

20 Years of Merger Guidelines Enforcement at the FTC: An Economic Perspective¹

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I. Overview

The purpose of this paper is to provide a brief summary, from an economic perspective, of the FTC's experience with enforcing the Merger Guidelines over the past 20 years. We highlight some of the important economic issues that the FTC had to grapple with in implementing the Guidelines and some of the economic analyses that were brought to bear on those issues. We begin with a short discussion of the pre-Guidelines FTC to clarify the context within which the implementation of the Guidelines was conducted in the early years. In the remainder of the paper, we summarize historical issues of economic significance by topic: important contributions to the economic analysis of mergers, market definition, concentration, barriers-to-entry, competitive analysis, efficiencies, and failing firm.

II. Introduction – The FTC at the Time of the Announcement of the Guidelines

To begin, it is useful to recall the context at the Federal Trade Commission in which the 1982 Guidelines were promulgated. In the 1970s, the FTC embarked on an aggressive enforcement policy aimed at deconcentrating industries such as ready-to-eat cereals and oil, and targeting various industry practices (*e.g.*, preemptive capacity expansion (*FTC v. DuPont*, 96 F.T.C. 653, order October 1980), preemptive product introductions (*FTC v. Kellogg Company*,

¹ The views set forth in this paper are those of the authors and do not necessarily represent the views of the Federal Trade Commission or individual Commissioners. The discussion should also not be interpreted as indicating that the authors individually or collectively have always agreed, as a matter of economics, with Commission actions. The authors thank James Langenfeld, Elizabeth Schneirov, and Jonathan Baker for helpful comments. They also thank the many economist, attorney, and accountant colleagues at the FTC over the years with whom they have learned how to implement the Guidelines. Of course, all errors are those of the authors.

² Members of the Bureau of Economics, FTC. The authors were all at the FTC when the 1982 Guidelines were issued. Scheffman left the FTC in 1988 and returned in June, 2001.

et. al., 99 FTC 8, dismissal order January 1982), shared monopoly (*FTC v. Exxon, et. al.*, 98 F.T.C. 453, dismissed order, September 1981), and facilitating practices (*FTC v. Ethyl*, 101 F.T.C. 425, final order March 1983, *jud. vacated sub nom. E. I. DuPont de Nemours & Co. v. FTC*, 729 F. 2d 128 (2^d Cir. 1984)). Some of those cases were still in litigation in 1982. Beyond the litigated cases, a lot of resources were used in industry investigations of automobiles and a number of other industries. “Standard” horizontal mergers were a relatively minor part of FTC antitrust efforts during the 1970s, largely due to the recognition by companies and the antitrust bar that horizontal mergers were likely to be challenged. There was also an effort to broaden the merger enforcement agenda beyond standard horizontal mergers, to deal with potential competition, and even conglomerate mergers. For example, one of the big merger investigations in the late 1970s and early 1980s involved Exxon’s proposed purchase of Reliance (*FTC v. Exxon/Reliance*, 100 F.T.C. 434, dismissed order, July 1982). Exxon was seen as a potential entrant into the electronic variable speed drive market, as it was thought that they possessed innovative drive technology set to revolutionize the market.

All of the major FTC monopolization cases were lost or abandoned. None of the many industry investigations led to significant cases that were won. However, at the time the Guidelines were promulgated, the FTC staff had about ten years experience in exhaustive investigations and litigation dealing with potential competitive issues in concentrated markets. Moving from a focus on potential competitive problems posed in concentrated industries to considering horizontal mergers in concentrated markets was a big change.

Although there are probably few people today who would defend those cases, a great deal was learned in investigating and in litigating these matters. These cases provided an opportunity for a very vigorous and thorough “debate” on the fundamental economic issues that are at the heart of antitrust and of industrial organization economics. Economists and attorneys came to

understand that making inferences about monopoly from structural indicia or accounting measures of profit, alone, was highly problematic. Most participants probably concluded that real world competition is much more complicated than antitrust law or economics textbooks suggest. The FTC did not have to wrestle with difficult market definition issues in these monopolization cases (as a strong market was generally one criterion for choosing the cases).³ Thus, although much was learned about real world competition in the monopolization cases at the FTC, there was no significant progress in advancing the economic analysis of market definition.

The monopolization cases (e.g., the ready-to-eat cereals - “Cereals”) industry generally did have to address barriers-to-entry. Work by Mike Scherer and Dick Schmalensee in the cereals case developed the analysis of entry barriers beyond the Bain or Stigler approaches. Whatever one thinks about the Scherer and Schmalensee analyses, they foreshadowed an economics literature about entry barriers and probably affected the way the FTC looked at entry barriers. This was an improvement, to the extent that it focused the barriers analysis on developing a fact-based theory (hopefully based in sound economics) of how/why there were or were not barriers in a particular setting. Nonetheless, the analysis of barriers in the monopolization cases (whether barriers were protecting monopoly profits) was not directly relevant to analysis of barriers for the purpose of analyzing a proposed merger, because even entry impediments could support competitive concerns by protecting market power in the short run.

The monopolization cases were rich in the area of competitive effects analyses, and were one stimulus of the expansion of the theoretical side of industrial organization economics. The

³ It may be of interest to note that in at least one of DOJ’s big monopolization cases (*IBM*), market definition was a central issue. Beyond Bill Baxter’s (and DOJ staff) genius, perhaps that is one reason why DOJ had greater appreciation for the need for a economically sound, implementable approach to market definition.

monopolization cases and industry investigations generally impacted the analysis of later mergers in those industries. However, the relatively elaborate theories of competitive effects in the monopolization cases (*e.g.*, as in Cereals) had little lasting impact in merger analysis, where the theories of potential competitive effects have generally been relatively simple. Finally, with respect to efficiencies, in all of the big monopolization cases and in many industry investigations, FTC staff were confronted with proffered efficiency explanations for suspect practices. By reviewing these arguments, staff built a better understanding of the ideas surrounding market efficiencies.

III. The 1982 FTC Horizontal Merger Statement

In 1982, the FTC still included three sitting Commissioners from the Carter Administration, with Reagan appointee Jim Miller, a Ph.D. “Chicago School” (via University of Virginia) economist as Chairman. The Director of the Bureau of Competition, Tom Campbell, was a attorney with a Ph.D. in economics from the University of Chicago. In 1983 Tim Muris, an attorney with past experience at the FTC and substantial expertise in economics, the law, and public policy, became the Director of the Bureau of Competition.⁴ It was under Muris that the early years (1983-85) of merger enforcement under the Guidelines were conducted.

Contemporaneous with the DOJ Merger Guidelines, the FTC issued its *Statement of Federal Trade Commission Concerning Horizontal Mergers* (“Merger Statement”). Despite three of the four sitting Commissioners being appointed by Carter, including preceding Chairman Pertschuk (who was very involved in the monopolization cases and industry investigations) the Merger Statement argued for de-emphasizing market structure as a factor in merger enforcement:

⁴ Charles James, the AAG for Antitrust (at the time this paper was written), was an Assistant to Muris and very involved in merger review.

More recent empirical economic research and well over a decade of practical experience in analyzing horizontal mergers, however, have led the Commission to conclude that proper consideration of market realities justifies some revision of market share benchmarks and greater consideration of evidence beyond mere market shares when such evidence is available and in a reliable form. ...

... while the Commission will continue to look to market share data as an important indicium of the likely competitive effects of a merger, a more refined treatment of that data is in order. (footnotes omitted)

One interpretation for the fact that a Commission that had brought the structural-focused monopolization cases later de-emphasized structure in its Merger Statement is that the Commission had learned from the monopolization cases that structural arguments, alone, are unlikely to prevail, at least in monopolization cases. The Merger Statement also stressed the importance of entry barriers, but provided no analytical framework for analyzing them. On product market definition, the FTC Merger Statement stayed with the case law, highlighting (admittedly generally unavailable) cross elasticities and *Brown Shoe*-type factors. Finally, the Merger Statement indicated that efficiencies could be considered by the Commission through prosecutorial discretion, but not as a legal defense of an otherwise offensive merger (Chairman Miller dissenting).

The Merger Statement also noted that “the DOJ 1982 revision to the 1968 Guidelines will be given considerable weight by the Commission and its staff.” In fact, almost from the beginning, FTC legal staff embraced the DOJ Guidelines as the analytical framework for merger analysis.⁵

⁵ For an attempt to categorize important characteristics of industries, mergers, and competitive issues for mergers reviewed in the first ten years of the Guidelines at the FTC see David Scheffman, *Making Sense of Mergers*, 38 Antitrust Bulletin 715 (1993).

And this was accepted with little or no resistance. In our view this was due to two characteristics of the Guidelines. First, the Guidelines' approach to market definition, barriers, and competitive effects was grounded in basic economics that both attorneys and economists could understand. Secondly, unlike the FTC Horizontal Merger Statement, the Guidelines laid out specific analyses that were implementable by both attorneys and economists.

IV. Part III Administrative Decisions

In the early years of the Guidelines, FTC Part III Administrative decisions sometimes did not appear to closely track the Guidelines. For example, in *Grand Union* (102 F.T.C. 1032, final judgment July, 1983) the Commission reversed an Administrative Law Judge finding of a "supermarket" product market (sales over \$1.5 million and store size over 10,000 square feet). Instead of employing the Guidelines' price hypothetical, the Commission focused on qualitative evidence of competition between supermarkets and smaller grocers, noting that these entities carried many of the same products, sold to many of the same customers, recognized at least some level of rivalry, responded to each-other with competitive strategies (extend hours of service or carry ready-to-eat products). The Commission interpreted the evidence to support a retail grocery market (and noted this market was broadly consistent with historical precedents). Despite *Grand Union*, the Commission took the position that supermarkets were a relevant market under the Guidelines when reviewing supermarket mergers later in the 1980s.⁶

In *Echlin* (105 F.T.C. 479, final judgment June, 1985) and later in *Goodrich* (110 F.T.C. 283, final judgment May, 1988) the Commission accepted the definition of barriers-to-entry as

⁶ Finally, *Grand Union* further advanced the FTC position that barriers are a necessary condition for a merger to create market power (*Grand Union* at 1063).

“additional long run costs that must be incurred by an entrant relative to the long-run costs faced by incumbent firms.” To address the 1984 Guidelines’ approach to barriers, in these Administrative decisions the Commission used the term “impediment to entry” as “any condition that necessarily delays entry into a market for a significant period of time and thus allows market power to be exercised in the interim” (*Echlin* at 486). The Commission’s conclusion on the ease of entry into the carburetor kit business was that entry was “extraordinarily easy and can be quite rapid” (*Echlin* at 491). In *Goodrich*, the Commission advanced the idea that “minimum efficient scale - in conjunction with sunk costs effects- represents a substantial impediment to entry” (*Goodrich* at 303). This approach was later integrated into the 1992 Guidelines.

V. Overview of the Evolution of the Merger Guidelines

Among other things, the 1982 Merger Guidelines advanced a new approach to market definition. The importance and brilliance of this advance cannot be overstated. Antitrust (and economics) had labored for decades with an amorphous approach to market definition which often was not economically sound and provided little actual guidance or clarity. Economists had not been able to come up with a methodology that was both analytically sound and administrable. The Guidelines’ approach to market definition focused on a central enforcement-related question (would a merger result in a price increase?) through the use of the hypothetical monopolist concept. The economic logic was understandable (although actually quite subtle in implementation) by attorneys and economists, and the methodology was administrable. The approach was audacious, in that the Guidelines were promulgated during a climate of great political controversy about the change in antitrust enforcement and the Guidelines changed the approach to a core issue in antitrust analysis, market definition, for which there was an extensive

body of case law. The Guidelines' approach to market definition is not flawless. Nonetheless, it was far superior to what it replaced and to this day, no one has advanced anything better.

The Guidelines also introduced a new concentration index, the Herfindahl-Hirschman Index (HHI). The appeal of the HHI was that it was related to Stigler's "Theory of Oligopoly," which was the foundation of the Guidelines' collusion analysis (now known as coordinated interaction). Of course, no concentration measure is "perfect." From an economic perspective, the HHI probably overemphasizes the potential competitive impact of the purchase of a competitor with a very small share by a competitor with a larger share unless the small competitor is a "maverick"⁷ or has substantial excess capacity and competitive costs.

Although the barriers discussion set out in the 1982 Guidelines was anchored in a price test framework, the concept was subject to multiple interpretations which led to a high variance in the analysis. The basic Guidelines' concept focused on determining whether entry was sufficient to preclude existing competitors from successfully raising price for any significant period of time. Both the likelihood and magnitude of the entry in response to the anticompetitive effect would be evaluated.

The 1982 Guidelines addressed a number of considerations beyond concentration and entry that would affect the likelihood that a merger would substantially reduce competition in a market. In addition to the standard observations that collusion is more likely in a relatively homogeneous market with an inelastic demand curve, the Guidelines listed spatial issues, quality of information, buyer market characteristics, historical conduct and performance evidence as relevant to the competitive analysis. The discussion of spatial concerns foreshadowed the

⁷ See, Jonathan B. Baker, *Mavericks, Mergers and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y.U. L. Rev. 135 (2002).

unilateral effects analysis in the 1992 Guidelines, as the Guidelines recognized that firms may compete more intensely with relatively close rivals than distant rivals in a differentiated goods market.

The 1984 Merger Guidelines made changes in five areas. First, the market definition test was refined to ensure that five percent was not a rule (for evaluating the hypothetical) and the Guidelines hypothetical was calibrated to the price at which the product in question currently trades. Second, the structural analysis was expanded to emphasize the potential importance of nonstructural factors (thus coming closer to the FTC Merger Statement). Third, the Guidelines clarified the treatment of foreign competition to ensure that the analysis was analogous to domestic competition. Fourth, the revision indicated that the DOJ would give “appropriate weight to efficiencies in all relevant cases.” Finally, the Guidelines indicated that failing divisions would be judged with standards similar to those applied to failing firms. This was a departure from the FTC Merger Statement, that indicated that as a matter of prosecutorial discretion, the FTC could evaluate a failing division claim under a more lenient standard than for a failing firm claim.

In 1992, the DOJ was for the first time joined by the FTC in releasing joint Guidelines. These Guidelines clarified the roles of demand-side and supply-side factors in market definition (uncommitted and committed entrants, etc.). Theories of anticompetitive effects (unilateral and coordinated interaction) were fleshed out in greater detail, and there was an emphasis on the importance of a credible fact-based theory of anticompetitive effects for a merger challenge. The 1992 Guidelines explicitly linked the barriers analysis to the theory of anticompetitive effects. A revised approach to barriers analysis was laid out, using a three-part test of timely, likely and sufficient entry to replace the likelihood and magnitude structure of the earlier Guidelines. The

1992 Guidelines also explicitly noted entry would be evaluated “without attempting to identify who might be potential entrants.”

In 1997, the joint DOJ/FTC Guidelines were revised, with the focus of revision being the efficiency section. Basically, the text just clarified the efficiency policy. For example, the merger-specific test was defined by the lack of practical alternatives. The Agencies explicitly committed not to challenge a merger “if cognizable efficiencies are of the character and magnitude such that the merger is not likely to be anticompetitive in any relevant market.”

VI. Economic Analyses

The Merger Guidelines are fundamentally grounded in economics. Economists inside and outside the agencies have contributed significantly to the development and implementation of the Guidelines analysis of mergers. There have been at least six particularly important advances in bringing economic analysis to bear on the application of the Guidelines.

- (i) “Critical loss” analysis.⁸

“Critical loss” analysis is regularly used at both the FTC and DOJ, and has been relied upon in a number of court decisions.⁹ Although there can be problems in implementation and

⁸ See, Barry Harris and Joseph Simons, *Focusing Market Definition: How Much Substitution is Necessary?*, 12 *Research in Law and Economics* 207 (1989); and Gregory Werden, *Demand Elasticities in Antitrust Analysis*, 66 *Antitrust Law Journal* 363 (1998).

⁹ See, for example, *FTC v. Tenet Health Care Corp.* 186 F.3d 1045 (8th Cir. 1999) which discusses “critical loss” at great length. Another recent case where critical loss analyses were important is *United States v. Sungard Data Sys.*, 172 F. Supp.2d 172 (D.D.C. 2001).

interpretation,¹⁰ critical loss analysis can be relevant and useful for both market definition and competitive effects analyses.

- (ii) The development of models that use data and statistical analyses to develop estimates of demand elasticities.

This type of analysis is done in order to attempt to directly address the Guidelines' market definition hypothetical, the answer to which depends on demand elasticity and costs.¹¹ This type of analysis can also be used, with the appropriate data and market situation, to develop statistical evidence bearing on unilateral effects theories.¹²

- (iii) Bidding model analysis

These analyses use historical bid data and information on competitor costs to analyze the potential competitive effects of a merger in a market where transactions are determined by bidding.

¹⁰ See, for example, James Langenfeld and Wenqing Li, *Critical Loss Analysis in Evaluating Mergers*, 46 *Antitrust Bulletin* 299 (2001).

¹¹ See, for example, Gregory J. Werden, *Demand Elasticities in Antitrust Analysis*, 66 *Antitrust Law Journal* 363 (1998).

¹² See, for example, J. Hausman, G. Leonard, and J.D. Zona, *A Proposed Method for Analyzing Competition Among Differentiated Products*, 60 *Antitrust Law Journal* 889 (1992); J. Hausman, G. Leonard, and J.D. Zona, *Competitive Analysis With Differentiated Products*, 34 *Annales d'Economie et Statistique* 159 (1994). In April 2002 a Bureau of Economics Working Paper, "Demand System Estimation and its Application to Horizontal Merger Analysis," <http://www.ftc.gov/be/workpapers/wp246.pdf>, identified data, statistical, and economic issues that deserve attention in improving the potential applicability of these analyses.

(iv) Analysis of “Natural Experiments”

“Natural experiments” are situations in which the number of competitors and/or concentration vary over time or space. When data is available, it is sometimes possible to conduct statistical or other empirical analyses that shed light on the potential competitive effects of a proposed transaction.

(v) 1992 Guidelines Entry Analysis

The 1992 Guidelines entry analysis provided a basis for “minimum viable scale” and other analyses that could contribute to the assessment of barriers-to-entry.

(vi) 1992 Guidelines Unilateral Effects Analysis

The analysis of diversion,¹³ simulation models,¹⁴ *etc.* has created a cottage industry for economists and has been an advance in economic analysis.¹⁵ All of these methodologies have been applied to competitive effects analysis.

¹³ See, for example, Carl Shapiro, *Mergers with Differentiated Products*, Antitrust, Spring 1996 at 23.

¹⁴ See, for example, Luke Froeb and Gregory J. Werden, *Simulation as an Alternative to Structural Policy in Differentiated Products Industries*, in *The Economics of the Antitrust Process*, Malcolm Coate and Andrew Kleit, eds., Kluwer Academic 1996; and Gregory J. Werden, *Simulating Unilateral Competitive Effects from Differentiated Products Mergers*, Antitrust, Spring 1997 at 55.

¹⁵ In our view more economic analyses, both theoretical and empirical, and more integration of important industry characteristics into the economics analysis, will be required to make these analyses more reliable inputs into enforcement decisions. (See, for example, the discussion of some of the leading industrial organization economists at FTC’s “Empirical Industrial Organization Roundtable,” September 2001, <http://www.ftc.gov/be/empiricaliorroundtabletranscript.pdf>.)

Below, we will discuss some examples where these analyses, and others, have been used in more detail.

VII. Market Definition¹⁶

Although the basic logic of the Guidelines market definition criteria is fairly straightforward, it has taken years to more fully lay out the analysis in different factual settings and improve the implementation. In the 1980s and into the early 1990s, (the early years for the implementation of the Guidelines at the FTC), legal staff investigations placed considerable emphasis on the answers of customers to the hypothetical price increase question. In retrospect, it is clear that customers had difficulty understanding the hypothetical question and that staff did not appreciate the importance of determining whether there were customers at the margin and the volume of business they represented. (The use of the hypothetical price increase was eventually significantly improved by the addition of “critical loss” analysis.)

Prior to the issuing of the Guidelines, FTC economists had a lot of experience in battling with attorneys over what the economists thought were narrow, economically implausible markets. The Guidelines, if misapplied, could be a powerful tool that could suggest implausibly narrow markets. The economics staff investigation placed much less weight on customer answers to the Guidelines hypothetical and instead tried to infer market definition from data and historical behavior.¹⁷ In some cases, economics staff (and sometimes management) advanced markets that (in retrospect) appear broader than would be justified by a strict application of the Guidelines. It is probably fair to say that it took many years for both the attorneys and

¹⁶ For a discussion of market definition under the Guidelines, *see*, for example, Gregory J. Werden, *Market Delineation under the Merger Guidelines: A Tenth Anniversary Retrospective*, 38 Antitrust Bulletin 517 (1993).

¹⁷ This will be discussed in more detail below.

economists to “thoroughly” understand the Guidelines methodology. Although it is still common for attorneys and economists to differ in conclusions on market definition, the basis of dispute now is typically the relative weight to be given various types of evidence rather than analytical differences.

A. Market Definition Issues

Different industries and fact situations posed new challenges for how to apply the Guidelines market definition analysis. Among the issues that arose in connection with market definition in applying the Guidelines at the FTC were:¹⁸

1. Can price correlations, by themselves, define Guidelines markets ? (no)
2. Can shipment patterns, by themselves, define Guidelines markets? (no)
3. Are used products in a Guidelines market? (not thus far)
4. Is blank tape in the market for prerecorded music? (no)
5. If different products are used in variable proportions in end uses, with the proportions varying to some extent based on price, can the different products be separate markets? (yes)

¹⁸ The parenthetical “answers” to these questions are the authors’ personal opinions on how FTC enforcement policy has evolved. Again, the discussion should not be interpreted as indicating that the authors individually or collectively have always agreed, as a matter of economics, with Commission actions.

6. Are private label products in the Guidelines market for grocery products in a given category (or is the market branded products, national branded products, etc.)? (sometimes)
7. Are major brands of carbonated soft drinks that have direct store delivery a Guidelines market? (yes)
8. Can joint products (e.g., light product coming out of the same refinery, such as gas and kerojet) be separate Guidelines markets? (yes)
9. Can there be a Guidelines market for the production or distribution of “premium” or “high quality” products or services? (sometimes)
10. Can there be a Guidelines market for the production or distribution of a “full line” of products or services? (sometimes)
11. Are supermarkets of some minimum size a Guidelines market? (thus far)
12. Can there be Guidelines markets for products or services that have yet to be introduced? (yes)
13. Can there be Guidelines markets for lines of research, R&D efforts, *etc.*? (yes)

14. Can a geographic market include some sources of imports but exclude others? (yes)
15. What is an analytically sound approach to product and geographic market and the supporting evidence that would convince a court in a hospital merger? (to be determined)

Although some of these questions have relatively obvious answers 20 years after the promulgation of the Guidelines, they were the issues that were wrestled with in the first few years of enforcing the Guidelines. In connection with investigating a wide range of market situations, the staff of the FTC built up expertise with the new market definition construct.

B. Some Specific Examples of Market Definition Analysis

1. Early FTC Econometrics Analyses

From the beginning there was an understanding by FTC economists that demand elasticities were central to the Guidelines' market definition analysis. As early as 1983 an FTC economist estimated a structural market model for a major intermediate good to obtain elasticity estimates to determine whether a hypothetical increase in domestic prices would be restrained by imports. This analysis indicated that imports sufficient to defeat a hypothetical price increase were unlikely to occur.

2. Petroleum Mergers

Petroleum company mergers have long been an important part of FTC merger enforcement. In many ways, petroleum markets are ideally suited to Guideline analysis. Refinery or pipeline outages, changing firm strategies in allocating products geographically, episodes of entry or exit at the marketing level are relatively rich sources of natural experiments which aid in testing hypotheses on relevant markets and other Guideline elements. Prices and quantities are generally very sensitive to each other in these markets, and the antitrust analyst typically has a wealth of price/quantity data with which to work, either from company internal sources, third party proprietary data, or public sources. The availability of data and a variety of natural experiments allow for more precise statements about market contours.

In the 1980s the Commission was faced with the first wave of mergers (Mobil/Marathon, Gulf/Cities Services, *Texaco/Getty*, *SoCal/Gulf*). The basic staff analyses of geographic and product market developed during that time have lasted to this day. Since demand elasticities are quite small, substitution on the demand side (*e.g.* substitution away from gasoline by motorists to other products in response to a small but significant and nontransitory increase in price “SSNIP”) is generally not important. Thus, FTC economists working on oil mergers have generally focused the relevant market analysis by assessing the limitations on supply side sources that determine current prices. This is sometimes referred to as identifying the marginal sources of supply. For example, on the bulk supply level, suppose a merger involved a combination of two nearby refineries in the Northeast, which were shipping product over a several state area. The analyst would ask if prices were to increase by a small amount per gallon – and this increase was not related to an increase in costs – which suppliers would respond?

Historical data and other evidence may suggest that the response would be primarily from pipelines which connect the area to refineries in the Gulf. Marine borne shipments into the Northeast from the Gulf, the Caribbean or even Europe might also increase. If so, these suppliers would need to be counted as market participants, potentially resulting in a fairly broad geographic market. Price responses of actual or potential market participants might vary seasonally, however. Pipeline capacity might be reached in summer months, for example, or opportunity costs of imported marine product may be so high at certain times that a SSNIP in the Northeast induces little additional supply. Under these circumstances, a narrower geographic market might be suggested.

During the 1990s, the FTC addressed a second wave of petroleum mergers. Cases which resulted substantial divestitures include *Shell/Texaco*, *BP/Amoco*, *Exxon/Mobil*, *BP/Arco*, *Chevron/Texaco*, and *Valero/UDS*. One new development in market analysis in petroleum occurred in the 1999 BP/ARCO transaction. BP and ARCO were the two largest producers and sellers of Alaska North Slope (“ANS”) crude oil, producing at the time about 44 and 30 percent of all ANS crude, respectively. About 90 percent of ANS was refined on the U.S. West Coast, while up to 10 percent had been exported to the Far East. About 45 percent of all crude refined on the West Coast was ANS, with the remainder being made up by crude oil from California and foreign sources. Having no downstream refineries of its own, BP sold all its ANS to other firms’ refineries located in the West Coast or Far East, while most but not all of ARCO’s ANS was consumed by its two West Coast refineries. The Commission alleged, among other things, that the proposed merger between BP and ARCO would reduce competition in three relevant markets defined as 1) sale of ANS crude, 2) sale of ANS to “targeted” West Coast refiners and 3) sale of all crude oil used by West Coast refiners.

The first two market definitions required that ANS itself was a product market distinct from other kinds of crude oil and the second definition constituted a price discrimination market. A number of empirical approaches were utilized within the FTC and by the parties to address these issues. One approach was to use econometric analyses focusing on estimating the demand elasticity for ANS crude.¹⁹ Another approach, which has become increasingly common in oil merger investigations, is to use refiners' linear programming models to simulate individual refinery decisions on crude purchases and outputs at alternative input and/or output prices.

Finally, quantitative evidence supporting a conclusion that there was some sort of price discrimination has also been used in oil company mergers to support price discrimination markets. The typical evidence is price and/or margin (netback) data indicating variations that appear to be inconsistent with competitive arbitrage. In our opinion, such alleged "price discrimination" analyses deserve much more economic attention, both as to theory and empirical evidence.

3. Hospital Mergers

If petroleum markets illustrate the easy applicability of Guidelines analysis to market definition, hospitals markets lie at the other end of the spectrum. Geographic and sometimes product market analyses are complicated by complex transactions between hospitals and third party payors and heterogeneity of hospitals. Transactions prices are determined in a relatively small number of bilaterally negotiated contracts between individual hospitals and managed care payors, thus the kinds of quantitative data necessary for estimation of relevant demand curves are generally not readily available. The types of "natural experiments" suited to test market

¹⁹ See, for example, David Scheffman and Pablo Spiller, *Geographic Market Definition Under the Department of Justice Merger Guidelines*, 30 *Journal of Law and Economics* 123 (1987).

contours are also much less frequently encountered in the analysis of hospital markets as compared to petroleum and other markets involving consumer goods or commodities. However, cost pressures in health care and the rise of managed care and selective contracting since the mid-1980s have led to increased focus by third party payors on “prices.” The views of these payors have been a key source of information for antitrust analysts seeking to apply the Guidelines’ relevant market analysis to hospital mergers.

The Commission started the Guidelines era with a series of enforcement actions which established the general approach to both product and geographic market definition in hospital mergers. Starting with successful administrative complaints in both *American Medical International* (104 F.T.C. 1, final judgment July, 1984) and *Hospital Corp. of America* (HCA) (106 F.T.C. 455, final judgment October, 1985), the Commission added victories in federal court in both *University Health* (F.T.C. v. University Health Inc, 1991-1 Trade Cas. (CCH) ¶69,444, *rev'd* 938 F.2d 1206 (11th Cir. 1991) and *Columbia Hospital Corporation* (F.T.C. v. Columbia 1993-1 Trade Cas. 70,209, 6 Trade Reg. Rep. 23,399). In all of these cases, the courts accepted cluster markets for acute care, inpatient hospital services along with relatively local geographic markets comprised of a few counties. *American Medical* involved geographic markets of San Luis Obispo city and county which the Commission accepted, as the respondent failed to put forward a “plausible basis” for overturning the initial decision. A year later in HCA, the Commission rejected the staff’s broad market, along with a hypothetical 45 minute travel market and accepted the more narrow Chattanooga urban area advocated by the parties and the Administrative Law Judge (ALJ).²⁰ The Commission went on to criticize the parties and the ALJ for relying on a static analysis of market definition considerations. Likewise, in *University*

²⁰ The parties advanced a narrow geographic market, because they had other hospitals outside the urban area that would be subject to a divestiture if a broad market was accepted.

Health the Commission established the Augusta, Georgia area as the relevant geographic market, and in *Columbia Hospital Corporation* the Commission obtained a comparable local market.

Although the courts have routinely accepted the Commission's hospital services cluster market approach, product market issues have nonetheless required considerable economic analysis in some cases. Hospitals produce a large number of services which are clearly distinct on the demand side. In some instances, hospitals may be able to shift capacity easily from one sort of care to another, but in other cases supply substitution between services may be more difficult and time consuming. Even within a given service, the expertise of care may differ markedly among hospitals, with some institutions being regarded as primary care hospitals while other provide more sophisticated secondary and tertiary level services.²¹

In some cases, differences among hospitals are significant enough to lead to consideration of fairly narrow relevant product markets, especially when the merging parties are among the few hospitals to provide certain services in an area. For example, certain hospital mergers have been analyzed to determine whether anticompetitive effects might occur in markets defined as obstetrical services or cardiac care, even though adverse effects in other inpatient services might not be expected since there were more numerous competitors. Of course, such relatively narrow hospital service markets have implications for geographic market definition (for example, some services such as cardiac care may have fairly broad geographic markets) and entry (entry impediments into a particular service may be very small, certainly as compared to producing the whole cluster of hospital services). These considerations probably explain why the

²¹ For a more complete discussion of hospital product market issues see Seth Sacher and Louis Silvia, *Antitrust Issues in Defining the Product Market for Hospital Services*, 5 *International Journal of the Economics of Business* 181 (1998).

FTC has not generally alleged such narrow markets in cases that have gone to trial.²²

Evidentiary elements of interest to economists in addressing these product market issues include observed contractual practices between hospitals and payors (e.g. certain services separately negotiated as “carve outs”), the views of payors on their ability to shift patients to other hospitals should the price of some service increase (ideally backed up by historical data), the time and costs associated with hospitals adding or upgrading services, and the effects on patient flow when hospitals have either added or withdrawn from particular services.

In recent years, while the agencies have still usually been able to prevail on product market, they have faced increasing difficulties in successfully litigating geographic market. Beginning in 1995, the FTC’s success with litigated hospital merger cases dramatically changed. In the 1995 *Freeman* (F.T.C. v. Freeman Hospital, 1995 Trade Reg. Rep. 23,775, *aff’d*, 69 F3d 260 (8th Cir. 1995)) case, the Commission challenged the merger of the two smaller of three hospitals in Joplin, Missouri. The FTC’s relevant market would include Joplin and areas within 27 miles of the city. The respondents proposed a much broader market which would include hospitals in communities as far as fifty miles away.

Much of the debate, at least from the Court’s perspective, focused on the relative merits of the contending sides’ differing analyses of Elzinga/Hogarty patient flow statistics. Hospital mergers have been a curiosity in that Elzinga/Hogarty tests generally are not given much weight under Guidelines market definition analysis.²³

²² However, the Commission did allege, with the court accepting, a “primary care” inpatient services market in addition to the usual, general acute care inpatient services market in the *Blodgett/Butterworth* case. The primary care market was considerably more concentrated than the overall acute care market, largely due to differences in the associated geographic markets.

²³ See Gregory J. Werden, *The Limited Relevance of Patient Migration Data in Market Delineation for Hospital Merger Cases*, 8 *Journal of Health Economics* 363 (1990).

The Commission recognized the limitations of shipments tests in the *Freeman* case and tried to persuade the court that its relevant market, in a Guidelines price increase sense, was supported by the evidence from and relating to third party payors, hospital administrators and the companies' documents. The district court, however, concluded that while such "non-empirical" data might have some probative value in evaluating the market, it was insufficient to carry the FTC's burden in establishing relevant market. The district court's opinion denying the Commission request for a preliminary injunction was upheld upon appeal to the Eighth Circuit. The Eighth Circuit was similarly unimpressed by market participant perceptions that few patients would leave the immediate area for care elsewhere should Joplin prices increase. That court concluded that the FTC had not answered the more relevant question of where patients could "practicably go" in the event of a price increase and had only addressed the question of where patients currently go. From an economics perspective, what appears to be required is an empirical-based analysis of third party payor decisions about provider contracting and the extent of subscriber coverage in response to a hospital service price increase. This analysis would need to include the resulting impact of those payor decisions upon subscriber utilization of the merging hospitals and their actual or proposed competitors.

The FTC prevailed on both product and geographic market in *Blodgett/Butterworth* (F.T.C. v. Butterworth Health Corp 946, F. Supp. 1285 (W.D. Mich, 1996) *aff'd*, 121 F.3d 708, Decision published without opinion (6th Cir. 1997)), but lost the case, in part, on issues related to the analysis of competitive effects of a merger of non-profit hospitals. The 1998 *Tenet* merger case involved the merger of the only two hospitals in Poplar Bluff, Missouri. The Commission argued a geographic market that roughly comprised a 50 mile area from Poplar Bluff, a market that would include the merging hospitals plus 5 very small rural hospitals including one owned by Tenet. The defendants argued for a market extending out 65 miles from Poplar Bluff. This larger market would bring in an additional fifteen hospitals, including several very large

hospitals which were capable of providing very high levels of care and a broader range of services.

While a good part of the Commission's case on geographic market in *Tenet* was based on Elzinga/Hogarty criteria which courts have come to expect in hospital merger cases, staff put considerable emphasis on developing testimony from payors and third party hospitals about their views as to the likely effects of a hypothesized price increase in Poplar Bluff on patient flows. The FTC also highlighted evidence of intense recent price competition between the merging hospitals for particular managed care contracts, noting that in this head to head competition for contracts more distant hospitals did not appear to be important. Defendant's response was a critical loss analysis based on so-called "contestable" zip codes, *i.e.*, areas where at least twenty percent of recent patients utilized hospitals other than those in Poplar Bluff. Defendant's conducted and used a consumer telephone survey to support an argument that the number of patients who would switch to another hospital outside of the FTC's proposed market to save the equivalent of a 5 percent increase in price would, given current price-cost margins, make a such a price increase unprofitable.

The FTC prevailed in *Tenet* at the district court level, which supported the FTC's geographic market definition in part on the basis of what it called the "anecdotal evidence" from payors and third party hospitals. The Eighth Circuit reversed upon appeal. The Eighth Circuit was impressed by the defendant's critical loss analysis, and specifically noted that critical loss analysis is employed in the Merger Guidelines to determine relevant markets. According to the Eighth Circuit, that over twenty percent of patients in contested zip codes already used hospitals outside the FTC's proposed market was a critical fact that was improperly discounted by the district court. The Eighth Circuit was skeptical of payor testimony that a price increase by

Poplar Bluff area hospitals would not be defeated, given their incentives to resist price increases and to control health care costs.

An important lesson from *Tenet* is that the Guidelines' approach to market definition can sometimes impose heavy burdens on the government, especially in cases like hospitals where pre-merger price cost margins are relatively high, resulting in critical loss estimates being small. Even the opinions of sophisticated buyers, if unsupported by quantitative analyses, may not be enough to be persuasive.

4. *Occidental-Tenneco*

In this matter (FTC v. Occidental Petroleum Corp., 1986-1 Trade Cas. (CCH) ¶ 67,071, (D.D.C. Apr. 29, 1986)), the FTC challenged Occidental's acquisition of Tenneco's suspension and dispersion PVC businesses. The extent of the geographic market was a key issue in the case, with the FTC arguing a U.S. market and the respondents arguing a world market. The court denied the FTC's request for a preliminary injunction. The respondent's expert was Barry Harris, and one of respondent's attorneys was current BC Director Joseph Simons. Harris estimated a critical loss of 875 million pounds for suspension PVC and 45 million pounds for dispersion PVC. If foreign producers could supply this critical output, neither suspension nor dispersion PVC could be U.S. markets. It was apparently this work that stimulated that later paper by Harris and Simons on critical loss.

After the merger was consummated, the Commission litigated a full trial on the merits (FTC v. Occidental Petroleum Corp. 115 F.T.C. 1010, final order December 1992). During the period before the administrative trial, the PVC world changed and import competition was no

longer considered likely enough to justify the broad market. The parties ended up settling the matter through the divestiture of some plants.

5. Examples of Consumer Goods Cases

In *Warner Polygram* (FTC v. Warner Communications, Inc., 1984-1 Trade Cas. (CCH) ¶ 66,025 (C.D. Cal. 1984), *rev'd*, 742 F.2d 1156 (9th Cir. 1984)), a matter involving recorded music, the parties argued that home taping and “bootleg” copies should be included in the market. The parties’ economists developed an econometric analysis of the demand for recorded music that showed that the sales of blank tape was a significant variable. Of course, this econometric analysis did not directly answer the Guidelines’ question about demand elasticity. In fact, the parties’ econometric model yielded an estimated own-price elasticity for recorded music that indicated that recorded music was a relevant market. This was one of the first instances at the FTC in which an own-price elasticity was estimated econometrically and used as one basis for inferring a product market under the Guidelines.

The District Court found taping to be in the market, while the Appeals Court ruled taping should be excluded from the market. The Appeals decision turned on the fact that packaging, pricing, and liner notes associated with prerecorded music differed from taped product. Also mentioned were the evidence from record companies and other facts that suggested an increase in the price of music would not cause a massive shift to home taping.

In the soft drink merger cases of the 1980s,²⁴ Commission staff developed and estimated econometric demand models that shed light on market definition and closest competitors. These estimates were not used in litigation. Later, with the increase in importance of unilateral effects analyses following the 1992 Guidelines, economists outside and inside the agencies developed and expanded the use of such models to develop own- and cross-price estimates as an input into unilateral effects analyses for consumer products mergers. In a number of grocery products mergers, both the parties and the FTC economists used the results of these analyses to simulate post-merger market outcomes.

In the *Swedish Match (FTC v. Swedish Match et al.*, 131 F. Supp 2d 151 (D.D.C. 2000)) merger, a key issue was whether moist snuff and loose-leaf chewing tobacco were in the same market. The defendants' economist testified for a broad market, in part based on econometric estimates of demand. The FTC prevailed without providing its own econometric analysis, focusing on other types of evidence and a rebuttal of the parties' economist's model and estimates. The court found a loose-leaf market based in part on the views of the merging firms' competitors, statements by distributors, and internal documents showing that price-based substitution between loose-leaf and moist snuff was minimal. This is an interesting contrast to the reasoning in some of the cases involving hospital mergers where much of this kind of evidence was accorded little weight. The Court also supported its finding of a loose-leaf product market on the basis of other *Brown Shoe* criteria such as industry recognition and distinct pricing of loose leaf and moist snuff.

6. *Staples/Office Depot*

²⁴ Coke's attempted acquisition of Dr Pepper went to litigation (*FTC v. Coca-Cola*, 641 F. Supp. 1128, (D.D.C. 1986), *vacated* 829 F.2d 191 (D.C. Cir. 1987)), and Pepsi's attempted acquisition of Seven Up was abandoned.

This 1997 transaction (*FTC v. Staples*, 970 F. Supp 1066 (1997)) would have combined two of the top three office supply superstore chains in the U. S. With about 1000 stores nationwide, the two chains competed in numerous metropolitan areas and in some instances were the only two superstore competitors; in other areas, Staples and Office Depot had only one other superstore rival, Office Max. A key question in this case was whether office superstores constituted a relevant product market. The Commission defined the product market as the sale of consumable office supplies through office superstores. This definition excluded items such as computers, fax machines, and office furniture where Staples and Office Depot faced competition from other superstore specialists and other efficient sales outlets. Respondents argued that other retailing formats such as warehouse clubs, discount mass merchandisers, mail order and independent stationers competed with the superstores, and advocated a broad product market, in which case the combined share of the parties would be quite small.

The Commission's argument for the narrower product market definition and for competitive effects was based primarily on price-related evidence. The econometric analysis in Staples/Office Depot essentially examined "natural experiments," as price effects were estimated as a function of the number of office supply superstores selling into a local region. One interpretation of the data is to observe that higher prices are associated with fewer competitors. As the proposed merger would reduce the number of competitors from three to two, all currently three entity locales could expect higher prices, while the threat of potential competition in the other areas where either Staples or Office Depot compete with Office Max would be reduced. Moreover, when the two merging parties are the only superstores in an area, the merger could create a monopoly.

In court, the FTC and the parties' economic experts put forward statistical analyses that provided estimates of Staples' and Office Depot's pricing in geographic markets where they had

no superstore competition to markets where they faced one or two such rivals. The FTC analysis concluded, for example, that Staples charged prices as much as 13 percent higher in markets where it had no superstore competition compared to areas where there are three competing superstores. The parties' economist provided rebuttal testimony contesting the FTC's expert's conclusions.

A key part of the case centered on internal company documents that indicated, for example, that Staples charged significantly higher prices, greater than 5 percent more, when it had no superstore competition than when it competed with other superstores. Because of these "hot documents," it is unclear to what extent the empirical economic analyses of either side affected the court's decision.²⁵ The Court found the FTC's price evidence persuasive, although it went on to invoke other *Brown Shoe* indicia such as "industry recognition" and "uniqueness" in finding a superstore relevant product market.

VIII. Concentration

The 1982 Guidelines introduced the HHI as the measure of concentration to replace the standard four firm concentration ratio. Two critical HHI levels of concentration were advanced; 1000 with a change in 100 and 1800 with a change of 50. The Guidelines reported an interest in being more "likely than not" to challenge mergers that fall into the 1000 to 1800 interval with a change of over 100 and "likely" to challenge mergers when the HHI exceeded 1800 and the

²⁵ For then Bureau of Economics Director Jonathan Baker's views on this matter see *Econometric Analysis in FTC v. Staples*, 18 *Journal of Public Policy & Marketing* 11 (1999). Responding to Baker's comments see Jerry Hausman and Gregory Leonard, "Documents vs. Econometrics in Staples," <http://www.antitrust.org/cases/staples/hasuleon.html>.

change exceeded 100. The exact wording of the Guidelines' presumptions were modified in later revisions of the Guidelines.

Some insight into the actual enforcement standards at the FTC can be gleaned from a review of a subsample of 220 merger investigations resolved between 1983 and 2000. This subsample basically contains all of the HSR-reportable horizontal mergers which underwent a full investigation during the period and where the potential competitive concerns were confined to a single market. Thus, complex transactions in which multiple competitive concerns are reviewed were removed from the sample.²⁶ The data set contains 113 enforcement actions (either settlements or complaints) and 107 closed investigations.

We identified the first and second lowest HHI (as estimated by the Commission attorneys) associated with an enforcement action in each of the nine two year periods to evaluate the evolution of enforcement over time.²⁷ The lowest HHI jumped from 1566 in 1983-84 to 2545 in 1985-86 and, except for one year, remained well over 2000 for the remainder of the time period. The same basic analysis was applied to the sample of closed cases, but this time focusing on the highest HHI closed in a two year period. These high HHIs generally exceeded 4000 throughout the sample. The second-lowest HHI exhibited a similar pattern. For enforcement, it jumped from 1652 in 1983-84 to 2575 in 1985-86 and remained over 2200 for the remainder of the time period. Likewise, the second-highest HHI for closed case generally exceeded 3500 throughout the sample.

²⁶ The single overlap focus generally excludes some important industries (*e.g.*, oil and supermarkets), and thus care should be taken in interpreting the results.

²⁷ Two-year periods were used to protect confidentiality.

A comparable analysis could be undertaken for the median HHI in each two year period. These median HHI's for complaints start around 1800 in 1983-84 and reach 5000 by 1991-92. The median rose to 6000 late in the sample. In contrast, median HHI levels for closed cases increased from virtually 1800 in 1983-84 to almost 2500 in 1985-86 and basically remained around that figure for the rest of the sample.

Thus, consistent with the FTC Merger Statement, these data indicate that the HHI thresholds in the Guidelines, alone, have generally not been determinative in enforcement decisions.

IX. Barriers-to-Entry

The 1982 Guidelines provided an operational approach to barriers, although there were analytical flaws that were worked out over time, which culminated in the barriers analysis in the 1992 Guidelines.²⁸ In the early years, three different approaches to entry evolved: the first (will enter) focused on the isolation of the actual firms likely to enter; the second (could enter) was based on the identification of actual barriers or impediments that would make entry unlikely (leaving a positive inference of easy entry in the absence of actual barriers); and the third (could profitably or would enter) focused on a hypothetical analysis of the incentives to enter.

One of the most heated areas of “debate” in the monopolization cases and in industrial organization in the 1970s was with respect to barriers-to-entry. Both the 1982 Guidelines and the FTC Merger Statement emphasized the importance of barriers-to-entry. In the early days of

²⁸ For a more detailed discussion of entry, see Malcolm B. Coate and James Langenfeld, *Entry under the Merger Guidelines 1982-1992*, 38 *Antitrust Bulletin* 557 (1993).

the Guidelines, the *Cereals* case debate over barriers continued in some investigations. Legal investigations emphasized the statements of possible potential entrants (*i.e.*, no they would not enter). Economics investigations focused on estimating the profitability of entry (not always appreciating the logic that entry had to be profitable at *post-entry* prices). It is fair to say that it took some time before a consistent approach was followed, and the approach continued to evolve with experience and better understanding of the analytical issues. Nonetheless, over the 20 years of FTC merger review under the Guidelines, there have been very few cases for which the major reason not to block an *otherwise problematic* merger was an absence of barriers-to-entry. However, an apparent absence of barriers-to-entry has sometimes been one of a number factors leading the FTC to allow a merger to go forward.

Under the 1992 criteria, most fully investigated cases have led to a conclusion that there were significant barriers-to-entry. Failing the timeliness test is probably the most commonly violated of the criteria, typically because of the absolute number of activities and the complexity of the entry process. The likelihood criteria is probably of secondary concern, as the interaction between scale and sunk costs often indicates that entry is unprofitable, unless the market is growing rapidly, or entry can be sponsored by large customers, who have a different pre- and post-entry calculus than *de novo* entrants.²⁹ The sufficiency analysis often serves to limit the impact of potential fringe entry, as subscale fringe entrants who may be profitable in a niche generally are not of sufficient scale to defeat the competitive effect of concern.

A. Entry Issues

²⁹ See, for example, David Scheffman and Pablo Spiller, *Buyers' Strategies, Entry Barriers, and Competition*, 30 *Economic Inquiry* 418 (1992); and David Scheffman, *Ten Years of Merger Guidelines: A Retrospective, Critique, and Prediction*, 8 *Review of Industrial Organization* 173 (1993).

Different industries and fact situations posed new challenges for how to apply the Guidelines' barriers analysis. Among the issues that arose in connection with entry in the first few years of applying the Guidelines at the FTC were:³⁰

1. Can scale economies impede entry? (standing alone, no. 1992 Guidelines' lay out the analysis)
2. How does reputation figure into the entry analysis? (time to enter and sunk cost)
3. How should the need to promote a product be evaluated? (same as other investments, time and sunk costs)
4. Do capital requirements affect entry? (standing alone, no)
5. Is entry possible in declining industries? (sometimes)
6. How do you calibrate the magnitude of entry? (look to potential anticompetitive effect)

Again, while a number of these questions appear relatively straightforward today, they played a role in developing our understanding of entry analysis under the Guidelines.

³⁰ The parenthetical "answers" to these questions are the authors' personal opinions on how FTC enforcement policy has evolved. Again, the discussion should not be interpreted as indicating that the authors individually or collectively have always agreed, as a matter of economics, with Commission actions.

B. Case Examples

1. *Promodes* (aka *Red Foods*) 1989

Of course, the DOJ's *Baker Hughes* case is the most notable case bearing on barriers-to-entry in the post-1982 Guidelines era. The FTC also lost a merger case (*FTC v. Promodes*, 1989-2 Trade Cas. (CCH) ¶ 68,688 (N.D. Ga. Apr. 14, 1989)) in part because it could not convince the court that there were barriers to entry. In this supermarket merger in Chattanooga, the entry impediments typically found in earlier grocery retailing cases (over-storing relative to the market growth and tight zoning regulation) were not present. Instead, the FTC's argument was based on both scale considerations linked to economies of multi-store operation and high sunk costs of entry, and on evidence about the intentions of potential entrants. Although the court found that the Commission staff had shown some historical and economic barriers, the court concluded that they were not sufficient to infer other supermarkets could not enter the Chattanooga grocery retailing market in the light of the fact that there had been a number of entrants over the preceding two years. The court did not accept the FTC's argument that the entry of only a few stores would not police the pricing of larger multi-store chains. This case highlighted the need to flesh out the analysis of barriers in the Guidelines, which was accomplished in 1992.

2. Drug Wholesaling Cases

In 1998, the FTC challenged two concurrent proposed mergers in drug wholesaling, Cardinal Health's acquisition of Bergen Brunswig and McKesson's acquisition of AmeriSource (*FTC v. Cardinal Health*, 12 F. Supp. 2d 34 (D.D.C. 1998)). In its decision, the court tracked the Guidelines' timeliness, likelihood and sufficiency elements. The Commission's economic

expert testified that new entry and/or expansion by existing smaller firms would be unlikely to counteract the anticompetitive effects of the mergers in this case. He concluded that there was a substantial gap between the four largest firms in the market (the defendants) and the vast majority of other, smaller drug wholesalers that is reflected not only in their respective market shares, but in their geographic coverage and their expenditures on technology. He further noted that: (1) the next two largest firms in the market had both testified that they were not in a position to close the gap between them and the four defendants in any significant way in the near future, and (2) the past history of entry/expansion in this market indicated that entry/expansion in this market was difficult.

The court found entry into the national market could be timely, noting explicitly that neither capital requirements nor technology was an impediment that might slow entry. Evidence bearing on likelihood was mixed. There had been little entry in recent history. With regard to expansion by regional drug wholesalers, on the one hand, there were examples of regional growing and indeed one of the defendants (AmeriSource) had emerged from regional status to reach the national level within the last five years. However, executives of key regional competitors testified they had no plans to expand in response to any post-merger pricing patterns. The court concluded that the sufficiency criterion had not been met. To the court, this meant that the “absence of another national wholesaler in the event of the mergers is too great a competitive loss—which the regional wholesalers cannot sufficiently replace.”

X. Competitive Effects Analysis

The main theories of competitive effects put forward in the 1982 Guidelines, supplemented with the clarifications included in the 1984 Guidelines, were collusion and

dominant firm. Dominant firm analysis was analytically straightforward, although complex in practice, since the analysis should hinge on the supply elasticity (competitive response) of the “fringe” and a sound market definition. The analytical approach for collusion was essentially the factor facilitating collusion “check list.” In practice, the check list does not always provide much guidance. The 1992 revision of the Guidelines addressed this concern by highlighting which issues would be most relevant to the collusion story.

In the early years of merger review under the 1982 Guidelines, the importance of customer complaints and “hot documents” were fully appreciated. Both the FTC and outside parties have become ever more thorough and sophisticated in attempting to solicit and assess customer opinions. There is more focus now than there was in the early years on soliciting customer opinions on the ultimate issue, *i.e.*, did customers believe that the merger would harm them through higher prices or other anticompetitive effects.

Evidence from documents and customers has always been important in collusion/coordinated interaction cases. Such evidence, when available, is used to support a conclusion that coordination is already occurring or would likely occur after the merger. Another approach to prove coordination/collusion has been to look for differences in prices or margins (or netbacks) across products or geography that appear to be inconsistent with competitive arbitrage. Such evidence is then used in support of an argument that there must be some sort of coordinated price discrimination already occurring in the market. Again, in our opinion, such alleged “price discrimination” analyses deserve much more economic attention, both as to theory and empirical evidence.

The 1992 Guidelines expanded significantly the relevant discussion of competitive effects. The collusion analysis (now labeled coordinated interaction) was more firmly grounded

in economic theory, which indicates that the key requirements of coordinated interaction are reaching an “agreement,” being able to detect deviations from the agreement, and having effective mechanisms for policing the agreement. The 1982 Guidelines’ “check list” is still relevant to these key requirements, but the 1992 Guidelines provide more of an analytical framework than the check list alone. The 1992 Guidelines also highlight the potential importance of “mavericks” in thwarting effective coordinated interaction, although the FTC had long utilized the maverick theory in “collusion” (coordinated interaction) investigations.

The 1992 Guidelines’ elevation of unilateral effects, with the differentiated products (Bertrand) or “capacity” (Cournot) variants probably had a significant impact on the analysis of competitive effects, and in the theory of the cases (more focus on unilateral theories) in merger investigations. While unilateral effects cases existed before the 1992 revision of the Guidelines, in our view there has been considerably more focus on unilateral effects theories since the 1992 Guidelines.

A. Issues in Competitive Effects Analysis

Among the issues that arose in connection with competitive effects analysis in applying the Guidelines at the FTC were:³¹

1. Can joint products be a significant impediment to effective coordination?
(sometimes)

³¹ The parenthetical “answers” to these questions are the authors’ personal opinions on how FTC enforcement policy has evolved. Again, the discussion should not be interpreted as indicating that the authors individually or collectively have always agreed, as a matter of economics, with Commission actions.

2. Can there be effective coordinated interaction in a market with heterogeneous products? (yes)
3. Can there be effective coordinated interaction with respect to innovation? (yes)
4. Are homogeneous goods markets always prone to collusion? (no)
5. Can there be a dominant firm-like theory from a merger of the “closest” competitors (yes)

B. Pre-1992 Cases

1. *Bass Brothers*

This matter (*FTC v. Bass Brothers Enterprises, Inc.* 1984-1 Trade Cas. (CCH) ¶ 66,041 (N.D. Ohio June 6, 1984)) probably represented a textbook merger collusion theory case. The core market (carbon black) was relatively homogeneous and firms were implementing a product standardization policy. Demand was inelastic, the market was stable, the competitors shipped nationwide, competition was on price, pricing structures were similar, and entry was difficult. The Commission had documents from the parties suggesting the merger would improve the suppliers bargaining position or stabilize the [pricing] situation. The court found the Commission had shown a “strong likelihood of showing . . . the effect of each of the acquisitions may be substantially to lessen competition” and therefore granted the injunction.

2. *Warner/Polygram*

This matter is notable, in part because the parties compelled discovery of Bureau of Economics memoranda (although the FTC has not had to produce internal staff memoranda in any other merger litigations). This was not a straightforward checklist case. The competition was in significant part about “new” products (new releases of recorded music), and this and other industry-specific factors implied that this was not a “garden variety” collusion case. The district court denied the request for a preliminary injunction, finding that collusion would be unlikely because of distinct and heterogenous products, sold through by special discounts and heavily promoted through non-price competition. The Appeals court reversed, noting the Commission had met its burden with concentration and entry evidence. The litigation established that a collusion theory case could be sustained in a complex market setting, although the court provided little guidance as to the appropriate analysis of the likelihood of conclusion.

3. *PPG/Swedlow*

In this matter, involving differentiated products and innovation, PPG proposed to acquire Swedlow (*FTC v. PPG Industries, Inc.*, 628 F.Supp. 881, *aff'd*, 798 F.2d 1500 (D.C. Cir 1986)). Both firms produced aviation glass. While some uses are relatively simple (the windshield in a small prop-driven plane), others involved substantial technology (the windshield in a 747). The court found that only one competitor, Sierracin, could match PPG and Swedlow in the high technology market. With the merger reducing the number of players from three to two, interdependent anticompetitive conduct was considered likely. The court found leading firm behavior to be a particular danger. Of course, one could also consider the leading firm problem to be a unilateral concern, because the many customers whose top choices would have been PPG and Swedlow would be adversely affected by the merger.

After the Appeals Court upheld the preliminary injunction, the FTC initiated an administrative proceeding to permanently enjoin the merger (*FTC vs. PPG Industries*, Docket No. 9204). The FTC's economic expert defined a development market for aircraft transparencies and highlighted the loss in head-to-head competition that affected the subset of customers who considered PPG and Swedlow to be the two best positioned competitors to serve their needs. This analysis posited a bidding market for development projects and isolated the most direct effect of the merger. While couched as a collusion concern, the analysis would now be seen as a form of unilateral analysis, because it was argued that the merged entity would be able to raise prices unilaterally for some customers. The parties withdrew from litigation before the trial was completed.

4. Collusion Analysis

The 1980s were probably a golden age of collusion analysis. Arguments within the FTC and arguments advanced by the parties and their increasingly important economic consultants went far beyond the check list in analyzing the potential for what we now call coordinated interaction effects.³²

In the early 1990s (pre-1992 Guidelines), in a matter involving an arguably homogeneous intermediate product, FTC economists produced a spreadsheet model that simulated critical loss for a hypothetical cartel under varying assumptions. The basic model computed the profitability of a five percent cartel price increase based on assumptions for the identities of the hypothetical cartel participants (marginal firms could be switched from the fringe to the cartel), the elasticity

³² See, for example, *In re: B.F. Goodrich*, 110 F.T.C. 207, 329-385 (1988), for an extensive analysis of collusion.

of demand, the amount of excess capacity required for a reserve cushion and the marginal cost of production. The physical capacity limits of the fringe firms were considered exogenous. The model was used to analyze the viability of various hypothetical cartels under varying assumptions.

C. Post-1992 Cases

1. *Boeing/McDonnell Douglas*

In this three to two merger, with obvious barriers to entry, the FTC declined to attempt to block the transaction. After an extensive investigation, the Commission determined that Boeing's acquisition of McDonnell Douglas would not have an anticompetitive effect on the commercial aircraft market or defense products. Cognizant that on its face the merger appeared to raise serious antitrust concerns, the Commission issued a statement explaining its conclusions.³³

In the commercial market, the transaction combined Boeing, a company with roughly 60 percent of the market for large aircraft with a non-failing direct competitor in a market where only one other competitor, Airbus Industries, was a significant rival. The investigation found virtually unanimous opinion that McDonnell Douglas no longer had a competitive impact on the worldwide market for commercial aircraft. Furthermore, no one believed that as an independent company or part of another firm that McDonnell Douglas's economic prospects would be

³³ Statement of Chairman Robert Pitofsky and Commissioners Janet D. Steiger, Roscoe B. Starek III and Christine A. Varney in the Matter of The Boeing Company/McDonnell Douglas Corporation, File No. 971-0051 (July 1, 1997). Commissioner Azcuenaga issued a separate statement concurring in part and dissenting in part.

reversed. In essence, the Commission concluded that looking forward competition would not be reduced by the merger.

2. Drug Wholesaling

In the *Cardinal* case, some company documents suggested that the merger was a way to achieve rational pricing by removing excess capacity from the market; some documents complained about price competition and stated the hope that removing excess capacity would have positive results for the industry. The FTC's economic expert testified that actual head-to-head competition between the four defendants had been an important cause of drug wholesaling prices coming down in recent years, and he highlighted recent examples of this competition. He also provided the court with an economic computer simulation bidding model that estimated the magnitude of price increases that might be expected post-merger. The FTC expert also testified to the theoretical relationship between excess capacity and the incentive to compete aggressively.

The court concluded that coordinated behavior would be more likely post merger (recall that the court was evaluating what it concluded would be a 4 to 2 situation). The court observed that prices had been falling in recent years when competition was very vigorous, and was concerned that the mergers would reduce downward pressures on price. Other concerns included the problematic use of most favored nations clauses and the fragmentation of the wholesale market.

3. *Heinz/Beechnut*

This proposed merger in 2000 (*FTC v. Heinz*, 116 F. Supp.2d 190 (2000), *rev'd* 246 F.3d 708 (D.C.Cir. 2001)) would have combined the second and third largest producers of baby food. Heinz and Beechnut each had approximately 14 percent of U.S. sales, with the leading producer, Gerber, having about a 70 percent share. While the Commission lost its request for preliminary injunction at the district court level, the D.C. Circuit reversed, finding that the Commission had sufficient likelihood of success on the merits to justify an injunction. The parties subsequently abandoned the transaction.

This case is notable because company documents and customer opinions were probably not important factors in the litigation and there was little evidence that coordinated interaction was present in the market or that the merger would remove a maverick competitor. The parties argued that there was little actual competition between the parties to the merger and put forward a plausible efficiency argument. The district court denied the request for a preliminary injunction noting “powerful evidence in the record about efficiencies realized by the merger, and . . . the enhanced prospects of the merged entity to introduce innovative products to compete with Gerber. . . .” The appeals court concluded that there was some evidence that the parties competed, and the strong structural indicia created a powerful presumption of a competitive concern.

4. *Swedish Match*

In *Swedish Match*, the FTC’s economic expert advanced a differentiated products theory as articulated in Section 2.21 of the Guidelines. The expert concluded that there were likely to be significant anticompetitive effects based on relatively high diversion ratios between the merging firms and the sizable existing price-cost margins. The court noted: “Two factors are of particular concern in determining this likelihood. First, the price-cost margin for National is

important because it determines the profit that will be retained by Swedish Match by users who switch from Swedish Match's brands to National's brands (because of course, Swedish Match will be acquiring National's brands as a result of the acquisition). Second, the diversion ratio is important because it calculates the percentage of lost sales that go to National. High margins and high diversion ratios support large price increases, a tenet endorsed most economists."³³ The court also found that strong brand loyalty, legal restrictions on advertising, and shrinking shelf space made it highly unlikely that rivals would be able or willing to reposition their brands to defeat the predicted price increases.

D. Bidding Markets

Bidding analyses of various levels of economic sophistication were used in a variety of industries, typically non-consumer markets, such as sales of industrial capital equipment, chemical sales from upstream chemical producers to downstream chemical producers, sales of medical equipment to hospitals, bidding for oil and gas leases, defense goods cases, etc.³⁴ In some industries there are formal bidding processes and rules (*e.g.*, defense contracting), in others the "bidding" process is more informal. Bidding markets raise issues of how to apply the Guidelines. What do market demand elasticity and SSNIPs mean in this context? Does the rationale for using HHIs make sense here? How should the HHI be measured? Should each individual auction or each buyer be considered a relevant market to inspect for potential anticompetitive effects? Should firms that are able to bid, but currently do not bid, be considered entrants?

³³ *FTC v. Swedish Match, et al.*, 131 F.Supp 2d 151 (D.D.C. 2000).

³⁴ Bidding was a central issue in *FTC v. Alliant*, 808 F. Supp. 9 (D.D.C. 1992).

The FTC economics bidding analyses of mergers in the 1980s were generally not very sophisticated.³⁵ For example, FTC economists often assumed a 1/n market share to build up concentration levels. Competitive concern often focused on collusion possibilities and how that would work (information exchange, collusive allocation of bids winners, etc). However, when staff had evidence that bidders differed materially in their ability to serve the customer, that information was included in a “closest rival” analysis. More recent analyses have been more sophisticated. First, they have tried to apply teachings of the developments in the economic literature, *i.e.*, what type of auction does the observed bidding most closely resemble (e.g., first price, second price auction, private values, common values), and what does this characterization imply for likely competitive effects. Second, this greater focus on bidding theory has shifted much of the concern on effects from collusion to a unilateral effect focus, in which bid functions are affected by a merger. One example is the unilateral effects theory applied to the Rite Aid/Revco merger.³⁶

E. Unilateral Effects

It important to note that unilateral effects theories have been applied much more widely than the “obvious” candidates (such as branded consumer products), that were discussed above. For example, the theory has been applied to hospital mergers (two closest rivals merging), medical products (two most similar treatment regimes merging), computer software (two most similar software programs merging), and even relatively homogeneous goods (firms with most

³⁵ However, the FTC had a number of investigations of “bid registries” in the 1980s which utilized more sophisticated economics.

³⁶ “FTC Will Seek to Block Rite Aid/Revco Merger,” FTC News, Federal Trade Commission, April 17, 1996; “Rite Aid Abandons Proposed Acquisition of Revco After FTC Sought to Block Transaction,” FTC News, Federal Trade Commission, April 24, 1996. For a discussion of the bidding (auction) theory in this matter *see* Jonathan B. Baker, *Unilateral Competitive Effects Theories in Merger Analysis*, Spring 1997 Antitrust at 21, and <http://www.ftc.gov/speeches/other/unilat61.htm>.

similar product and strategy propose to merge). In general, the application of these models requires evidence that the merging parties are substantial players in the market and close head-to-head competitors.

XI. Efficiencies

The 1982 Guidelines included efficiencies as a consideration that might affect enforcement decisions in some cases. The 1984 revisions clarified the Guidelines to observe that the DOJ always gave efficiencies appropriate weight and added some structure to the efficiency discussion. To be relevant, the efficiencies had to be both “clear and convincing” and could not be “reasonably achieved by the parties through other means.” To further clarify that efficiencies could in some circumstances be important, the efficiency analysis was further updated in 1997. This revision set the standard of proof for efficiencies at “reasonable verification” and ensuring only “practical” alternatives need to be considered in the merger specificity test. The Guidelines also committed the enforcement agencies not to challenge mergers in which the efficiencies dominate the likely anticompetitive effects such that the merger is not likely to be anticompetitive in any market.

In the early years of Guidelines enforcement, there were matters in which efficiency claims were probably a significant determinant of enforcement decisions. In one particularly interesting matter, an expert consultant argued that although the proposed merger was not anticompetitive, the Commission should not consider the efficiency claims his clients’ advanced. Nonetheless, the efficiency claims may have been a factor in a decision not to block the transaction. Lande discusses one 1982 matter in which an economist argued a standard Williamsonian tradeoff would suggest that the merger should not be challenged, because the

inelasticity of demand constrained the social welfare loss, while society as a whole would benefit from the cost savings.³⁷ The recommendation was not accepted by the Commission, representing an early rejection of the total (rather than consumer) welfare standard.

In the 1980s, the Commission was presented with a relatively unique efficiency claim involving a proposed merger of adjoining refineries. The parties made credible arguments that by consolidating the two refineries costs could be significantly reduced. However, in order to accomplish the consolidation combined capacity would be reduced. This merger was blocked. Efficiencies were also prominent in some of the defense industry mergers, as the rationalization of the defense sector created the potential for significant cost savings. As the core buyer was the Department of Defense, it played a significant role in ensuring efficient transactions were allowed, while mergers to monopoly were often challenged.

FTC economists have attempted to quantify the overall trade-off between potential anticompetitive effects and efficiencies. As some portion of marginal cost reductions will be passed on to consumers, the analyst is able to compute the maximum allowable price increase associated with a specific reduction in cost. Likewise, economists can undertake the standard Williamsonian rectangle versus triangle calculation to determine if efficiencies are large enough to generate a social welfare gain. More sophisticated analyses would apply a discounted present value formula to adjust for the fact that cost savings are generally longer lived than anticompetitive effects.

FTC accountants have also had a very important role in assessing potential efficiencies. The types of analyses performed may typically include: reviews of material costs and related

³⁷ Robert Lande, *The Rise and Coming Fall of Efficiency as the Ruler of Antitrust*, 33 Antitrust Bulletin 429 (1988).

contracts to assess savings related to quantity purchases, reviews of labor costs and related union agreements to assess savings related to head count reductions, reviews of labor rates and anticipated reductions to see if actual reductions look realistic based on current manufacturing requirements and reviews of machine run rates and capacity schedules to assess whether it is likely for plant consolidation to result in anticipated cost savings. In addition, FTC accountants may perform cost/volume/profit analyses evaluating shifts of production from one facility to another, and undertake research into current industry practices for comparison of claims that only a merger will allow achievement of operational efficiencies.

A. Efficiency Cases

1. *Staples/Office Depot*

Staples/Office Depot was litigated immediately following the release of the 1997 Guidelines.³⁸ A significant portion of the trial was devoted to efficiencies, with the parties and the Commission putting forth testimony on efficiencies, and the Court's decision referred specifically to the "newly revised efficiencies section of the Merger Guidelines." The parties submitted an "Efficiencies Analysis" that predicted that the merged firm would achieve savings of between \$4.9 and \$6.5 billion over the five years following the transaction, as well as ongoing dynamic efficiencies. Staples argued that "two thirds of the savings realized by the combined company would be passed along to consumers." Based primarily on the testimony of the Commission's efficiencies expert, the Court found Staples' estimates of cost savings to be unreliable³⁹ and unverified. Also, while the Court believed that some portion of any efficiencies

³⁸ The 1997 Guidelines were released in April 1997, the Staples trial was held in late May 1997 and Judge Hogan released his decision on June 30, 1997.

³⁹ Cost savings presented to the Court were about 500% larger than those given to Staples and Office Depot's Boards of Directors at the time of the merger, and significantly

achieved through the merger would be passed on to consumers, and that Staples and Office Depot each had a history of passing on cost savings, it found that Staples' history of passing through only 15 to 17 percent of cost savings to be at odds with the projected two thirds pass through rate.⁴⁰ "Based on the above evidence, the Court cannot find that the defendants have rebutted the presumption that the merger will substantially lessen competition by showing that, because of the efficiencies which will result from the merger, the Commission's evidence gives an inaccurate prediction of the proposed acquisition's probable effect." (*FTC v. Staples*, 970 F. Supp. 1066 (1997)).

2. Drug Wholesaling

Efficiencies considerations were also an important part of the drug wholesaling case, with the Commission putting on a separate economic expert on efficiency issues. The parties had claimed various efficiencies from (1) distributional efficiencies by closing overlapping centers, (2) better purchasing practices, and (3) reduction in overhead and inventory costs. The FTC expert testified the parties had not substantiated their claims with sound and reliable backup data. She further testified that a substantial fraction of the claimed efficiencies were not merger specific, and were achievable unilaterally. The court concluded that there were likely to be significant efficiencies from the merger, but concluded that "evidence presented by the FTC strongly suggests that much of the savings anticipated from the mergers could also be achieved through continued competition in the wholesale industry. While it must be conceded that the mergers are likely to yield the cost savings more immediately, the history of the industry over

larger than those in documents filed with the Securities and Exchange Commission.

⁴⁰ Caution should be used when applying pass through rates estimated with pre-merger data to evaluate the competitive impact of efficiencies in a less than competitive post-merger world, because the accretion of market power may increase the incentives to pass through cost savings.

the past ten years demonstrates the power of competition to lower cost structures and garner efficiencies as well.” *FTC v. Cardinal Health Inc.*, 12 F. Supp.2d 34, 43-44 (D.D.C. 1998)

3. *Heinz/Beechnut*

The recent “Baby Food” matter is one the most notable FTC cases involving efficiency claims. The parties argued with some plausibility that merging the production into one efficient plant that had capacity to produce both lines would significantly improve the efficiency of the new combined firm. Moreover, the joint firm would be able to market the best recipes of each firm and utilize the efficient Heinz distribution system. The district court found the merger would aid innovation as the deal would improve Heinz’s access to retailers. Since the efficiencies aided the district judge in finding it “more probable than not” that the proposed merger would actually increase competition, cost savings proved important in the defense of the merger. However, the D.C. Circuit reversed, finding a need to prove “extraordinary efficiencies” to overcome the government’s strong presumption. The review of the evidence determined that the efficiency claims accepted by the district court were technically overstated and not necessarily merger specific.

XII. Failing Firm

The Guidelines recognize that a merger may not raise anticompetitive concerns if imminent failure of a firm would cause its assets to exit the market. While this concept of a failing firm is relatively straightforward, assessing whether or not a firm truly is failing can be quite challenging. In a number of cases the FTC has undertaken a variety of accounting and economic analyses to determine the financial health of one of the merging parties. These analyses include: reviewing cash flow forecasts to determine whether financial obligations will

be met in short term, analyzing operating statements to render an opinion on what impact exiting a market has on corporate cash flow and profitability post exit, evaluating cost allocation methods to assure appropriate costs have been allocated to failing assets, performing standard financial statement analyses of a firm or division which is anticipating exit, and assessing alternative buyers or other financing opportunities.

The FTC has successfully challenged a number of mergers where a failing firm defense was alleged. For example, in *Bass Brothers* (carbon black) the court denied a failing firm defense. In the *Harbour Group* (telescopes) (*FTC v. Harbour Group Inc.*, No. 90-2525 (D.D.C. Nov. 19, 1990)), the FTC also presented financial analysis testimony, demonstrating the failure to seek alternative purchasers as well as an insufficient demonstration of financial weakness. On a number of occasions in non-litigated matters, FTC accountants and economists have concluded that failing firm claims were not valid, while in a few situations, the failing firm defense has been accepted.

XIII. Conclusion

The 1982 Merger Guidelines and the three revisions have been a very important advance in antitrust and economic analysis and have provided an economically sound, implementable approach to merger analysis. The FTC, from the beginning, embraced the Guidelines as the proper mode of analysis. Much has been learned at the FTC, at the DOJ, and on the outside on how to apply the Guidelines' analyses better. There is still more to learn, as new fact situations test the ability of merger analysts to apply the Guidelines. This paper has attempted to provide a brief summary of the history of the implementation of the Guidelines at the FTC over the past 20 years from an economics perspective.