

Volume 52 | Issue 1

2001

Non-Incumbent Competition: Mergers Involving Constraining and Prospective Competitors

John E. Kwoka

Follow this and additional works at: <https://scholarlycommons.law.case.edu/caselrev>



Part of the [Law Commons](#)

Recommended Citation

John E. Kwoka, *Non-Incumbent Competition: Mergers Involving Constraining and Prospective Competitors*, 52 Case W. Res. L. Rev. 173 (2001)

Available at: <https://scholarlycommons.law.case.edu/caselrev/vol52/iss1/10>

This Symposium is brought to you for free and open access by the Student Journals at Case Western Reserve University School of Law Scholarly Commons. It has been accepted for inclusion in Case Western Reserve Law Review by an authorized administrator of Case Western Reserve University School of Law Scholarly Commons.

NON-INCUMBENT
COMPETITION:
MERGERS INVOLVING
CONSTRAINING AND PROSPECTIVE
COMPETITORS

John E. Kwoka[†]

INTRODUCTION

Over the past thirty years, merger analysis by the Federal Trade Commission (“FTC”) and the Antitrust Division of the Justice Department (“DOJ”) has been significantly improved by several developments. More sophisticated use of concentration-share thresholds, the theory of unilateral effects, more explicit standards for evaluating entry, and the treatment of efficiencies, among other changes, have made successive versions of the *Merger Guidelines* a better reflection of underlying economics, a more precise enforcement tool, and more helpful to businesses and to the courts. With respect at least to one important area of concern, however, current analysis of mergers has not only failed to advance but, indeed, has regressed. That area is commonly known, but not well described, by the term “potential competition.”

The classic form of a merger involving a “potential competitor” concerns an incumbent Firm A that merges with or acquires Firm B (the roles may be reversed). Firm B is currently outside the relevant market but is (or is viewed by incumbents as) a plausible entrant, and its entry (or perceived threat to enter) measurably strengthens compe-

[†] Neil F. Finnegan Distinguished Professor, Department of Economics, Northeastern University. Much of the work on this paper was undertaken while the author was Senior Research Scholar at the American Antitrust Institute. This paper has benefited greatly from comments by Joe Brodley, Steve Calkins, Peter Carstensen, Harry First, Bert Foer, Bob Lande, Geoff Shepherd, and Larry White. I am also indebted to Joe Farrell and Andy Joskow for very helpful discussions of the issues and to Marcy Shyovitz for legal research. Remaining errors are my sole responsibility.

tion. At first glance the anticompetitive effects of such a merger may seem as clear as those flowing from a merger between actual producers of the good in question. After all, the elimination of a threatening competitor relaxes the constraint on existing firms in much the same manner as the elimination of a current competitor. For various reasons, however, both the courts and the antitrust agencies have treated mergers involving such “non-incumbent competitors” fundamentally differently from those involving existing firms. Indeed, at present the judicial view toward non-incumbent competition is one of considerable skepticism, with evidentiary hurdles so high, in the words of some observers, as to “virtually repeal the potential competition doctrine.”¹

The result of this judicial attitude is that the FTC and DOJ have been reluctant to bring cases that depend crucially and obviously on such considerations. Instead, the agencies have responded either by not challenging some mergers that have such anticompetitive potential, or by emphasizing other competitive concerns instead of potential competition in order to escape quick judicial rejection. Neither of these approaches represents good policy, of course. Here we shall argue that this kind of avoidance is unnecessary as well. Such avoidance is unnecessary because the reasons for the courts’ skepticism with respect to this doctrine—if they were ever well-founded—can be put to rest by advances in two areas: first, in the economic theory and empirical evidence regarding non-incumbent competitors, and second, in the development of criteria for identifying non-incumbent firms that matter to the competitive process.

This paper reviews the history of the “potential competition” doctrine and then focuses on conceptual and practical advances that resolve past concerns. We define two types of non-incumbent firms that matter—a “constraining competitor” and a “prospective competitor.” A constraining competitor is a non-incumbent firm that is viewed by incumbents as a threat to enter and thus imposes a very real constraint on their current pricing and other decisions. A merger eliminating such a firm directly relaxes the constraint faced by incumbent firms. The term “prospective competitor” denotes a firm that has the incentive and capability actually to initiate production. Its elimination by merger negates its likely entry and the industry deconcentration that would result.²

¹ LAWRENCE A. SULLIVAN & WARREN S. GRIMES, *THE LAW OF ANTITRUST*, § 11.3b3, at 622 (2000).

² The terms “constraining competitor” and “prospective competitor” denote firms analogous to those termed in the literature a “perceived potential competitor” and an “actual potential competitor,” respectively. The present terminology is superior in that it connotes the very real

We employ the concepts of constraining and prospective competitors as the basis for proposed guidelines for evaluating the likely competitive effects of mergers involving non-incumbent companies. This proposal is consistent with modern economic analysis and with the basic framework of the *Merger Guidelines*, and that it can be both helpful to the antitrust enforcement process and convincing to the courts.

Part II of this article reviews the judicial and enforcement history of the potential competition doctrine, since it is that history that has led to the present policy conundrum. Part III discusses modern economic theory and empirical evidence with respect to non-incumbent competition—theory and evidence that forms the foundation for this revisiting of past doctrine. Part IV addresses the issue of operational criteria for identifying non-incumbent competitors that matter, and then proposes new standards for analyzing mergers involving such firms. Part V concludes.

I. POTENTIAL COMPETITION: JUDICIAL ENFORCEMENT BACKGROUND

The doctrine of potential competition first arose in a number of antitrust cases in the 1960s and was formally integrated into merger analysis in the early 1980s. At about the same time, however, Supreme Court rulings sharply reduced its applicability. Over the past twenty years the doctrine has been employed less often, typically as a secondary issue, and often cloaked in other language. The following section reviews this judicial and enforcement history, which forms the basis for current policy.

A. *Early Potential Competition Cases*

The first case that raised the issue of potential competition in an important way was *United States v. El Paso Gas Co.*³ El Paso was a supplier of natural gas to customers in California and sought to acquire Pacific Northwest Pipeline Company. Pacific Northwest had substantial reserves of gas outside California and, while it sold no gas there, it had repeatedly considered entering, even on occasion bidding to supply utilities in that state. After reviewing evidence that Pacific Northwest's bids in fact altered El Paso's prices, the Supreme Court concluded that "the mere efforts of Pacific Northwest to get into the California market, though unsuccessful, had a powerful influence on

(not merely potential or perceived) economic impact of such firms. It also avoids the baggage associated with earlier terminology.

³ 376 U.S. 651 (1964).

El Paso's business attitudes within the state."⁴ The Court observed that "unsuccessful bidders are no less competitors than successful ones" and upheld the government's challenge to the acquisition.⁵

The *El Paso* case established the proposition that competition from firms outside the market mattered both in fact and in the law. Subsequent cases sharpened the distinction between the types of effects, and the types of non-incumbent competitors, that mattered. When Proctor & Gamble ("P&G") sought to acquire Clorox, P&G argued that it never actually intended to enter the liquid bleach market by itself, and indeed no evidence was introduced to the contrary. Reversing the lower court in *FTC v. Proctor & Gamble Co.*,⁶ the Supreme Court nonetheless prohibited the acquisition on the theory that P&G in some objective sense could have entered, that it was the single most likely entrant, and that "[i]f Proctor had actually entered, Clorox's dominant position would have been eroded and the concentration of the industry reduced."⁷ Thus, the acquisition was deemed illegal because, by eliminating a plausible entrant, it prevented the prospective deconcentration of the industry. This theory came to be known as "actual potential competition," reflecting the belief that, absent the merger, the non-incumbent actually would have entered the market, thereby rendering it more competitive.

If *Proctor & Gamble* stood for the proposition that an objective assessment of the likelihood of entry might suffice, the subsequently-decided *United States v. Falstaff Brewing Corp.*⁸ emphasized that perception by itself could be decisive as well. Falstaff acquired Narragansett beer in order to extend its reach into New England, arguing successfully to the lower courts that it never intended to enter that region by building a new brewery. The Supreme Court reversed and remanded, asserting that the issue "is not what Falstaff's internal company decisions were but whether, given its financial capabilities and conditions in the New England market, it would be reasonable to consider it a potential entrant into that market."⁹

If so, Falstaff's presence on the "fringe of the market" likely influenced the behavior of other New England firms, and its entry by acquisition would eliminate that competitive restraint.¹⁰ This scenario was (and is) conventionally termed "perceived potential competition,"

⁴ *Id.* at 659.

⁵ *Id.* at 661.

⁶ 386 U.S. 568 (1967).

⁷ *Id.* at 575.

⁸ 410 U.S. 526 (1973).

⁹ *Id.* at 533.

¹⁰ *See id.* Upon rehearing, the lower court found that the government failed to carry its burden.

since the non-incumbent firm is considered a threat to enter and thus its elimination reduces the constraint on incumbent firms. The distinction between perceived and actual potential competition is an important one, both analytically and in the history of this doctrine.

A substantial number of other potential competition cases in this period of time arose in the context of then-common concern with conglomerate mergers and in the context of the formation of joint ventures. Joint ventures take the concept of potential competition one step further in that they often involve two firms neither of which currently produce in the relevant market. One notable example involved a joint venture between Pennsalt Chemicals and Olin Mathieson Corp. which was to manufacture a chemical product in the southeastern states. While both companies had contemplated entering that market by themselves, the joint venture combined Pennsalt's expertise in product manufacture with Olin's presence as a supplier of other chemical products in the region. The District Court engaged in a "head count" approach, approving the arrangement in the belief that both firms would not have independently entered the relevant market.¹¹ Having concluded that one new entity was the maximum to be expected, it found no reason to disprefer the joint venture.

Upon review, in *United States v. Penn-Olin Chemical Co.*,¹² the Supreme Court ruled otherwise, arguing that even if it were true that only one entity would actually enter, there was another outcome competitively preferable to joint venture entry. Absent the joint venture, either Pennsalt or Olin might have entered independently while the other remained "at the edge of the market, continually threatening to enter."¹³ The Court judged this to be a more competitive outcome and a possibility that the lower court therefore needed to consider.¹⁴

A subsequent case gave the Court the opportunity to articulate its overall approach to potential competition, one that has governed enforcement to this date. A large Seattle bank, Marine Bancorporation, sought to acquire a midsize bank in Spokane. The government successfully challenged the acquisition in district court, but in *United States v. Marine Bancorporation*,¹⁵ the Supreme Court reversed, concluding that Marine Bancorporation could not have been seen as a

¹¹ *United States v. Penn-Olin Chem. Co.*, 217 F. Supp. 110, 130-31 (D. Del. 1963), vacated by 378 U.S. 158 (1964).

¹² 378 U.S. 158 (1964).

¹³ *Id.* at 173.

¹⁴ *See id.* Upon rehearing, the district court concluded that neither of the two firms would have entered independently and so let the joint venture stand. The government again appealed to the Supreme Court. This time the Court was evenly divided, preserving the district court's ruling. *See United States v. Penn-Olin Chem. Co.*, 389 U.S. 308 (1967).

¹⁵ 418 U.S. 602 (1974).

likely entrant into Spokane since state banking laws virtually prohibited *de novo* entry into another region.¹⁶ The language of the Court has proven to be crucial:

Unequivocal proof that an acquiring firm actually would have entered *de novo* but for a merger is rarely available. . . . Thus, . . . the principal focus of the doctrine is on the likely effects of the premerger position of the acquiring firm on the fringe of the target market . . . [A] market extension merger may be unlawful if the target market is substantially concentrated, if the acquiring firm has the characteristics, capability, and economic incentive to render it a perceived potential *de novo* entrant, and if the acquiring firm's premerger presence on the fringe of the market in fact tempered oligopolistic behavior on the part of existing participants in that market.¹⁷

The first sentence of this excerpt acknowledges the possibility of a non-incumbent firm that is a bona fide prospective entrant (an "actual potential competitor"). At the same time, however, the Court expressed its deep doubt about this possibility and made clear how difficult it would be to prove this to its satisfaction. The dearth of cases based on such argument attests to the impracticality of meeting the burden of proof, leading observers to declare the doctrine of actual potential competition "moribund."¹⁸

Regarding perceived potential competition, the Court articulated a standard involving proof of three elements: (1) The market in question must be concentrated; (2) the non-incumbent firm must have the "characteristics, capabilities, and economic incentive to render it a perceived potential *de novo* entrant;" and (3) the non-incumbent firm must have "in fact tempered oligopolistic behavior on the part of existing market participants."¹⁹ The stringency of this standard reflected the Court's unease with—indeed, skepticism con-

¹⁶ *Id.* at 636.

¹⁷ *Id.* at 624-25.

¹⁸ See SULLIVAN & GRIMES, *supra* note 1, § 11.3b, at 621. It certainly has been moribund as a primary enforcement tool, although as we shall see, potential competition has continued to play a supporting role in some cases. For other recent reviews, see FED. TRADE COMM'N, *Federal Trade Commission Innovation and the Assessment of Competitive Effects*, in ANTICIPATING THE 21ST CENTURY: COMPETITION POLICY IN THE NEW HIGH-TECH, GLOBAL MARKETPLACE 10 (1996); David Balto, *Antitrust Enforcement in the Clinton Administration*, 9 CORNELL J.L. & PUB. POL'Y 61 (1999) (assessing DOJ and FTC antitrust enforcement performance in such areas as merger, high tech markets, distribution, and dominant firm conduct).

¹⁹ *Marine Bancorporation.*, 418 U.S. at 624-25.

cerning—this doctrine as well. The stringency is apparent by contrasting the criteria to those of conventional merger analysis. Particularly the third element—proof of an actual constraining effect—has no real counterpart in the evaluation of mergers between existing firms. Evaluation of incumbent-firm mergers are grounded in both economic theory and empirical evidence as to the importance of all firms in a small-number setting, but there is no requirement to show that any specific firm demonstrably constrains others.²⁰ The much higher standard for perceived potential competition articulated in *Marine Bancorporation* and reinforced by lower court decisions²¹ has resulted in few such cases being brought in the federal courts.

The FTC has sought to strike a more sympathetic posture towards doctrine of potential competition, but it too has raised substantial evidentiary burdens. In *In re B.A.T Industries*,²² the agency considered whether the company would have entered the U.S. market for chemical carbonless paper had it not acquired the leading current U.S. producer. The FTC stated that the argument regarding entry requires “clear proof of concrete internal plans for independent entry that have been at least tacitly approved at the governing levels of corporate management.”²³ Not only was that standard not met in *B.A.T.*, but it has posed an enormous hurdle to subsequent cases as well. Indeed the most recent former FTC Chairman, Robert Pitofsky, has characterized the *B.A.T.* standard as “gut[ting] the actual potential competition doctrine.”²⁴

At about the same time as the *B.A.T.* case, the FTC ruled on the proposed joint venture between General Motors (“GM”) and Toyota to produce a small car in California for the U.S. market.²⁵ A key issue in the investigation was whether either GM or Toyota (or both) would otherwise have undertaken a similar project, so that the joint venture did not represent an incremental producing entity. There was in fact substantial evidence that GM had considered an alternative venture with Isuzu, a far less important rival than Toyota. In addition, Toyota was known to be the lowest-cost Japanese producer, so that its

²⁰ While there is no requirement, the theory of unilateral effects directs attention to firm-specific impacts of a merger. See Janusz A. Ordover & Robert D. Willig, *Economics and the 1992 Merger Guidelines: A Brief Survey*, 8 REV. INDUS. ORG. 139 (1993).

²¹ See *Tenneco v. FTC*, 689 F.2d 346, 351-52 (2d Cir. 1982) (citing potential competition rule of *Marine Bancorporation*); *BOC Int'l Ltd. v. FTC*, 557 F.2d 24, 26 (2d Cir. 1977) (same).

²² 104 F.T.C. 852 (1984) (affirming dismissal order).

²³ *Id.* at 930.

²⁴ Robert Pitofsky, *Competition Policy in Communications Industries: New Antitrust Approaches*, Address to the Glasser Legal/Works Seminar on Competitive Policy in Communications Industries, Washington, DC, at <http://www.ftc.gov/speeches/pitofsky/newcomm.html> (Mar. 10, 1997).

²⁵ *General Motors Corp.*, 103 F.T.C. 374 (1984) (consent decree).

elimination as a possible independent entrant significantly raised the constraint (up to the level of the next lowest-cost producer, namely, Honda) on existing firms' prices. Despite this, the FTC approved the joint venture, while seeking to preserve GM as an actual potential entrant by *limiting* its output from the venture with Toyota.²⁶

This history reveals that, from the 1960s until the early 1980s, the doctrine of potential competition was undergoing evolution in the courts and the enforcement agencies. From initial acceptance of (or at least interest in) the doctrine, the courts became increasingly concerned with two issues: the certainty and precision of the impact of non-incumbent firms, and the ability to identify a non-incumbent firm that truly mattered. By the end of this period, a deep skepticism had developed about this doctrine and, while not rejecting it out of hand, the courts proceeded to erect high hurdles for disapproval of mergers involving such firms. The result—no doubt, the intent—was that few prospects remained for successful challenge of mergers involving non-incumbent competitors.

B. Merger Guidelines and Potential Competition

Despite the *Marine Bancorporation* case, the nearly simultaneous 1982 and 1984 Merger Guidelines endorsed the concern with mergers that "eliminat[ed] specific potential entrants."²⁷ Section 4.11 of those Guidelines articulated an explicit "theory of potential competition,"²⁸ stating that a merger removing a firm at the "edge of the market" could harm competition in either of two ways:

- Harm to "perceived potential competition" by the elimination of "a significant present competitive threat that constrains the behavior of firms already in the market,"²⁹ or
- Harm to "actual potential competition" by eliminating "the possibility of entry by the acquiring firm in a more procompetitive manner."³⁰

²⁶ See *id.* at 383-84. This limitation did not succeed in inducing GM's entry in any other fashion. For a full description of this case, see John E. Kwoka Jr., *International Joint Venture: General Motors and Toyota*, in *THE ANTITRUST REVOLUTION: THE ROLE OF ECONOMICS* 46 (John E. Kwoka, Jr. & Lawrence J. White eds., 1994).

²⁷ DEP'T OF JUSTICE, MERGER GUIDELINES (1982) reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,102, at 20,531 (Jun. 14, 1982). See DEP'T OF JUSTICE, MERGER GUIDELINES (1984) reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20,564-65 (Jun. 14, 1984).

²⁸ See 1984 MERGER GUIDELINES, *supra* note 27, § 4.11.

²⁹ *Id.* § 4.111.

³⁰ *Id.* § 4.112.

The Guidelines stated explicitly that mergers raising either concern would be evaluated under a “single structural analysis analogous to that applied to horizontal mergers”³¹ and set out the following factors as relevant: market concentration, conditions of entry generally, the acquiring firm’s entry advantage, the market share of the acquired firm, and efficiencies.³² More specifically, no challenge would occur if entry into the market is generally easy or if more than a few firms have the same or a comparable advantage in entering. “More than a few” was interpreted to mean where “the entry advantage ascribed to the acquiring firm (or another advantage of comparable importance) is also possessed by three or more other firms.”³³

The *1982/1984 Merger Guidelines* largely correspond to the spirit of cases prior to the *Marine Bancorporation* decision, cases that recognized both perceived and actual potential entrants as elements of the competitive analysis. But with that decision and others that sharply limited the applicability of the doctrine of potential competition, enforcement practice changed dramatically. Subsequent versions of the *Merger Guidelines* incorporated potential competition concerns only by reference to earlier versions of the guidelines.³⁴ A recent chief economist at the Antitrust Division has described the effect on enforcement as making such cases “so rare as to make the whole notion virtually absent from antitrust.”³⁵

While there is indeed no further mention of potential competition, the 1992 revision of the *Merger Guidelines* made at least one change that reflected concern with certain non-incumbent firms. Those Guidelines define as market participants both current producers and so-called “uncommitted entrants.”³⁶ The latter are firms that, while not currently producing in the relevant market, have sufficiently modest sunk costs as to enable them to initiate a supply response within a year in response to a small but significant and nontransitory

³¹ *Id.* § 4.113. Mergers involving potential competition were denoted “non-horizontal” because the firms were currently operating in the same market. This terminology is misleading, however, since their effect is entirely “horizontal” in the sense of affecting pricing of the product produced or capable of being produced by the merging firms.

³² *Id.* §§ 4.131, 4.132, 4.133, 4.134, 4.135.

³³ *Id.* § 4.133.

³⁴ See ABA ANTITRUST SECTION, THE 1992 HORIZONTAL MERGER GUIDELINES: COMMENTARY AND TEXT 21 (1992) (noting in the statement accompanying release of the revised guidelines that “[n]either agency has changed its policy with respect to non-horizontal mergers” and alluding to Section 4 of the 1984 version, but otherwise containing no explicit discussion of the issues).

³⁵ Andrew S. Joskow, *Potential Competition: The Bell Atlantic/NYNEX Merger*, 16 REV. INDUS. ORG. 185, 189 (2000).

³⁶ DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1.32 (rev. ed. 1997), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,104, at 20,569 (Apr. 8, 1997) [hereinafter 1992 MERGER GUIDELINES].

price increase.³⁷ As market participants, uncommitted entrants in principle are to be assigned market shares and made part of the calculation of overall concentration. Of course, since their actual output definitionally is zero, share assignment would have to be based on capacity or some other valid method of anticipating production.

In principle, the concept of uncommitted entrants would seem to recognize competition from non-incumbent firms that are prospective entrants within a short time frame. Yet this concept has several limitations as a mechanism for addressing the loss of competition from non-incumbent firms. First, the emphasis in the analysis on sunk costs and timeliness of responses implies a focus on "actual potential competition." "Perceived potential competition"—the version of the doctrine with which the courts have seemed more comfortable and which is acknowledged in earlier Guidelines—appears to fall outside the scope of uncommitted entry. Second, firms whose response time is longer than one year ("committed entrants") are not treated as market participants in the current Guidelines and, indeed, are recognized only insofar as they affect the condition of entry and thereby the market power of incumbent firms. The Guidelines are effectively silent on the consequences of a merger involving a "committed entrant." We shall return to the Guidelines' treatment of committed entry in Part IV.

C. More Recent Cases Involving Potential Competition

Despite the legal impediments to claims of potential competition, a number of more recent merger investigations and complaints, and even a few cases, have raised the issue in some fashion. The following cases illustrate the nature of continuing enforcement actions.

The FTC has raised potential competition issues in a modest number of mergers over the past decade. Three involved pharmaceutical or other medical supply industries. In *Hoechst AG*³⁸ and *Zeneca Group*,³⁹ the Commission alleged that by merger and contractual agreement the parties eliminated a significant source of prospective competition for particular drugs. In *Boston Scientific Corp.*,⁴⁰ the complaint alleged that the company's acquisitions of two smaller competitors eliminated "the most likely potential entrant" and "an actual potential competitor" into a highly concentrated market for a

³⁷ Earlier guidelines defined a similar category of "production substitutors" who were to be considered part of the market, but they received much more cursory treatment.

³⁸ 1999 WL 378815 (F.T.C. June 7, 1999), 120 F.T.C. 1010 (1995).

³⁹ F.T.C. Dkt. No. C-3880 (June 7, 1999).

⁴⁰ *Boston Scientific Corp.*, 119 F.T.C. 549 (1996).

particular type of catheter.⁴¹ In each instance the potential competition claim played a significant role. The FTC avoided trial in each case by securing a consent order providing for divestiture or licensing of assets required to preserve competition.

Another group of FTC cases has involved mergers and acquisitions in various retail markets. In *FTC v. Staples, Inc. and Office Depot, Inc.*,⁴² the matter of Staples' proposed merger with Office Depot, the principle argument involved the reduction of competition between the two office superstores, but the district court opinion also endorsed the view that "allowing the defendants to merge would eliminate significant future competition. Absent the merger, the firms are likely, and in fact have planned, to enter more of each other's markets, leading to a deconcentration of the market and, therefore, increased competition between the superstores."⁴³ Some observers have noted similar secondary claims regarding the loss of potential competition in the mergers of Kroger and Fred Meyer, Ahold and Giant, and Albertson's and American Stores.⁴⁴ In each case the FTC required divestiture of assets sufficient to prevent the loss of an independent competitor in particular markets.

Significant cases involving potential competition issues at the Antitrust Division have arisen in the telecommunications and airlines industries, among others. The Bell Atlantic-NYNEX merger (1996) and that between Southern Bell Co.-Ameritech (1999) each represented consolidations between Bell operating companies with adjacent territories.⁴⁵ A central issue in both mergers was whether, absent the merger, one company would have entered into local telephone service in the other's territory. There was abundant evidence that Bell Atlantic had indeed contemplated entry into NYNEX's historic monopoly territory, notably the New York City calling area.⁴⁶ In the second case, SBC was found to be planning to expand into Ameritech's Chicago market, while Ameritech would otherwise have entered into St. Louis, in SBC's territory. In each case the parties claimed there were other equally well-positioned potential entrants as

⁴¹ See *id.* at 553.

⁴² 970 F. Supp. 1066 (D.D.C. 1997)

⁴³ *Id.* at 1082. For a full description of this case, see Serdar Dalkir & Frederick R. Warren-Boulton, *Prices, Market Definition, and the Effects of Merger: Staples-Office Depot*, in *THE ANTITRUST REVOLUTION* 143 (John E. Kwoka, Jr. & Lawrence J. White eds., 3d ed. 1999).

⁴⁴ See David A. Balto, *Supermarket Merger Enforcement*, *ANTITRUST REP.*, Aug. 1999, at 2 (examining eight litigated supermarket mergers).

⁴⁵ The earlier SBC merger with Pacific Tel involved non-adjacent Bell Operating Companies.

⁴⁶ See Steven R. Brenner, *Potential Competition in Local Telephone Service: Bell Atlantic-NYNEX* (1997), in *THE ANTITRUST REVOLUTION* (John E. Kwoka, Jr. & Lawrence J. White eds., 3d ed. 1999).

well as other constraints on incumbents' market power. The DOJ approved both mergers without revealing how it analyzed the potential competition issues.⁴⁷

For telecommunications mergers, the Federal Communications Commission ("FCC") also has oversight authority and undertook its own competition analysis of the Bell Atlantic-NYNEX and the SBC-Ameritech mergers. In the former case the FCC opinion explicitly endorsed an actual potential competition approach, setting out five necessary elements of the doctrine:

(1) The market in question ("the target market") is highly concentrated; (2) few other potential entrants are "equivalent" to the company that proposes to enter the target market by merger; (3) the company entering the target market by merger was reasonably likely to have entered the market but for the proposed merger; (4) that company had other feasible means of entry; and (5) such alternative means of entry offer a substantial likelihood of ultimately producing de-concentration in the target market or other significant pro-competitive effects.⁴⁸

Based on these considerations, the FCC concluded that Bell Atlantic was an actual potential competitor in Manhattan and proceeded to assign hypothetical market shares based on confidential market research data.⁴⁹ The actual calculations implied that the proposed merger raised significant competitive concerns.⁵⁰

Similar issues were raised by SBC's merger with Ameritech. The FCC stated that its potential competition analysis "builds upon,

⁴⁷ In the Bell Atlantic-Nynex case, it did so with a brief statement that it found no antitrust violation. The SBC-Ameritech merger was subject to divestiture of some cellular assets.

⁴⁸ FCC File No. NSD-L-96-10, ¶138 (August 14, 1999) (opinion and order), at http://www.fcc.gov/Bureaus/Common_Carriers/Orders/1997/fcc9728.txt. It is worth noting that other regulatory agencies with a role in overseeing mergers have considered similar arguments. For example, potential competition arguments have been made before the Federal Energy Regulatory Commission. See American Elec. Power Co. and Cent. and South West Corp., FERC Dkt. No. EC98-40-000, (June 1998) (motion to intervene and protest of the APPA and NRECA).

⁴⁹ This imputation of market shares to a firm that had no current presence in the market in question is contemplated in the Merger Guidelines treatment of uncommitted entrants, as discussed before, but the FCC's actual reliance upon these shares may be unprecedented. The chief economist at the Antitrust Division at the time has cited the FCC's methodology approvingly. See Joskow, *supra* note 35. For a description of this proceeding, see Brenner, *supra* note 46.

⁵⁰ Given its view of the competitive effects, it seemed paradoxical to many observers that the Commission nonetheless approved the merger, albeit subject to a number of conditions and commitments intended to hasten the advent of competition in NYNEX's territory.

but does not attempt to copy, the ‘actual potential competition’ doctrine established in antitrust case law.”⁵¹ Among the important differences, it asserted that telecommunications represents a “transitional market,” moving from regulated monopoly status to a more open environment, in which evidence of potential competitors might take new forms. Specifically, prospective competitors might include firms that have the incentive and ability to enter but have been unable to do so because of regulatory barriers.⁵² The FCC determined that each of these Bell Operating Companies (“BOCs”) represented so-called “precluded competitors” into the other’s territory—that is, firms that would be potential competitors but for regulation itself—and that the merger between them harmed competition and the public interest.⁵³

DOJ has cited potential competition concerns in other cases. These include Primestar’s acquisition of the certain assets of News Corp. and MCI, the proposed merger of Signature and AMR Combs, Northwest’s acquisition of a controlling stake in Continental Airlines, and the proposed United Airlines acquisition of US Airways. Each of these deserves brief comment. Since Primestar was controlled by five cable operators, the acquisition would have eliminated the cable companies’ most significant potential competitor—News Corp’s ASkyB venture—and prevented any independent firm from using the assets to compete with Primestar’s owners’ cable systems.⁵⁴ Signature/AMR Combs and Northwest/Continental both involved actual as well as potential competition concerns. Signature had undisputed plans to enter into flight support services at two airports served only by AMR.⁵⁵ In the Northwest-Continental case, the Justice Department complaint explicitly alleged that the arrangement:

⁵¹ FCC CC Dkt. No. 98-141, ¶ 64 (October 8, 1999) (opinion and order), at http://www.fcc.gov/Bureau/Common_Carrier/Orders/1999/fcc99279.doc.

⁵² The FCC explicitly noted that in such markets “firms may be included as significant competitors even though they may have yet to manifest a firm intention to enter or to invest substantially in preparation for entry.” FCC CC Dkt. No. 98-141, at ¶ 64, n.142, at http://www.fcc.gov/Bureau/Common_Carrier/Orders/1999/fcc99279.doc.

⁵³ As it had done with Bell Atlantic-Nynex, however, the FCC nonetheless approved the merger subject to a lengthy list of conditions and commitments by the parties designed to open up their territories to local exchange competition. In the context of these mergers the DOJ apparently considered whether in transitional markets there was added reason to preserve potential entrants, given the fact there was only one incumbent and no history of entry and exit. It apparently concluded that no special treatment was necessary. See Joskow, *supra* note 35.

⁵⁴ See Complaint at 17-18, *United States v. Primestar*, No. 1:98CV01193 (D.D.C. May 12, 1998), available at <http://www.usdoj.gov/atr/cases/index.htm>. For a fuller description of this case, see Daniel L. Rubinfeld, *The Primestar Acquisition of the News Corp./MCI Direct Broadcast Satellite Assets*, 16 REV. INDUS. ORG. 193 (2000).

⁵⁵ See *United States v. Signature Flight Support Corp.*, 1999-2 Trade Cas. ¶ 72,611 (D.D.C. Mar. 26, 1999) (final judgment).

will diminish the potential for nonstop competition for Memphis-Cleveland and Memphis-Newark, as well as potential competition in other markets for which Northwest and Continental are among the few likely future providers of scheduled airline passenger service. As a result, fares likely will increase and service likely will decrease in these city pairs.⁵⁶

Similarly, in the proposed United-US Airways consolidation, the Justice Department noted among its concerns that “United is the most likely airline to enter” seven hub-to-hub nonstop markets dominated by US Airways.⁵⁷ In the first three cases the Justice Department secured settlements involving divestitures or other modifications that resolved its stated concerns. In the fourth, United abandoned its plan to acquire US Airways for multiple reasons, including the Justice Department’s threatened suit.

This group of cases suggests that both the FTC and the Justice Department have continued to find the doctrine of potential competition useful in formulating objections to certain mergers, but both have been cautious in the manner in which they raise it. Moreover, both have sought to resolve such cases by consent orders rather than litigation, since orders are effective means for achieving much of what the agencies might seek without exposing their arguments to a skeptical judiciary. Thus, potential competition may be described as the stealth doctrine of modern antitrust—staying alive by flying under the judicial radar. In the next two Parts, we argue that this approach is no longer necessary, as advances in economics have resolved the courts’ concerns with this doctrine.

II. THE ECONOMICS OF NON-INCUMBENT COMPETITION

Particularly over the past twenty years, there have been significant advances in economic theory and in empirical evidence regarding the effects of non-incumbent firms and entry generally. These advances substantially close prior gaps in our understanding. They give insight into which mergers are likely to have anticompetitive effects. And ultimately they provide grounds for reconsidering the present judicial skepticism toward non-incumbent firm mergers. Here

⁵⁶ Complaint at 6, *United States v. Northwest Airlines and Continental Airlines*, No. 98-74611 (E.D. Mich. Oct. 23, 1998), available at <http://www.usdoj.gov/atr/cases/index.htm>.

⁵⁷ Press Release, U.S. Department of Justice, Department of Justice and Several States will Sue to Stop United Airlines from Acquiring U.S. Airways, at <http://www.usdoj.gov/opa/pr/2001/July/361at.htm> (July 27, 2001).

we review that theory and evidence. This Part will address the issue of identifying problematic markets and firms in the context of actual merger cases.

A. *Constraining Competition and Deconstraining Mergers: Theory*

Economic theory is quite clear as to how a non-incumbent firm may constrain the behavior of incumbent firms. Strands of that theory date back at least to Joe Bain, who described the effect of a potential entrant thus: "The condition of entry. . . . determines the relative force of potential competition as an influence or regulator on the conduct and performance in a market."⁵⁸ From Bain's insight flowed models of limit pricing—the highest price the incumbent can charge without inducing entry—and other theoretical approaches that formalized the relationship between incumbent and non-incumbent firms.⁵⁹ For expository purposes here we adopt the framework of modern oligopoly theory.

Simple theory illustrates the anticompetitive effects of mergers that eliminate a constraining competitor. Assume an industry with only a few firms, where each such firm maximizes its profit, denoted π :

$$\pi = q_i P(Q) - C(q_i) \quad (1)$$

Here q_i denotes its own output and $C(q_i)$ its costs. $P(Q)$ is market demand, a function of the total output Q of all firms. Firm i maximizes its profit by differentiating this expression with respect to its output and setting the result equal to zero. This is equivalent to setting marginal revenue equal to marginal cost, thus:

$$P(Q) + q_i [\partial P(Q)/\partial q_i] = \partial C/\partial q_i \quad (2)$$

Here the ∂ notation signifies the partial derivative. The term $\partial C/\partial q_i$ denotes marginal cost and $\partial P(Q)/\partial q_i$ is the effect on market price of firm i 's own output change. The latter is comprised of two component effects, as can be seen in this rewriting:

⁵⁸ JOE S. BAIN, *INDUSTRIAL ORGANIZATION* 8 (2d ed., 1968). In earlier writing, Bain was less dispassionate: "[T]o argue that sellers in concentrated industries deliberately disregard the consequences of threatened entry would picture them as unbelievably stupid." Joe S. Bain, *A Note on Pricing in Monopoly and Oligopoly*, 39 *AM. ECON. REV.* 448, 452 n.7 (1949).

⁵⁹ For a review of these models and approaches, including critiques of various theories, see Richard J. Gilbert, *The Role of Potential Competition in Industrial Organization*, *J. ECON. PERSP.*, Summer 1989, at 107.

$$\partial P(Q)/\partial q_i = [\partial P(Q)/\partial Q] [\partial Q/\partial q_i] \quad (3)$$

The first term is the slope of market demand and is a parameter to the individual firm, while the second measures the total market output effect resulting from firm i 's output initiative.

Total market output Q is, definitionally, the sum of firm i 's own output q_i plus that from the rest of the firms in the market, denoted R_i . Change in total market output is therefore the sum of changes in each. The second term on the right-hand side of the above equation can be expressed as:

$$\begin{aligned} \partial Q/\partial q_i &= \partial(q_i + R_i)/\partial q_i \\ &= 1 + \partial R_i/\partial q_i \end{aligned} \quad (4)$$

The term $\partial R_i/\partial q_i$ —known as the conjectural variation—is crucial to an understanding of oligopoly output and pricing decisions, since it captures firm i 's expectation of the response by the rest of the industry to its output initiative.⁶⁰ This concept is commonly used to characterize interactions among incumbents in an industry and is easily generalized to non-incumbent firms. We represent possible output responses from non-incumbent firms by writing the conjectural variation as follows:

$$\partial Q/\partial q_i = 1 + \partial R_i/\partial q_i + \partial S/\partial q_i \quad (5)$$

The additional term $\partial S/\partial q_i$ measures any output that is induced from *non*-incumbent firms—that is, firms whose present output in the market is zero but who are viewed as responding to an incumbent's output choices.

This last expression makes clear the analogy between existing rivals' responses and non-incumbent's responses. Each type of firm is capable of exerting conceptually similar constraints on the output decision of the firm in question. For example, an incumbent that is concerned about entry or expansion may choose a level of output higher than otherwise, into order to blunt the incentive of non-

⁶⁰ Conjectural variations have come under criticism in economics for a number of reasons. For present purposes we need not resolve those, but merely note that in this context the conjectural variation is a useful device for representing the types of responses that a firm must anticipate. For a useful discussion, see Richard Schmalensee, *Competitive Advantage and Collusive Optima*, 5 INT'L J. INDUS. ORG. 351 (1987).

incumbents actually to enter. In this manner the existence of the non-incumbent firm alters—constrains—existing firms' behavior in a competitively favorable direction. Of course, entrants are not identical to existing rivals in terms of their incentives and their capabilities to expand output. They have different degrees of sunk costs, market information, and alternative opportunities, among other factors. As a consequence the numerical value of the conjectural variation with respect to non-incumbent firms will in general be different from those that measure responses to incumbents, that is, $\partial R_i/\partial q_i$ $\partial S/\partial q_i$. But the simple fact that it is non-zero makes such non-incumbent firms relevant to the competitive process.

Focusing on the value of the conjectural variation suggests some other conclusions:

- If the conjecture with respect to incumbent firms— $\partial R_i/\partial q_i$ —is sufficiently large, the market is quite competitive and further constraint by non-incumbent firms might be redundant. This implies that the elimination of a non-incumbent firm raises a competitive concern in cases where the incumbent market is not by itself sufficiently competitive.
- If the conjecture with respect to constraining firms— $\partial S/\partial q_i$ —is sufficiently large, the market operates more or less competitively regardless of the structure of incumbents alone.⁶¹ The implication of this observation is that the elimination of a single non-incumbent firm is less likely to be a concern if there are a sufficient number of remaining non-incumbents to preserve the constraint.
- If neither conjecture is so large as to render the market sufficiently competitive by itself, then the presence of constraining competitors makes a difference to market behavior and performance.

⁶¹ An extreme version of this case is represented by the theory of contestable markets. Contestable markets are characterized by the absence of sunk costs (so that firms can instantaneously and costlessly enter and exit) and by slower response times by incumbents relative to entrants (so that entrants can depart before incumbents can lower price and inflict losses on them). If entry were that easy, then concentration among incumbents would not affect market performance, nor would it matter if an incumbent acquired one of many possible entrants into such a market. The model of contestable markets, however, has been shown to have strong theoretical limitations, and in addition, tests have found it inapplicable to any real-world markets, as we shall discuss below.

Constraining firms cannot be identified by examining the *non-incumbent* firms that might represent that constraint. Rather, it is the expectations and behavior of *incumbent* firms themselves that are crucial, and the evidence lies with their decisions and behavior that are significantly influenced by the non-incumbent firm. Note, too, that constraining firms need not actually be prospective entrants. Indeed, even if they are not actually planning entry, firms that exert a restraint on incumbents qualify as constraining firms and hence represent competitively significant firms.⁶²

These considerations imply that a merger eliminating such a firm relaxes the competitive constraint felt by the incumbent firm or firms. Such a merger—what will here be termed a “deconstraining merger”—results in less competitive incumbent behavior and adversely affects market performance.

B. Prospective Competition and Entry-Negating Mergers: Theory

A prospective competitor is a firm that is in fact likely to enter the market in the near future. The theory that explains such a firm’s competitive significance derives directly from oligopoly and merger theories that demonstrate the relationship between market performance and the number of significant firms. These theories are sufficiently familiar and well accepted—including in the concentration criteria in the *Merger Guidelines*—that we need not set them out explicitly here.⁶³ All imply that adding a firm will strengthen competitive forces and improve market performance.

One relevant difference between a prospective competitor and the additional firm(s) in those standard models is that a prospective competitor is a *future* competitor and thus it does not have any contemporaneous effect on the market. A prospective competitor will deconcentrate the market and improve its performance as of the time of its actual entry. Thus, a merger that eliminates a prospective competitor is anticompetitive in that it prevents future deconcentration of the market and lessens future competition. Such a merger is here termed an “entry-negating merger.”

⁶² It is for these reasons that the terms “potential competitor” and “potential entrant” are not apropos. The effect of this firm is in no sense “potential” but rather immediate and real. Nor is this firm necessarily ever actually an entrant.

⁶³ The effect of entry on market equilibrium can be deduced from standard theories of the effects of mergers. Whereas entry involves an increase in the number of incumbent firms, a merger reduces that number. For an explication in the case of Cournot and non-Cournot competitors, see, e.g., John E. Kwoka Jr., *The Private Profitability of Horizontal Mergers with Non-Cournot and Maverick Behavior*, 7 INT’L J. INDUS. ORG. 403 (1989).

There is a substantial economic theory and empirical evidence that further informs our understanding of the effects of market deconcentration through entry of new firms. Analytical models of entry suggest the following conclusions:⁶⁴

- Entry can be a powerful mechanism for correcting market distortions. Actual entry diminishes market power over time, but even the threat of entry constrains incumbents. In the extreme (and unrealistic) case of markets with perfectly costless entry and exit—so-called contestable markets—incumbent market power is completely negated.
- Entry into markets responds to larger expected profits and to rapid market growth. Both factors provide signals that entry is likely to be profitable in the relevant time frame.
- Initial entry is often at small scale but foreshadows later expansion. Full-scale entry is more costly and risky, so that most entrants adopt a strategy of small-scale entry and gradual expansion thereafter.

Empirical evidence confirms these predictions, and in addition comes to the following factual conclusions:

- Entry response times may not be short. Entrants often do not respond immediately but may wait for persistence of profit and growth signals before committing resources to actual entry. This represents a caution about the time horizon for entry, especially where sunk costs are large.
- The magnitude of the effect of actual entry on incumbent firm margins is not immediately overwhelming. While entry does in-

⁶⁴ See PAUL A. GEROSKI, MARKET DYNAMICS AND ENTRY (1991) (analyzing existing data sources on the impact of firm entry on pricing, technical progress, efficiency, productivity, and industry evolution); Timothy Dunne et al., *Patterns of Firm Entry and Exit in U.S. Manufacturing Industries*, 19 RAND J. OF ECON. 495, 495 (1988) (summarizing patterns of firm entry, growth, and exit in the four-digit U.S. manufacturing industries over the period of 1963–1982); Paul A. Geroski, *What Do We Know About Entry*, 13 INT'L J. INDUS. ORG. 421, 421 (1995) (summarizing recent empirical research on firm entry and developing seven 'stylized facts' about what drives entry); John J. Siegfried & Laurie Beth Evans, *Empirical Studies of Entry and Exit: A Survey of the Evidence*, 9 REV. INDUS. ORG. 121, 121 (1994) (drawing conclusions regarding firm entry from 70 empirical studies, notably, that entry is more frequent in the more profitable rapidly growing markets).

deed reduce margins, timing and size requirements postpone full effectiveness. Entry must be permitted sufficient time to strengthen incumbent competition.

- Survival rates of entrants are low. Entry is inherently risky, and no one firm necessarily succeeds in its efforts. Thus, a market with multiple possible entrants is more likely to result in at least one successful entrant.

These empirical findings have led one observer to the cautionary conclusion that entry as a mechanism for disciplining the market is “generally a poor substitute for active rivalry amongst incumbent firms.”⁶⁵ Clearly, no merger policy with respect to entrants should substitute for policy with respect to incumbents. Yet these findings do confirm that entry does matter, validating policy concerns with entry-negating mergers, and they provide some insight into the mechanisms. For example, large-scale or otherwise capable entry is uniquely likely to be effective, but small-scale entry is valuable as a precursor to more substantial operation. Moreover, the procompetitive impact of entry ought not rely on a very small a number of possible entrants, since no one or two firms’ success is guaranteed. These findings provide some guidance as to what constitutes problematic cases of entry-negating mergers.

C. Non-Incumbent Competition: The Evidence

There is a substantial body of empirical literature confirming the effects of competition from non-incumbent firms on market performance. Of necessity, this literature focuses on constraining competition rather than prospective competition, looking for evidence that incumbent firm behavior is in fact altered. A standard format for such a study estimates a statistical relationship of the following sort:

$$\text{PRICE} = f(\text{CONC}, \text{CONCOMP}, X) \quad (6)$$

Here CONC denotes some measure of concentration (such as HHI) that is calculated among incumbent firms. CONCOMP is some measure of constraining competition (discussed below), and X represents a set of control variables that may differ across markets—for example, costs or demand conditions. Data from a number of markets in the same industry are used to estimate this relationship statistically.

⁶⁵ Geroski, *supra* note 64, at 437.

A negative and significant coefficient on CONCOMP would imply that price is less where non-incumbent competition is greater, other things (including concentration) held constant. In addition, a significant positive coefficient on CONC itself would confirm that greater concentration among incumbent firms facilitates the exercise of market power, resulting in higher price.

The non-incumbent firms that in fact represent significant constraints on the behavior of incumbents in some market must be identified. There are several possible methods of doing so. Most directly, one could rely on incumbent firm documents to identify non-incumbent firms viewed as constraining. Of course, documents may not be available or, even if available, they may be unreliable.⁶⁶ Alternatively, objective standards for identifying constraining competitors could be developed. For example, non-incumbent firms producing similar commodities in nearby markets could be presumed positioned to enter the market and hence recognized as a constraint. Alternatively, firms possessing assets that are necessary, or at least very important, for operation in the market could be construed as best able to surmount any remaining obstacles to entry, and hence constraining.⁶⁷

Once relevant non-incumbent firms have been identified, their significance must be measured. Since by definition they have no current production and sales, conventional output-share calculations cannot be performed. Capacity might be used as a metric for all relevant firms—incumbents and non-incumbents—and capacity-based shares calculated.⁶⁸ An alternative approach would involve taking a simple count of constraining competitors on the theory that their influence may be proportional to their numbers.⁶⁹ A variant on this approach would be to take a count of nontrivial constraining competitors, recognizing that those that are very small and perhaps capacity-constrained are unlikely to significantly affect incumbent firm behavior.

A number of studies of this sort have been performed, one of which we shall describe in greater detail. Morrison and Winston investigated 769 city-pair airline markets in 1983.⁷⁰ The average qual-

⁶⁶ Incumbent firms seeking to merge would have an incentive to misrepresent whether or not prospective entrants constrain its decisions.

⁶⁷ Those assets could be tangible (e.g., some input) or intangible, such as specialized marketing knowledge. This asset standard may run the risk of identifying as constraining many more firms than in reality actually do constrain incumbent firms.

⁶⁸ There is precedent in the Merger Guidelines for just such a calculation, where capacity data are more readily available and/or better measure firms' presence in a market.

⁶⁹ This may be particularly appropriate where the price formation process involves bidding competition.

⁷⁰ Steven A. Morrison & Clifford Winston, *Empirical Implications and Tests of the Contestability Hypothesis*, 30 J.L. & ECON. 53 (1987).

ity-adjusted price on each route is related to the number of incumbent carriers and the number of "potential entrants," as well as a number of control variables. Potential entrants are defined as those carriers (other than incumbents) serving either endpoint of the route,⁷¹ since such carriers have (a) feed traffic, an asset that is critical to effective entry, and (b) knowledge and infrastructure relevant to the route. This definition is based on the proposition that such firms are positioned most readily to enter the market and hence are regarded as constraining competitors by incumbent carriers.

The full results of Morrison and Winston's study are reproduced in Table 1. As is evident, each of their control variables—for market density, slot-controlled airports, and the percent of business travelers—is found to have the expected effect on price.⁷² More to the point, each additional actual competitor is found to reduce price on average by .44 cents, or about 4 percent of the average price.⁷³ This result is statistically highly significant, implying that the number of incumbents—that is, market concentration—clearly matters. Equally importantly, each "potential competitor" also significantly reduces price, by .15 cents per mile.⁷⁴ This latter result confirms the separate and significant constraint on incumbent pricing imposed by firms that are known to be positioned to enter a market.

Two corollary points from this study deserve mention. First, while the number both of incumbents and of potential entrants matter, not surprisingly, the effect of one additional potential entrant is smaller than that from one additional actual entrant. The coefficients just reported imply that one incumbent is worth three potential entrants in terms of price-reducing capability. Second, further regressions in the study check for a variety of other possible effects. The only variation of consequence is the finding that the effect of potential entry is clearest when there are at least four such entrants in the market.⁷⁵

Morrison and Winston's study corroborates the constraining effect of non-incumbent firm, but it is only one of many studies to do so. A survey of the economics literature has revealed at least thirteen other studies that cast empirical light on this issue. Most of these also

⁷¹ *Id.* at 58.

⁷² *See id.* at 59-62.

⁷³ *See id.* at 61.

⁷⁴ *Id.*

⁷⁵ *Id.* at 63. It should be noted that Morrison and Winston's article is intended to test the theory of contestable markets in the very market—airlines—that the advocates of that theory most often have argued it is applicable. By finding that the number of incumbents and the number of potential entrants matter to pricing, that theory can be rejected. Numerous other studies draw the same conclusion.

involve the airline industry, primarily because constraining competitors are more objectively identifiable than in other markets. More typically, markets may be surrounded with partially substitutable products and a mass of possible entrants, rendering both market definition and identification of potential entrants much more complex.⁷⁶

Table 2 summarizes the results of all these empirical studies of constraining competition, together with some information concerning their methodology. Although most of the airline studies employ the same definition of a constraining competitor—an airline that serves one endpoint of the route—there are some variations. Hurdle et al. require adequate feed as well as endpoint operation;⁷⁷ Reiss and Spiller consider the indirect service alternative;⁷⁸ Strassman limits it to carriers with a major hub at one endpoint.⁷⁹

In the case of the two railroad studies, constraining competition takes the form of a carrier providing interline service, that is, service along one portion of an otherwise monopoly route.⁸⁰ Since such a carrier might be uniquely well positioned to initiate service along the remaining true-monopoly segment, by analogy to airlines it may constitute a constraining competitor. Entry into railroad service is a considerably more costly, lengthy, and risky process than for airlines, of course, implying that even the best positioned non-incumbent is likely to have less of an effect on an incumbent railroad's pricing.

That said, these studies are notable for their consistent implications. Despite differences in time period and data, and some variation in industry and definitions, all fourteen studies find that competition by non-incumbent firms lowers the price charged in the market. In all but two (or perhaps three, depending on the details of interpretation) the key effect on price is statistically significant. Where it is not, the studies use somewhat atypical definitions of markets, in Peteraf & Reed⁸¹ or of constraining competitors in Strassman⁸² and

⁷⁶ A further reason is that, as part of its regulatory legacy, a substantial amount of data is collected on airline markets, carriers, and prices.

⁷⁷ Gloria J. Hurdle et al., *Concentration, Potential Entry, and Performance in the Airline Industry*, 38 J. INDUS. ECON. 119, 122-23 (1989)

⁷⁸ Peter C. Reiss & Pablo T. Spiller, *Competition and Entry into Small Airline Markets*, 32 J.L. & ECON. S179, S180 (1989).

⁷⁹ Diana L. Strassman, *Potential Competition in the Deregulated Airlines*, 72 REV. ECON. & STAT. 696, 698 (1990).

⁸⁰ See CLIFFORD WINTSON ET AL., *THE ECONOMIC EFFECTS OF SURFACE FREIGHT DEREGULATION* 45 (1990); Curtis M. Grimm et al., *Foreclosure of Railroad Markets: A Test of Chicago Leverage Theory*, 35 J.L. & ECON. 295, 298 (1992).

⁸¹ See Margaret A. Peteraf & Randal Reed, *Pricing and Performance in Monopoly Airline Markets*, 37 J.L. & ECON. 193, 196 (1994) (analyzing the effect of potential competition on an airline monopoly market).

⁸² See Strassman, *supra* note 79, at 698.

Borenstein.⁸³ This body of evidence lends strong support to the proposition that potential competition matters.

Equally importantly, the magnitude of the effect is in almost all cases substantial. Incumbent pricing in airline markets is constrained by an amount that ranges from less than one-quarter of one percent for each potential entrant⁸⁴ to nearly 10 percent when Southwest is the constraining firm.⁸⁵ While such differences may seem large, there is no reason to expect the effect to be uniform in magnitude regardless of time, place, and identity of the non-incumbent.

Most of these studies also permit a comparison of the magnitude of price effect from an additional potential competitor relative to that from an additional actual competitor. That comparison implies that each potential competitor causes price to fall from about one-eighth to one-third as much as would an additional actual competitor in the market. The principle exception here appears to be Richard's finding of an equal effect from Southwest as an incumbent and as a constraining non-incumbent.⁸⁶

In summary, despite some variation in details in these studies, there is a considerable body of empirical evidence supporting the proposition that firms that do not currently produce in a particular market, but that are visibly positioned to enter, significantly affect pricing by incumbent firms. There should be no doubt about the potency of non-incumbent competition and its importance for antitrust. In addition, these studies illustrate how the notion of "visibly positioned" can be operationalized as well as how econometric evidence can be used to capture the effects of non-incumbent competitors.

III. TOWARD GUIDELINES FOR NON-INCUMBENT COMPETITORS

As noted earlier, the skeptical view that the courts have held toward non-incumbent competition ("potential competition") has resulted from two factors: first, the seeming lack of proof of the effects of non-incumbent competition, and second, doubts as to whether relevant non-incumbent competitors could be identified and distinguished from non-incumbent firms that do not matter. The economic theory

⁸³ See Severin Borenstein, *Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry*, 20 RAND J. ECON. 344, 352-53 (1989) (defining potential competition as all airlines who carry less than one percent of the traffic on the observed route).

⁸⁴ See Steven A. Morrison & Clifford Winston, *The Dynamics of Airline Pricing and Competition*, 80 AM. ECON. REV. 389, 390-92 (1990) (special issue).

⁸⁵ Steven A. Morrison & Clifford Winton, *The Remaining Role for Government Policy in the Deregulated Airline Industry*, in DEREGULATION OF NETWORK INDUSTRIES 32-34 (S. Peltzman & C. Winston eds., 2000).

⁸⁶ Krista Richards, *The Effect of Southwest Airlines on U.S. Airline Markets*, 4 RES. TRANSP. ECON. 33 (1996).

and empirical evidence that have been reviewed should remedy the first of these deficiencies, and indeed, they also provide insight into the second. But the second concern—criteria for non-incumbent firms that matter—turns out to be thoroughly addressed in the current *Merger Guidelines*, albeit in a form that obscures its importance to this issue. We address this issue in the first sub-section below, following by proposed guidelines for analyzing mergers involving non-incumbent competitors.⁸⁷

A. Identifying Non-Incumbent Firms that Matter

Our point of departure is the present *Merger Guidelines*' treatment of so-called committed entrants, that is, non-incumbent firms whose sunk costs are significant and hence cannot respond within one year.⁸⁸ The purpose of this section of the Guidelines is to set forth the conditions of entry that render permissible an otherwise problematic merger—one where concentration among incumbent firms is high: "A merger is not likely to create or enhance market power...if entry into the market is so easy that market participants...could not profitably maintain a price increase."⁸⁹ Uncommitted entrants are said to be relevant if their entry is "timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of concern."⁹⁰ Timely entry is defined as that which takes place within two years.⁹¹ Entry is likely if it is profitable at the pre-merger price.⁹² Sufficient entry is that which restores the pre-merger price.⁹³

These criteria serve to define firms that matter in the sense that they would respond, and respond effectively, to the exercise of market power by a merger of incumbent firms. But by extension, these same criteria can be employed to identify those *non*-incumbent firms—parties to a merger—that are competitively relevant. That is, we can define a non-incumbent firm that matters as one that can enter within two years, be profitable at pre-merger price, and (by itself or together with other entrants) restore pre-merger price. While these criteria are not necessarily straightforward, their use should pose no greater problems than those encountered at present in evaluating con-

⁸⁷ See SULLIVAN & GRIMES, *supra* note 1, § 11.3b3, at 623 ("The need for a well-reasoned rule for addressing potential competition issues is probably greater than ever.")

⁸⁸ Recall that quicker entrants qualify as "market participants."

⁸⁹ 1992 quicker entrants qualify as "market participants."

⁸⁹ 1992 MERGER GUIDELINES, *supra* note 36, at § 3.0.

⁹⁰ *See id.*

⁹¹ *See id.* § 3.2.

⁹² *See id.* § 3.3.

⁹³ *See id.* § 3.3, 3.4.

ditions of entry. Our proposed guidelines rely upon these accepted criteria.

Moreover, the current Guidelines treatment of entry is strangely one-sided.⁹⁴ As noted, a non-incumbent firm (or group of firms) meeting the criteria for committed entry supposedly exerts enough power to counteract incumbents' efforts to raise price, but there is no corresponding presumption in the Guidelines that a merger eliminating that very same non-incumbent firm is anticompetitive. This asymmetry in the treatment of non-incumbent firms depending upon whether they are participants in the merger or not is not merely difficult to understand, but it has the effect of tilting policy in favor of mergers. The existence of a constraining competitor moderates concerns over a merger and thus makes the merger more likely to be approved, whereas a merger that eliminates the same constraining firm raises no automatic concern. One of the corollary benefits of the guidelines to be proposed is that they will resolve this asymmetry of treatment.

B. Guidance for Mergers Involving Non-Incumbent Firms

Our proposed approach to mergers involving non-incumbent firms relies upon these criteria for identifying firms that matter, on the earlier Guidelines' treatment of potential competition, and on the cited theory and evidence regarding entrants and non-incumbent competitors. The approach has two steps: (1) satisfaction of one structural precondition for concern with mergers involving non-incumbent firms, and then (2) demonstration of certain features specific to the case of (a) a deconstraining merger or (b) an entry-negating merger.

STEP 1: THE PRECONDITION

The first step involves determination as to whether a necessary structural precondition for concern holds. That precondition is simply that the market consisting of current producers must be at least moderately concentrated. This determination would be made in accordance with the current *Merger Guidelines* and reflects the empirical and theoretical proposition that only those markets that are not workably competitive among existing firms stand to benefit from the role of non-incumbent firms.

⁹⁴ See *id.* § 3.

If this precondition holds, the impact of non-incumbent firms in general and the non-incumbent firm that is party to the merger in particular would be further scrutinized.

STEP 2A: A PROSPECTIVE COMPETITOR / ENTRY-NEGATING MERGER

If the merger allegedly would eliminate a non-incumbent that is a prospective competitor, the merger would likely be challenged if the precondition is met and if the following considerations hold:

(1) The non-incumbent competitor has the capability to enter within a period of two years.

(2) The non-incumbent competitor would likely find entry profitable if price were to remain at its present level (or rise by some predictable amount).

(3) The non-incumbent competitor could enter at a scale sufficient to reduce price by a small but significant and nontransitory amount (or hold it constant if it otherwise would rise by at least a small but significant amount), or could enter at a smaller initial scale but with the capability and incentive to expand substantially within a period of two years.

(4) The non-incumbent competitor is one of no more than five equally well-positioned prospective entrants, or is significantly better positioned to enter than any other possible entrant. As noted earlier, in the presence of many equally well-positioned non-incumbents, the elimination of a single one would arguably not affect future market performance.⁹⁵

Evidence of prospective competition could take either of two form. The first is corporate documents indicating serious interest in possible entry, the basis for that interest, and the capability to undertake actual entry.⁹⁶ Since reliable documentary evidence is not always available, the evidence could alternatively take the form of ob-

⁹⁵ As with other criteria in the Guidelines, the choice of five prospective entrants has an element of arbitrariness. It exceeds the earlier Guidelines' criterion of three, based on evidence of low survival rates of entrants. Thus, to ensure the survival of at least one entrant, a larger number of prospective entrants ought to be preserved. Along similar lines, Areeda and Turner proposed that a merger involving a non-incumbent firm be presumed legal if there were more than three prospective entrants, and that the presumption be conclusive if the number exceeded six. See 5 PHILLIP AREEDA & DONALD F. TURNER, ANTITRUST LAW ¶ 1123b, at 122 (1980) ("[T]he elimination of the defendant is immaterial in view of the plentitude of other potential entrants who could choose to enter across insignificant entry barriers whenever it seems profitable to do so.").

⁹⁶ Convincing documents would be those pre-dating any investigation of the proposed merger, those at relatively senior levels of the company, and those stating positions against the party's own interest. Deposition and other contemporaneous testimony should be heavily discounted.

jective facts about the prospective competitor and its market that would reasonably lead to the conclusion that it could undertake such entry. For example, firms producing products similar to the product in questions, or using similar distribution or marketing techniques, merit close examination as prospective entrants.⁹⁷

STEP 2B: A CONSTRAINING COMPETITOR / DECONSTRAINING MERGER

If the precondition holds and a merger would allegedly eliminate a constraining firm, it would likely be challenged on the basis of convincing evidence that the firm represented an effective and significant constraint on competition among incumbents. That evidence could again take either of two forms. The first would be documents in the possession of incumbent firms indicating active monitoring of and reaction to the non-incumbent party to the merger. These would demonstrate a non-zero conjectural variation between firms. The second, alternative type of evidence would be market data that demonstrate significant responsiveness by incumbents to actions of the allegedly constraining firm. Cases such as *Staples*⁹⁸ illustrate the potency of both data and documents in identifying significant constraining firms. Academic research had also gone far toward measuring actual interactions between firms.⁹⁹

An allegation of a deconstraining merger need not show that the non-incumbent has either the incentive or capability to enter, nor that there are only a small number of such firms. Where the allegation is that of a constraint, demonstration of the constraint trumps all indirect evidence and other considerations.

C. Other Frameworks for Treating Non-Incumbent Competitors

While the above proposal reflects current understanding and analytical approaches, other frameworks have been suggested for addressing mergers involving non-incumbent firms. We offer some comments on two of those—that due to Brodley, and the so-called “innovation market” approach.

In two important articles written in the aftermath of the Supreme Court’s *Marine Bancorporation* case, Brodley advanced the proposition that the court had erred in abandoning a strict structural

⁹⁷ These similarities are what Brodley has termed “proximity” of producers and products as a criterion for identifying likely entrants. See Joseph F. Brodley, *Potential Competition Mergers: A Structural Synthesis*, 87 YALE L.J. 1 (1977).

⁹⁸ *FTC v. Staples and Office Depot*, 970 F. Supp. 1066 (D.D.C. 1997).

⁹⁹ See, e.g., STEVEN A. MORRISON & CLIFFORD WINSTON, *THE EVOLUTION OF THE AIRLINE INDUSTRY* (1995).

approach to merger analysis, including with respect to non-incumbent firms, and had created confusion in distinguishing actual from perceived potential competition.¹⁰⁰ He advocated a “structural-presumptive” approach that would “identify the class of most likely entrants into the most ill-structured markets, and then bar large acquisitions in those markets by such firms.”¹⁰¹ Likely entrants would be identified by their “proximity” to the affected market, a useful notion encompassing similarities in technology, marketing, and customers. In addition, the potential competitor must be one of the “few most significant possible” entrants. Satisfying these would create a presumption against a merger involving such a firm.

Brodley’s approach was explicitly intended to return the doctrine of potential competition to a more structural and measurable foundation and thereby to avoid what he believed to be the complexity and even indeterminacy of other methods. There is, of course, much to be said for simple, measurable, and therefore usually structural standards for evaluating mergers, but over time merger analysis in general has moved away from a structural approach. The current Guidelines de-emphasize concentration and share thresholds, instead elevating other considerations to high importance, all in a manner intended to be consistent with modern economics. A return to structural criteria for potential competition would be difficult to imagine, even if it were unambiguously desirable.

Moreover, advances in economics underscore the fundamentally different issues involved in deconstraining versus entry-negating mergers. As noted above, greater availability of data and more sophisticated statistical analysis open up the possibility of isolating and measuring firm interactions in ways not possible twenty years ago. And attention is routinely paid to firm conduct and competitor interactions in merger analyses, for example, in defining markets and in modeling unilateral effects. Similar attention would seem appropriately paid to conduct issues in evaluating mergers involving non-incumbent firms, as has been suggested in the previous section.

A second alternative method of analyzing potential competition mergers that has recently received considerable attention involves so-called “innovation markets.” Originating with Gilbert and Sunshine,¹⁰² this approach would evaluate a merger based in part on

¹⁰⁰ See Brodley, *supra* note 97; Joseph F. Brodley, *Potential Competition Under the Merger Guidelines*, 71 CAL. L. REV. 376, 386 (1983) (describing the 1982 *Merger Guidelines*’ single structural analysis approach to assessing anticompetitive potential competition mergers).

¹⁰¹ Brodley, *supra* note 97, at 65.

¹⁰² See Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569, 571 (1995)

its effect on independent R&D efforts by companies, rather than current production of some marketable product. By focusing on control of a pre-production capability—"innovation"—this approach is said to facilitate analysis of some potential competition mergers. The argument has been set forth as follows:

Innovation resulting from vigorous research and development is often the precursor to entry in markets characterized by sophisticated and rapidly evolving technology. A merger or acquisition that adversely affects innovation, therefore, may reduce the probability of entry into and the intensity of competition in markets where the merging firms do not compete prior to the merger.¹⁰³

The concept of innovation markets may serve to capture the anticompetitive effects of a merger where the effect on R&D itself is the key issue,¹⁰⁴ but for more typical competitive concerns with potential competition, innovation markets are not a well-designed tool. For example, suppose a firm producing a well-defined product that is not undergoing any change decides to merge with another firm that might otherwise have entered into production of exactly the same product. Such a merger would not obviously raise an "innovation" problem since there is no innovative process at work, but the competitive problems associated with the elimination of a prospective or constraining competitor are clear.

A further problem with the innovation markets approach is evidentiary. The actual product market is not easily defined, participating firms are not easily identified, and anticompetitive effects are not easily predicted. Indeed, all of these issues—thorny in any potential competition context—seem especially difficult when the market is cast in terms of "innovation." For all these reasons reliance upon innovation markets as a primary enforcement tool would seem ill-advised.¹⁰⁵

(proposing the use of innovation markets to analyze the effects of a merger on competition in research and development and on the consequences of this competition for the prices, costs, and availability of downstream products).

¹⁰³ *Id.* at 570.

¹⁰⁴ Such was the case in the 1996 merger of Ciba-Geigy and Sandoz. Both were involved in substantial R&D efforts at genetic engineering and were made to sell off one of their research programs as a condition for FTC approval of the merger. *See* Ciba-Geigy, Ltd., 123 F.T.C. 842 (1997).

¹⁰⁵ For similarly unenthusiastic views of innovation markets, see Lawrence B. Landman, *Did Congress Actually Create Innovation Markets?*, 13 BERKELEY TECH. L.J. 721 (1998); Richard T. Rapp, *The Misapplication of the Innovation Market Approach to Merger Analysis*, 64 ANTITRUST L.J. 19 (1995).

CONCLUSION

This paper has sought to restore viability to the doctrine of non-incumbent competition. We have demonstrated the roots of this doctrine in economic theory and the empirical support for its importance. We have shown how relevant non-incumbent firms can be identified by extension of the criteria already set forth in the *Merger Guidelines* and employed by the enforcement agencies. Based on all that, we have offered some tentative guidelines suggesting how the antitrust agencies and courts could appropriately analyze claims of anticompetitive effects from mergers involving constraining and prospective competitors.

This doctrine of non-incumbent competition has remained largely dormant for some thirty years, during a merger wave of historic proportions. Many important mergers of that period and of the present time raise concerns involving such firms, and it can only be hoped that the agencies will renew their efforts to treat de-constraining mergers and entry-negating mergers as the threats to competition that they manifestly represent.

Table 1
Estimation Results on Quality-Adjusted Yields

Variable Definition	Estimate
Hub dummy (1 if route was nonhub/nonhub, 0 otherwise)	2.31* (.37)
Hub dummy (1 if route was nonhub/small hub, 0 otherwise)	1.41* (.32)
Hub dummy (1 if route was nonhub/medium hub, 0 otherwise)	2.16* (.40)
Hub dummy (1 if route was nonhub/large hub, 0 otherwise)	2.52* (.50)
Hub dummy (1 if route was small hub/small hub, 0 otherwise)	1.30* (.32)

Hub dummy (1 if route was small hub/medium hub, 0 otherwise)	2.56* (.38)
Hub dummy (1 if route was small hub/large hub, 0 otherwise)	3.51* (.48)
Hub dummy (1 if route was medium hub/medium hub, 0 otherwise)	2.62* (.43)
Hub dummy (1 if route was medium hub/large hub, 0 otherwise)	3.12* (.46)
Hub dummy (1 if route was large hub/large hub, 0 otherwise)	3.42* (.50)
Slot dummy (1 if either origin or destination airport had slot restrictions, 0 otherwise)	.60* (.19)
Percentage of business travelers on route	.06* (.005)
Number of airlines offering direct or on-line connecting service	-.44* (.04)
Number of airlines serving at least one airport on the route (excluding actual carriers)	-.15* (.02)

Notes: No. of observations = 769

$R^2 = .42.$

Standard errors are in parentheses.

* indicates statistical significance.

Source: Steven A. Morrison & Clifford Winston, *Empirical Implications and Tests of the Contestability Hypothesis*, 30 *J.L. & ECON.* 53, 62 (1987) (reprinted with permission *The Journal of Law & Economics*, Univ. of Chicago, (2001)). © Copyright 1987 by The University of Chicago. All rights reserved.

TABLE 2
Economic Studies of Constraining Competitors

AUTHOR(S)/ DATE	INDUSTRY/ DATA	CONSTRAIN- ING COM- PETITOR	FINDINGS
Morrison and Winston 1987 ¹⁰⁶	Airlines 769 city-pair markets in 1983	Non-incumbent carriers serving either or both endpoints	Each non- incumbent competitor lowers price by .44 cents per mile. Statistically significant.
Hurdle et al 1989 ¹⁰⁷	Airlines 867 nonstop city-pair markets in 1985	Non-incumbent carriers serving either or both endpoints and with adequate feed	Each such "likely po- tential en- trant" low- ers price by .16-.22 cents per mile. Sta- tistically significant.
Borenstein 1989 ¹⁰⁸	Airlines 3591 city- pair routes in 1987	Concentration among carriers at endpoint airports plus small incum- bent carriers, relative to just non- incumbents	One stan- dard devia- tion in such "potential competi- tion" lowers price by less than 1%. Not consistently significant.

¹⁰⁶ Steven A. Morrison & Clifford Winston, *Empirical Implications and Tests of the Contestability Hypothesis*, 30 J.L. & ECON, 53 (1987).

¹⁰⁷ Gloria J. Hurdle et al., *Concentration, Potential Entry, and Performance in the Airline Industry*, 38 J. INDUS. ECON. 119 (1989).

¹⁰⁸ Severin Borenstein, *Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry*, 20 RAND J. ECON. 344 (1989).

AUTHOR(S)/ DATE	INDUSTRY/ DATA	CONSTRAIN- ING COM- PETITOR	FINDINGS
Morrison and Winston 1989 ¹⁰⁹	Airlines 112 city-pair routes in 1983	Non-incumbent carriers serving either or both endpoints, in- teracted with distance	Each non- incumbent lowers price, but not signifi- cantly
Reiss and Spiller 1989 ¹¹⁰	Airlines 113 city-pair markets, 1982	Indirect ser- vice: one-stop, change of planes	Indirect service sig- nificantly lowers price, but direct ser- vice lowers price by more
Morrison and Winston 1990 ¹¹¹	Airlines 18,573 ob- servations of city-pair markets, 1978-1988	Non-incumbent carriers serving either or both endpoints	Each non- incumbent lowers price by .55% pre-1982 and .14% post-1982. Significant.
Strassman 1990 ¹¹²	Airlines 442 quarterly observations on 92 large city-pair markets, in 1980	Non-incumbent carriers with a major hub at either endpoint	Additional carrier with major hub lowers price, but not signifi- cantly

¹⁰⁹ Steven A. Morrison & Clifford Winston, *Enhancing the Performance of the Deregulated Air Transportation System*, in BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 61 (1989).

¹¹⁰ Peter C. Reiss & Pablo T. Spiller, *Competition and Entry in Small Airline Markets*, 32 J.L. & ECON. 179 (1989).

¹¹¹ Steven A. Morrison & Clifford Winston, *The Dynamics of Airline Pricing and Competition*, 80 AM. ECON. REV. 389 (May 1990) (special issue).

AUTHOR(S)/ DATE	INDUSTRY/ DATA	CONSTRAIN- ING COM- PETITOR	FINDINGS
Winston et al 1990 ¹¹³	Railroads 1558 ship- ments of coal and grain, 1210 ship- ments of other com- modities, 1985	Interline ser- vice: service along one por- tion of route served entirely by monopoly carrier	Interline service low- ers prices sig- nificantly. Effect for "other commodi- ties" sub- stantial
Grimm et al 1992 ¹¹⁴	Railroads 395 ship- ments, 1985	Interline ser- vice: service along one por- tion of route entirely served by monopoly carrier	Interline service lower price charged by single-line carrier. Effect larg- est for first single-line carrier, but all are sig- nificant
Bruekner, Dyer, and Spiller 1992 ¹¹⁵	Airlines 6054 itiner- aries with 4 flight seg- ments through 267 airports in 1985	Non-incumbent carriers serving both endpoints	Each non- incumbent lowers price by 1.6%. Statistically significant.

¹¹² Diana L. Strassman, *Potential Competition in the Deregulated Airlines*, 72 REV. ECON. & STAT., 696 (1990).

¹¹³ CLIFFORD WINSTON ET AL., *THE ECONOMIC EFFECTS OF SURFACE FREIGHT DEREGULATION* (1990).

¹¹⁴ Curtis M. Grimm et al., *Foreclosure of Railroad Markets: A Test of Chicago Leverage Theory*, 35 J.L. & ECON. 295 (1992).

¹¹⁵ Jan K. Bruekner et al., *Fare Determination in Airline Hub-and-Spoke Networks*, 23 RAND J. ECON. 309 (1992).

AUTHOR(S)/ DATE	INDUSTRY/ DATA	CONSTRAIN- ING COM- PETITOR	FINDINGS
Peteraf and Reed 1994 ¹¹⁶	Airlines 345 city-pair markets in 1984 served by only one carrier	Non-incumbent carriers serving either or both endpoints	Number of non- incumbents lowers price, but insignifi- cantly. More im- portant is average cost of low- est-cost potential entrant.
Bruekner and Spiller 1994 ¹¹⁷	Airlines 7732 obser- vations on about 5000 routes in 1985	Non-incumbent carriers serving both endpoints	Each addi- tional con- straining carrier low- ers price by about 2%. Statistically significant.
Richards 1996 ¹¹⁸	Airlines 558 routes of less than 1000 miles in 1995	Presence of Southwest on route, or serv- ing one end- point, or serv- ing neither endpoint	Southwest effect on fares sig- nificant and similar on routes it served and where it served one endpoint

¹¹⁶ Margaret A. Peteraf & Randal Reed, *Pricing and Performance in Monopoly Airline Markets*, 37 J.L. & ECON. 193 (1994).

¹¹⁷ Jan K. Bruekner & Pablo T. Spiller, *Economics of Traffic Density in the Deregulated Airline Industry*, 37 J.L. & ECON. 379 (1994).

¹¹⁸ Krista Richards, *The Effect of Southwest Airlines on U.S. Airline Markets*, 4 RES. TRANSP. ECON. 33 (1996).

AUTHOR(S)/ DATE	INDUSTRY/ DATA	CONSTRAIN- ING COM- PETITOR	FINDINGS
Morrison and Winston 2000 ¹¹⁹	Airlines 1000 most heavily trav- eled routes, 1978 and 1998	Presence of Southwest or of other low- cost carriers on adjacent route, also at airport on route	Southwest effect very large and statistically significant. Effect of other low- cost carriers mixed.

¹¹⁹ Steven A. Morrison & Clifford Winston, *The Remaining Role for Government Policy in the Deregulated Airline Industry*, in *DEREGULATION OF NETWORK INDUSTRIES* (S. Peltzman & C. Winston eds., 2000).

