
Modular Market Definition

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Surging interest in antitrust enforcement is exposing, once again, the difficulty of defining relevant markets. Past decades have witnessed the invention of many tests for defining markets, but little progress has been made, or even attempted, at reconciling these different tests. Modern market definition has thus become a confused agglomeration of often conflicting ideas about what relevant markets are and how they should be defined and used. The result — unpredictable and unreliable market boundaries — is an unsure footing for the complicated cases and policy questions now before us.

This Article responds to the problem of confused market definition with a simple but powerful approach to dealing with multiple tests for defining markets. The basic insight is that different tests scope markets appropriate for serving different needs. Helpful market definition can thus proceed in two steps. First, identify the substantive purposes for which markets are being defined in a particular application. Second, select the test that defines markets most suited to serving those purposes.

This modular approach to market definition offers several advantages over the current conflation of different tests. First, the modular approach promises greater predictability and reliability in market definition practice. Second, it provides a more legally honest and economically coherent explanation of how the various tests for defining markets fit together. Third, it contributes to ongoing policy discussions, clarifying how relevant markets work in antitrust law and how they can be leveraged to empower more efficient and effective enforcement practices.

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TABLE OF CONTENTS

INTRODUCTION	1093
I. PROCESS — THE HISTORY OF MARKET DEFINITION	1098
A. <i>Tests Based on Commodity Concepts</i>	1099
B. <i>Tests Based on Popular Perception</i>	1102
C. <i>Tests Based on Joint Market Power</i>	1107
D. <i>Tests Based on Individual Market Power</i>	1111
II. PURPOSE — THE FUNCTIONS OF MARKET DEFINITION	1117
A. <i>Magnification</i>	1118
B. <i>Translation</i>	1122
C. <i>Exploration</i>	1125
III. PRACTICE — MODULAR MARKET DEFINITION	1129
A. <i>Coordinated Effects Enabling Tacit Collusion</i>	1130
B. <i>Coordinated Effects Entrenching Tacit Collusion</i>	1132
C. <i>Concerted Conduct</i>	1133
D. <i>Undifferentiated-Product Unilateral Effects</i>	1136
E. <i>Differentiated-Product Unilateral Effects</i>	1137
F. <i>Monopolization</i>	1138
G. <i>Structuralist Concerns</i>	1141
CONCLUSION.....	1143

INTRODUCTION

In 1945, the Aluminum Company of America (“Alcoa”) was like the Apple or Amazon of today. Founded by a backyard inventor who had discovered a low-cost way of smelting aluminum, the company had grown into a corporate empire. From its humble start as a smelting operation, Alcoa expanded upstream into mining operations and power generation. It also expanded downstream into the fabrication of cookware, cables, and machine parts. Through growth and acquisitions at every level, Alcoa’s operations soon blanketed the nation and suffocated its rivals.¹ In the eyes of the public, Alcoa was a dangerous monopoly, the likes of which the antitrust laws were meant to condemn.² Unbeknownst to the public, Alcoa would soon become the catalyst to almost a century of struggle with market definition.

The government sued Alcoa, accusing it of monopolizing the aluminum ingot market, but lost badly at the district court.³ Undeterred, it appealed to the Supreme Court,⁴ only to encounter recusals so numerous that a quorum could not be reached. The stalemate was finally broken when the Court relinquished final review of the case to a panel of the Second Circuit.⁵ By this peculiar chain of events, Learned Hand came to write for the court of last resort. Hand’s always clear-minded analysis did much to produce a reasoned and persuasive resolution of the case. But Hand struggled, ultimately in vain,

¹ See generally Spencer Weber Waller, *The Story of Alcoa: The Enduring Questions of Market Power, Conduct, and Remedy in Monopolization Cases*, in *ANTITRUST STORIES* 121 (Eleanor M. Fox & Daniel A. Crane eds., 2007) (providing detailed background on Alcoa).

² Learned Hand observed as much in a preconference memo: “If we hold that [Alcoa] is not a monopoly, deliberately planned and maintained, everyone who does not get entangled in legal niceties, and in the incredible nonsense that has emanated from the Supreme Court, will, quite rightly I think, write us down as asses. Wherever the line of size should be drawn, it must include such a company as this” Memorandum from Judge Learned Hand to Judges Augustus N. Hand & Thomas W. Swan 13-14 (regarding *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416 (2d Cir. 1945)) (on file with author) [hereinafter *Hand Memo*].

³ *United States v. Aluminum Co. of Am.*, 44 F. Supp. 97, 309 (S.D.N.Y. 1941), *aff’d in part and rev’d in part*, 148 F.2d 416 (2d Cir. 1945).

⁴ Direct appeal was permitted under the Expediting Act, 15 U.S.C. § 29(b).

⁵ The proceeding was postponed indefinitely when recusals resulted in the absence of a quorum. *United States v. Aluminum Co. of Am.*, 320 U.S. 708, 708-09 (1943). Congress eventually intervened and the case was transferred to the Second Circuit. *United States v. Aluminum Co. of Am.*, 322 U.S. 716, 716 (1944).

to untie one defiant knot: he did not know what the “aluminum ingot market” encompassed.⁶

Because Alcoa produced everything from virgin ingot to pots, pans, and machine parts, the market could potentially have included anything from minerals in the ground to the aluminum products scattered throughout kitchens and garages around the country. That was a problem for Hand, because different ways of slicing the aluminum ingot market pointed to different legal outcomes. If the market included everything and the kitchen sink, then Alcoa’s market share hovered around sixty percent — big, but not clearly monopoly.⁷ If it included just virgin ingot and the secondary metal produced from recycled scrap aluminum, then Alcoa’s market share shrank to thirty percent.⁸ But if the market was defined as virgin ingot and its initial fabrication, then Alcoa’s share rocketed up to an undoubtedly monopolistic ninety percent.⁹

What Hand needed, to decide the case on a sound and persuasive basis, was a predictable and reliable tool for choosing between these different plausible definitions of the aluminum ingot market. Unfortunately, no such tool existed. No prior opinion had grappled with this problem, at least not to the point of producing useful precedent on defining markets.¹⁰ Without such a tool, Hand’s opinion was destined to disappoint. And it did. Alcoa lost the case — Hand chose the ninety percent option — but the way the outcome of such an important case had come to teeter upon so unprincipled and unpredictable a line-drawing exercise has haunted antitrust ever since.¹¹

The world has changed much since 1945 but, in many ways, it is still the same. In place of massive metallurgy companies, public concern about monopoly now stacks against technology giants like Google,

⁶ *Hand Memo*, *supra* note 2, at 12 (noting that “[t]he question whether Alcoa is a monopoly under §2 of the Act depends in the first place upon its control of the production of virgin aluminum, and upon the extent to which through that control it has control of the market for aluminum ingot” and proceeding to consider uncertainties about what should be counted in the aluminum ingot market).

⁷ *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416, 424 (2d Cir. 1945).

⁸ *Id.*

⁹ *Id.*

¹⁰ *See infra* Part I.A (describing market definition before *Alcoa*).

¹¹ *Alcoa*, 148 F.2d at 422-26 (citing no authority on how to define a market). Hand’s market analysis is weak by modern standards. *See Waller, supra* note 1, at 130-33. But his conclusions were not necessarily wrong. *See id.* (providing other justifications for Hand’s choice of market). *See generally* Peter L. Swan, *Alcoa: The Influence of Recycling on Monopoly Power*, 88 J. POL. ECON. 76 (1980) (defending important aspects of Hand’s market analysis).

Amazon, Facebook, and Apple. The products are different, but if we were trying to say whether Google had monopolized the market for general search services,¹² would the difficulty of identifying the perimeter of that market be any different today than it was for Judge Hand in 1945? Or take the claim that Facebook dominates the market for personal social networking services.¹³ Does it? To answer this, we need a way of deciding what else is in this market. Would video-based services like YouTube be included? Professional services like LinkedIn? What about email and text messaging? Time marches forward, but the challenges of market definition have not aged a day.

Another way that antitrust has developed much but changed little is in the development of tests for defining markets. We are now officially overflowing with these tests. We have tests that define markets based on interchangeability of product uses and upon cross elasticity of demand.¹⁴ We have tests based on things like public perception and trade usage.¹⁵ We have tests based on predictions of how hypothetical monopolists would behave.¹⁶ We have refinements of these tests based on econometric and statistical techniques.¹⁷ We have yet more refinements based on observed behavior.¹⁸ Just about the only thing we

¹² See Complaint at ¶ 92, *United States v. Google, LLC*, No. 20-CV-03010 (D.D.C. Oct. 20, 2020) (No. 1:20-cv-03010).

¹³ Complaint for Injunctive and Other Equitable Relief at ¶¶ 61-62, *Fed. Trade Comm'n v. Facebook, Inc.*, No. 20-03590 (D.D.C. Jan. 13, 2021) (No. 1:20-cv-03590).

¹⁴ *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 395 (1956); *Times-Picayune Publ'g Co. v. United States*, 345 U.S. 594, 612 n.31 (1953).

¹⁵ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962); see also *United States v. E. I. du Pont de Nemours & Co. (du Pont-General Motors)*, 353 U.S. 586, 593-94 (1957) (defining a similar test around the identification of “peculiar characteristics and uses”).

¹⁶ E.g., LAWRENCE SULLIVAN, *HANDBOOK OF THE LAW OF ANTITRUST* 4 (1977) (defining markets by asking whether a price increase in a provisional market could be maintained for some time); U.S. DEP'T OF JUST. & FED. TRADE COMM'N, *HORIZONTAL MERGER GUIDELINES* § 4.1 (2010) [hereinafter 2010 HORIZONTAL MERGER GUIDELINES], <http://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf> [<https://perma.cc/EV72-FYD4>] (describing the Hypothetical Monopolist Tests for defining relevant markets); see also *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 218 (D.C. Cir. 1986) (characterizing Sullivan's price-increase maintenance hypothetical as a well-known criterion for defining markets).

¹⁷ E.g., Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON. 1, 4 (2010); Barry C. Harris & Joseph J. Simons, *Focusing Market Definition: How Much Substitution Is Necessary?*, 12 RES. L. & ECON. 207, 211-19 (1989).

¹⁸ E.g., *Fed. Trade Comm'n v. Staples, Inc.*, 970 F. Supp. 1066, 1075-76 (D.D.C. 1997).

do not have is any way of balancing or reconciling this tangled mess of varied and often conflicting approaches.

The result, of course, is that we still do not have a predictable and reliable tool for defining markets. All that we have done is replace the need for judges to make arbitrary and unprincipled decisions about the scope of markets with the need for judges to make arbitrary and unprincipled decisions about the tests that will be used to define the scope of markets. This has not made market definition more certain or reliable. If anything, it has done the opposite. Learned Hand at least had common sense and intuition on his side. Modern market definition may not leave us even these.

Antitrust pays a heavy price for confused and unreliable market definition. Enforcement failures and numbingly overcomplicated legal disputes are among the visible consequences of market definition practices today.¹⁹ The future consequences are even more concerning. A bill, cosponsored by Senator Amy Klobuchar, seeks to strengthen antitrust enforcement by making mergers, and certain other forms of conduct, presumptively illegal if undertaken by firms holding more than a fifty percent share of a relevant market.²⁰ Merits of the underlying objective aside, the problem with this plan is that it fails to address the inextricable dependence of market-share thresholds on market definition. The strongest presumption in the world means nothing if it is not braced against a predictable and reliable system for defining markets. Without that bracing, the effort could backfire. If defendants are able to exploit the sloppiness of market definition to consistently minimize their apparent market share, then the increased emphasis on market share statistics could hinder the very enforcement that the bill seeks to strengthen.

To reduce a complicated situation down to simple terms, we can imagine market definition as a carpentry tool. For the past several decades, judges and antitrust experts have treated market definition like it was a hammer.²¹ Hammers are simple tools. Sure, they come in different shapes, sizes, and colors. But, for basic carpentry, any hammer

¹⁹ See, e.g., *Fed. Trade Comm'n v. Facebook, Inc.*, No. 20-3590, 2021 WL 2643627, at *1 (D.D.C. June 28, 2021) (finding that the FTC “failed to plead enough facts to plausibly establish . . . that Facebook has monopoly power in the market for Personal Social Networking (PSN) Services”).

²⁰ S. 225, 117th Cong. §§ 4, 26A (2021).

²¹ See, e.g., *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 19-23 (D.D.C. 2017) (conflating at least five separate tests under the common heading of “market definition”); *Fed. Trade Comm'n v. Sysco Corp.*, 113 F. Supp. 3d 1, 25-27 (D.D.C. 2015) (similar).

will do. The same hammer fits every nail. Those who have treated market definition like a hammer have tended to assume that it shares these properties. Just as the same hammer can be carried from one job to the next, the same test of market definition has been repurposed from one context to the next.²² And just as every hammer leads to the same result when used to pound a nail, every test of market definition has been assumed to target and identify the exact same scope of trade.²³

The hammer analogy is old and in many ways appealing. But it has failed antitrust. Suppose, instead, that we were to treat market definition like a power drill. Unlike hammers, drills consist of separate parts. One part is the base, which converts power into torque. The other part is the drill bit, which converts torque into a hole of a specific size, depth, and shape. Using a drill requires more thought than using a hammer. Even if the drill is only used for making holes, the carpenter still must stop to select the appropriate drill bit for every job. Treating market definition like a power drill would mean ascribing it these properties. Just as the right drill bit must be chosen to produce the desired hole, the right test of market definition would need to be chosen to serve the purposes that the resulting market was meant to serve.

Power drills are examples of modular design: the ability to use different drill bits for different applications is essential to the usefulness of the tool. My thesis in this Article is that market definition is and always has been a modular concept — a drill, not a hammer. This becomes clear when we stop to consider how the *process* of defining markets, the tests we use to decide the scope of markets in specific applications, relates to the *purpose* of market definition, the substantive functions that relevant markets are meant to serve in specific applications. Once process and purpose are severed, it becomes natural to ask: which of the available processes of market definition best serves the purposes for which we are defining markets in this application? And once that question is asked, it becomes easy to see answers throughout the history of market definition. Put another way, this Article does not advance a new approach to market definition. It simply reveals an approach that has been sitting under our noses all along.

A modular understanding of market definition constitutes a predictable and reliable tool for defining markets in antitrust cases. This Article extracts that tool from antitrust history in Part I, observing how

²² See *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 404 (1956) (“The ‘market’ which one must study . . . will vary with the part of commerce under consideration. The tests are constant.”).

²³ See *infra* notes 24–25 (citing examples of the modern *everything soup* statement of the standard for market definition).

different tests of market definition were developed to meet different needs in response to changes in the focus of substantive antitrust law. The Article describes that tool in Part II, using three purposes that most relevant markets have traditionally served to explore how the choice of market definition test relates to the fulfillment of the expected purposes of relevant markets. Finally, the Article explains how the tool can be used in Part III, enumerating various situations in which relevant markets may be needed and discussing how to define helpful relevant markets in each application. A brief conclusion offers four policy recommendations that follow from this clarified understanding of market definition.

I. PROCESS — THE HISTORY OF MARKET DEFINITION

On what basis do we define markets? A glance at the market definition section of any recent antitrust opinion will reveal several pages of potential tests.²⁴ What it will not reveal is even the slightest effort to reconcile or balance the — apparently simultaneous — application of all these varied and conflicting approaches to the facts at hand.²⁵ The result is that summaries of the standard for defining markets often read more like a whiplash tour of antitrust history than they do a useful guide to market definition in a given case.

But, even setting aside the implementation problems raised by multiple tests, on what basis have we come to believe that all these tests are simultaneously helpful in the first place? Antitrust law and policy evolved dramatically over its history to date.²⁶ Might not different tests of market definition have been designed to fit different substantive concerns?

²⁴ E.g., *Fed. Trade Comm'n v. Qualcomm Inc.*, 411 F. Supp. 3d 658, 683-85 (N.D. Cal. 2019), *rev'd and vacated on other grounds*, 969 F.3d 974, 1005 (9th Cir. 2020) (citing, as bases for market definition, the practical indicia factors, reasonable interchangeability and cross-elasticity of demand standards, determination of available substitutes, and the hypothetical monopolist test); *Fed. Trade Comm'n v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 45-47 (D.D.C. 2018) (similar); *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 193-95 (D.D.C. 2017) (similar); *Sysco*, 113 F. Supp. 3d at 25-38 (similar).

²⁵ E.g., *Wilhelmsen*, 341 F. Supp. 3d at 47 (citing both the *Brown Shoe* practical indicia and the HMT as parallel sources of evidence upon which market definition would be based); *Aetna*, 240 F. Supp. 3d at 20-21 (same); *Sysco*, 113 F. Supp. 3d at 27-37 (same); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 50-52 (D.D.C. 2011) (same).

²⁶ See William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSPS. 43, 58-59 (2000) (chronicling the historic convergence of legal and economic analysis in antitrust).

A. Tests Based on Commodity Concepts

Let us start as far back as possible. Long before the passage of the first United States antitrust statutes, the common law provided that unreasonable restraints of trade were void as against public policy.²⁷ Judges deciding restraint of trade cases engaged in a simple form of implicit market definition. They assumed that the scope of competitive effects followed commodity lines.

In the late 1800s, for example, courts in many states were called upon to decide whether municipal market regulations were enforceable.²⁸ To take one representative case, in *City of Bloomington v. Wahl*, a city ordinance provided that fresh meat could only be sold within the designated space of the Bloomington City Market; a meat vendor whose shop lay outside the perimeter of this market objected to the rule as an unreasonable restraint of trade.²⁹ In his discussion of the case, the judge referred to the “market” as the physical space in the city, but focused on the “business” of selling meat as the area of trade in which the effect of the restraint might be felt.³⁰ Cases testing the enforceability of voluntary or implied agreements not to compete tended to follow a similar path. Here, judges focused their attention on the restriction of competition within a popularly recognizable line of trade, such as “the business of boating”³¹ or the “trade of a baker.”³²

²⁷ See, e.g., *Mitchel v. Reynolds* (1711) 24 Eng. Rep. 347 (BR) (discussing the policy motivating this doctrine as it applied to covenants not to compete).

²⁸ See, e.g., *City of Bloomington v. Wahl*, 46 Ill. 489 (1868) (discussing whether a city ordinance restricting the locality of where fresh meat could be sold is enforceable); *City of Chicago v. Rumpff*, 45 Ill. 90, 97-98 (1867) (discussing the enforceability of an ordinance concerning slaughtering within certain zoned parameters); *Caldwell v. City of Alton*, 33 Ill. 416 (1864) (discussing the enforceability of a city ordinance that prohibited the sale of vegetables outside the limits of the market); *Gale v. Vill. of Kalamazoo*, 23 Mich. 344 (1871) (discussing the enforceability of a city agreement regulating the sale of meat, poultry and produce); *Dunham v. Trs. of Rochester*, 5 Cow. 462, 462 (N.Y. Sup. Ct. 1826) (discussing the enforceability of a city by-law that restrains trade by imposing special license requirements upon hucksters); *Town Council of Winnsboro v. Smart*, 45 S.C.L. (11 Rich.) 551 (1858) (addressing the enforceability of a town ordinance that restricted the sale of butcher's meat within the corporate limits until after nine o'clock in the morning).

²⁹ *City of Bloomington*, 46 Ill. at 490-91.

³⁰ *Id.* at 493 (“If this may be done, the business in this department would fall into the hands of the few, and all competition would be destroyed, and the people oppressed.”).

³¹ *Palmer v. Stebbins*, 20 Mass. (3 Pick.) 188, 188 (1825); see also *Bergamini v. Bastian*, 35 La. Ann. 60, 66 (1883) (discussing the “line of business” of selling coffee and pastries).

³² *Mitchel v. Reynolds* (1711) 24 Eng. Rep. 347, 347 (BR).

This simple equation of the relevant scope of trade with commodity concepts survived the passage of the Sherman Act. Thus, we see early antitrust opinions address a company's dominance over "the oil industry"³³ or the plight of miners in "the coal industry."³⁴ Also like the common law cases, early antitrust opinions used the term "market" in the sense of a physical location in which a commodity was being traded.³⁵

Now, jump ahead to the state of antitrust law in the wake of *Alcoa* in 1945. A systematic method for choosing between alternative views of market scope was obviously needed, but no obvious methodology presented itself. In 1948, the Supreme Court refereed a "sharp dispute" between the government and some merging steel producers concerning the scope of "the market for rolled steel products."³⁶ Rather than use the opportunity to clarify market definition, the Court recoiled from "the difficulty of laying down a rule as to what areas or products are competitive," contributing only a conclusory and fact-bound declaration of the market's scope in this particular case.³⁷

Finally, in the mid-1950s, the first tentative steps toward a modern test of market definition began to appear. In *Times-Picayune Publishing Company v. United States*, the Court counseled that the scope of the market "must be drawn narrowly to exclude any other product to which, within reasonable variations in price, only a limited number of buyers will turn; in technical terms, products whose 'cross-elasticities of demand' are small."³⁸ A few years later, in the *Cellophane* case, it elaborated that the "market is composed of products that have reasonable interchangeability for the purposes for which they are produced — price, use and qualities considered."³⁹

These were important steps in the history of market definition, and the confident language of the *Times Picayune* and *Cellophane* opinions survives today in nearly every statement of the standard for defining markets. In substance, however, these standards of market definition

³³ *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1, 75 (1911).

³⁴ *Appalachian Coals v. United States*, 288 U.S. 344, 361 (1933).

³⁵ *See, e.g., id.* ("Coal has been losing markets to oil, natural gas and water power and has also been losing ground due to greater efficiency in the use of coal."); *Bd. of Trade of Chi. v. United States*, 246 U.S. 231, 239-40 (1918) (discussing the availability of grain markets in different Midwest states).

³⁶ *United States v. Columbia Steel Co.*, 334 U.S. 495, 508 (1948).

³⁷ *Id.* at 511.

³⁸ *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 612 n.31 (1953). The opinion also counseled that markets "cannot be measured by metes and bounds." *Id.* at 611.

³⁹ *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 404 (1956).

were like a fresh coat of paint on an old car: nice new look, same old engine. The underlying goal was still to define markets by implicit reference to commodity products. All that the new language did was fussy up the prior practice.

One way to see this is to note the absence of a decision threshold in either test. Are pens and pencils interchangeable writing instruments? This seems like something upon which people could disagree. But suppose for sake of argument that they are interchangeable; are they *sufficiently* interchangeable to warrant placing them in a common market? How is a judge supposed to answer this question except by personal intuition and reference to common product classifications?⁴⁰ This was, of course, the prevailing practice before these tests were introduced.

Another, more subtle, way that these tests reflect a focus on commodity products is in their inattention to prevailing prices. In the imaginary world of perfectly competitive trade in commodities, no firm has the power to influence prices, so it is sensible to judge the closeness of products by their substitutability at prevailing prices. This only works in that theoretical world, though. Even a buyer who strongly prefers aluminum over steel may switch to buying steel if the price of aluminum gets too high. If a company like Alcoa has the market power to raise the price of aluminum, this means that the interchangeability of steel becomes, in part, a matter of how high the price of aluminum is raised.⁴¹ To put it concretely, would we want to define markets in a way that would let a company like Alcoa expand the market — shrinking its market share and thereby escaping liability — simply by raising its prices? If that's not letting the fox guard the hen house, it is only because the fox has fewer motivations to eat than hens than the monopolist has to raise its prices under such a scheme.

The appeal of the Supreme Court's early market definition tests is limited to the commodity competition context in which they were devised. There is nothing fundamentally wrong with scoping markets by commodity product lines in this narrow context, but neither is there anything that recommends it. No modern antitrust goal is advanced by

⁴⁰ See David Glasner & Sean P. Sullivan, *The Logic of Market Definition*, 83 ANTITRUST L.J. 293, 305 (2020) (“[N]either [test] even attempts to articulate where the cutoff lies. How small must be the cross-elasticity of demand, and how poor must be the interchangeability of use, before the edge of a relevant market has been reached?”).

⁴¹ In the antitrust literature, a closely related concern with this test of market definition is discussed under the title of the “Cellophane fallacy” or the “Cellophane trap.” See, e.g., 2B PHILIP E. AREEDA, HERBERT HOVENKAMP & JOHN L. SOLOW, ANTITRUST LAW ¶ 539 (4th ed. 2014); RICHARD POSNER, ANTITRUST LAW 150-51 (2d ed. 2001).

defining markets according to the *Times Picayune* and *Cellophane* tests today. Fortunately, the history of market definition did not end here.

B. Tests Based on Popular Perception

A few years after the *Times Picayune* and *Cellophane* decisions, a spate of Eisenhower appointments reshaped the Supreme Court's stance on antitrust. From the late 1950s to the late 1960s, Warren Court antitrust emerged as a machine bent on taking back political control of industry and commerce. Looking at what antitrust was about during this unique epoch in its history, we can quickly see why new and different tests of market definition would be needed to achieve the Court's ends.

One pillar of Warren Court antitrust was a certain type of concern with economic efficiency. A strong sense of "structuralism" persuaded the Court — and many economists at the time — that unconcentrated industries performed better than concentrated industries,⁴² and thus that economic efficiency could be promoted by preventing increases in concentration whenever possible. In *United States v. Philadelphia National Bank*, the Court balked at an attempted merger of the second and third largest banks in a local geographic market.⁴³ Observing that "competition is likely to be greatest when there are many sellers, none of which has any significant market share,"⁴⁴ the Court reasoned that a merger that would give a single firm control over thirty percent of commercial banking in a local area was "so inherently likely to lessen competition substantially" that it should be enjoined with little further inquiry.⁴⁵ This structural concern with competitor concentration undergirds many of the Warren Court's decisions. But even though economic efficiency was an important goal, it was not the Court's only focus at this time.

⁴² See Donald I. Baker & William Blumenthal, *The 1982 Guidelines and Preexisting Law*, 71 CALIF. L. REV. 311, 315 (1983) ("[M]erger policy during the 1960's tended to flow from a simple equation: increases in concentration lead to less efficient performance."); Herbert Hovenkamp, *Markets in Merger Analysis*, 57 ANTITRUST BULL. 887, 889 (2012) (observing that "highly influential in the economic literature of the 1960s, was structuralism, which found a close link between economic performance and market structure").

⁴³ *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 330 (1963).

⁴⁴ *Id.* at 363 (internal markup omitted) (quoting Comment, 'Substantially to Lessen Competition . . .': Current Problems of Horizontal Mergers, 68 YALE L.J. 1627, 1638-39 (1959)). The Court cited both economists and Congress as supporting this proposition. *Id.* at 363, nn.38-39.

⁴⁵ *Id.* at 363.

Another pillar was the related idea that small and local businesses needed protection against competition from larger and more efficient rivals. In *Brown Shoe Company v. United States*,⁴⁶ the Court placed this protectionist goal above efficiency concerns. In amending section 7 of the Clayton Act, it said, “Congress was desirous of preventing the formation of further oligopolies [because of] their attendant adverse effects upon local control of industry and upon small business.”⁴⁷ The Court explicitly held that even if “higher costs and prices might result” from the protection of small and local businesses, Congress had “resolved these competing considerations in favor of decentralization.”⁴⁸

In short, Warren Court antitrust was about protecting little guys and fending off the creep of industrial concentration.⁴⁹ This was a time when even small increases in concentration raised antitrust concerns.⁵⁰ It was a time when efficiency advantages were often seen as problematic.⁵¹ It was a time when cutting prices to win customers could be attacked as anticompetitive.⁵² It was a time defined by a distinct shift in analytical focus and in need of a correspondingly distinct shift in the approach to market definition.

Hints of that new approach can be glimpsed in the Supreme Court’s 1957 decision of the *du Pont-General Motors* case.⁵³ Studiously avoiding any mention of the *Times Picayune* or *Cellophane* tests, the Court defined a narrow market consisting of “automotive finishes and fabrics” by listing off a few “characteristics and uses” that distinguished these products from the broader field of “other finishes and fabrics.”⁵⁴ Alone, this pivot would not have been that monumental, but it signaled bigger

⁴⁶ *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962).

⁴⁷ *Id.* at 333.

⁴⁸ *Id.* at 344.

⁴⁹ See Thomas E. Kauper, *The Warren Court and the Antitrust Laws: Of Economics, Populism, and Cynicism*, 67 MICH. L. REV. 325, 329 (1968) (discussing the “peculiar blend” of economic theory and populism that motivated Warren Court antitrust).

⁵⁰ See, e.g., *United States v. Von’s Grocery Co.*, 384 U.S. 270, 272 (1966) (breaking up a merger that produced a firm with a total market share of about 7.5 percent).

⁵¹ See, e.g., Hovenkamp, *supra* note 42, at 895 (“The perceived injury in *Brown Shoe* was . . . [that] *Brown Shoe* would acquire a competitive advantage over its competitors.”).

⁵² See, e.g., *Utah Pie Co. v. Cont’l Baking Co.*, 386 U.S. 685, 690-98 (1967) (describing price cutting that led to “a deteriorating price structure” as “lessening of competition”).

⁵³ *United States v. E. I. du Pont de Nemours & Co. (du Pont-General Motors)*, 353 U.S. 586, 593-95 (1957).

⁵⁴ *Id.* at 593-94, n.12.

changes to come.⁵⁵ When, a few years later, the Court decided *Brown Shoe*, the same opinion that pegged protectionism above efficiency also introduced the next major test of market definition.

The test that *Brown Shoe* announced defined markets⁵⁶ by reference to a list of “practical indicia,” observational evidence of how businesspeople and the public perceived industry boundaries:

[Market boundaries] may be determined by examining such practical indicia as industry or public recognition of the [market] as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.⁵⁷

The Court similarly scoped the geographic boundaries of markets by looking to the “commercial realities of the industry.”⁵⁸ Put another way, what *Brown Shoe* invited judges to do was define markets around such tactile landmarks as an industry’s own self classification or a lay person’s everyday understanding of a what constituted a market or an industry.

The invitation was eagerly accepted. *Brown Shoe* was a merger case, and a review of subsequent merger cases from the 1960s and 1970s shows that the practical indicia test quickly came to dominate market definition analysis.⁵⁹ It also diffused into other areas of antitrust law. In 1966, the Court extended the practical indicia test to monopolization

⁵⁵ See, e.g., Jesse W. Markham, *The Du Pont-General Motors Decision*, 43 VA. L. REV. 881, 884-88 (1957) (expressing concern about the future consequences of the *du Pont-General Motors* test of market definition); Gregory J. Werden, *The History of Antitrust Market Delineation*, 76 MARQ. L. REV. 123, 143 (1992) (interpreting the *du Pont-General Motors* case as marking “a significant shift in ideology on the Court, which was to prove decisive over the remainder of Chief Justice Warren’s tenure”).

⁵⁶ To be precise, *Brown Shoe* described a test for defining “submarkets.” The difference between submarkets and relevant markets was unclear from the start and the two soon converged. See *Geneva Pharm. Tech. Corp. v. Barr Labs. Inc.*, 386 F.3d 485, 496 (2d Cir. 2004) (“The term ‘submarket’ is somewhat of a misnomer, since the ‘submarket’ analysis simply clarifies whether two products are in fact ‘reasonable’ substitutes and are therefore part of the same market.”); AREEDA ET AL., *supra* note 41, ¶ 533 (critiquing efforts to distinguish submarkets from relevant markets).

⁵⁷ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

⁵⁸ *Id.* at 336.

⁵⁹ Werden, *supra* note 55, at 172 (“In the two decades following the Supreme Court’s decision in *Brown Shoe Co. v. United States*, the submarket concept and the practical indicia dominated thinking on market delineation in the lower courts.” (footnote omitted)).

cases.⁶⁰ Lower courts extended it further to cover concerted action cases.⁶¹ And when the Department of Justice (“DOJ”) released its first merger guidelines in 1968, its own test of market definition drew obvious inspiration from both the *du Pont-General Motors* and *Brown Shoe* tests: markets were defined as “[t]he sales of any product or service which is distinguishable as a matter of commercial practice from other products or services.”⁶²

Like *Times Picayune* and *Cellophane*, judges still cite *Brown Shoe* as primary authority for defining markets today.⁶³ And, just like those earlier tests, modern invocations of the practical indicia test are hard to love. Only a few of the practical indicia have any plausible connection to antitrust’s current focus on market power and constraints on that power.⁶⁴ Sure, some creative judges and scholars have reinterpreted select indicia as evidentiary proxies for market power considerations.⁶⁵

⁶⁰ *United States v. Grinnell Corp.*, 384 U.S. 563, 572 (1966) (endorsing, in dicta, the use of *Brown Shoe*’s practical indicia test in monopolization cases).

⁶¹ *E.g.*, *Columbia Metal Culvert Co. v. Kaiser Aluminum & Chem. Corp.*, 579 F.2d 20, 26-27 (3d Cir. 1978) (“[U]nder either s 1 or s 2 of the Sherman Act, judges . . . are adjured to follow the well-trodden trail illuminated by [*Brown Shoe*’s test of market definition].”); *Heattransfer Corp. v. Volkswagenwerk, A.G.*, 553 F.2d 964, 980 (5th Cir. 1977) (similarly applying the practical indicia test to allegations of section 1 and 2 violations).

⁶² U.S. DEP’T OF JUST., 1968 MERGER GUIDELINES § 3(i) (1968).

⁶³ *E.g.*, *Fed. Trade Comm’n v. Wilh. Wilhelmssen Holding ASA*, 341 F. Supp. 3d 27, 47 (D.D.C. 2018) (similar); *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 21 (D.D.C. 2017) (citing *Brown Shoe*’s practical indicia as the first of the “analytical tools at [the court’s] disposal” when defining markets); *Fed. Trade Comm’n v. Sysco Corp.*, 113 F. Supp. 3d 1, 27 (D.D.C. 2015) (“Courts look to two main types of evidence in defining the relevant product market: the ‘practical indicia’ set forth by the Supreme Court in *Brown Shoe* and testimony from experts in the field of economics.”).

⁶⁴ *See* Jonathan Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L.J. 129, 149 (2007) (commenting that not all of the practical indicia are related to substitution patterns and noting “confusion and error” where use of the practical indicia has not focused on these patterns); Robert Pitofsky, *New Definitions of Relevant Market and the Assault on Antitrust*, 90 COLUM. L. REV. 1805, 1815 (1990) (describing the distinct customers factor as “problematic” and the industry or the public recognition factor as “decidedly marginal on the question of market definition”); Werden, *supra* note 55, at 172-79 (criticizing the market power significance of several of the practical indicia).

⁶⁵ *See, e.g.*, *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 218-19 (D.C. Cir. 1986) (Bork, C.J.) (reinterpreting the Court’s practical indicia as “evidentiary proxies for direct proof of substitutability”); Jonathan Baker, *Stepping Out in an Old Brown Shoe: In Qualified Praise of Submarkets*, 68 ANTITRUST L.J. 203, 205 (2000) (“Some of the seven practical indicia appear related to the identification of buyer substitution patterns, the concern of market definition under the Merger Guidelines.”).

But this anachronism masks the point of the practical indicia test, which was never about market power in the first place.⁶⁶

Judges of *Brown Shoe*'s era rarely even thought to connect market definition with market power.⁶⁷ Across forty-four reporter pages, *Brown Shoe* includes one solitary reference to market power, buried in a footnote, without contextual evidence that the Court meant what that term means today.⁶⁸ And why should the Court have spent any time on market power? At that time, antitrust was about preventing industrial concentration and harm to small businesses. "Industry," as the word is used by anyone other than today's antitrust experts, has less to do with market power than it does with similarity of production technologies and recognizable lines of trade — practical indicia factors.⁶⁹ To protect the small, local businesses in a market, one must have in mind a group of businesses similar enough to each other and distinct enough from others to constitute a recognizable market in which small, local competitors can be identified and protected — again, practical indicia factors.⁷⁰

The practical indicia test is a process of defining markets appropriate for addressing industrial concentration and harm to small businesses.⁷¹ It is a test designed for and around this particular set of antitrust concerns.

⁶⁶ Hovenkamp, *supra* note 42, at 896-97 ("[T]he rationale for market definition in *Brown Shoe* was very different from, and is fundamentally at odds with, the rationale for market definition . . . today.").

⁶⁷ See Werden, *supra* note 55, at 186 (noting the rarity of connecting market definition to market power from the mid-1950s to the mid-1970s).

⁶⁸ *Brown Shoe Co. v. United States*, 370 U.S. 294, 322 n.38 (1962).

⁶⁹ See AREEDA ET AL., *supra* note 41, ¶ 530a, at 235 n.5 (commenting that the lay term "market" often encompasses trading locations, like a farmers' market, or a "category of manufacture," like the "motors and generators" market); Hovenkamp, *supra* note 42, at 891 (commenting that the term "line of commerce" describes, "in commercial law and other settings . . . a set of products that a layperson might regard as in the same 'line,' such as clothing or groceries").

⁷⁰ See, e.g., *United States v. Von's Grocery Co.*, 384 U.S. 270, 277 (1966) ("Congress sought to preserve competition among many small businesses by arresting a trend toward concentration in its incipency before that trend developed to the point that a market was left in the grip of a few big companies.").

⁷¹ Cf. Lawrence A. Sullivan, *The New Merger Guidelines: An Afterword*, 71 CALIF. L. REV. 632, 639 (1983) (commenting that if one believed "that Congress wanted to maintain markets of many small firms, regardless of effects on costs and prices," then the Court's approach to market definition would be justified).

C. Tests Based on Joint Market Power

Jump ahead to the 1980s, and we find that antitrust law had changed again. Warren Court antitrust lost momentum during the 1970s. As Donald Baker and William Blumenthal observe: “the Supreme Court last sounded the key populist phrases, . . . retention of ‘local control’ and ‘protection of small businesses,’ . . . in 1974 in a dissenting opinion.”⁷² But just as Warren Court antitrust was winding down, the Chicago-School philosophy of scholars like Robert Bork, Frank Easterbrook, and Richard Posner was gaining steam. Several activist Reagan appointees⁷³ were all the additional encouragement that was needed to crest the peak and descend screaming into a new regime. In a matter of years, antitrust was “cut to a new pattern,” as one commentator put it.⁷⁴ This meant changes in both antitrust policy and enforcement.

As far as policy, Chicago-School antitrust fiercely pursued one objective: prevent certain exercises of market power and harm to consumer welfare as a way of preserving economic efficiency. Populist goals which had nothing to do with economic efficiency, like the protection of small and local businesses, were unceremoniously jettisoned.⁷⁵ Thus, when the DOJ updated its merger guidelines in 1982,⁷⁶ the only policy motivating merger enforcement was now the

⁷² Baker & Blumenthal, *supra* note 42, at 320 n.41 (referring to *Gulf Oil Corp. v. Copp Paving Co.*, 419 U.S. 186, 207 (1974) (Douglas, J., dissenting)).

⁷³ Cf. Phillip Areeda, *Justice’s Merger Guidelines: The General Theory*, 71 CALIF. L. REV. 303, 306-07 (1983) (commenting that DOJ officials had “given every indication of a mission to improve and rectify antitrust law, a mission pursued through public statement, amicus briefs, and the Guidelines”).

⁷⁴ Sullivan, *supra* note 71, at 632; see also William F. Baxter, *Responding to the Reaction: The Draftsman’s View*, 71 CALIF. L. REV. 618, 618 (1983) (referencing a “trend in antitrust jurisprudence toward a focus on economic efficiency and consumer welfare”).

⁷⁵ See Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV. 1696, 1703-04 (1986) (describing antitrust goals “other than efficiency (or its close proxy consumers’ welfare)” as political questions of income redistribution without “any semblance of ‘legal criteria’” upon which judges could decide cases).

⁷⁶ U.S. DEP’T OF JUST., 1982 MERGER GUIDELINES (1982) [hereinafter 1982 MERGER GUIDELINES].

promotion of economic efficiency.⁷⁷ Within a few years, federal judges were extending this primacy of efficiency to all of antitrust law.⁷⁸

As far as enforcement was concerned, Chicago-School antitrust focused on a few specific ways that market power might be acquired. For instance, the main injury contemplated by the 1982 Merger Guidelines was that a merger would facilitate the exercise of joint market power by enabling explicit or tacit collusion among competitors.⁷⁹ The basic idea was that, by eliminating a previously independent competitor, a merger could lift a constraint that had been preventing — or at least frustrating — cooperation to jointly elevate prices.⁸⁰ Richard Posner captured this collusion-centric Chicago-School focus in *Hospital Corporation of America v. FTC*: “When an economic approach is taken in a [merger] case, the ultimate issue is whether the challenged acquisition is likely to facilitate collusion.”⁸¹

While judges still needed to define markets and measure market concentration in order to decide merger cases under this new approach, their reasons for doing so were far from what had motivated Warren Court judges. Market boundaries were needed *only* to identify the groups of competitors that could potentially collude on price elevation after a merger. Market concentration mattered *only* because economic

⁷⁷ See Baker & Blumenthal, *supra* note 42, at 317 (“Where economic, social, and political considerations once received more or less equal billing as the basis for merger policy, economic considerations have now achieved primacy.” (footnote omitted)); Robert G. Harris & Thomas M. Jorde, *Market Definition in the Merger Guidelines: Implications for Antitrust Enforcement*, 71 CALIF. L. REV. 464, 465 (1983) (“[T]he thrust of the Merger Guidelines is that economic efficiency is the *only* factor relevant to the enforcement of antitrust laws.”).

⁷⁸ E.g., *Morrison v. Murray Biscuit Co.*, 797 F.2d 1430, 1437 (7th Cir. 1986) (“The purpose of antitrust law, at least as articulated in the modern cases, is to protect the competitive process as a means of promoting economic efficiency.”); see also *Westman Comm’n Co. v. Hobart Int’l, Inc.*, 796 F.2d 1216, 1220 (10th Cir. 1986) (“We adhere to the view that the antitrust laws should not restrict the autonomy of independent businessmen when their activities have no adverse impact on the price, quality, and quantity of goods and services offered to the consumer.”).

⁷⁹ See Baker & Blumenthal, *supra* note 42, at 315 (“From among the many conceivable economically based enforcement theories, the Department has plucked one of comparatively narrow (but hardly unanticipated) focus: mergers must not be permitted to enhance substantially the risk of tacit collusion.”); see also *id.* (“[T]he principal risk associated with a merger is that it might better enable firms in the industry to conspire tacitly to increase prices and restrain production.”).

⁸⁰ Pitofsky, *supra* note 64, at 1807 (“Merger enforcement . . . proceeds from the premise that when a small group of firms occupies a large share of the relevant market, they can more easily collude or coordinate sales policies in order to raise prices above competitive levels.”).

⁸¹ *Hosp. Corp. of Am. v. Fed. Trade Comm’n*, 807 F.2d 1381, 1386 (7th Cir. 1986).

theory suggested that concentrated markets would be more susceptible to collusion than unconcentrated markets.⁸² In short, the purposes for which judges were defining markets were now alien to the purposes that had motivated market definition not twenty years before.⁸³

A creature of that earlier time, *Brown Shoe's* practical indicia test was useless for these new purposes. Influential economists like Janusz Ordover and Robert Willig criticized the practical indicia, and earlier tests of market definition, as “inadequate substitute[s] for, and a diversion from, sound direct assessment of a merger’s effects.”⁸⁴ George Stigler called previous market definition “an almost impudent exercise in economic gerrymandering.”⁸⁵ Baker and Blumenthal castigated Warren Court market definition as “ad hoc evidentiary selection, hand-waving, or result orientation.”⁸⁶ The common theme was obvious: a new process of market definition was needed.

The 1982 Merger Guidelines responded to that need.⁸⁷ The Hypothetical Monopolist Test (“HMT”), promulgated by the guidelines, delineated markets not by reference to commodity concepts, or by popular perceptions of market boundaries, but by analytically identifying a scope of trade in which collusion among competitors could lead to higher prices.⁸⁸ The approach of the HMT was to start by taking

⁸² See *infra* notes 154–157 and accompanying text.

⁸³ See *Hosp. Corp. of Am.*, 807 F.2d. at 1386 (“[T]he economic concept of competition, rather than any desire to preserve rivals as such, is the lodestar that shall guide the contemporary application of the antitrust laws”); Baker & Blumenthal, *supra* note 42, at 316 (“Unlike the 1960’s cases, however, the Guidelines view concentration as mattering not for its own sake, but because it increases the likelihood of collusion.”).

⁸⁴ Janusz A. Ordover & Robert D. Willig, *The 1982 Department of Justice Merger Guidelines: An Economic Assessment*, 71 CALIF. L. REV. 535, 536 (1983).

⁸⁵ George J. Stigler, *The Economists and the Problem of Monopoly*, 72 AM. ECON. REV., May 1982, at 1, 8.

⁸⁶ Baker & Blumenthal, *supra* note 42, at 324.

⁸⁷ Though the 1982 Merger Guidelines are often credited as introducing this test, the basic idea seems to have occurred to various authors at about the same time. See, e.g., 2 PHILLIP AREEDA & DONALD F. TURNER, *ANTITRUST LAW* 347 (1978) (defining markets as groups of firms that would have market power if acting in unison); SULLIVAN, *supra* note 16, at 4 (defining markets by whether a price increase in a provisional market could be maintained for some time); Kenneth D. Boyer, *Is There a Principle for Defining Industries?*, 50 S. ECON. J. 761, 763 (1984) (defining markets as ideal collusive groups); Gregory J. Werden, *The Use and Misuse of Shipments Data in Defining Geographic Markets*, 26 ANTITRUST BULL. 719, 721 (1981) (defining markets by whether a merger of producers would result in a price increase).

⁸⁸ The HMT has been revised over the years but has retained its core structure. Compare 1982 MERGER GUIDELINES, *supra* note 76, § II.A, with 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 4.1.

a group of producers to be a small provisional market and to ask whether the firms in that market would, if they were hypothetically joined together to act as a monopolist not constrained by price regulation or the entry of new firms, choose to implement at least a small but substantial price increase. If the answer to this question was “yes,” then that provisional market was validated as a relevant market for antitrust analysis. If “no,” then more producers would be added to the provisional market and the process was repeated until a price increase would be imposed. At base, the HMT defined a market as a group of competitors who could, at least under ideal circumstances, collude to jointly raise their prices.⁸⁹

The HMT was the darling of 1980s antitrust. Ordover and Willig called it a “noteworthy intellectual feat” that focused “much of the best available economic learning” on the task of “appropriate economic analysis” in merger cases.⁹⁰ Robert Pitofsky called it a “formidable achievement”⁹¹ and credited its “orderly, intellectual approach” with making market definition “a more coherent exercise during the 1980s than in previous decades.”⁹² Though initially promulgated by the DOJ, the FTC adopted the HMT internally,⁹³ and soon joined the DOJ in advocating the test.⁹⁴ Lower courts similarly adopted the HMT when defining markets in merger cases.⁹⁵

Enthusiasm for the HMT was no lucky accident. The HMT was a test of market definition designed for and around the substantive policies of Chicago-School antitrust. Like Chicago-School antitrust generally, the HMT was about market power, its enhancement, and its exercise.⁹⁶ Like Chicago-School merger enforcement specifically, the HMT looked for

⁸⁹ See SULLIVAN, *supra* note 16, at 41 (proposing a similarly relaxed version of the test).

⁹⁰ Ordover & Willig, *supra* note 84, at 539, 573 (describing the HMT as “consistent with economic learning and helpful for logically resolving otherwise difficult [market delineation] issues”).

⁹¹ Pitofsky, *supra* note 64, at 1822.

⁹² *Id.* at 1808.

⁹³ David Scheffman, Malcolm Coate & Louis Silvia, *Twenty Years of Merger Guidelines Enforcement at the FTC: An Economic Perspective*, 71 ANTITRUST L.J. 277, 281 (2003) (“[A]lmost from the beginning, FTC legal staff embraced the DOJ Guidelines as the analytical framework for merger analysis.”).

⁹⁴ U.S. DEP’T OF JUST. & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1.11 (1992) [hereinafter 1992 HORIZONTAL MERGER GUIDELINES].

⁹⁵ See Gregory J. Werden, *The 1982 Merger Guidelines and the Ascent of the Hypothetical Monopolist Paradigm*, 71 ANTITRUST L.J. 253, 270-75 (2003) (cataloging, by circuit, lower court opinions adopting all or part of the HMT).

⁹⁶ See Pitofsky, *supra* note 64, at 1822 (“[B]y focusing on the capacity for the future exercise of market power, [the HMT asked] a central question that often had been inadequately treated in the past.”).

groups of competitors that could collude to raise prices.⁹⁷ The HMT was a process of market definition specifically tailored to the substantive law it was helping to apply.

Chicago-School antitrust extended beyond merger control, and even within merger control it at least recognized the possibility of other types of anticompetitive harm.⁹⁸ But the triumph of the HMT was in connecting market definition to the type of joint market power at issue in collusion-facilitation concerns. When the HMT was extended to other antitrust concerns, it needed refinements to fit them.⁹⁹

D. Tests Based on Individual Market Power

Jump ahead another twenty years, however, and the HMT had morphed from darling to demon. So devastating was its fall from grace that some commentators wondered aloud whether not just the HMT but all of market definition was soon to find itself upon the chopping block.¹⁰⁰ What had changed? A shift in substantive law had pushed the purposes of market definition out of alignment with the HMT, at least in certain important applications.

The seeds of this disruption were planted in the 1980s. The simple models of competition behind Chicago-School antitrust were known from the start to be oversimplified in some important respects,¹⁰¹ and efforts to enrich them had begun immediately.¹⁰² From the early 1990s

⁹⁷ See Areeda, *supra* note 73, at 307 (“[The HMT] correctly relate[s] market definition to the ultimate legal issue — the prospect that the merging firms will achieve price-raising power or that the merger will facilitate price coordination among oligopolists.”).

⁹⁸ 1982 MERGER GUIDELINES, *supra* note 76, § III.A.2 (devoting a single paragraph to a different theory of harm under the heading of the “leading firm proviso”).

⁹⁹ See Glasner & Sullivan, *supra* note 40, at 312-24 (discussing the need to customize the HMT to meet other theories of anticompetitive harm).

¹⁰⁰ Cf. Daniel A. Crane, *Market Power Without Market Definition*, 90 NOTRE DAME L. REV. 31, 33 (2014) (“[T]he handwriting is on the wall for market definition.”).

¹⁰¹ See, e.g., Herbert Hovenkamp, *Antitrust Policy After Chicago*, 84 MICH. L. REV. 213, 256-64 (1985) (critiquing Chicago-School antitrust as relying too heavily on static models of competition without strategic considerations); Richard Schmalensee, *Another Look at Market Power*, 95 HARV. L. REV. 1789, 1793-98 (1982) (illustrating how one influential Chicago-School model’s implications changed when restrictive assumptions were relaxed or varied).

¹⁰² E.g., Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515, 515-16 (1985) (critiquing the persuasiveness of Chicago-School arguments against antitrust intervention in some leveraging cases); Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267, 267 (1983) (illustrating how a dominant firm might profit by strategically raising the production costs of its rivals); Robert D. Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*,

to the 2010s, economists revisiting then derelict antitrust concerns — like predatory pricing and vertical restraints of trade — would time and again find them more worrying than Chicago-School antitrust had supposed.¹⁰³ This research also led to the development of entirely new antitrust concerns.

One such concern was about the unilateral effects of mergers. Recall that in the coordinated effects focus of Chicago-School antitrust, the problem with mergers was that they could facilitate joint exercises of market power — help competitors collude on raising prices. In a unilateral effects focus, the worry is instead that the elimination of all competition between the merging parties would directly enable the merged company to individually raise its prices — even without any collusion or cooperation from its competitors.

A prototypical unilateral effects concern was presented in *FTC v. Swedish Match*, a case involving the attempted merger of loose-leaf tobacco sellers Swedish Match and National Tobacco.¹⁰⁴ In the differentiated product space of loose-leaf tobacco, comparable prices, flavor profiles, and brand messages made the tobacco products of Swedish Match and National the best and next-best options for many consumers. If Swedish Match tried to raise its prices, many of these consumers would switch to National, and vice versa if National tried to raise its prices.¹⁰⁵ The concern presented by the merger of these companies was that the termination of their special rivalry would give the merged company an individual incentive to raise its prices. Since customers could no longer punish a price increase by running to the arms of the now-merged rival, the merged firm now had the freedom to raise its prices a bit.

1991 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 281, 299-305 (describing a modern unilateral effects model for a merger of competitors in a differentiated product space).

¹⁰³ See, e.g., *United States v. AMR Corp.*, 335 F.3d 1109, 1114-15 (10th Cir. 2003) (noting that “[r]ecent scholarship has challenged the notion that predatory pricing schemes are implausible and irrational” and that “[p]ost-Chicago economists have theorized that price predation is not only plausible, but profitable, especially in a multi-market context,” thus “we do not [approach that theory] with the incredulity that once prevailed”); Herbert Hovenkamp, *Post-Chicago Antitrust: A Review and Critique*, 2001 COLUM. BUS. L. REV. 257, 258 (attributing to post-Chicago antitrust a less permissive view of the conduct of dominant firms, a more serious concern for the potential effects of mergers, and a greater willingness to consider the anticompetitive potential of vertical restraints).

¹⁰⁴ *Fed. Trade Comm’n v. Swedish Match*, 131 F. Supp. 2d 151, 153-54 (D.D.C. 2000).

¹⁰⁵ *Id.* at 169.

The incentive to raise prices following a merger of close competitors in a differentiated product space is intuitive enough, but the magic of the theory is that it can be mathematically modeled with some basic economic assumptions about the competitive process.¹⁰⁶ An economist with adequate data and an appropriate model of competition can even produce a numeric prediction of what the unilateral price effects of a merger will be. In *Swedish Match*, the FTC's expert economist testified that "the merger will result in a price increase of Swedish Match's loose leaf brands of approximately eleven percent and a price increase for National's brands of approximately twenty-one percent."¹⁰⁷ The attractiveness of simple numeric predictions in antitrust litigation really cannot be overstated.

As a consequence, unilateral effects exploded onto the scene.¹⁰⁸ Using data compiled from FTC investigations, Malcolm Coate reports that unilateral effects rose from being the primary focus of less than twenty percent of merger investigations at the start of the 1990s — and presumably something closer to zero before that — to well over seventy-five percent of merger investigations by 2010.¹⁰⁹ The same change in focus is reflected in the Merger Guidelines. Where the 1982 Merger Guidelines devoted barely a paragraph to a simple precursor of

¹⁰⁶ See generally Margaret E. Slade, *Merger-Simulations of Unilateral Effects: What Can We Learn from the UK Brewing Industry?*, in *CASES IN EUROPEAN COMPETITION POLICY: THE ECONOMIC ANALYSIS* 312, 313-21 (Bruce Lyons ed., 2009) (providing intuition and technical details); Gregory J. Werden, *Unilateral Competitive Effects of Horizontal Mergers I: Basic Concepts and Models*, in 2 *ISSUES IN COMPETITION LAW AND POLICY* 1319 (Wayne Dale Collins, ed., 2008) (same); Gregory J. Werden & Luke M. Froeb, *Unilateral Effects of Horizontal Mergers*, in *HANDBOOK OF ANTITRUST ECONOMICS* 43 (Paolo Buccirossi ed., 2008) (same); Jonathan B. Baker & Timothy F. Bresnahan, *The Gains from Merger or Collusion in Product-Differentiated Industries*, 33 *J. INDUS. ECON.* 427 (1985) (providing what appears to be the first demonstration of this empirical methodology); Willig, *supra* note 102 (providing an early and clear articulation of this approach).

¹⁰⁷ *Swedish Match*, 131 F. Supp. 2d at 169.

¹⁰⁸ See Jonathan B. Baker, *Why Did the Antitrust Agencies Embrace Unilateral Effects?*, 12 *GEO. MASON L. REV.* 31, 33-36 (2003) (attributing the popularity of unilateral effects theories to the availability of empirical methods of measuring market power).

¹⁰⁹ Malcolm B. Coate, *The Merger Review Process at the Federal Trade Commission from 1989 to 2016*, at 35 tbl.4 (Feb. 28, 2018) (unpublished manuscript), <https://ssrn.com/abstract=2955987> [<https://perma.cc/EZ9A-2GBR>] (excluding merger-to-monopoly cases in calculating these figures, and so possibly undercounting the rate at which unilateral effects are the primary concern); see also Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 *ANTITRUST L.J.* 49, 60 (2010) [hereinafter *Hedgehog to Fox*] ("The biggest shift in merger enforcement between 1992 and 2010 has been the ascendancy of unilateral effects as the theory of adverse competitive effects most often pursued by the Agencies.").

unilateral effects, the 1992 revisions treated unilateral effects and coordinated effects in roughly the same detail, and the 2010 revisions now devote twice as much space to unilateral effects as they do to a breezier account of coordinated effects.¹¹⁰

Returning to how this relates to the HMT, one input that is not required in unilateral effects analysis is the definition of an HMT market. A product of a time when antitrust was about joint market power — not individual market power — the HMT simply focused on different issues than unilateral effects. For economists and practitioners looking for unilateral effects in mergers, time spent on the HMT was time wasted.

One complaint was that the HMT placed competitors either inside or outside a market, with no accounting for degrees of competitive closeness.¹¹¹ This had always been true, but its visibility was accentuated by the differentiated products focus of the new unilateral effects concern. Economists like Joseph Farrell and Carl Shapiro warned that, in the differentiated-products context, efforts to delineate markets via the HMT risked allowing outcomes to turn on “an inevitably artificial line-drawing exercise.”¹¹²

Another complaint was that the HMT’s indirect path to inferring the implications of a merger was obviated by “direct” estimation of market power in unilateral effects analysis.¹¹³ Economists like Dennis Carlton criticized use of the HMT as a “crude” way of predicting market power.¹¹⁴ Farrell and Shapiro called the HMT “clumsy.”¹¹⁵ Louis

¹¹⁰ Compare 1982 MERGER GUIDELINES, *supra* note 76, § III.A.2, and 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 94, §§ 2.1-2.2, with 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, §§ 6-7.

¹¹¹ E.g., AREEDA ET AL., *supra* note 41, para. 530, at 238 (“This ‘either-or’ nature of market definition can readily be criticized to the extent that compromises between full inclusion or full exclusion are typically not available.”); Mark A. Lemley & Mark P. McKenna, *Is Pepsi Really a Substitute for Coke? Market Definition in Antitrust and IP*, 100 GEO. L.J. 2055, 2098 (2012) (commenting that market definition “draws an arbitrary line when what we need is a continuum that reflects the partial differentiation of products”).

¹¹² Farrell & Shapiro, *supra* note 17, at 1, 4.

¹¹³ See, e.g., *id.* at 2, 5 (suggesting that inferences derived from HMT markets are less direct than inferences derived from unilateral effects models); see also Malcolm B. Coate & Jeffrey H. Fischer, *Is Market Definition Still Needed After All These Years*, 2 J. ANTI-TRUST ENFT 422, 448 (2014) (describing an analytical choice between market definition and direct estimation of the likely effects of a merger).

¹¹⁴ Dennis W. Carlton, *Market Definition: Use and Abuse*, 3 COMPETITION POL’Y INT’L 3, 3 (2007).

¹¹⁵ Farrell & Shapiro, *supra* note 17, at 1.

Kaplow called it “counterproductive,”¹¹⁶ and some less flattering things as well.¹¹⁷

At previous inflection points in the history of market definition, we saw frustration with existing tests of market definition herald new methodologies. Here, dissatisfaction with the HMT arose from its poor performance in identifying mergers likely to bring about unilateral market power. The price predictions of unilateral effects models were a ready-made solution for identifying this type of harm. We might, therefore, guess that this made the prediction of a price increase by an appropriate unilateral-effects model the new test of market definition for this concern.

Unilateral effects predictions did slot into this role, but a rhetorical wrinkle complicated things. Early proponents of unilateral effects models introduced this methodology not as a form of market definition, but as a *replacement* for it.¹¹⁸ Thus, the current merger guidelines declare: “[s]ome of the analytical tools used . . . to assess competitive effects do not rely on market definition;”¹¹⁹ the “[diagnosis of] unilateral price effects based on the value of diverted sales need not rely on market definition;”¹²⁰ and “[unilateral effect] merger simulation methods need not rely on market definition.”¹²¹ What justification could possibly explain the surprising move of treating unilateral effects predictions as *not* market definition?

One possibility is that the two-competitor scope of trade bounded by unilateral effects concerns is too narrow to be called a market.¹²² The problem with this idea is that “relevant market” has long been a term of art in antitrust.¹²³ The HMT, universally understood to be a process of

¹¹⁶ Louis Kaplow, *Market Definition and the Merger Guidelines*, 39 REV. INDUS. ORG. 107, 109 (2011).

¹¹⁷ Louis Kaplow, *Market Definition: Impossible and Counterproductive*, 79 ANTITRUST L.J. 361, 367 (2013) (“pointless”); Louis Kaplow, *Why (Ever) Define Markets?*, 124 HARV. L. REV. 438, 442 (2010) (“useless”); Louis Kaplow, *Market Definition Alchemy*, 57 ANTITRUST BULL. 915, 926 (2012) (“perverse”).

¹¹⁸ See Farrell & Shapiro, *supra* note 17, at 1-2 (proposing one unilateral effects model as an alternative to market definition); see also *id.* (citing sources for the implicit claim that market definition is not needed because merger effects can be directly estimated).

¹¹⁹ 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 4, para. 2.

¹²⁰ *Id.* § 6.1, para. 6.

¹²¹ *Id.* § 6.1, para. 7.

¹²² See Hovenkamp, *supra* note 42, at 908 (commenting that unilateral harm in a differentiated product space “does not fit well into our conception of market definition”).

¹²³ *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 50 (D.D.C. 2011).

market definition, does not identify broad and intuitive markets:¹²⁴ it scopes an area of trade in which a certain type of market power could be exercised. So does a unilateral effects prediction. In fact, if we take the merging parties as the provisional market in the HMT, and if we take the unilateral effects prediction as evidence that the hypothetical monopolist would increase its prices by a small but substantial amount, then the unilateral effects prediction would validate the merging parties as a relevant market under the very methodology of the HMT. How could one of these be market definition if the other is not?

Well, maybe precision is the difference. Perhaps the ability of some unilateral effects models to predict specific price effects differentiates this analysis from the more qualitative market-based inferences supported by something like the HMT. The problem with this idea is that experienced antitrust practitioners *never* simply accept the predictions of unilateral effects models.¹²⁵ Like everything in economics, these models depend on assumptions about human behavior and the competitive process.¹²⁶ The predictions can be sensitive to even slight changes in these assumptions.¹²⁷ Of course, the accuracy of assumptions can be bolstered by proof that they qualitatively match observed behavior, and sensitivity can be addressed by proof that different assumptions lead to qualitatively similar predictions.¹²⁸ But shuffling the qualitative parts of the inference around

¹²⁴ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 4, para. 9 (“Relevant antitrust markets defined according to the hypothetical monopolist test are not always intuitive and may not align with how industry members use the term ‘market.’”).

¹²⁵ See, e.g., Duncan Cameron, Mark Glick & David Mangum, *Good Riddance to Market Definition?*, 57 ANTITRUST BULL. 719, 734 (2012) (“[O]ne should not confuse the apparent precision of these models . . . with a tool that will generate accurate and reliable measures of market power when applied in the complexity of the real world.”).

¹²⁶ See *supra* note 102 (listing references to model parameters and assumptions).

¹²⁷ See Slade, *supra* note 106, at 331-38 (illustrating the sensitivity of costs, demand systems, and unilateral effects predictions to various possible modeling assumptions); Philip Crooke, Luke Froeb, Steven Tschantz & Gregory J. Werden, *Effects of Assumed Demand Form on Simulated Postmerger Equilibria*, 15 REV. INDUS. ORG. 205, 206-08 (1999) (observing how demand curvature can substantially affect model predictions); Roy J. Epstein & Daniel L. Rubinfeld, *Understanding UPP*, 10 B.E. J. THEORETICAL ECON. 1, 8 (2010) (observing that “the accuracy and reliability of the [a unilateral effects price-pressure index] depends crucially on the accuracy of the diversion ratio [parameter]”); Gregory J. Werden & Luke M Froeb, *Choosing Among Tools for Assessing Unilateral Merger Effects*, 7 EUR. COMPETITION J. 155, 158 (2011) (commenting that unilateral effects predictions are valid “only if the model actually captures the essence of competition in a particular industry, and only if the merger itself does not fundamentally change how competitors interact”).

¹²⁸ Cf. 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 6.1, para. 7 (“The Agencies . . . place more weight on whether their merger simulations consistently

the table doesn't make them disappear. If the HMT's reliance on qualitative inferences is what earns it the title of market definition, then unilateral effects predictions deserve that honor as well.

As a final stab, we might consider whether unilateral effects predictions were strategically carved off from market definition to direct generalist judges away from the HMT and other market definition tests when looking at unilateral effect concerns. Well, if that was the plan, it was not the result. Judges — who do not see antitrust cases every day — have proven unsurprisingly uncomfortable with the idea of simply skipping a step in rule of reason analysis as venerable as defining relevant markets.¹²⁹ And, with unilateral effects predictions professedly not market definition, they have reached for tests like the HMT to define these markets — precisely the wrong result.¹³⁰ One cannot look at this situation and help but speculate that market definition might be clearer and more accurate today if unilateral effects predictions had only been labeled a process of market definition from the start.

Stripped of all the math and rhetoric, the only real difference between the HMT and unilateral effects predictions is the type of market power at issue. The HMT defines markets around potential exercises of joint market power. Unilateral effects predictions define markets around potential exercises of individual market power. The processes are different, but they are both tests for defining markets. Each test seeks a scope of trade in which a particular type of market power might be exercised.

II. PURPOSE — THE FUNCTIONS OF MARKET DEFINITION

The history of market definition is like the history of western architecture. Victorian architectural norms dominated one period; Brutalist aesthetics another; the small-house movement is the most striking fad today. These are all ways to build a house. But imagine a design document that reads “The façade should reflect the elegance of

predict substantial price increases than on the precise prediction of any single simulation.”).

¹²⁹ *E.g.*, *Fed. Trade Comm'n v. Whole Foods Mkt., Inc.*, 548 F.3d 1028, 1036 (D.C. Cir. 2008) (objecting that “[i]nexplicably, the FTC now asserts a market definition is not necessary . . . in contravention of the statute itself”); *see also* *City of New York v. Grp. Health Inc.*, 649 F.3d 151, 155 (2d Cir. 2011) (making failure to allege a plausible relevant market grounds for dismissal); *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir. 1997) (same).

¹³⁰ *E.g.*, *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 19-21 (D.D.C. 2017); *Fed. Trade Comm'n v. Sysco Corp.*, 113 F. Supp. 3d 1, 25-38 (D.D.C. 2015); *Fed. Trade Comm'n v. Swedish Match*, 131 F. Supp. 2d 151, 159-60 (D.D.C. 2000).

the time, but try to stick with just concrete, and if it doesn't fit on a trailer then don't even bother." Equally absurd mashups now appear in every description of the standard for defining markets.¹³¹ To return to carpentry tools, this is the hammer analogy at work.

History resists the hammer analogy at every turn. Different tests of market definition were developed to address different issues. New tests were developed not to reproduce the same results as earlier tests but to identify different scopes of trade more helpful to the analytical questions then at issue. In carpentry terms, the better analogy is a power drill. One market definition module after another has been added to the antitrust toolbox, each one designed to meet a distinct and specific set of needs.

The history of market definition offers several glimpses into how specific processes of market definition have been developed to meet specific analytical purposes.¹³² With both process and purpose changing simultaneously, however, it can be difficult to make out the underlying patterns. We can see more if we hold fixed a few common purposes of market definition and compare different processes of market definition against them. The following picks out three traditional purposes of relevant markets and explores how different tests define relevant markets appropriate for serving these purposes in different contexts. The point of this discussion is *not* to classify the universe of potential purposes for defining markets in antitrust analysis.¹³³ For the limited goals of exploring important patterns and providing context for Part III, however, a discussion centered on these few and overlapping traditional purposes will suffice.

A. Magnification

One traditional purpose of market definition has been to act like a microscope trained upon a specific area of concern. The full, interconnected web of commerce — of all possible products and technologies and consumptive uses and trading partners — is simply too big and too overwhelming to provide useful context for antitrust analysis. Market definition responds to this problem by zooming in on one or more relevant strands of the web, focusing attention where it is needed and cropping out those peripheral details that would only end up distracting from the necessary analysis.

¹³¹ See *supra* notes 24–25.

¹³² See *supra* Part I.

¹³³ See Glasner & Sullivan, *supra* note 40, at 296-98 (citing number purposes that have been attributed to market definition in antitrust analysis).

The Supreme Court has at times come close to equating market definition with this magnification purpose. The Court seemed to be alluding to it in *FTC v. Indiana Federation of Dentists* when it said that the only purpose of market definition is to help “determine whether an arrangement has the potential for genuine adverse effects on competition.”¹³⁴ It had previously come closer in *Philadelphia National Bank*, saying that market definition identified the part of trade where “the effect [of the challenged act] on competition will be direct and immediate.”¹³⁵ These statements are a good start at explaining the microscope purpose of market definition, but they are incomplete in one important respect: they neglect to explain what strength of magnification we seek.

Is the point to fully bound the range of potential harm? If so, we should draw markets broadly and magnify weakly, capturing every part of the web where harm is possible but scooping up lots of irrelevant stuff, too. Or is the point to clearly identify one area of concern at a time? If that is the case, then we would draw markets narrowly and magnify strongly, zooming in tight on one area of concern without necessarily capturing the full range of harm — at least, not all at once. We need not speculate on this point. From a quick glance at the market definition modules discussed so far, the typical objective is the second option: narrow markets and strong magnification.

Of all market definition tests to date, only the early commodity concept tests followed the weak magnification path. There are reasons why this may have made sense at the time. Rule of reason analysis was once a vague and shifting target.¹³⁶ Before reliance on economics began to sharpen focus on individual actors and market behavior,¹³⁷ there would have been some benefit in matching the wide prowl of the rule

¹³⁴ Fed. Trade Comm’n v. Ind. Fed’n of Dentists, 476 U.S. 447, 460 (1986) (according this definition to “the inquiries into market definition and market power”); see also Fed. Trade Comm’n v. Actavis, Inc., 570 U.S. 136, 153-56 (2013) (returning to the “potential for genuine adverse effects on competition” as a gating question in determining whether antitrust remedies are available).

¹³⁵ United States v. Phila. Nat’l Bank, 374 U.S. 321, 357 (1963) (describing definition of the geographic market in a merger case, but not obviously limiting the principle to this context).

¹³⁶ See, e.g., Bd. of Trade of Chi. v. United States, 246 U.S. 231, 238-39 (1918) (prescribing, as the “true test of legality,” a broad factual inquiry without clear standards for deciding when a restraint of trade was reasonable or unreasonable).

¹³⁷ Cf. Kovacic & Shapiro, *supra* note 26, at 49-52 (describing the late introduction of market structure inferences in rule of reason analysis).

of reason with equally expansive markets. The *Times Picayune* and *Cellophane* tests pursued wide markets, and little else.¹³⁸

But the early commodity-concept tests are outliers in every sense. In *Brown Shoe*, the Supreme Court tellingly dismissed the *Times Picayune* and *Cellophane* tests as merely identifying the “outer boundaries of a product market.”¹³⁹ And in the decades since *Brown Shoe*, no test of market definition has shown the slightest interest in these outer boundaries. Modern tests instead focus strong lenses on the areas of trade relevant to specific concerns.

Start with *Brown Shoe* itself. The practical indicia test was a response to concerns about increasing concentration and the plight of small and local businesses.¹⁴⁰ To guard against rising concentration in industries as popularly understood, judges needed to be able to identify industries as popularly understood. To protect small and local businesses, judges needed to be able to pick out groups of businesses whose common interests could be evaluated and protected.¹⁴¹ The practical indicia test served up the type of narrow and intuitive markets needed to address these concerns.

Of course, strong magnification tends to crop out peripheral details. And in the case of the practical indicia test, this meant that the markets defined by the test could not purport to scope the full range of potential harm. The public could recognize a national shoe market while also recognizing city-level markets.¹⁴² The Supreme Court anticipated this issue in *Brown Shoe* and addressed it with an invitation to define multiple relevant markets where necessary.¹⁴³ This has not been necessary as often as one might think, however, since harm in any single market usually suffices to establish illegality.¹⁴⁴

¹³⁸ See *supra* notes 40–41 and accompanying text.

¹³⁹ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

¹⁴⁰ See *supra* notes 42–48 and accompanying text.

¹⁴¹ *Brown Shoe* observed that Congress had intended “the protection of competition, not competitors.” *Brown Shoe*, 370 U.S. at 320. This position is reconcilable with the protection of small businesses if that protection is required to accrue to the benefit of all small and local businesses in a recognizable market, not just to specific competitors.

¹⁴² See, e.g., *id.* at 328, 339 (identifying a national shoe market for one aspect of a merger and a series of local shoe markets defined around cities with populations exceeding 10,000 for another aspect of the merger).

¹⁴³ *Id.* at 325, 336 (commenting that within any broader market there may exist submarkets that are also appropriate markets for antitrust scrutiny).

¹⁴⁴ See *id.* at 325 (commenting that “it is necessary to examine the effects of a merger in each . . . economically significant market” because if a probable lessening of competition is found in any such market, “the merger is proscribed”); *United States v. E. I. du Pont de Nemours & Co. (du Pont-General Motors)*, 353 U.S. 586, 595 (1957) (similar).

The HMT is a very different test, but it closely follows the strong magnification pattern of the practical indicia test. Here, the concern is that a merger could facilitate something like tacit collusion on joint price elevation.¹⁴⁵ The HMT scopes markets around this potential injury.¹⁴⁶ In so doing, it too adopts the narrow market and strong magnification approach. Suppose that a merger of two steel manufacturer-and-fabricator companies risks facilitating collusion among other manufacturers, other fabrications, or both. The HMT could be used to validate either or both of these potential collusive rings as relevant markets. Nested markets are also possible: if joint market power could be exercised by the competitors in a given market, then it could usually be exercised by the competitors in any arbitrary expansion of that market as well.¹⁴⁷ As before, the HMT zooms in on one potential area of harm without prejudice to other potential areas of harm. Nothing logically prohibits the use of multiple HMT markets where doing so would be helpful.¹⁴⁸

Unilateral effects predictions follow the same pattern again. There is no need to belabor the details. Here, the concern is about individual exercises of market power. Predicted price increases following the merger of two competitors identify these competitors as capable of exercising that market power.¹⁴⁹ Again, a tight zoom means that the scope of the market does not exhaust the scope of potential harm. A merger could, for example, threaten both unilateral and coordinated effects. And the pursuit of these different concerns would benefit from scoping different relevant markets for each concern.

The dominant pattern that emerges from this discussion of the magnifying role of market definition is one of tight magnification on a specific area of antitrust concern. Tests that follow this pattern — like the practical indicia test, the HMT, and unilateral effects predictions — do not purport to exhaust the full range of potential harm. Each identifies at least one area of potential harm without prejudice to the possibility of other areas of potential harm. The point of these relevant

¹⁴⁵ See *supra* notes 79–81 and accompanying text.

¹⁴⁶ See *AREEDA ET AL.*, *supra* note 41, ¶ 533f, at 275 (“The function of defining a market [by the HMT] is to determine that grouping of sales that, if controlled by a single firm or a cartel, could charge noncompetitive prices.”).

¹⁴⁷ See *Baker*, *supra* note 64, at 148 n.68, 149 (observing that relevant markets may nest or overlap); *Glasner & Sullivan*, *supra* note 40, at 332–33 (elaborating on this point and providing an illustrative example).

¹⁴⁸ See *Glasner & Sullivan*, *supra* note 40, at 326–36 (providing an extended defense of the delineation of multiple relevant markets using something like the HMT).

¹⁴⁹ See *supra* note 106 (summarizing unilateral effects models).

markets is not to identify the single “right” market for a given case. The point is merely to help courts and litigants focus their attention on one area of concern at a time.

B. Translation

Another function of market definition is to translate concerns arising from abstract political and economic theory into statements about the actions of producers, consumers, and competitors in the world. Competitors emerge, victims step forward, the heroes and villains of an antitrust narrative come to life, all within the universe of a relevant market. Resist the urge to write this off as poetic and trivial. It is not.¹⁵⁰

Take the markets implicitly defined by unilateral effects predictions. Sophisticated economic models may be used to produce these predictions. The jargon alone can be an obstacle to a layperson’s understanding, to say nothing of the calculus and statistics used to arrive at model predictions, or the body of assumed principles and prior results upon which the models are based. As theory goes, this is not a gentle and approachable variety.

But now consider how a unilateral effect prediction translates that theory into statements about actors in the world. These two companies are close competitors. If they merge, they might raise their prices.¹⁵¹ Here are the consumers who would feel the pinch of that price increase.¹⁵² And here are the competitors best positioned to stop the price increase.¹⁵³ This concrete, tractable narrative is *not* a simplistic dumbing down of economic theory. It is a precise translation of that theory into statement about the interactions of actors in the world. And that is precisely where attention should be placed. It is the future

¹⁵⁰ See Steven C. Salop, *The First Principles Approach to Antitrust*, Kodak, and *Antitrust at the Millennium*, 68 ANTITRUST L.J. 187, 191-92 (2000) (observing how market definition identifies key actors in a theory of harm); Gregory J. Werden, *Why (Ever) Define Markets? An Answer to Professor Kaplow*, 78 ANTITRUST L.J. 729, 740-43 (2013) (discussing the narrative role that market definition plays in antitrust litigation).

¹⁵¹ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 6.1, para. 3 (“Unilateral price effects are greater, the more the buyers of products sold by one merging firm consider products sold by the other merging firm to be their next choice.”).

¹⁵² See *id.*, para. 4 (identifying the subset of consumers most likely affected by such a merger).

¹⁵³ See *id.*, para. 8 (discussing the potential responses of non-merging competitors). Whether we call this market structure or entry analysis, the substance is the same. See Coate & Fischer, *supra* note 113, at 433 (suggesting that market structure analysis, entry analysis, and repositioning considerations all address common concerns).

interactions of these actors, not abstract model parameters, that will determine whether competitive injuries arise.

As another example, consider the translations performed by the HMT. Economic theory paints collusion as an enticing but unstable form of cooperation among competitors.¹⁵⁴ Every member of a collusive group stands to profit by joining the collusive scheme but, soon as collusion takes off, every member of the collusive group also stands to profit by defecting on the arrangement.¹⁵⁵ The threat of collusion therefore turns on how likely the members of a collusive group are to successfully stabilize their arrangement. Who are the potential collaborators? Do they have like incentives?¹⁵⁶ How many of them would need to cooperate for collusion to succeed?¹⁵⁷ Evaluating the threat of collusion involves answering questions like these.¹⁵⁸

In that vein, recall what the HMT does. It defines a market as a potential collusive group. The competitors in an HMT market are, by construction, a group of competitors with the joint market power to collude. To evaluate the threat of collusion among these competitors, we can count their number and try to decide which of them would need to cooperate for collusion to succeed.¹⁵⁹ We can also inspect the operations of individual competitors in trying to look for differences or similarities in incentives to collude. Here again, market definition translates abstract economic theory into factual questions about actual actors in the world. And market definition really is where this translation takes place. If the relevant market had been defined by

¹⁵⁴ See, e.g., Louis Kaplow & Carl Shapiro, *Antitrust*, in 2 HANDBOOK OF LAW AND ECONOMICS 1073, § 3.2.1 (A. Mitchell Polinsky & Steven Shavell eds., 2007) (summarizing elements of successful collusion in economic models of oligopoly).

¹⁵⁵ Participation in a joint ten percent price increase sounds great until compared with the option of poaching customers while others blindly raise their prices.

¹⁵⁶ See generally Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y.U. L. REV. 135 (2002) (discussing incentive-heterogeneity considerations at length).

¹⁵⁷ See Kaplow & Shapiro, *supra* note 154, at 1112 (“Collusive outcomes are less likely to occur in industries with more firms because greater numbers make it more difficult to satisfy the . . . conditions necessary for successful collusion.”); Ordovery & Willig, *supra* note 84, at 555 (“The view that a reduction in the number of firms facilitates coordinated use of assets among the incumbent firms is a rock upon which much of industrial economics has been built.”); George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 55 (1964) (modeling cartel stability as a function of market concentration, itself a function of the number of important competitors in a market).

¹⁵⁸ Cf. 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 7.2 (listing these and many related factual considerations).

¹⁵⁹ HMT markets may encompass the smallest group of competitors needed to bring about a joint price increase, but this is not a guaranteed property of these markets.

anything other than the HMT, then the number and incentives of competitors in the relevant market would not generally correspond to the threat of potential collusion among these competitors.

The previous examples concern antitrust evaluations of potential changes in market power, but the translation function of market definition extends to other sociopolitical objectives as well. In the era of Warren Court antitrust, for example, changes in market concentration were not opposed because they might affect specific forms of market power. The inference was broader and stronger than that.¹⁶⁰ To politicians and economists of the time, and to many who still subscribe to their viewpoint today, increasing concentration was not evidence of a problem — increasing concentration was the problem.¹⁶¹

Brown Shoe's practical indicia test translates an abstract political preference for deconcentrated industries into factual terms administrable by courts. Scoping markets around recognizable industries facilitates the measurement of concentration in terms familiar to legislators and lay people. If the objective is to satisfy the public's interest in controlling concentration as the public perceives it, then there can be no substitute for defining relevant markets according to public perception.¹⁶²

In each of these examples, market definition translates abstract concerns into concrete statements about actors in the world. While the details differ from one context to the next, the basic function of every translation is the same: the relevant market is defined so that it is populated with the actors whose interactions are most important to evaluating the threat of a given injury. Antitrust cases are in every sense *about* the characters and controversies that emerge in these translations.

¹⁶⁰ E.g., George J. Stigler, *Mergers and Preventive Antitrust Policy*, 104 U. PA. L. REV. 176, 181-82 (1955) (describing a tight connection between industrial concentration and effectiveness of competition); see Baker, *supra* note 156, at 138 (“The dominant and largely unquestioned view among economists and antitrust commentators [at this time] was that when only a few firms competed in an industry, they readily would find a way to reduce rivalry, collude tacitly, and raise prices above the competitive level.”); cf. CARL KAYSER & DONALD F. TURNER, *ANTITRUST POLICY: AN ECONOMIC AND LEGAL ANALYSIS* 132-36 (1959) (suggesting the presumptive illegality of any merger resulting in a firm with more than a twenty percent share of the market).

¹⁶¹ See, e.g., *Brown Shoe Co. v. United States*, 370 U.S. 294, 315 (1962) (noting “fear of what was considered to be a rising tide of economic concentration in the American economy”); *id.* at 346 (“We cannot avoid the mandate . . . that tendencies toward concentration in industry are to be curbed in their incipiency”); *id.* at 345 n.72 (concluding that Congress sought “to prevent even small mergers that added to concentration in an industry”).

¹⁶² See *supra* notes 69–70 and accompanying text.

C. Exploration

Another purpose of market definition is to provide a context for exploring counterfactual aspects of antitrust concerns.¹⁶³ Take entry analysis, as an example. The possibility of future entry is nearly always an issue in antitrust litigation. Without barriers to entry, potential market power gains are ephemeral, since any attempt to exercise that power would attract others to compete for the newly profitable transactions, eventually unwinding any market power gains through increased competition. Fact finders must therefore ask whether and how quickly new competitors would enter a relevant market in response to an exercise of market power — a question which presumes the context of a relevant market.¹⁶⁴ In this and other ways, market definition facilitates the exploration of antitrust concerns.

What other types of exploration does it facilitate? Fully evaluating the threat of post-merger tacit collusion requires courts to engage a long list of factual inquiries. Philip Areeda once summarized the challenge as follows:

[Market structure inferences] do not purport to be determinative but are to be considered along with ease of entry, degree of product homogeneity, next closest products or producers excluded from the market definition, buyer concentration, information availability or exchanges, economic performance, prior disruptiveness of a merging firm, and such practices as price protection clauses, product standardization, delivered pricing, past collusion, and other matters affecting the ease of tacit price coordination.¹⁶⁵

¹⁶³ This is often described as an “organizing” function of relevant markets. See SULLIVAN, *supra* note 16, at 64 (“[T]he only purpose for defining a market is to organize available data in a way which facilitates judgment about the extent of that power.”); Franklin M. Fisher, *Economic Analysis and “Bright-Line” Tests*, 4 J. COMPETITION L. & ECON. 129, 130 (2008) (“Market definition can be a useful tool, a way to begin organizing the material that must be studied.”).

¹⁶⁴ See Fisher, *supra* note 163, at 131 (“Ease of entry must also be considered, and one might reasonably say that such a consideration requires one to know what it is that is being entered.”); Werden, *supra* note 150, at 729 (“Even if antitrust analysis never used market shares, the relevant market would remain essential for examining entry prospects and the durability of market power.”); see also Crane, *supra* note 100, at 48 (questioning how entry can be assessed “in a ‘direct’ market power analysis since entry barriers require identification of a market into which entry is difficult”).

¹⁶⁵ Areeda, *supra* note 73, at 309.

He could have kept going. Historic market stability can be an important consideration,¹⁶⁶ as can things like the frequency of contact between competitors across different markets¹⁶⁷ and the way that a merger changes the incentives of merging firms.¹⁶⁸

It is hard to miss the connection between these factors and the surrounding context of a relevant market defined by the HMT. Many of these inquiries are intuitive and sensible only within the context of such a market. Moreover, these inquiries would not be facilitated by relevant markets defined according to other tests. For purposes of the assessing the “degree of product homogeneity” or the “prior disruptiveness of a merging firm,” the narrow relevant markets defined by unilateral effects predictions would be just as inapt as the industry concepts scoped by the practical indicia test.¹⁶⁹

On that point, note that *Brown Shoe*’s practical indicia test serves different but still recognizable exploration purposes. The structuralist objectives that motivated antitrust in *Brown Shoe*’s time were linked to the understanding of industries as permanent fixtures in the world. Locating analysis within a specific industry allowed courts to consider the surrounding context of that industry when evaluating the structural effects of mergers. The apparent trajectories of industries were matters of special importance: “only . . . examination of the particular market — its structure, history and probable future — can provide the

¹⁶⁶ See Edward J. Green & Robert H. Porter, *Noncooperative Collusion Under Imperfect Price Information*, 52 *ECONOMETRICA* 87, 90-91 (1984) (relating this and other aspects of competitive structure to the feasibility of self-enforcing collusion); see, e.g., Subhasish M. Chowdhury & Carsten J. Crede, *Post-Cartel Tacit Collusion: Determinants, Consequences, and Prevention*, 70 *INT’L J. INDUS. ORG.*, Mar. 2020, at 1,1 (discussing experimental evidence on how prior success at collusion may similarly facilitate coordination).

¹⁶⁷ See B. Douglas Bernheim & Michael D. Whinston, *Multimarket Contact and Collusive Behavior*, 21 *RAND J. ECON.* 1, 1 (1990) (suggesting how multimarket contact may facilitate collusion); Federico Ciliberto & Jonathan W. Williams, *Does Multimarket Contact Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry*, 45 *RAND J. ECON.* 764, 773-88 (2014) (providing empirical evidence on this relationship).

¹⁶⁸ See, e.g., Baker, *supra* note 156, at 166-77 (describing different ways that a merger may facilitate collusion by changing the incentives of one of the merging parties).

¹⁶⁹ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 7.2 (describing the many market-based factors that are used to assess vulnerability to coordinated conduct); Phillip Areeda, *Market Definition and Horizontal Restraints*, 52 *ANTITRUST L.J.* 553, 562-63 (1983) (drawing a similar distinction between the scope and purpose of relevant markets defined for assessing coordinated conduct and relevant markets defined for assessing unilateral or monopoly market power).

appropriate setting for judging the probable anticompetitive effect of the merger.”¹⁷⁰ But other features of the industry mattered as well.¹⁷¹

The practical indicia test responded to “Congress’ express intent” that mergers be assessed “within an industry framework almost inevitably unique in every case”¹⁷² by defining relevant markets to align with recognizable and persistent industry concepts. Again, the test is unique in its satisfaction of this purpose. Few of the relevant contextual inquiries make much sense outside of the industry concepts sought by the practical indicia test. A potential collusive group, defined as a relevant market by the HMT, would be little help in trying to assess the trajectory of an industry, and the narrow market scoped by a unilateral effects prediction would be simply worthless.

Exploration functions are, however, performed by unilateral effects predictions in the different context of evaluating unilateral effects concerns. The need for exploration might come as a bit of a surprise in view of the apparent precision of these models in directly predicting price effects.¹⁷³ But the literal accuracy of unilateral effects predictions is always limited to the toy models of competition they assume.¹⁷⁴ The more that actual patterns of competition diverge from these models, the more unilateral effects predictions work like educated guesses.¹⁷⁵ To be blunt, in empirical studies to date, unilateral effects models have not had great success in predicting observed behavior.¹⁷⁶

¹⁷⁰ *Brown Shoe Co. v. United States*, 370 U.S. 294, 322 n.38 (1962).

¹⁷¹ See, e.g., *United States v. Cont’l Can Co.*, 378 U.S. 441, 458-66 (1964) (discussing various features of the metal can and glass industries and how a merger would change the nature of competition in these industries); see also *United States v. Bethlehem Steel Corp.*, 168 F. Supp. 576, 583 (S.D.N.Y. 1958) (“The contending positions of the parties can be understood only against the background and general pattern of the iron and steel industry, the making and distribution of steel and steel products, the nature, size and location of the companies in the industry, the nature of competition in the industry generally . . .”).

¹⁷² *Brown Shoe*, 370 U.S. at 322 n.38.

¹⁷³ See *supra* note 113 and accompanying text.

¹⁷⁴ See Cameron et al., *supra* note 125, at 734 (warning not to confuse the predictions of a restricted economic model with accurate statements about complex, real-world markets); see also Franklin M. Fisher, *Games Economists Play: A Noncooperative View*, 20 RAND J. ECON. 113, 115 (1989) (decrying economic testimony “that one should analyze real markets by using [simple models of competition]” as “theory run riot”).

¹⁷⁵ See *supra* notes 126–128 and accompanying text.

¹⁷⁶ See Dennis W. Carlton & Mark Israel, *Will the New Guidelines Clarify or Obscure Antitrust Policy?*, ANTITRUST SOURCE, Oct. 2010, at 1, 4 (“[T]here is only weak empirical evidence establishing the usefulness of merger simulation as a tool to predict anticompetitive mergers.”); Craig Peters, *Evaluating the Performance of Merger Simulation: Evidence from the U.S. Airline Industry*, 49 J.L. & ECON. 627, 627 (2006) (reporting that “standard simulation methods, which measure the effect of the change

This does *not* undermine the usefulness of unilateral effects predictions. It simply means that these predictions are the beginning of competitive effects analysis, not the end of it. Further exploration is always needed. As Shapiro explains, “measuring upward pricing pressure, or even performing a full merger simulation, typically is not the end of the story” because “[r]epositioning, entry, innovation, and efficiencies must also be considered.”¹⁷⁷ When the potential price responses of other firms are not reflected in the underlying model, these too must be considered in evaluating the potential for unilateral market power to be gained and exercised. The appropriate scope of trade for exploring these questions is precisely the implicit market defined by the predicted exercise of market power. Like all other tests of market definition, unilateral effects predictions expose a context in which relevant analysis can be helpfully performed.

Across each of these different applications, market definition performs the same basic function. It marks out a context in which the various issues relating to a concern may be explored and addressed. This exploration function could be trivial — in a tautological sense, any relevant market provides a context for exploring every inquiry — but the right connection between the choice of test and the application at hand elevates it to something far more valuable.

Helpful relevant markets facilitate exploration by matching the market to the needs of the inquiry. A market defined by the HMT is helpful context for exploring joint market power concerns. A market defined by a unilateral price effect prediction is helpful context for exploring individual market power concerns. Neither market is

in ownership on unilateral pricing incentives, do not generally provide an accurate forecast”); see also Douglas D. Davis & Bart J. Wilson, *Differentiated Product Competition and the Antitrust Logit Model: An Experimental Analysis*, 57 J. ECON. BEHAV. & ORG. 89, 91 (2005) (describing uninspiring experimental results). See generally Jonas Björnerstedt & Frank Verboven, *Does Merger Simulation Work? Evidence from the Swedish Analgesics Market*, 8 AM. ECON. J. 125 (2016) (reporting some successes, but also several respects in which merger simulation failed to adequately explain the apparent price and share effects of an observed merger); Lars Mathiesen, Øivind Anti Nilsen & Lars Sjørgard, *A Note on Upward Pricing Pressure: The Possibility of False Positives*, 8 J. COMPETITION L. & ECON. 881 (2012) (illustrating false positives in upward pricing pressure (“UPP”) analysis); Matthew C. Weinberg, *More Evidence on the Performance of Merger Simulations*, 101 AM. ECON. REV., May 2011, at 51, 51 (reporting a retrospective study in which merger simulations substantially underpredicted the actual estimated price effects of a merger).

¹⁷⁷ Carl Shapiro, Deputy Assistant Att’y Gen. for Econ., Dep’t of Just., Update from the Antitrust Division, Remarks as Prepared for the American Bar Association Section of Antitrust Law Fall Forum 26 (Nov. 18, 2010), <https://www.justice.gov/atr/file/518246/download> [<https://perma.cc/E95Z-QLC3>].

typically a helpful context for the other's concern. Just like the functions of market definition discussed above, the utility of a relevant market for exploration purposes derives from using the right test for the right question.

III. PRACTICE — MODULAR MARKET DEFINITION

Everything discussed so far points toward a simple, two-step solution for choosing the appropriate market definition test in any application. First, identify the substantive purposes for which relevant markets are being defined. Second, identify the test that delineates markets best suited to serving those purposes. This modular approach is undoubtedly different from current practice, but it is not a departure from binding precedent. If anything, the modular approach to market definition is more faithful in its adherence to precedent than any recent cases have been.

The modern approach — treating every test of market definition as somehow interchangeable — is a false account of antitrust history. As illustrated in Part I, even a brief review of the different contexts in which the different tests were developed reveals the unremarkable fact that different tests of market definition were developed to serve different purposes. It is true that several market concepts have served some broadly similar purposes in their respective contexts. Examples of this, like the magnification function of relevant markets, were discussed in Part II. But as Part II also illustrated, the ability of a market to serve these purposes derives from the connection between a specific test and its intended application.

Modular market definition accepts and exploits the differences between different tests of market definition. It anticipates that the most helpful test will be selected for every application. How does this work in practice? That is easier to show than tell. The following illustrates how a modular approach to market definition quickly identifies the details of appropriate market definition tests across a variety of situations.¹⁷⁸

¹⁷⁸ Note, in passing, that the modular approach to market definition tailors tests to concerns, not cases. Were a case to raise more than one concern, it would typically be important to define different relevant markets for each concern. This approach of defining different relevant markets for different concerns was employed by the Supreme Court in *Brown Shoe*. *Brown Shoe Co. v. United States*, 370 U.S. 294, 324-28, 335-39 (1962) (conducting separate market definition for the vertical and horizontal concerns raised by the same merger). It enjoys theoretical as well as practical justifications. See Glasner & Sullivan, *supra* note 40, pt. III (providing an extended justification for a multiple market paradigm).

A. *Coordinated Effects Enabling Tacit Collusion*

In a standard coordinated effects theory, the concern is that a merger will allow the exercise of joint market power through tacit collusion. Put another way, the worry is that the members of a possible collusive group will, because of the merger, become capable of colluding on things like joint price increases. As discussed before, the HMT was made to fit this concern.¹⁷⁹ The HMT, implemented by hypothesizing the joint exercise of market power as a small but substantial price increase over prevailing prices, is the right test for defining markets in this context.

With that said, many of the fussier details of the HMT as described in the 2010 Horizontal Merger Guidelines can be omitted. The Guidelines talk about expanding markets to fill perceived gaps in the set of products in the market,¹⁸⁰ a heuristic sometimes called the “circle principle.”¹⁸¹ They also talk about shrinking markets to match the smallest group of competitors that could plausibly collude,¹⁸² a heuristic sometimes called the “smallest market principle.”¹⁸³ As descriptions of how the agencies choose to structure their internal analysis, these heuristics are questionable judgement calls but nothing more. That tolerance does not extend to treating the heuristics as immutable parts of the market definition process.

A stark illustration of this point is provided by the recent case of *FTC v. Rag-Stiftung*.¹⁸⁴ The FTC complained, in this case, that a merger of two hydrogen peroxide producers risked facilitating tacit collusion among other producers of commodity hydrogen peroxide.¹⁸⁵ This is a simple theory, and it begs a simple market. Do producers of commodity hydrogen peroxide have the joint market power to raise prices if they cooperate to do so? If so, then that is a relevant market under the HMT.¹⁸⁶ True, the HMT might validate other relevant markets as well, but the availability of alternative relevant markets does not *and cannot*

¹⁷⁹ See *supra* notes 96–97 and accompanying text.

¹⁸⁰ 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 4.1.1, para. 4 (suggesting the inclusion of products in a market when those products are perceived to be interstitial to other products already included in the market).

¹⁸¹ E.g., *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 37 (D.D.C. 2017).

¹⁸² 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 4.1.1, para. 5 (“[W]hen the Agencies rely on market shares and concentration, they usually do so in the smallest relevant market satisfying the hypothetical monopolist test.”).

¹⁸³ E.g., *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 59 (D.D.C. 2011).

¹⁸⁴ *Fed. Trade Comm’n v. RAG-Stiftung*, 436 F. Supp. 3d 278 (D.D.C. 2020).

¹⁸⁵ Complaint at 2-3, *Rag-Stiftung*, No. 9384 (F.T.C. Aug. 2, 2019) (No. 1910029).

¹⁸⁶ See *supra* notes 87–99 and accompanying text.

preclude consideration of any other market validated by the HMT. Non-exclusivity is a property of all strong-magnification tests.¹⁸⁷

The district court missed this point in *RAG-Stiftung*, in part because it confused some of the Merger Guidelines' heuristics with the test of market definition itself.¹⁸⁸ Treating the smallest market principle and some language about supply-side substitution as immutable principles of market definition,¹⁸⁹ the court erroneously rejected the simple relevant market that fit the FTC's complaint, and instead substituted relevant markets defined so narrowly that data were apparently unavailable for them.¹⁹⁰ This prevented the court from reaching the merits of the FTC's complaint.¹⁹¹ Wrongly defined markets repelled, rather than facilitated, the substantive analysis that the case required.¹⁹²

All that is needed to avoid this type of error is to start market definition with a clear understanding why markets are being defined. The concern, in a standard coordinated effects theory, is that a group of competitors could coordinate to raise prices. The HMT validates markets in which competitors have the joint market power to do just that. If the members of a candidate market appear not to satisfy the test — because they are too few or too easily replaced to exercise joint market power — then expansion of the candidate market is necessary. But, if the candidate market satisfies the HMT, it simply makes no difference that some other broader or narrower group of competitors could also exercise joint market power.¹⁹³ If broader or narrower markets could also satisfy the HMT criteria, then all that we have learned is that these, too, may constitute scopes of trade in which the threatened harm is theoretically possible. Alternative HMT markets can add to the list of potential scopes of concern; they can never subtract from it.

¹⁸⁷ See *supra* Part II.A.

¹⁸⁸ See *RAG-Stiftung*, 436 F. Supp. 3d at 292-300.

¹⁸⁹ See *id.* at 292-93 (treating the smallest market principle as a rule of market definition); *id.* at 293-300 (plucking language from explanatory footnotes and asides to create a novel framework for deciding when it would be permissible to accept a broad market if narrower markets were possible).

¹⁹⁰ *Id.* at 303, 310.

¹⁹¹ *Id.* at 310 (describing lack of evidence as dispositive). The court did comment briefly, in dicta, on the feasibility of coordinated effects, but this analysis, too, was obstructed by the court's market definition error. See *id.* at 312 (admitting that "the Court's review is necessarily limited" by the unavailability of evidence related to the narrow relevant markets that the court chose to define).

¹⁹² See *supra* notes 185-94 and accompanying text.

¹⁹³ See *supra* note 147 and accompanying text.

B. *Coordinated Effects Entrenching Tacit Collusion*

In a different version of the coordinated effects theory, tacit collusion has already taken hold among a group of competitors and the concern is that a merger will entrench the ongoing exercise of joint market power. Put another way, the threatened harm is not the exercise of new joint market power, but the stabilization of old joint market power.¹⁹⁴ Vetting entrenchment theories requires market analysis.¹⁹⁵ What test should be used to define those markets?

Because it scopes markets around joint market power concerns, the HMT is again the place to start. But applying the HMT by hypothesizing a price increase over prevailing prices now leads to strange results. Suppose that ongoing collusion has already raised prices as high as they profitably can go. Applying the HMT to these elevated prices reveals that the collusive group lacks the joint market power to raise prices further (which is true) but would then move on to expand the market on the assumption that the collusive group lacks joint market power (which is false).¹⁹⁶ Worse than wrong, this brings us back to the fox and henhouse problem:¹⁹⁷ the higher the collusive group manages to raise its prices, the wider the market becomes, and the more freedom the members of this group have to lock in their successful collusion through mergers.

These problems trace to a mismatch between the usual articulation of the HMT and the substantive concern in entrenchment theories. The usual articulation identifies a scope of trade in which new joint market power could be exercised, but entrenchment is about old joint market power.¹⁹⁸ The concern is that ongoing collusion may be set in stone by

¹⁹⁴ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 1, para. 5 (“[M]ergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise.”); Areeda, *supra* note 169, at 564 (commenting that “[m]erger precedents have been concerned not only with combinations creating new power but also with those reinforcing present power” and that “a merger which reinforces pre-existing monopoly or oligopoly pricing” may be anticompetitive).

¹⁹⁵ See generally Sean P. Sullivan, *Anticompetitive Entrenchment*, 68 U. KAN. L. REV. 1133 (2020) (discussing entrenchment theories of harm in merger enforcement).

¹⁹⁶ See Salop, *supra* note 150, at 194 (describing similar interpreting errors under the labels of the “Cellophane Trap” and the “Price-Up Trap”).

¹⁹⁷ See text following note 41.

¹⁹⁸ See Sullivan, *supra* note 195, at 1136 (contrasting “the usual claim that the merger or acquisition would make things worse in the relevant market” with the entrenchment concern that market power is already being exercised in the relevant market and the “corresponding public interest in preserving opportunities for the grind of competitive frictions to make things better in the future”).

a merger involving members of an already collusive group. This can happen without any new market power being created.

One way to define markets around the entrenchment concern would be to run the HMT against an estimate of the competitive price, asking whether the members of the apparently collusive group would have the joint market power to raise prices above a reasonable guess at what the price would be but for their apparent collusion.¹⁹⁹ More directly, we could try to run the HMT in reverse, seeking a scope of trade in which the defection of one of the merging parties could destabilize ongoing coordination. These are complex inquiries, but they are not insuperable.

In *Valspar Corp. v. E.I. Du Pont De Nemours & Co.*, the Third Circuit recently affirmed summary judgement against a plaintiff's price fixing claim, reasoning that the members of a titanium dioxide oligopoly were tacitly colluding without express agreement to do so.²⁰⁰ The Seventh Circuit reached a similar conclusion in *In re Text Messaging Antitrust Litigation*, reasoning that the small number of competitors offering text messaging services could easily engage in tacit collusion,²⁰¹ and even reasoning that an email offered as proof of collusion failed to do so because it "rather clearly refers to tacit collusion."²⁰² The same evidence that persuades courts of tacit collusion in these cases should suffice to prove narrow relevant markets around the tacitly colluding groups in entrenchment theories of coordination.

C. Concerted Conduct

The seemingly concerted conduct of competitors often raises joint market power concerns. In some cases, this conduct trips a *per se* rule

¹⁹⁹ See Glasner & Sullivan, *supra* note 40, at 319-24 (discussing this point as an example of a broader need to match the HMT to the specifics of alleged collusion); Salop, *supra* note 150, at 197 ("Using the lower price that would prevail in the absence of the alleged anticompetitive conduct as the competitive benchmark is appropriate whenever it is alleged that a restraint will prevent price from falling to a lower level.").

²⁰⁰ *Valspar Corp. v. E.I. du Pont de Nemours & Co.*, 873 F.3d 185, 200 (3d Cir. 2017) ("It makes sense that each firm would implement [parallel pricing] strategies, since conscious parallelism allows firms in an oligopoly to in effect share monopoly power and maintain prices at a profit-maximizing, supracompetitive level." (internal quotation marks omitted)).

²⁰¹ *In re Text Messaging Antitrust Litig.*, 782 F.3d 867, 871 (7th Cir. 2015) ("[T]he fewer the firms, the easier it is for them to engage in 'follow the leader' pricing ('conscious parallelism,' as lawyers call it, 'tacit collusion' as economists prefer to call it) . . .").

²⁰² *Id.* at 872.

of illegality.²⁰³ In all other cases, market definition may be an important step in evaluating the anticompetitive potential of the arrangement.²⁰⁴ Because the focus is on exercises of joint market power, there are overlaps between market definition in this setting and in coordinated effects analysis. There are also differences, tracing to how alleged conspiracies direct analysis.

As a concrete example, consider *Todd v. Exxon Corp.*, in which the plaintiff alleged that a group of oil companies was using an information exchange to suppress employee wages.²⁰⁵ In describing how the plaintiff might seek to prove market power in her case, then-Judge Sotomayor identified two alternative paths that could be pursued. One path involved defining a relevant market and establishing that the defendants held a large share of this market. The other involved producing evidence of observable anticompetitive effects.²⁰⁶ These are well-supported alternatives in antitrust law,²⁰⁷ but their apparent distinction is curious. If market definition is done right, what would be the difference between each path?

Start with the market definition option. The plaintiff complained that Exxon, Mobil, B.P., and others were exchanging information in order to suppress wages. If wages were already suppressed as a result, then a helpful market definition test would ask whether the alleged group of companies would have the joint market power to suppress wages relative to where they would be but for the ongoing information exchange.²⁰⁸ This is the conduct-analogue of the HMT as applied to an

²⁰³ *Nat'l Soc'y of Pro. Eng'rs v. United States*, 435 U.S. 679, 692 (1978) (identifying *per se* illegality as applying to agreements "so plainly anticompetitive that no elaborate study of the industry is needed to establish their illegality"); *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 228 (1940) ("[P]rice-fixing combinations which lack Congressional sanction are illegal *per se*; they are not evaluated in terms of their purpose, aim or effect in the elimination of so-called competitive evils.").

²⁰⁴ *See Cal. Dental Ass'n v. Fed. Trade Comm'n*, 526 U.S. 756, 779 (1999) (commenting that even when a *per se* rule would ultimately be applied, "considerable inquiry into market conditions" may be required to justify the *per se* rule).

²⁰⁵ *Todd v. Exxon Corp.*, 275 F.3d 191, 195 (2d Cir. 2001).

²⁰⁶ *Id.* at 206 ("If a plaintiff can show that a defendant's conduct exerted an actual adverse effect on competition, this is a strong indicator of market power. In fact, this arguably is more direct evidence of market power than calculations of elusive market share figures.").

²⁰⁷ *See, e.g., Fed. Trade Comm'n v. Ind. Fed'n of Dentists*, 476 U.S. 447, 460-61 (1986) (noting that reduced output "can obviate the need for an inquiry into market power" through market definition).

²⁰⁸ *See Salop, supra* note 150, at 197 (noting that if it is alleged "that certain conduct has already permitted a firm to raise its price," then "the proper competitive benchmark is not the current price [but] the lower price that would have prevailed absent the

entrenchment theory of coordination.²⁰⁹ That question could be answered by circumstantial evidence of market power, but the most compelling proof would be evidence of actual wage suppression.

Now consider the direct proof of effects option. Here, the plaintiff presents evidence that the defendants' conduct was resulting in observable wage suppression.²¹⁰ Unless this ends the inquiry, it still may be helpful to identify one or more relevant markets in which further analysis could be conducted — entry barriers, business justifications, and similar inquiries being difficult to study in a vacuum.²¹¹ But, as we have just discussed, evidence of actual effects is itself compelling proof that those engaged in the challenged conduct have the joint market power to constitute a relevant market under the HMT.²¹²

Put another way, when market definition is properly conducted, the market definition and direct proof inquiries ask the same questions and lead to the same results. When proof of effects is unavailable, market definition is the only path forward. But when proof of effects is available, the two coincide. Proof of actual anticompetitive effects does not obviate market definition; proof of actual effects subsumes market definition.²¹³

Now, what happens when the challenged conduct has not yet had time to cause actual effects? Suppose the oil companies in *Todd* had only just begun to swap information. Here, market definition asks whether the coconspirators would have the joint market power to bring about future wage suppression. This is the conduct-analog of the HMT as applied to standard coordination theories.²¹⁴ Prevailing prices — here, wages — are the appropriate baseline for the tests, and the feasibility of the exercise of joint market power can only be tested by circumstantial evidence.

alleged restraint”). Put another way, the *Cellophane* fallacy, widely recognized as complicating market definition in the monopolization context, applies equally in the concerted action context. *Cf. supra* note 41 (discussing the *Cellophane* fallacy).

²⁰⁹ *See supra* Part II.B.

²¹⁰ *E.g., Todd*, 275 F.3d at 214 (alleging ongoing salary suppression and specific reductions in wage competition over prior years).

²¹¹ *See supra* Part II.C (discussing markets as test labs).

²¹² *See generally* Crane, *supra* note 100 (discussing direct inferences of market power from conduct); John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B.U. L. REV. 1169, 1196 (2018) (elaborating on how and when market power can be identified from conduct).

²¹³ *See supra* notes 118–130 (similarly interpreting unilateral effects predictions).

²¹⁴ *See supra* Part III.A.

D. Undifferentiated-Product Unilateral Effects

Returning to merger analysis, one type of unilateral effects concern straddles the line between individual and joint market power. The setting is an undifferentiated product space — a context in which competing products are almost perfectly interchangeable — and the concern is that a merger of competitors will create a firm with a large enough market share to be able to profit by curtailing its own production. The artificial scarcity that this curtailment creates would drive up the price of all producers.²¹⁵ Hence, this is an exercise of joint market power. But the merged firm collects enough of the profits to find curtailment worthwhile even without the cooperation of its competitors. Hence, this is unilateral conduct.²¹⁶

In economic models of this type of unilateral effect, features of a market like the relative shares of the merging parties and the likely supply responses of non-merging rivals inform the seriousness of concern.²¹⁷ How should markets be defined when trying to identify these features?

While this is a theory of unilateral conduct, the effect is still an exercise of joint market power, and so the HMT is again the appropriate test for the job.²¹⁸ In fact, this is one setting in which some of the fussier details of market definition as described in the 2010 Horizontal Merger Guidelines may be applicable.²¹⁹ Since the theory of harm is an automatic price increase propagated across all producers by a supply retraction, scoping the impact of the price increase, and how much of the profit would return to the merged firm, may well require filling in gaps and identifying sufficiently narrow markets in this setting.

This form of unilateral effect concern is not often pursued today, but recent cases like *FTC v. Tronox* confirm that it is still an important part

²¹⁵ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 6.3, para. 1 (describing concern that “the merged firm will find it profitable unilaterally to suppress output and elevate the market price” (emphasis added)).

²¹⁶ See *id.* § 6.3 (discussing this concern in greater detail).

²¹⁷ See *id.* para. 2 (listing relevant factors). See generally Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 AM. ECON. REV. 107 (1990) (describing price and welfare effects of merger in this context); Luke M. Froeb & Gregory J. Werden, *A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of a Homogeneous Product*, 58 ECON. LETTERS 367 (1998) (similar); R. Preston McAfee & Michael A. Williams, *Horizontal Mergers and Antitrust Policy*, 40 J. INDUS. ECON. 181 (1992) (similar).

²¹⁸ If the merger is still unconsummated, then the prevailing price is the appropriate baseline.

²¹⁹ See, e.g., *supra* notes 180–183 (discussing market definition heuristics described in the 2010 Horizontal Merger Guidelines).

of the enforcement arsenal.²²⁰ When undifferentiated-product unilateral effects theories are pursued, the HMT is the appropriate test for defining relevant markets.

E. Differentiated-Product Unilateral Effects

Today, the far more common unilateral effects concern involves a unilateral price increase arising from a merger of close competitors in a differentiated product space. Think, for example, of a merger of tobacco companies or soft-drink manufacturers. Here, the concern is not that a merger will facilitate the exercise of joint market power by all competitors but that it will facilitate the exercise of individual market power by the merging parties.²²¹ The appropriate test of market definition in this setting is the credible prediction of a unilateral price increase in an appropriate model of the competitive process.²²²

The appropriate test is not the HMT or *Brown Shoe's* practical indicia test. True, unilateral effects cases have been successfully argued despite their reliance on relevant markets defined by these tests.²²³ But this is cold comfort if it merely signals that cases with unilateral effects concerns are only being brought when they happen to exhibit impressive concentration in relevant markets defined by these inappropriate tests. When the relevant concern is about a potential exercise of individual market power, defining relevant markets around hypothesized exercises of joint market power offers at best a blurry view of the relevant scope of trade. And the contribution of the practical indicia test is next to nothing.

The one important exception to this rule is a special case of unilateral effects analysis in which market shares in a broader relevant market substitute for more precise measures of the closeness of competitors.²²⁴

²²⁰ Fed. Trade Comm'n v. Tronox Ltd., 332 F. Supp. 3d 187, 208-12 (D.D.C. 2018) (finding the post-merger firm would have "meaningful market incentives to manage prices by withholding TiO2 supply"); see also Complaint at 2, Superior Plus Corp., No. 9371 (F.T.C. June 27, 2016) (No. 1610020), <https://www.ftc.gov/system/files/documents/cases/160627superiorcanexuscmpt.pdf> [<https://perma.cc/FN5B-T3EY>] (alleging that the merger "would increase the likelihood of future anticompetitive output reductions to increase price").

²²¹ See *supra* notes 104–107, 118–130, and accompanying text.

²²² See *supra* notes 106–107 and accompanying text.

²²³ E.g., *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 20-21 (D.D.C. 2017) (applying both the practical indicia and HMT tests to define the relevant market for a differentiated-product unilateral effects concern); *Fed. Trade Comm'n v. Sysco Corp.*, 113 F. Supp. 3d 1, 26-37 (D.D.C. 2015) (same); *Fed. Trade Comm'n v. Swedish Match*, 131 F. Supp. 2d 151, 159-160 (D.D.C. 2000) (same).

²²⁴ See, e.g., Willig, *supra* note 102, at 299-305 (explaining this approach).

There are serious theoretical limitations to this approach, and these typically limit share-based unilateral effects predictions to the shallow waters of data scarcity and time constraints.²²⁵ But, when this path is taken, the HMT is a reasonable process for scoping a market in which shares could at least potentially identify frequency of head-to-head competition. The practical indicia test claims no such redeeming virtue.

F. Monopolization

Monopolization is a vast subject. The different versions of offense — monopolize, attempt to monopolize, conspiracy to monopolize — are distinct enough to warrant separate treatment.²²⁶ Atop that division, the subject further divides by type of concern: acquisition of monopoly power and maintenance of existing monopoly power are different enough to warrant separate treatment.²²⁷ And atop that subdivision the additional complexity emerges that exclusionary conduct encompasses various different acts and consequences. Relevant markets and market shares may connect in different ways to the anticompetitive harm threatened by exclusive dealing, predatory pricing, refusals to deal, and the other ways in which a dominant firm might seek to exclude rivals or raise their costs.²²⁸ The analysis may also depend on questions of timing and focus, as where concerns relate to the exclusion of potential competitors, or where concerns involve changes in innovation or research intensity.²²⁹

In short, monopolization is not one antitrust concern, but really a factorial expansion encompassing many related but different concerns. Rather than attempt what would necessarily be a cursory treatment of the individual elements of this expansion,²³⁰ we can consider three

²²⁵ See Jerry Hausman, *2010 Merger Guidelines: Empirical Analysis*, ANTITRUST SOURCE, Oct. 2010, at 1 (noting that this approach requires the IIA property, which is “unrealistic in many situations”); Willig, *supra* note 102, at 301 (commenting that the assumptions behind this approach “are unlikely to be valid in many areas of application”).

²²⁶ See 15 U.S.C. § 2 (2021).

²²⁷ See *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966) (affirming that the offense of monopolization applies to both the acquisition of monopoly power and the maintenance of monopoly power through exclusionary conduct).

²²⁸ See generally 3 PHILIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 199-465 (2015) (discussing different types of exclusionary conduct).

²²⁹ See JONATHAN B. BAKER, THE ANTITRUST PARADIGM: RESTORING A COMPETITIVE ECONOMY 152-75 (2019) (discussing innovation harms arising from mergers and exclusionary conduct).

²³⁰ For initial sketches of a comprehensive treatment, see Sean P. Sullivan, *Market Definition*, in 1 RESEARCH HANDBOOK ON ABUSE OF DOMINANCE AND MONOPOLIZATION 1, 1

overarching questions that inform any use of market definition in a monopolization context.

First, what are relevant markets being used for? A firm's possession of a large share of a relevant market is commonly interpreted as evidence that the firm possesses monopoly power in that market.²³¹ And a firm's market share in a relevant market is also commonly used to infer something about the firm's incentive to engage in exclusionary conduct — certain forms of exclusion only making sense when undertaken by firms of sufficiently large relative size.²³² Note, however, that nothing logically requires these two inferences to use the same relevant market. It may often be helpful to delineate separate relevant markets for each inference.²³³

Second, is the relevant concern about the acquisition, possession, or maintenance of monopoly power? Markets defined for purposes of assessing a firm's possession or maintenance of monopoly power face the challenge of the *Cellophane* fallacy: current substitution patterns will overstate the significance of competitive constraints — and thus understate the firm's actual market power — whenever a firm is already exercising the market power it possesses.²³⁴ This is the same problem encountered in defining HMT markets for entrenchment theories of coordinated conduct.²³⁵ Just as in the entrenchment context, a correction is needed to define markets relative to something like substitution patterns at competitive baseline prices when using relevant

(Pinar Akman, Konstantinos Stylianou & Or Brook eds., Edward Elgar forthcoming); Lawrence J. White, *Market Power and Market Definition in Monopolization Cases*, in 2 ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY 913 (W. Dale Collins ed., 2008). For a closely related discussion of the meaning of exclusion and monopoly power, see Thomas G. Krattenmaker, Robert H. Lande & Steven C. Salop, *Monopoly Power and Market Power in Antitrust Law*, 76 GEO. L.J. 241, 248-53 (1987); Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 213-14 (1986).

²³¹ See, e.g., *supra* notes 7–11 and accompanying text (describing the identification of monopoly power by market share in *Alcoa*).

²³² See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 110-11 (5th ed. 2016) (citing predatory pricing, foreclosure, and tying as examples of exclusionary conduct offenses “that are plausible only [when] the defendant occupies a large portion of the relevant market in question”).

²³³ See Sullivan, *supra* note 230, at 6-9 (discussing the use of separate relevant markets to assess existing market power and conduct threatening to increase that market power).

²³⁴ See Sullivan, *supra* note 230, at 11 (observing that all substitution-based tests of market definition are subject to this potential error); *supra* notes 41, 196, and accompanying text (discussing the interpretive error of evaluating competition at prices already reflecting the exercise of market power).

²³⁵ See *supra* Part III.B.

markets for these purposes. Importantly, that correction is *not* needed when relevant markets are being used to assess potential increases in a firm's market power.²³⁶ Thus, the *Cellophane* fallacy applies to a relevant market defined for purposes of assessing an alleged monopolist's current market power but does not apply to relevant markets defined for purposes of assessing the same firm's ability to increase its market power through exclusionary conduct.

Third, what understanding of monopoly power will the relevant markets be used to evaluate? One might suppose that this had long ago been settled but consider the current state of the law. The most common definition of monopoly power, today, is "something greater than [normal] market power."²³⁷ But it is also said that monopoly power is "the power to control prices or exclude competition."²³⁸ Recent outcries against the threat of technological monopolies echo something of past interpretations of monopoly power as defined by insufficient availability of alternatives²³⁹ or as companies having attained sizes "great enough to cause just anxiety on the part of those who love their country more than money."²⁴⁰

Each of these understandings of monopoly power focuses on something different, and a test of market definition appropriate to one understanding of monopoly power may be ill-suited to another. For the significant market power interpretation, a version of the HMT could suffice. That test would not be much help, however, if monopoly power was defined as having a dominant share of a recognizable industry or as the mere ability to exclude competitors.²⁴¹ For these, the practical indicia test would seem to offer the better approach. And if monopoly power was defined by the absolute size or asset value a company alone, then market definition would be entirely unnecessary. Establishing the possession of monopoly power would be an accounting exercise.

²³⁶ See Sullivan, *supra* note 230, at 6-9 (elaborating on this point in the additional context of attempted monopolization claims).

²³⁷ Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 481 (1992).

²³⁸ United States v. E. I. du Pont de Nemours & Co. (*Cellophane*), 351 U.S. 377, 391 (1956).

²³⁹ United States v. Aluminum Co. of Am., 148 F.2d 416, 427 (2d Cir. 1945) (describing the illegality of monopolization as reflecting a preference for "a system of small producers . . . [over] one in which the great mass of those engaged must accept the direction of a few").

²⁴⁰ N. Sec. Co. v. United States, 193 U.S. 197, 407 (1904) (Holmes, J., dissenting).

²⁴¹ Here, mere injury to competitors contrasts with an expectation that injury to competitors would translate into harm to consumers. See generally Krattenmaker & Salop, *supra* note 230 (discussing in detail the different possible standards of exclusion).

These questions only begin to address the appropriate use of market definition in monopolization cases. If this seems complicated, it is because the substantive law is complicated. Modular market definition selects the test of market definition by looking to the analytical needs of the substantive law. And monopolization currently encompasses a sprawling and under-theorized collection of different concerns.²⁴² If market definition is to be reliably helpful in evaluating these concerns, then it must start from first principles in every case — asking what the underlying concern is and what needs to be addressed to evaluate that concern.

G. Structuralist Concerns

We have yet to address the type of structuralism that was prominent in 1960s antitrust, and for good reason. It has been a long time since antitrust last fought for the retention of unconcentrated industries and the protection of small businesses.²⁴³ But while these concerns have not moved courts in several decades, the history of antitrust law is one of shifting norms and policy goals,²⁴⁴ and recent events may signal the return of structuralism, perhaps even protectionism, to the antitrust stage.

Bearing the short title “Consolidation Prevention and Competition Promotion Act of 2019,”²⁴⁵ a bill introduced by Senator Klobuchar in 2019 recited that “unprecedented consolidation is reducing competition and threatens to place the American dream further out of reach for many consumers in the United States.”²⁴⁶ As discussed previously, another bill recently introduced by the Senator would erect presumptions of illegality for mergers and exclusionary conduct undertaken by firms with more than a fifty percent share of any relevant market.²⁴⁷ Meanwhile, a recent House subcommittee report urges

²⁴² Cf. Thomas E. Kauper, *Section Two of the Sherman Act: The Search for Standards*, 93 GEO. L.J. 1623 (2005) (describing, with exasperation, more than a century of uncertainty about the standard of illegality in monopolization cases).

²⁴³ See *supra* note 72 and accompanying text.

²⁴⁴ See William E. Kovacic, *The Modern Evolution of U.S. Competition Policy Enforcement Norms*, 71 ANTITRUST L.J. 377, 400 (2003) (commenting on the inevitability of evolution and change in competition policy and enforcement norms); Robert Pitofsky, *The Political Content of Antitrust*, 127 U. PA. L. REV. 1051, 1052 (noting attention to “political” concerns throughout most of antitrust history). See generally Kovacic & Shapiro, *supra* note 26 (discussing the historic evolution of antitrust norms).

²⁴⁵ S. 307, 116th Cong. § 1 (2019).

²⁴⁶ *Id.* § 2.

²⁴⁷ S. 225, 117th Cong. §§ 4, 26A (2021).

greater congressional attention to “increased market concentration in our economy”²⁴⁸ and references with apparent approval a recommendation that Congress should “investigate factors which tend to . . . injure small business . . . or promote undue concentration of economic power”²⁴⁹ Calls to break up and restructure large businesses now come from commentators in positions of authority in the administration and federal agencies.²⁵⁰

The result of these initiatives remains to be seen. If the outcome is indeed the return to antitrust of a strong form of structuralism concerned with concentration itself,²⁵¹ or a type of the protectionism that seeks to defend small businesses against larger rivals even if doing so means lower economic efficiency,²⁵² then this will have follow-on effects in market definition.

Simply put, tests like the HMT are inappropriate for pursuing concerns about industry-level concentration or the protection of small businesses. Scopes of trade designed to focus on possible exercises of joint market power do not exhibit systematic relationships with either of these concerns. Instead, the return of this type of structuralism to antitrust would necessitate a corresponding return to relevant markets defined by something like *Brown Shoe’s* practical indicia test.²⁵³ This is not to claim that the practical indicia test of the 1960s perfectly fits these concerns. The point is simply that markets scoped by popular perception are the appropriate setting for addressing concerns about concentration as popularly perceived and for pursuing related protectionist objectives.

²⁴⁸ STAFF OF H. SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF THE COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 7 (Comm. Print 2020) [hereinafter DIGITAL MARKETS REPORT].

²⁴⁹ *Id.* at 7-8.

²⁵⁰ E.g., TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE 132-33 (2018) (suggesting the use of structural breakups as a means of increasing competition in certain areas of trade); Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1090 (2019) (proposing to restrict platform hosts from vertically integrating into the sale of products, so that separate entities would need to engage in each activity); Elizabeth Warren, *Here’s How We Can Break Up Big Tech*, MEDIUM: TEAM WARREN (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c> [<https://perma.cc/9HY4-UGBB>] (similar to Wu).

²⁵¹ See Herbert Hovenkamp, *The Looming Crisis in Antitrust Economics*, 101 B.U. L. REV. 489, 538 (2021) (critiquing at least one bill as “focused far too much on increased concentration or absolute size for their own sake”).

²⁵² See *supra* notes 46–49 and accompanying text.

²⁵³ See *supra* notes 67–71 and accompanying text.

CONCLUSION

It bears emphasis that nothing in this Article is a proposal for changing antitrust law. No legislation is required to implement any part of this approach. Indeed, nothing stops any court from adopting the modular approach to market definition today. True, modular market definition differs from current practice, and its adoption would mark a departure from recent precedent. But the only innovation of this Article is to give due weight to the differences between different tests of market definition — to honestly acknowledge that different tests were intentionally developed to address different concerns. Everything else flows from that. To the extent that this Article proposes a departure from recent precedent, it is only because recent precedent has itself departed from faithful interpretation and application of earlier cases and authority.

The details of the modular approach to market definition have been illustrated in enough detail above to obviate yet another summary here. Instead, I prefer to close with four broad suggestions for antitrust practice that follow from this modular approach to market definition. These suggestions are closer to proposals for changing antitrust law.

First, because proper market definition is an inherently flexible exercise, courts should take care not to inject Hobson's choices into its practice in the form of rules that restrict markets to fit one specific mold or none at all.

One example to avoid is the claim of *Newcal Industries v. Ikon Office Solution* that markets “must encompass the product at issue as well as all economic substitutes for the product.”²⁵⁴ Judges in the Ninth Circuit have spent over a decade declaring defective, under this rule, any market that arguably omits potential substitutes.²⁵⁵ Whether the inclusion of these omitted substitutes would actually change anything about the evaluation of dispositive issues in the case appears to be an academic question under this rule.

²⁵⁴ *Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008).

²⁵⁵ See, e.g., *Payment Logistics Ltd. v. Lighthouse Network, LLC*, No. 8-CV-00786-L, 2018 WL 5311907, at *3 (S.D. Cal. Oct. 24, 2018) (dismissing a complaint on the basis that alleged cost and complexity differences were legally insufficient to justify plaintiff's exclusion of another product from the alleged relevant market); *AFMS LLC v. United Parcel Serv. Co.*, 105 F. Supp. 3d 1061, 1077-80 (C.D. Cal. 2015), *aff'd sub nom.* *AFMS LLC v. United Parcel Serv., Inc.*, 696 F. App'x 293 (9th Cir. 2017) (finding plaintiff's market definition insufficient as a matter of law because, among other things, it did not describe a “commercially cognizable market” and it excluded substitute services on the improper basis of quality differences).

Another example is the Hobson's choice that antitrust plaintiffs often face in merger litigation. When seeking to enjoin mergers, the government now defines markets by the HMT even when the complaint turns on nothing but unilateral effects predictions,²⁵⁶ and even when those HMT markets have nothing to do with its substantive basis for seeking an injunction.²⁵⁷ The government does this for the simple reason that many judges expect markets to be defined this way.²⁵⁸ Here, no less than in the Ninth Circuit, we see a single process of market definition being forced upon every application.

The errors in the *Newcal* rule and current merger enforcement are plain to see when looked at from the perspective of modular market definition.²⁵⁹ Helpful relevant markets are defined by matching the process of market definition with the purposes that relevant markets are meant to serve. Rules rigidly dictating process without regard to purpose are guaranteed to get things wrong.

Second, because different relevant markets relate to their associated concerns in different ways, care should be taken not to assume that the correspondence between features of one market and its concern apply to other markets and other concerns.

A concrete illustration of this point is provided by the tortured history of market concentration inferences in antitrust law.²⁶⁰ From about the 1950s to the 1960s, industrial organization economists reported what seemed to be strong relationships between industrial concentration and various measures of market power. This research was soon attacked as suffering from measurement problems (market power is hard to measure) and causality issues (concentration can actually result from

²⁵⁶ See, e.g., Shapiro, *supra* note 177, at 15 (reassuring listeners that DOJ "recognizes the necessity of defining a relevant market as part of any merger challenge we bring").

²⁵⁷ Compare 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 6.1, paras. 6-7 (disclaiming the need to define markets in unilateral effects analysis), with *Hedgehog to Fox*, *supra* note 109, at 56 (disclaiming the ability to skip market definition "when going to court").

²⁵⁸ See *supra* notes 129-130 and accompanying text.

²⁵⁹ The *Newcal* error is especially pronounced as it appears to intend that the expansive relevant markets sought by old commodity concepts tests be used in every context. Amazingly, the lonely authority that *Newcal* produces for its rule is the very page of *Brown Shoe* — the full page is cited — in which the Court first excused markets from matching the wide breadth of the early commodity concept tests. *Newcal Indus., Inc. v. Ikon Off. Sol.*, 513 F.3d 1038, 1045 (9th Cir. 2008) (citing *Brown Shoe v. United States*, 370 U.S. 294, 325 (1962)).

²⁶⁰ See generally Richard Schmalensee, *Inter-industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951 (R. Schmalensee & R. D. Willig eds., 1989) (providing a critical review of this literature).

market power).²⁶¹ Decades later, only echoes of the initial claims remain. Few today would deny that there is a positive but hard-to-generalize relationship between concentration and price in many industries,²⁶² but the typical soundbite is that economists have not established more than a “weak” empirical relationship between concentration and market power.²⁶³

Looked at from the perspective of modular market definition, this whole project is a curiosity. Modular market definition acknowledges that there are different ways of defining markets.²⁶⁴ It also acknowledges that there are different types of market power.²⁶⁵ The unstated assumption in the research and antitrust conversation seems to be that market concentration and market power must admit some one-size-fits-all relationship. But if different tests of market definition connect different versions of market concentration to different types of market power, then what exactly are we averaging?²⁶⁶ Seen from this perspective, weakness in the observed relationship between concentration and market power could owe as much to muddled market thinking as it does to any actual absence of economic relationships in the data.

Third, safe harbors based on market structure thresholds should be limited to specific concerns or not used at all.

Ever since 1982, the merger guidelines have set aside certain mergers as unlikely to require serious analysis. These unproblematic mergers are identified by their small size or effect on concentration in a market

²⁶¹ See Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSPS. 44, 46-47 (2019) (summarizing similar concerns); see also Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in HANDBOOK OF ANTITRUST ECONOMICS 1, 24-25 (Paolo Buccirossi ed., 2008) (same).

²⁶² See Schmalensee, *supra* note 260, at 988 (summarizing the literature as supporting the stylized fact: “In cross-section comparisons involving markets in the same industry, seller concentration is positively related to the level of price”).

²⁶³ See, e.g., Carlton, *supra* note 114, at 4 (“Unfortunately, there is only a weak link between change in market share and change in competitive performance . . .”).

²⁶⁴ See *supra* Part I.

²⁶⁵ See *supra* Part II.

²⁶⁶ Cf. Berry, Gaynor & Morton, *supra* note 261, at 45, 47-48 (noting that there is no single causal relationship between concentration and price, but actually a series of different relationships, a subset of which may be applicable in any given context).

defined by the HMT.²⁶⁷ Mergers not meeting minimum concentration thresholds are rarely investigated at all — the thresholds are thus safe harbors or quasi-safe harbors depending on who you ask.²⁶⁸

Looked at from the perspective of modular market definition, it is astonishing that this practice has remained undisturbed for so long. Back when the minimum concentration threshold was first put in place, merger review was essentially concerned with only coordinated effects analysis.²⁶⁹ At that time, a merger unlikely to lead to significant concentration in any HMT market probably did not raise competitive concerns.²⁷⁰ Today, however, unilateral effects concerns are by far the bigger emphasis in government enforcement efforts. And a merger may create unilateral market power without creating any risk of coordinated behavior.²⁷¹ So, why is concentration in a market designed only to assess coordinated conduct still being used as a plenary screen for enforcement?²⁷²

None of the obvious justifications are satisfying. This practice could be defended as economizing on government budgets and as increasing the predictability of merger enforcement.²⁷³ But the same could be said of any underinclusive test. Should we turn all patients away at the hospital doors if they do not present with high blood pressure?²⁷⁴ This practice could also be defended on the theory that narrowly drawn HMT markets may approximate unilateral effects predictions in many cases.

²⁶⁷ See 1982 MERGER GUIDELINES, *supra* note 76, § III.A.1.a; 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 94, §§ 1.0, 1.51; 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 16, § 5.3, para. 6.

²⁶⁸ Cf. FED. TRADE COMM'N & U.S. DEP'T OF JUST., HART-SCOTT-RODINO ANNUAL REPORT 5-6 (2019), https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau-competition-department-justice-antitrust-division-hart-scott-rodino/p110014hrsannualreportfy2019_0.pdf [<https://perma.cc/KC3A-SJQB>] (reporting that only about two to three percent of merger notifications were subject to requests for additional information and documentary material in recent years).

²⁶⁹ See *supra* notes 79–81 and accompanying text.

²⁷⁰ See 1982 MERGER GUIDELINES, *supra* note 76, § III.A.1.a (commenting that “implicit coordination among firms is likely to be difficult [in unconcentrated markets]”).

²⁷¹ See *supra* notes 111–117 and accompanying text.

²⁷² Cf. *Hedgehog to Fox*, *supra* note 109, at 69 (commenting that despite the increased emphasis on unilateral effects concerns, the “DOJ continues to apply the HHI thresholds to all horizontal mergers”).

²⁷³ See John Kwoka, *The Structural Presumption and the Safe Harbor in Merger Review: False Positives or Unwarranted Concerns?*, 81 ANTITRUST L.J. 837, 844-45 (2017) (summarizing the history and policy goals of safe harbor provisions in merger analysis).

²⁷⁴ See Salop, *supra* note 150, at 191-98 (critiquing the idea that market definition acts as a preliminary “filter” for ruling out competitive effects).

But why torture HMT markets to serve this role when more appropriate tests are already available for unilateral effects concerns?²⁷⁵

In the end, there is no salvaging a rule that ignores one antitrust concern on the basis of evidence against another, different concern. Screens based on market concentration in HMT markets are a principled way of disposing coordination concerns relating to those relevant markets. But screens based on market concentration in one HMT market are not a principled way of disposing concerns relating to any other relevant market. At a time when many are looking for opportunities to strengthen merger enforcement,²⁷⁶ the termination of this strange and unprincipled practice should be a high priority.

Fourth, market definition should be expected and allowed to continue to evolve with changes in the substantive law.

Market definition could not have survived for so many decades, and endured so many changes in antitrust policy, if it did not have the ability to change and grow with the underlying law.²⁷⁷ That flexibility is especially important today. Giants of the tech world now face scrutiny and challenge on novel grounds.²⁷⁸ Matters of long-term innovation and privacy competition increasingly sound in antitrust.²⁷⁹ Opposing philosophies are entering into a battle over control of the next few decades of antitrust policy.²⁸⁰ The gathering clouds portend little certainty in this area of law and the need for flexibility in all tools of analysis.

²⁷⁵ See *supra* notes 118–130 and accompanying text.

²⁷⁶ E.g., BAKER, *supra* note 229, at 15, 77–80; Carl Shapiro, *Antitrust: What Went Wrong and How to Fix It*, 35 ANTITRUST 33, 33 (2021).

²⁷⁷ See *supra* Part I.

²⁷⁸ See, e.g., Complaint for Injunctive and Other Equitable Relief, Fed. Trade Comm'n v. Facebook, Inc., No. 20-CV-03590 (D.D.C. Jan. 13, 2021) (claiming that Facebook has maintained a monopoly position through acquisitions and exclusionary conduct); Complaint, United States v. Google, LLC, No. 20-CV-03010 (D.D.C. Oct. 20, 2020) (alleging that Google has used exclusionary conduct to maintain monopolies in several search-related markets). See generally DIGITAL MARKETS REPORT, *supra* note 248 (outlining cases against Amazon and Apple as well).

²⁷⁹ See, e.g., Erika M. Douglas, *The New Antitrust/Data Privacy Law Interface*, 130 YALE L.J. F. 647 (2021) (exploring connections between antitrust and privacy); Giulio Federico, Fiona Scott Morton & Carl Shapiro, *Antitrust and Innovation: Welcoming and Protecting Disruption*, in 20 INNOVATION POLICY AND THE ECONOMY (Josh Lerner & Scott Stern eds., 2020) (exploring ways in which mergers may suppress innovation).

²⁸⁰ See generally A. Douglas Melamed, *Antitrust Law and Its Critics*, 83 ANTITRUST L.J. 269 (2020) (summarizing and synthesizing current debates over antitrust policy); see also Daniel A. Crane, *The New Crisis in Antitrust(?)*, 83 ANTITRUST L.J. 253 (2020) (similar).

Modular market definition responds to that need. What are the boundaries of the general search market? What products should be included in the scope of personal social networking services? Matters of market definition can easily touch more lives than thousands of other legal disputes combined. These questions and their answers are too important to be left to the chance outcomes and momentary caprice of current market definition practices. Here and elsewhere, a modular approach to market definition presents a predictable and reliable path to identifying helpful relevant markets.