pricing on Matsushita's part was flawed and legally inadmissible.

IV. WHAT THE COURT HELD IN *THALES V. MATSUSHITA*

In its central argument denying below-cost pricing, Matsushita relied in large part on *Marsann* and *Inglis* and claimed that Thales had incorrectly allocated costs for Matsushita's overhead costs, and particularly costs for Matsushita's worldwide support network, to all program bids. This would result in the allocation of costs incurred at a Matsushita service facility whether or not the IFE system in question was or would ever be serviced at that particular location.⁴⁷

they prefer to let a larger airline perform the due diligence and evaluation and then free ride on those efforts. For example, if Emirates purchases a Thales system, then smaller airlines can feel comfortable purchasing Thales systems as well.

⁴⁷ In a related argument, Matsushita alleged that the case law does not support a finding of predatory pricing when prices are found to be below Average Total Cost, but above Average Variable Cost. In support, Matsushita cited: *Cascade Health Solutions fka U.S.* 9th Cir., (Sept. 4, 2007) No. 05-35627 DV No. CV-02-06032-ALHI, p. 11223; *Rebel Oil Co., Inv. v. Atlantic Richfield Co.*, 146 F.3d 1088, 1095-96 (9th Cir. 1998); *Vollrath Co. v Sammi Corp.*, 9 F.3d 1455, 1460 (9th Cir. 1993); and *Marsann Co. v. Brammal, Inc.*, 788 F.2d 611, 613 (9th Cir. 1986).

The Court ultimately agreed that Thales failed to demonstrate adequately the existence of below-cost pricing, and that having failed in this regard, concluded that “Thales is unable to offer sufficient evidence of predatory conduct to support its Sherman Act claims.”⁴⁸ Therefore, the Court granted the motion for summary judgment for the defendant Matsushita, in spite of some findings that supported aspects of Thales’s arguments.

A. The Court agreed with Thales on some issues

With respect to whether pricing below ATC was predatory, the Court noted that while each of the cases cited by Matsushita in their briefs used incremental cost as the standard against which to measure allegedly predatory pricing, the cases do not stand for the proposition that incremental cost was the only standard.⁴⁹ The Court gave two reasons for this decision.

First, the Court cited *Brooke Group* where the Supreme Court explicitly declined to resolve the conflicts over cost measures that existed in the lower courts. Second, the Court noted that recent Ninth Circuit cases don’t state a more definitive rule either.⁵⁰ The Court went on to explain the role of the measure of costs in shifting the burden of proof. If the prices are below ATC but above AVC, the plaintiff bears the burden of showing that the prices were predatory. If the prices are below AVC, that constitutes a *prima facie* case of predatory pricing

⁴⁸ Thales Avionics, Inc., v. Matsushita Avionics Systems Crop., Matsushita Electric Industrial Co. Ltd., Order Granting Defendant Panasonic Avionic Corp.’s Motion for Summary Judgment, p 3.

⁴⁹ Thales Avionics, Inc., v. Matsushita Avionics Systems Crop., Matsushita Electric Industrial Co. Ltd., Order Granting Defendant Panasonic Avionic Corp.’s Motion for Summary Judgment, p 7.

⁵⁰ See *Transamerica Computer v. IBM*, 698 F.2d 1377 (9th Cir.), cert. denied, 464 U.S. 955 (1983); *Janich Bros. v. American Distilling Co.*, 570 F.2d 848 (9th Cir. 1977), cert. denied, 439 U.S. 829 (1978); *California Computer Products v. IBM*, 613 F.2d 727 (9th Cir. 1979); *Vollrath Co. v. Sammi Corp.*, 9 F.3d 1455 (9th Cir. 1993), cert denied, 511 U.S. 1142 (1994).

and the burden shifts to the defendant.⁵¹ Note that this is a softer application of the Areeda-Turner test than the authors originally suggested.

In the context of the present case, the Court ruled that Thales had met this particular burden sufficiently well to survive a motion for summary judgment, stating that “Through [Thales’s expert], Thales offers evidence of the unique nature of the market, which suggests an anticompetitive reason to offer prices above AVC but below ATC.”⁵²

The Court also ruled that, had Thales met its burden with respect to the allocation of costs (discussed in the following section), that:

Thales would have presented a rational economic theory of why Panasonic would forego covering all of its costs on certain sales to exclude or impede Thales’ entry into the market sufficient to meet its Celotex burden on this theory. *William Inglis*, 668 F.2d at 1035-36.⁵³

As we shall see, the allocation of costs issue was the critical one and on that issue the motion was decided against Thales.

B. The Court held that the allocation of costs was not admissible

With respect to the proper allocation of costs, the Court ultimately found that Thales’s accounting expert failed to follow the conceptual approach apparently required in *Marsann*. Along the way, the Court agreed that many of this expert’s

⁵¹ *Thales Avionics, Inc., v. Matsushita Avionics Systems Corp., Matsushita Electric Industrial Co. Ltd.*, Order Granting Defendant Panasonic Avionic Corp.’s Motion for Summary Judgment, p 8.

⁵² *Id.*, pp. 8-9.

⁵³ *Id.*, p. 9.

judgments were admissible. Thales's accounting expert made the judgment that many costs recorded as fixed in Matsushita's accounting system were variable to some extent. Examples included advanced engineering, quality control, repair shop, program management. What the Court held next is worth quoting at length because it is far more detailed and thorough than what can be found in *Marsann* or *Inglis*:

The Court finds that [Thales's accounting expert] was entitled to challenge Panasonic's characterization of costs. [Thales's accounting expert] estimated that 60% of these costs were in fact variable, based on review of 2003 records. From inspection of Panasonic records, [Thales's accounting expert] concluded that fixed overhead amounted to about 15% of revenue, and hence the variable portion of fixed expenses amounted to 9% of revenue. The analysis to this point is reasonable and certainly within the gambit of a material factual dispute, but at this point the analysis falters.

[Thales's accounting expert] does not tie her analysis to the specific projects which she analyzed...[and] similarly moved from analyzing direct and indirect labor costs on a macro basis to a uniform addition to each program of 25% of revenue to cover variable labor costs...The Court believes that as an expert [Thales' expert] was entitled to make an allocation for variable labor, but consistent with the controlling case law, she was required to go farther...[Thales's accounting expert's] approach to overhead and labor parallels the work by plaintiff's expert accounting firm which was rejected in *William Inglis*: E&W calculated one measure of cost by (i) identifying the expenses that varied with Continental's total output, (ii) assigning to private label bread a percentage of each of those expenses, the percentage corresponding to private label bread's share of total Continental output, and (iii) dividing the amount resulting from step (ii) by the number of loaves of private label bread sold by Continental. The study showed that, between 1970 and 1976, Continental repeatedly sold private label bread at prices that were below this measure of costs. Contrary to Inglis' contentions at trial and on appeal, this data could not serve as sufficient evidence of intent. *William Inglis*, 942 F.2d at 1336.

The parallel holds true with *Marsann*. Cropper determined Brammall's AVC by studying costs of the company's entire roll-straightening division over the four-month period in which Brammall performed its work at United States Steel. He then classified costs as fixed or variable, dividing the total variable costs by output to produce the AVC figure. In effect, he assumed that the variable costs attributable to each unit of production were the same without regard to the particular circumstances under which that unit of production took place. Marsann admits that Cropper did not examine the actual costs of the United States Steel job alone. *Marsann*, 788 F.2d at 612-13.

In effect [Thales's accounting expert] assumed that the variable costs attributable to each unit of production were the same without regard to the particular circumstances under which the unit of production took place. That [Thales's accounting expert] was not entitled to do.⁵⁴

This last step (which the Court ruled inadmissible) is actually a reasonable, and economically justified, cost accounting approach to allocating joint costs to specific projects. In fact, it is a necessary element in estimating marginal costs for many purposes.

V. MARSANN EFFECTIVELY BARS THE ALLOCATION OF OVERHEAD COSTS

The language in *Marsann*, and its progeny *Inglis* and *Thales*, is sweeping. We read it as barring the allocation of costs on any output-related base. If we are correct, *Marsann* creates problems for antitrust and indeed for more general commercial litigation because allocation of costs to projects or products is a necessary ingredient to cost estimation.

⁵⁴ United States District Court, Central District of California, Case No., SACV 04-454-JVS(MLGx), Order Granting Defendant's Motion to Exclude, March 30, 2006.

The Marsann Court’s interpretation of “uniquely incurred costs” effectively bars the allocation of costs based on a percentage of revenue generated by a particular product or in the case of *Thales*, a particular IFE program. Furthermore, no other possible method of allocation is approved, suggesting that no allocation method is possible. Again, allocation of variable overhead costs by revenue is a reasonable basis. More strikingly, we will demonstrate that allocation by revenue is conservative from the viewpoint of a predatory pricing plaintiff.

Revenue is, of course, closely related to output. Indeed, in the simple case of constant pricing across programs, revenue is perfectly correlated with output, being simply output times a constant price. If we make the further assumption that direct costs are proportional to output, then revenue is also perfectly correlated with direct costs. On these assumptions, allocation of variable overhead by revenue is equivalent to allocation by direct costs or output. No wonder output and direct costs are such common bases for cost allocation in accounting. They are very similar. One might ask why use revenue in this situation?

Using revenue in this situation is both simpler and more conservative than the other common bases. In the IFE industry, pricing is by program. Programs differ greatly in scale and in exactly which goods and services are provided. For example, a program might involve two airplanes or 120 airplanes. One might adjust output by the number of airplanes, or better, the number of seats. But that doesn’t go far enough. The simplest system costs a small fraction of the high-end,

high-tech versions. Revenue is a value-weighted index of output. Very large, expensive programs involve high output and high revenue.⁵⁵

When examining an allegation of targeted predatory pricing, the simplifying assumption of constant prices across products or programs will likely be violated. The prices are likely to be lower in for the sales that are alleged to be predatory. This introduces a bias in the estimation of costs, but the direction of the violation is conservative from the plaintiff's viewpoint. It leads to an understatement of the variable costs for the alleged predatory pricing. Thus, revenue, it turns out, is not merely a reasonable basis for allocating variable overhead cost. Revenue is more conservative than the other common bases for allocation and thus should be given a privileged position in predatory pricing cases—far from being explicitly excluded.

A. A numerical example

To see the conservative direction of the bias, consider a simple example which tracks *Thales*. There is a predatory pricing defendant who sold two programs. Program A is priced lower, relative to costs than program B. Naturally, program A is the one that is alleged to be predatory. For simplicity, let us assume that the programs are identical physically and in terms of the true marginal costs of production, sales and service. Since observed direct costs are also identical across programs, this implies that allocation according to direct cost is correct.

⁵⁵ It is because of this necessity of averaging over heterogeneous products that revenue is an accepted measure for market share and Herfindahl-Hirshman Indexes in antitrust. See Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, Issued: April 2, 1992, Revised: April 8, 1997, Sec. 1.41.

The problem for the accounting or economic analyst is to use accounting records and reasonable analytical methods to determine whether the pricing in program A is below variable costs, and thus meets the Areeda-Turner test. Suppose that the accounting information system generates the following information:

PROGRAM LEVEL DATA		
	Program A	Program B
Selling Price (Revenue)	\$90	\$200
Direct Cost	\$65	\$65
FIRM LEVEL DATA		
Fixed Cost for the firm	\$25	
Variable Overhead for the firm	\$100	

For this example, we have finessed the problem of estimating how much of the overhead cost is variable. We assume that this has been established and that there is no dispute about the magnitude of the variable overhead cost. The remaining problem is to allocate the known variable overhead across programs. The defendant's accounting system admits of two possibilities for this: 1) direct cost; or 2) revenue. The following notation will be used.

Variable Overhead Costs of A (unknown): VOC_A

Variable Overhead Costs of B (unknown): VOC_B

Revenue from A (known): R_A

Revenue from B (known): R_B

Direct Cost of A (known): DC_A

Direct Cost of B (known): DC_B

Total Variable Overhead Costs (known): TVOC

Total Revenue (known): TR

Total Direct Costs (known): TDC

If one allocates according to revenue, the variable overhead costs for each program (*i.e.*, A and B) would be calculated by multiplying the total variable overhead costs by the ratio of the revenue of program A to total revenue:

$$VOC_A = (TVOC) \left(\frac{R_A}{TR} \right) \quad (1)$$

Plugging in the actual values from the accounting data:

$$VOC_A = (\$100) \left(\frac{90}{290} \right) = \$31 \quad (2)$$

A similar calculation from program B follows:

$$VOC_B = (TVOC) \left(\frac{R_B}{TR} \right) \quad (3)$$

In terms of the values from the accounting data:

$$VOC_B = (\$100) \left(\frac{200}{290} \right) = \$69 \quad (4)$$

If, instead, one allocates according to direct cost, the variable overhead costs would be calculated by multiplying the total variable overhead costs by a different ratio, the ratio of direct cost for program A to total direct costs:

$$VOC_A = (TVOC) \left(\frac{DC_A}{TDC} \right) \quad (5)$$

In term of the accounting data:

$$VOC_A = (\$100) \left(\frac{65}{130} \right) = \$50 \quad (6)$$

And agins, similarly for program B:

$$VOC_B = (TVOC) \left(\frac{DC_B}{TDC} \right) \quad (7)$$

In terms of the accounting data

$$VOC_B = (\$100) \left(\frac{65}{130} \right) = \$50 \quad (8)$$

Thus, the revenue allocation method allocates less cost to the allegedly predatory low-price program, program A. This method reduces the cost, making a finding that program A was priced below variable cost more difficult. In this example,

price is below variable cost using either method, but it is closer to cost using the revenue method.⁵⁶

Numerically, using the revenue allocation method for Program A:

$$R_A - VC = \$90 - \$65 - \$31 = -\$6 \quad (5)$$

Thus, revenue is estimated to be \$6 below variable cost for program A. Using the direct cost allocation method for Program A:

$$R_A - VC = \$90 - \$65 - \$50 = -\$25 \quad (6)$$

Under the direct cost allocation method, revenue is estimated to be significantly more below cost, *i.e.*, \$25 versus \$6.

This demonstrates the conservative nature of allocation by revenue for predatory pricing analysis. In this case, it is more conservative than the assumed truth—which would be found by allocation according to direct costs. In most predatory pricing situations, one would expect allocation by revenue to be more conservative than allocation by output or (closely related) direct costs. If the allegations are true, the method would ordinarily be biased against the plaintiff. It follows that revenue should be a privileged base for allocating cost among products for predatory pricing analysis – not a prohibited base. *Thales* seems to have it quite wrong at this crucial point.

⁵⁶ This example shows the likely case, where the ratio of revenue to direct cost for the program suspected of being predatory is substantially below that ratio for other sales. That is why these sales are suspect in the first place. But, the result from the example could be reversed if the contrary were to be true.

B. Under the *Thales* Holding, Prices Could Almost Never be Below Cost

If the analyst is prevented from allocating costs in some straightforward manner, any costs that are not directly attached to output by product within a company's own financial statements are effectively eliminated from the AVC. This might, in itself, drive the estimated AVC down low enough that prices could not be observed below it. This would make it almost impossible to prove what has become a threshold issue for predatory pricing--a violation of the Areeda-Turner test. It seems very unlikely that the Court meant to do that. Further, a firm that expected that it might consider predatory pricing in the future could game the system to defeat a future predatory pricing claim. It would simply accumulate more costs in a general overhead category and fewer costs in a direct cost category in its accounting statements.

C. Applying the *Thales* Holding to Calculations for Lost Profit Damages in General

Further, the same issue of allocating overhead variable costs comes up in commercial damage calculations. Often, the basis is lost profits from lost sales. This requires an estimate of marginal cost, which is often proxied by average variable cost. Much the same as a predatory pricing analysis, the calculation of average variable cost for damage purposes requires an adjustment of overhead to account for the variable portion and an assignment to various products in a multi-product firm. If this allocation is not allowed by courts following the reasoning of *Thales*, there are two possible outcomes, neither of which is desirable. One possibility is for the court to rule that average variable cost cannot be established, therefore damages cannot be

calculated. Alternatively, the court could rule that the estimate cannot include allocated costs. This second possibility will understate costs and, therefore, overstate damages. Neither outcome makes good economic or legal sense.

VI. CONCLUSION

It is difficult to say why the Courts' reasoning seems to have gone astray in *Marsann* and ultimately *Thales*. Perhaps the Court was overly sensitive to the danger of a plaintiff overstating costs in an Areeda-Turner pricing analysis by loading excessive overhead onto the product (here program) in question. That sensitivity seems clearly at the heart of *Inglis*. This danger suggests care in evaluating the accounting and economic logic and data used, but it cannot support barring a necessary step in cost estimation: the allocation of variable overhead across products.

It seems to us that the allocation of variable overhead is an important factual issue that should be considered by the fact finder at trial. This allocation requires careful analysis by expert accountants and economists, evaluated in the structured adversarial setting of a trial. A sound judgment on the allocation of variable overhead cost is not susceptible to judicial determination at summary judgment, based on briefings, depositions and reports. Such an allocation is necessary to the correct application of the Areeda-Turner test. Further, the determination of a reasonable allocation is not something new and exotic for courts. Nor is this determination primarily an issue for predatory pricing or even antitrust law. It is an everyday issue for courts dealing with lost profits due to many causes of action, from construction delay to commercial defamation. We suggest that the reasoning used in the *Marsann* case and ultimately the *Thales* decision is faulty and will cause unnecessary problems in future cases.