The Theory of Contestable Markets and Its Legacy in Antitrust Practice

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Lawyers and economists working in antitrust are likely to encounter the Theory of Contestable Markets (henceforth “TCM”) at some point in their professional lives. In this article we provide a brief, non-technical explanation of TCM and we chronicle its rise to prominence, its decline in popularity within mainstream Economics, and its enduring influence on the practice of antitrust.

I. What Is a Contestable Market?

In 1982, industrial organization economists William Baumol, John Panzar, and Robert Willig published a book titled Contestable Markets and the Theory of Industry Structure. They proposed an innovative framework that sought to “generalize the concept of perfect competition,” describing market entry and exit conditions that would induce socially optimal behavior even in oligopolistic or monopolistic markets. This stark separation between market structure (i.e., concentration) and market outcomes (i.e., prices and quantities sold) was a challenge to the Structure-Conduct-Performance paradigm, which had dominated the profession since the seminal work of Joe Bain in the 1950s. As such, Baumol and his coauthors proclaimed their theory to be an “uprising in the theory of industry structure” and “a new theory of industrial organization.” Much of the Economics profession and many practitioners seemed to agree with this assessment. As noted by William Shepherd just two years after the publication of

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1 The views expressed in this article are solely those of the authors, who are responsible for the content, and do not necessarily reflect the views of Cornerstone Research.
2 Senior Advisor, Cornerstone Research.
3 Associate, Cornerstone Research.
7 Baumol, supra note 5; Baumol et al., supra note 4, at vi.
the Baumol et al. book, “the topic [was] being installed not only in the literature, but also in graduate curricula and in policy debates about antitrust and regulation.”

According to Baumol et al., a contestable market is characterized by the following conditions:

1. Free Entry: All firms, including those that do not currently produce in the market, have access to the same production and distribution technologies. Furthermore, there are no regulatory barriers to entry. All firms (new or existing) that wish to offer products to the market are on a level playing field with respect to other firms in the market in terms of consumer perception—there are no branding advantages. In summary, there are no barriers to entry as George Stigler defined them: “A cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry.”

2. Free Exit: There are no impediments to firms leaving the market. When a firm exits the market, it can recover the depreciated value of its market-specific investments; i.e., there are no sunk costs.

3. Sticky Short-Term Prices: Incumbent firms cannot adjust their prices immediately. This may be due to contract provisions or other practical impediments.

4. Price-Sensitive Consumers: Consumers immediately react to differences in price, purchasing the least costly alternative. This corresponds to the consumer behavior assumed in the widely used Bertrand-Nash model of oligopolistic behavior.

Together, these assumptions imply that hit-and-run entry, a key implication of TCM, is possible. Hit-and-run entry takes place when a firm enters the market, sells its products at a price below the prevailing price in that market—but above the competitive level—and then exits before incumbent firms can react.

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When hit-and-run entry is possible, incumbent firms will not price their products above the competitive level; if they do, a hit-and-run entrant will take advantage of the situation by capturing all of the sales in the market, leaving incumbent firms empty-handed.

A. Airline Markets as the Prototypical Contestable Markets

Proponents of TCM pointed to airline routes between city-pairs as real world examples of contestable markets. Baumol et al. provide a characteristically persuasive explanation:

Consider two towns between which the demand for travel is only sufficient to support one flight a day. This is a natural monopoly market. And yet, because airline equipment (virtually “capital on wings”) is so very freely mobile, entry into the market can be fully reversible. In principle, faced with a profitable opportunity in such a market, an entrant need merely fly his airplane into the airport, undercut the incumbent’s price, and fly the route profitably. Then, should the incumbent respond with a sufficient price reduction, the entrepreneur need only fly his airplane away to take advantage of some other lucrative option—even if he only returns his rented aircraft or resells it in the well-functioning secondary aircraft market. Thus, it is highly plausible that air travel provides real examples of contestable markets.\(^{11}\)

Subsequent research, however, suggested that airline routes were not perfectly contestable. As Baumol and Willig note in their 1986 retrospective on TCM, “post-deregulation experience in the airlines industry has revealed several elements of the structure of supply that conflict significantly with the conditions necessary for the pure theory of contestability to apply without modification.”\(^{12}\) Several econometric studies found a statistical relationship between profits and market structure in airline markets, contradicting the predictions of TCM. Moreover, when entry occurred, established firms reduced their fares in response, violating the sticky price condition described above.\(^{13}\) Other structural factors such as constraints in the supply of airport facilities and particular airplane

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\(^{11}\) Baumol et al., supra note 4, at 7.


\(^{13}\) Indeed, airline markets are sometimes cited as examples of predatory pricing, where incumbents lower prices below cost in order to drive entrants out of the market. See, for instance, the description of Northwest’s response to Spirit Airlines’ entry to the Detroit to Philadelphia market in Luis Cabral, *Introduction to Industrial Organization* (Cambridge, MA: MIT Press, 2000), at 275.
models, as well as union-negotiated wage contracts, further departed from the basic assumptions of TCM. However, researchers found that potential competition constrains price in these markets, providing support for TCM's notion that potential competition can be a competitive constraint on market participants.16

B. Criticisms of Contestable Markets Theory

Criticisms of TCM followed close on the heels of Baumol et al.'s book.15 Some economists faulted the authors of TCM for overstating their contribution and underemphasizing the influence of the work of Bain, Stigler, and others on barriers to entry, as well as other contemporary theories of imperfect competition such as limit pricing.16 More relevant, however, were claims that TCM's assumptions lack generality and, therefore, that the theory was empirically implausible.

One powerful criticism of TCM centered on the apparent disconnect between the model's assumptions on the flexibility of prices relative to capacity. For hit-and-run entry to be feasible, a firm must be able to bring new products to the market before incumbent firms can adjust their prices in response. However, as Avinash Dixit noted, "[t]he traditional presumption in industrial organization is the opposite, that is, that prices can be changed more quickly than sunk capacity."17

Ultimately, these arguments together with the failure to establish a consistent body of empirical evidence to support TCM, as noted above for the case of airline markets, resulted in most academic economists putting TCM aside. Church and Ware's widely cited textbook on Industrial Organization sums up current attitudes toward TCM, stating that "[t]he theory of contestability has

16 See Shepherd, supra note 8, at 572, 574, noting that TCM was "offered with unusual self-praise," and that "[i]n 1956, Joe Bain added the concept of entry barriers, as an element that could modify internal market power. The logical possibility that free entry could neutralize internal market power was known from the outset, but it was set aside as an extreme case." See also Dixit, supra note 9.
17 Dixit, supra note 9, at 16.
provoked considerable controversy over its logical possibility, robustness, and empirical relevance.\textsuperscript{16}

II. Contestable Markets Theory through the Lens of the DOJ/FTC Merger Guidelines

The influence of TCM on antitrust practice over the years can be traced through the lens of the DOJ/FTC Merger Guidelines. In particular, the concept of potential entry has played a significant role in the Merger Guidelines since 1982.\textsuperscript{19} The 1982 and 1984 Merger Guidelines introduced criteria consistent, but perhaps not directly inspired by, TCM; the 1992 Guidelines reflected the main concepts of TCM; and the 2010 Guidelines reflect the profession's turn away from TCM.

The 1982 Guidelines gave entry a central role in merger enforcement for the first time, stating that “\textit{[t]}f entry into a market is so easy that existing competitors could not succeed in raising price for any significant period of time, the Department is unlikely to challenge mergers in that market.”\textsuperscript{20} In effect, potential entrants whose participation in the market was judged to be sufficiently likely and timely following a 5 percent increase in price were considered to be part of the market and assigned market shares.\textsuperscript{21} While this view owes at least as much to the work of Bain, Stigler, and others on the importance of barriers to entry as it does to TCM, contemporary commentators noted its congruence with TCM, and the Guidelines were often interpreted in light of TCM.\textsuperscript{22} The 1984

\textsuperscript{19} Jeffrey Church and Roger Ware, \textit{Industrial Organization: A Strategic Approach} (New York, NY: McGraw-Hill, 2000), at 509. \textit{See also} Rhys Evenden and Alan Williams, “Contestability: The Debate and Industry Policy,” \textit{Economic Analysis and Policy} 30, no. 1 (2000): 75–90, at 76 (“Contestability theory no longer holds widespread support amongst academic economists in the field of microeconomic policy because the assumptions have come to be regarded as implausible as a matter of logic or empirical evidence.”).


\textsuperscript{22} Eleanor M. Fox, “The New Merger Guidelines: A Blueprint for Microeconomic Analysis,” \textit{Antitrust Bulletin} 27 (1982): 519–591, at 541 (“The categories of 'Ease of Entry' and 'Other Factors' are very important... Even if the market is dominated by a single firm, it is possible that entry conditions make the leading firm's market 'contestable' by firms that can enter and leave without incurring unrecoupable costs (e.g., airlines in an unregulated environment, seeking new routes).”); Janusz Ordover and Robert Willig, “The 1982 Department of Justice Merger Guidelines: An Economic Assessment,” \textit{California Law Review} 71, no. 2 (1983): 535–574, at 563 (“This view squares with a generally accepted notion that in a market unprotected by entry barriers, incumbent firms cannot exercise market power. In such markets, which we term contestable markets, the threat of entry is an absolute constraint on incumbents’ market power.”); Richard Schmalensee, “Horizontal Merger Policy: Problems and Changes,” \textit{Journal of Economic Perspectives} 1, no. 2 (1987): 41–54, at 51 (“The position of the Guidelines on the extreme case of contestable markets is theoretically correct: 'If entry into a market is so easy
revision of the Guidelines brought their treatment of entry a step closer to TCM’s by noting that “entry is more likely to occur when the additional assets necessary to produce the relevant product are short-lived or widely used outside the particular application”; i.e., when assets needed to enter are not sunk.25

In spite of the alignment between the 1982 and 1984 Merger Guidelines and TCM, the proponents of TCM were quick to point out the conceptual and practical difficulties associated with the Guidelines’ treatment of entry.24 In particular, they argued that the approach laid out in the Guidelines would necessarily be speculative given the difficulty of determining the ease with which production facilities can be used to produce alternate goods and of surmising what a particular firm’s reaction might be to a 5 percent price increase. Moreover, these scholars argued that by focusing only on existing production facilities, the approach could understate the competitive constraint imposed by potential competitors.

The practical difficulties and ambiguities inherent in the 1984 Guidelines’ treatment of potential entry were brought to the fore in 1990 through two high-profile appeals court decisions that went against the Justice Department: Baker Hughes and Syfy.25 The decisions built on the precedent set by the Second Circuit’s 1984 Waste Management decision which, citing the Merger Guidelines, held that “entry into the relevant product and geographic market by new firms or by existing firms... is so easy that any anti-competitive impact of the merger before us would be eliminated more quickly by such competition than by litigation.”26 The appellate court decisions in Baker Hughes and Syfy similarly stressed the proposition that easy entry can trump other factors indicating a risk of anticompetitive effects, such as high concentration. In both cases, the government argued, to no avail, that although entry was feasible, it required a

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24 Ordoon and Willig, supra note 22, at 564–566.


substantial long-term commitment and was thus unlikely to be “quick and effective” in response to a small but significant increase in price.\textsuperscript{27}

The \textit{Baker Hughes} and \textit{Syufy} decisions were issued while Robert Willig, one of the main proponents of TCM, was Deputy Assistant Attorney General for Economics in the Department of Justice’s Antitrust Division (1989—1991). Willig was succeeded in that post by Janusz Ordover (1991—1992), a frequent coauthor of Willig’s and a prominent scholar of TCM. Some senior staff at the Justice Department saw these losses as stemming in part from a lack of clarity and specificity in the Merger Guidelines as to the critical distinction between the competitive implications of easy, uncommitted entry (i.e., hit-and-run entry) and entry requiring a long-term investment at scale (i.e., entry involving large sunk costs).\textsuperscript{28} As a result, the revised 1992 Merger Guidelines strongly reflect the influence of TCM.\textsuperscript{29}

The 1992 Guidelines introduced the concept of an “uncommitted” entrant, defined as a firm that, in response to a small but significant increase in price, “likely would enter rapidly into production or sale of a market product in the market’s area, without incurring significant sunk costs of entry and exit.”\textsuperscript{30} The absence of sunk costs, of course, and the companion idea that an entrant is uncommitted in the sense that it may choose to stay in or leave the market at any time, has a direct mapping to TCM; in the words of Jonathan Baker, “uncommitted entry is ‘hit and run.’”\textsuperscript{31} The introduction of “uncommitted” entrants extended the scope for supply-side substitution to enter the analysis of market definition; it was not only producers with existing capacity that were to be considered but also even a firm that is “newly organized or is an existing firm without products or productive assets closely related to the relevant market.”\textsuperscript{32}

As Ordover and Willig noted in an essay reviewing the 1992 Guidelines, “[t]he

\textsuperscript{27} United States v. \textit{Baker Hughes Inc.}, 908 F.2d 981, 983 (D.C. Cir. 1990).


\textsuperscript{29} Peter Reiss, “Remarks Prepared for the Antitrust Modernization Commission’s Economists’ Roundtable on Merger Enforcement,” mimeo (2006), Washington D.C., at 6 (“Given Professor Willig’s tenure in the Justice Department from 1989—1991, it is perhaps not too surprising that Section 3 of the 1992 Guidelines explicitly recognizes the importance of sunk costs for entrants’ decisions, and that the Guidelines also use the terms ‘committed’ and ‘uncommitted’ entrants.”); Paul Pauley, “A History of the FTC’s Bureau of Economics,” U.S. Federal Trade Commission - Bureau of Economics (2015), at n.199 (“The guide revision was initiated by DOJ (and likely by Bobby Willig).”)


\textsuperscript{31} Baker, supra note 28, at 196.

logic and the mechanics of the Guidelines’ treatment of uncommitted entry are tied to the market power concerns that constitute the theme of the entire Guidelines’ methodology.”\textsuperscript{55} This marked a high-point for the influence of TCM.

While academic economists had largely turned away from TCM by the time it was fully embraced by the Merger Guidelines in 1992, the Guidelines would remain unaltered for the next eighteen years. The Justice Department and the FTC conducted extensive consultation as part of their preparation of the 2010 Merger Guidelines. One of the elements of the 1992 Guidelines that was criticized was the concept of uncommitted entry. Various experts saw it as potentially confusing, seldom used, and out of touch with the latest economic research showing that “entry isn’t as easy as we once thought.”\textsuperscript{54} In response, the treatment of potential competition and entry was “simplified” in the 2010 Guidelines.\textsuperscript{55} The legacy of TCM, however, lives on; uncommitted entry has been renamed “rapid” entry, but the framework retains its emphasis on sunk costs and the ease of entry and exit.

III. Contestability in Today’s Antitrust Community

While TCM is no longer a prominent topic of discussion at most Economics departments, its legacy endures within the antitrust community. Most notably, TCM’s emphasis on potential entry as a competitive constraint has had an enduring influence on how antitrust practitioners think about market definition, market power, and mergers.

TCM’s history in antitrust enforcement has kept the word “contestable” on practitioners’ lips; a recent reference book written by antitrust practitioners notes that “[t]he word ‘contestable’ has entered the legal vocabulary and is used in a looser fashion than that proposed in the economic literature.”\textsuperscript{55} In a recent speech, EU Competition Commissioner Margrethe Vestager assured her audience that “we will never turn our eyes off the customers and the need to keep a fast-

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changing industry open, innovative and contestable.” In a 2011 document, the DOJ uses the term “contestable volume” to refer to “the patients that United Regional would actually be at risk of losing if an insurer were to choose non-exclusivity.” In our experience, this varied use of the term “contestable” can lead to confusion as some people inevitably associate it with the formal TCM. William Shepherd attempted to correct this early on: “Baumol et al.’s vague term, ‘contestability,’ particularly needs to be replaced by the more accurate phrase, ‘ultra-free entry.’... The word [contestability] is informal and intuitive, implying interactions and imperfections that the ultra-free entry model rules out.” While Shepherd’s warning was not heeded, a well-informed practitioner can make use of the term “contestability” and of TCM itself to great effect, given the right circumstances.

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59 Shepherd, supra note 8, at 572–573.