

MODULAR MARKET DEFINITION

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Abstract. Recent interest in curbing the apparent market dominance of companies like Amazon, Facebook, Apple, and Microsoft is exposing the public to a difficulty long known to the antitrust community: the challenge of deciding in what markets a company operates. If the same company that dominates a narrowly defined market would fade into the crowd in a more broadly defined market, then is antitrust intervention really warranted? Antitrust law has a long history with this question, but it is a history punctuated as much by setback as by success. Even today, antitrust litigation stumbles at market definition with shocking regularity.

This Article introduces modular market definition—a tool for more systematically and reliably defining markets in antitrust cases. Decoupling the purpose of market definition from the process of the exercise, modular market definition turns conflicting tests of market definition into a series of complementary modules, each appropriate for scoping markets in a particular context. This streamlines market definition by providing a principled guide to defining markets, even in complex situations. It also reveals defects in how antitrust tries to use market definition today.

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Introduction

For seventy-five years now, judges, advocates, and antitrust experts have yearned for, and labored to build, a systematic and reliable tool for defining markets in antitrust cases. It would take a person months to read all of the articles, chapters, and opinions that have been written on this topic. Yet, stepping back and looking at antitrust practice today, it is hard to see where progress has been made. Like bugs preserved in amber, many of market definition's most frustrating problems persist unaged, today, from their early appearance in *United States v. Aluminum Company of America*, a case decided in the spring of 1945.

Back then, Alcoa was like the Apple or Amazon of today. Founded by a backyard inventor who discovered a cheap way of smelting aluminum, the company had grown into a corporate empire. From its humble beginnings smelting aluminum ingot, Alcoa had clawed its way upstream into mining operations and marched its way downstream into the fabrication of finished products like cookware, cables, and machine parts. Its domain blanketed the nation.² In the eyes of the public, Alcoa was a monopoly, the likes of which the antitrust laws were meant to condemn.³ The Justice Department's case against Alcoa sought to do just that.

When an uncommon series of events forced the Supreme Court to punt the case to a panel of the Second Circuit,⁴ Learned Hand wrote for the court of last resort. His opinion disclosed an uncomfortable truth. The charge that Alcoa had illegally monopolized the aluminum ingot market could not be

² 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*).

³ Learned Hand observed as much in a preconference memo: "If we hold that [*Alcoa*] is not a monopoly, deliberately planned and maintained, every-one who does not get entangled in the legal niceties, and in the incredible nonsense that has emanated from the Supreme Court, will, quite rightly I think, write us down as asses." Memorandum from Judge Learned Hand to Judges Augustus N. Hand & Thomas W. Swan 13–14, *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416 (2d Cir. 1945) (on file in Learned Hand Papers, Harvard Law School Library, Box 207, Folder 17), as reprinted in Marc Winerman & William E. Kovacic, *Learned Hand, Alcoa, and the Reluctant Application of the Sherman Act*, 79 ANTITRUST L.J. 295, 295–96 (2013).

⁴ The government lost at the district court. *United States v. Aluminum Co. of Am.*, 44 F. Supp. 97 (S.D.N.Y. 1941), *aff'd in part and rev'd in part*, 148 F.2d 416 (2d Cir. 1945). It appealed directly to the Supreme Court under the Expediting Act, Ch. 544, 32 Stat. 823 (1903) (current version at 15 U.S.C. § 29), but the proceeding was postponed indefinitely when multiple recusals resulted in the absence of a quorum. *United States v. Aluminum Co. of Am.*, 320 U.S. 708 (1943). Congress eventually intervened whereupon the case was transferred to the Second Circuit for final review. *United States v. Aluminum Co. of Am.*, 322 U.S. 716 (1944).

decided until the court first answered a leadenly dull yet remarkably difficult fact question: What did the aluminum ingot market encompass?

Recall that Alcoa produced everything from virgin ingot to pots, pans, and machine parts. This meant that its market could potentially have included anything from minerals in the ground to the aluminum products already sitting in kitchens and garages around the country. That indeterminacy mattered, because different ways of slicing the aluminum ingot market would lead to sharply different legal conclusions. Including everything and the kitchen sink in the market placed Alcoa's market share at around 60%: big, but not obviously monopoly.⁵ If the market was instead limited to virgin ingot and the secondary aluminum produced from recycled scrap, then Alcoa's market share shrank to a mere 30%.⁶ But if the market was defined as virgin ingot and its fabrication into new products, then Alcoa's market share rocketed up to a comfortably monopolistic 90%.⁷

To decide the case on a legally sound and persuasive basis, Hand needed a systematic and reliable tool for choosing between these different plausible ways of describing the aluminum ingot market. Unfortunately, no prior opinion had really grappled with this problem, at least not to the point of producing helpful precedent on market definition.⁸ And because no tool of market definition existed, Hand's opinion was destined to disappoint. Alcoa lost the case—Hand chose the 90% option—but the way the outcome hung upon so unprincipled and unpredictable a line-drawing exercise has remained an unnerving anecdote ever since.⁹

The world has changed since 1945 but, in many ways, it is still the same. Instead of massive metallurgy companies, popular concern about monopoly now stacks against technology giants like Google, Amazon, Microsoft, and Apple. The products are different, but if Learned Hand were called upon to decide whether Amazon had illegally monopolized the online retail market, would the fundamental indeterminacy of that question be any different today than it was in 1945? Or, take a more focused target: if Tesla were accused of monopolization, in what market would it be found to operate? Is Tesla the world's most dominant producer of long-range, high-tech, all-

⁵ *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416, 424 (2d Cir. 1945).

⁶ *Id.*

⁷ *Id.*

⁸ See *infra* notes 35–43 (describing market definition before *Alcoa*).

⁹ *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 2, at 130–33. But his conclusions were not necessarily wrong. See *id.* (providing other justifications for Hand's choice of market); see generally Peter J. Swan, *The Influence of Recycling on Monopoly Power*, 88 J. POL. ECON. 76 (1980) (defending important aspects of Hand's market analysis).

electric consumer automobiles, or is it one of the smallest players in the global vehicle market? These are bugs in amber.

Another way that we have developed much but changed little is in the creation of legal tests for market definition. We are now overflowing with these tests. We have tests that define markets based on interchangeability of use and cross elasticity of demand.¹⁰ We have tests based on things like public perception and trade usage.¹¹ We have tests based on predictions of how a hypothetical monopolists would behave.¹² We have tests based on econometric and statistical analyses.¹³ We have tests based on observable anticompetitive effects.¹⁴ Just about the only thing we do not have is any way of balancing and reconciling this confused heap of varied and often conflicting approaches to market definition.

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

The recent opinion in *United States v. Sabre Corporation*, for example, reads like a chapter out of *Alice in Wonderland*. The poor judge starts by

¹⁰ *Times-Picayune Publ'g Co. v. United States*, 345 U.S. 594, 612 n.31 (1953); *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 395 (1956).

¹¹ *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”).

¹² *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); *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); U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *HORIZONTAL MERGER GUIDELINES* § 4.1 (August 19, 2010) [hereinafter 2010 HORIZONTAL MERGER GUIDELINES], <http://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf> (describing the Hypothetical Monopolist Tests for defining relevant markets).

¹³ *E.g.*, Barry C. Harris & Joseph J. Simons, *Focusing Market Definition: How Much Substitution Is Necessary*, 12 RES. L. & ECON. 207, 211–19 (1989); Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON., Mar. 2010, art. 9, at 1, 4.

¹⁴ *E.g.*, *FTC v. Staples, Inc.*, 970 F. Supp. 1066, 1075–76 (D.D.C. 1997).

observing that the two sides of a merger are, in fact, active competitors.¹⁵ If two firms compete, it seems safe to assume that they must compete in some common market. But then the judge recalls a recent Supreme Court case in which the Court described two-sided platforms as competing only with other two-sided platforms.¹⁶ One of the parties in *Sabre* had been called a two-sided platform in a separate matter, while the other seemed to be one-sided.¹⁷ Therefore, concluded the judge, the two parties could not “as a matter of antitrust law” be placed in a common market.¹⁸ If they were not in a common market, then they could not be competitors. And if they were not competitors, then what harm could the merger do? Not to dismiss this nicely syllogistic logic, but haven’t we lost sight of the facts?

In another recent opinion, *FTC v. Rag-Stiftung*, an overeager judge so finely pulverized his markets that, when it came time to look at evidence, nothing left was big enough to see. The FTC, in this case, had complained that a merger of two hydrogen peroxide producers risked enabling tacit collusion among producers of commodity hydrogen peroxide.¹⁹ This is a simple theory, and it begs a simple market. Could producers of commodity hydrogen peroxide collude to raise prices? If so, then that is a relevant market.²⁰ The judge thought market definition had to be more complicated. First, he sliced the market into different categories of commodity hydrogen peroxide.²¹ Then, he diced the slices into subcategories based on how this commodity chemical was being used.²² And when at last he turned to look at the evidence, and found none to be available at this fine a granularity, he declared the FTC had produced inadequate evidence to meet its burden and allowed the merger to proceed.²³ By this logic, there are no beaches in this world, only millions upon millions of individual grains of sand.

The point is not to pick on these judges. For one thing, their errors are not remarkable. These are merely the two most recent examples in a long line of outcome-dispositive market definition missteps. For another thing, the judges in these cases are sympathetic figures. No judge wants to get

¹⁵ *United States v. Sabre Corp.*, 452 F. Supp. 3d 97, 117–18, 137 (D. Del. 2020), *vacated as moot*, No. 20-1767, 2020 WL 4915824 (3d Cir. July 20, 2020).

¹⁶ *Id.* at 136–37.

¹⁷ *Id.* at 137–38.

¹⁸ *Id.* at 136.

¹⁹ Administrative Part 3 Complaint at 2–3, *Evonik/PeroxyChem*, No. 191 0029 (2020), https://www.ftc.gov/system/files/documents/cases/d09384_evonik-peroxychem_part_iii_complaint_8-2-19.pdf.

²⁰ See *infra* Part III.A.1 (discussing the test of market definition in this context).

²¹ *FTC v. RAG-Stiftung*, 436 F. Supp. 3d 278, 299 (D.D.C. 2020).

²² *Id.* at 303.

²³ *Id.* at 310–11.

market definition wrong. The problem is that judges lack a systematic and reliable tool for getting market definition right. Here, at least, the problem really is the tool—and the way we try to use it.

For the past seventy or so years, judges and antitrust litigants have treated market definition like a hammer. Hammers are, of course, simple instruments. Sure, they come in different shapes, sizes, and colors. But, for basic carpentry work, any hammer will do. The same hammer fits every nail. When market definition is treated like a hammer, it is assumed to share the hammer's properties. Just as the same hammer can be carried from one job to the next, a given test of market definition is assumed to be appropriate in every context.²⁴ And just as every hammer leads to the same result when used to pound a nail, every test of market definition is assumed to aim for the same scope of market.²⁵ This is an appealing view of the world, but we have seen what market definition looks like in the hammer regime.

Suppose, instead, that market definition was treated like a power drill. Unlike hammers, drills consist of separate parts. One part is the base, which converts electricity 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 ever used for making holes, the carpenter still must stop to select the appropriate drill bit for each job. When treated like a power drill, market definition shares these properties. Just as the right drill bit cannot be chosen without knowing the desired hole, the right test of market definition cannot be chosen without knowing the purposes that the resulting market is 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. The thesis of this Article is that market definition can likewise be enhanced by exploiting its intrinsically modular design. This modularity becomes clear when we separate the *purpose* of defining markets, the role that a market plays in a particular application of substantive antitrust law, from the *process* of defining markets, the test we used to select the scope of a market in a given application. Once these are severed, it becomes natural and intuitive to ask: Which of the available tests of market definition best serves the purposes of defining a market in this application? Like how the desired hole guides the selection of a drill bit, this modular approach to market definition lets the substantive legal purposes of market definition

²⁴ See *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956) (“The ‘market’ which one must study . . . will vary with the part of commerce under consideration. The tests are constant.”).

²⁵ See *infra* notes 32–33 (citing examples of the modern *everything soup* statement of the standard for market definition).

guide the selection of the appropriate test. In short, modular market definition is what current antitrust doctrine lacks: a predictable and reliable tool for defining markets in antitrust cases.

Hints of modularly appear throughout the history of market definition. In Part I of this Article, we climb the hill from market definition's prehistory before *Alcoa* to the present day. The passing scenes reveal how changes in antitrust policy and enforcement have motivated the use of different tests of market definition over time. Far from the slow evolution of a one-size-fits-all hammer, the history of market definition is actually the rapid invention of many differently specialized tests for defining markets.

Yet, standing at the peak of market definition doctrine and looking back over its history, we can also see the fabric of a common design. In Part II of this Article, we identify the consistent purposes that market definition has served across different contexts and antitrust regimes. First, it has sought to identify a scope of trade in which a given harm could occur.²⁶ Second, it has served to connect the structure of competition in that scope of trade to the risk of the relevant harm.²⁷ Third, it has acted to contextualize further analysis of the relevant harm.²⁸ Like the reason for choosing one drill bit over another, these purposes explain why we should prefer one test of market definition over another in a given context.

Combining the fixed purposes of market definition with the ability to choose between alternative processes yields a modular tool of market definition. In Part III of this Article, we see how this tool works and what it means for substantive antitrust law. In terms of how it works, modular market definition can be used like a cookbook for selecting the appropriate test in a given context.²⁹ Is the concern that a merger of competitors will facilitate coordinated pricing? There is an appropriate process for defining that market. Is the concern that a merger will lead to the unilateral exercise of market power in a differentiated product space? A different process is appropriate for defining that market. In terms of what it means, modular market definition reveals the hidden danger in trying to repurpose market concepts from one context to the next.³⁰ An example and illustration of this problem is the use, by government enforcement agencies, of one particular type of market definition process as a screen for identifying suspect mergers.³¹ How many anticompetitive mergers are being missed by the

²⁶ See *infra* Part II.A.

²⁷ See *infra* Part II.B.

²⁸ See *infra* Part II.C.

²⁹ See *infra* Part III.A.

³⁰ See *infra* Part III.B.

³¹ See *infra* notes 242–247.

agencies, simply because the harm they pose does not occur within the particular scope of market used in this screening process? Modular market definition reveals both the problem and the way forward.

I. The Many Processes of Market Definition

On what basis do we define markets in antitrust cases? A glance at the market definition section of any recent opinion will reveal several pages of potential tests.³² But what it will not reveal is even the slightest effort to reconcile or balance the apparently simultaneous application of these varied and often conflicting approaches.³³ The result is that statements of the standard for defining markets often read more like a whirlwind tour of the history of antitrust thought than they do a useful guide to predicting the outcome of market definition in a particular case.

But, even setting aside the implementation problems raised by multiple simultaneous tests, on what basis have we come to believe that all these tests are simultaneously helpful for identifying relevant markets in the first place? Antitrust law and policy evolved dramatically over its history to date.³⁴ Isn't the safer bet that different tests of market definition have been devised to fit different substantive concerns?

A. Tests based on commodity concepts

Let's start as far back as possible. Even before we had antitrust statutes there were hints of modern competition policy. Under the common law, unreasonable restraints of trade could be held void and unenforceable as against public policy.³⁵ Judges deciding restraint of trade cases engaged in a

³² E.g., *FTC 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 (9th Cir. 2020); *FTC v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 45–47 (D.D.C. 2018); *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 193–95 (D.D.C. 2017); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 25–38 (D.D.C. 2015).

³³ E.g., *Wilhelmsen*, 341 F. Supp. 3d at 47 (D.D.C. 2018) (citing both the *Brown Shoe* practical indicia and the HMT as parallel sources of evidence upon which market definition would be based); *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 20–21 (D.D.C. 2017) (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).

³⁴ See William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSP. 43 (2000) (chronicling the historic convergence of legal and economic analysis in antitrust); see also 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).

³⁵ See, e.g., *Mitchel v. Reynolds* (1711) 24 Eng. Rep. 347 (discussing the policy motivating this doctrine as it applied to covenants not to compete).

simple form of implicit market definition in which the scope of competitive effects was assumed to follow commodity lines.

In the late 1800s, for example, courts in many states were called upon to decide whether municipal market regulations were enforceable.³⁶ 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.³⁷ 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.³⁸ 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”³⁹ or the “trade of a baker.”⁴⁰

This uncritical equation of the relevant scope of trade with commodity concepts endured the passage of the Sherman Act. Thus, early antitrust opinions considered a company’s dominance over “the oil industry”⁴¹ or the plight of miners in “the coal industry.”⁴² Also like the common law cases, early antitrust opinions used the term “market” in the loose sense of a location in which the commodity in question was traded.⁴³

Fast forward to the state of antitrust law in the wake of *Alcoa* in 1945. The need for a systematic method for choosing between alternative views of market scope was now clear. But the Supreme Court was still slow to act. In 1948, it refereed a “sharp dispute” between the government and some merging steel producers concerning the scope of “the market for rolled steel

³⁶ See, e.g., *City of Bloomington v. Wahl*, 46 Ill. 489 (1868); *City of Chicago v. Rumpff*, 45 Ill. 90, 97–98 (1867); *Caldwell v. City of Alton*, 33 Ill. 416 (1864); *Gale v. Vill. of Kalamazoo*, 23 Mich. 344 (1871); *Dunham v. Trustees of Rochester*, 1826 WL 2016 (N.Y. Sup. Ct. 1826); *Town Council of Winnsboro v. Smart*, 45 S.C.L. 551 (S.C. App. L. 1858).

³⁷ *City of Bloomington*, 46 Ill. at 490–91.

³⁸ *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.”).

³⁹ *Palmer v. Stebbins*, 20 Mass. 188, 193 (1825); see also *Bergamini v. Bastian*, 35 La. Ann. 60, 66 (1883) (the “line of business” of selling coffee and pastries).

⁴⁰ *Mitchel v. Reynolds* (1711) 24 Eng. Rep. 347.

⁴¹ *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1, 75 (1911).

⁴² *Appalachian Coals v. United States*, 288 U.S. 344, 361 (1933).

⁴³ 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 City of Chi. v. United States*, 246 U.S. 231, 239–40 (1918) (discussing the availability of grain markets in different Midwest states).

products.”⁴⁴ Those hoping that the Court would take this opportunity to clarify the rules of market definition were disappointed when the Court meekly admitted to “the difficulty of laying down a rule as to what areas or products are competitive,” before offering a conclusory declaration of the relevant market’s boundary in this particular case.⁴⁵

Finally, in the mid-1950s, the Court took its first tentative steps toward a more systematic approach to market definition. In *Times-Picayune Publishing Company v. United States*, it 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.”⁴⁶ 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.”⁴⁷

These were important steps in the history of antitrust market definition, and the bold language of the *Times Picayune* and *Cellophane* tests survives today in nearly every statement of the standard for defining markets.⁴⁸ In substance, however, these tests 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 identifiable commodity products. All that the new tests did was reword 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 a question upon which people could disagree, and perhaps the answer depends on the person. But suppose for sake of argument that they are interchangeable; are they *sufficiently* interchangeable to be placed in a common market? How is a judge to answer this question except by intuition and reference to common product classifications?⁴⁹ This was, of course, the prevailing practice before these tests were introduced.

⁴⁴ *United States v. Columbia Steel Co.*, 334 U.S. 495, 508 (1948).

⁴⁵ *Id.* at 511.

⁴⁶ *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.

⁴⁷ *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 404 (1956).

⁴⁸ While I hesitate to put much weight on individual words, the *Cellophane* test does specifically refer to “commodities” in one of its articulations. *Id.* at 395 (“[N]o more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes make up t[he relevant market].”).

⁴⁹ 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

Another, more subtle, way that the tests reflect a focus on commodity products is in their inattention to prevailing prices. In the imaginary world of perfectly competitive trade in commodity products, no firm has the power to influence prices, so it is sensible to judge the closeness of two 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 steel if the price of aluminum rises high enough. So, if a company like Alcoa has the power to raise the price of aluminum at will, then the products reasonably interchangeable with aluminum become a matter of how high Alcoa chooses to set the price at a given moment in time.⁵⁰ Would we really want to define markets in a way that lets a company like Alcoa expand the market—escaping illegality—simply by raising its prices high enough to make other products comparatively attractive?

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 wrong with scoping markets by reference to commodity products within this narrow context, but neither is there anything to recommend it. No modern antitrust goal is advanced by defining markets according to these tests today. Fortunately, many other tests of market definition exist to fill the vacuum.

B. Tests based on popular perception

A spate of Eisenhower appointments reshaped the Supreme Court’s approach to antitrust within a few years of the *Times Picayune* and *Cellophane* decisions. From the late 1950s to the late 1960s, Warren Court antitrust emerged as a machine bent on wresting back the public’s control over industry and commerce. New tests of market definition were needed. To see why, we need only look at what specific policy objectives antitrust was about during this unique epoch in its history.

One of the themes of Warren Court antitrust opinions was concern with economic efficiency. A strong sense of “structuralism” persuaded the Court—and many economists of the time—that unconcentrated industries

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?”).

⁵⁰ 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).

performed better than concentrated industries,⁵¹ and thus that economic efficiency could be promoted by blocking increases in concentration wherever possible. In *United States v. Philadelphia National Bank*, for example, the Court balked at an attempted merger of the second and third largest banks in a local geographic market.⁵² Observing that “competition is likely to be greatest when there are many sellers, none of which has any significant market share,”⁵³ the Court reasoned that a merger giving a firm control of 30% of commercial banking in the area was “so inherently likely to lessen competition substantially that it” should be enjoined with little further inquiry.⁵⁴ This structural concern with concentration explains many of the Warren Court’s decisions. But even though economic efficiency was an important goal, it was not the Court’s primary concern at this time.

Another theme of Warren Court antitrust was the idea that small and local businesses needed protection against competition from larger and more efficient rivals. In *Brown Shoe Company v. United States*,⁵⁵ the Court placed these protectionist goals 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.”⁵⁶ 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.”⁵⁷

In sort, Warren Court antitrust was about protecting little guys and holding fast against the creep of industrial concentration.⁵⁸ This was a time

⁵¹ 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*, 50 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”).

⁵² *United States v. Phila. Nat. Bank*, 374 U.S. 321, 330 (1963).

⁵³ *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.* and nn. 38–39.

⁵⁴ *Id.* at 363.

⁵⁵ *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962).

⁵⁶ *Id.* at 333.

⁵⁷ *Id.* at 344.

⁵⁸ Cf. 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).

when even small increases in concentration raised antitrust concerns.⁵⁹ It was a time when efficiency advantages were a problem to be avoided.⁶⁰ It was a time when price cutting to win consumers away from a rival could be attacked as anticompetitive.⁶¹ It was, in sum, a time in need of its own distinct approach to market definition.

The first traces of a new approach appeared in 1957 in the Supreme Court's decision of the *du Pont-General Motors* case.⁶² Studiously avoiding any mention of the *Times Picayune* or *Cellophane* tests, the Court defined a narrow relevant 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."⁶³ Alone, this change in approach would not have been that monumental, but it signaled bigger changes to come.⁶⁴ When, a few years later, the Court decided *Brown Shoe*, the same opinion that elevated protectionism above efficiency also introduced the next major test of market definition.

The test that the Court announced in *Brown Shoe* defined markets⁶⁵ 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

⁵⁹ 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).

⁶⁰ See, e.g., Hovenkamp, *supra* note 51, at 895 ("The perceived injury in *Brown Shoe* was . . . [that] *Brown Shoe* would acquire a competitive advantage over its competitors.")

⁶¹ 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").

⁶² *United States v. E. I. du Pont de Nemours & Co. (du Pont-General Motors)*, 353 U.S. 586 (1957).

⁶³ *Id.* at 593–94 and n.12.

⁶⁴ 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").

⁶⁵ In truth, what the Court proposed in *Brown Shoe* was a test for defining "submarkets." The difference between submarkets and relevant markets was unclear from the start, and the two concepts quickly 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."); 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 50, ¶ 533 (critiquing efforts to distinguish submarkets from relevant markets).

characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.⁶⁶

The Court similarly scoped the geographic boundaries of a market by looking to the “commercial realities of the industry.”⁶⁷ Put another way, what *Brown Shoe* proposed was to define markets around such pragmatic landmarks as an industry’s own self classification or a lay person’s everyday understanding of a what constituted a market or an industry.

This approach struck a chord. *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.⁶⁸ The practical indicial test also diffused into other areas of antitrust law. In 1966, the Court cited it as a way to define markets in monopolization cases.⁶⁹ Lower courts extended the test to cover concerted action cases as well.⁷⁰ And when the DOJ released its first official 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.”⁷¹

Like *Times Picayune* and *Cellophane*, judges still cite *Brown Shoe*’s practical indicia test today as primary authority for defining markets.⁷² And just like these earlier tests, modern invocations of the practical indicia test are hard to love. Only a few of the practical indicia have any serious connection to antitrust’s modern focus on market power and constraints on

⁶⁶ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

⁶⁷ *Id.* at 336.

⁶⁸ Werden, *supra* note 64, 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)).

⁶⁹ *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).

⁷⁰ *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).

⁷¹ U.S. DEP’T OF JUSTICE, MERGER GUIDELINES § 3(i) (1968).

⁷² *E.g.*, *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 21 (D.D.C. 2017) (citing *Brown Shoe*’s practical indicia as one of “a number of analytical tools at [the court’s] disposal” for defining markets).

that power.⁷³ Sure, some creative judges and scholars have reinterpreted some of the practical indicia as proxies for market power considerations.⁷⁴ But this anachronism masks the point of the practical indicia test, which was never about market power.⁷⁵

Antitrust opinions, at the time the practical indicia test was penned, rarely even attempted to connect market power to market definition.⁷⁶ Across forty-four reporter pages, *Brown Shoe* includes one solitary reference to market power, buried in a footnote and without contextual evidence that the Court meant anything like what that term means today.⁷⁷ And why should the Court have spent any time on market power? From the late 1950s to late 1960s, 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.⁷⁸ And to protect the small businesses in a market, one must have a recognizable market in mind in which the relevant small

⁷³ 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 64, at 172–79 (criticizing the market power significance of several of the practical indicia).

⁷⁴ 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.”).

⁷⁵ Hovenkamp, *supra* note 51, 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.”).

⁷⁶ See Werden, *supra* note 64, at 186 (noting the rarity of connecting market definition to market power from the mid-1950s to the mid-1970s).

⁷⁷ *Brown Shoe Co. v. United States*, 370 U.S. 294, 322 n.38 (1962).

⁷⁸ See 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 50, ¶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 51, 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.”).

businesses can be identified and protected—again, calling for the type of evidence contained in the practical indicial factors.⁷⁹

Market definition under the practical indicia test was and is a process for identifying scopes of trade in which concerns about industrial concentration and harm to small businesses could be pursued.⁸⁰ It is a market definition process of and for this particular set of concerns.

C. Tests based on joint market power

Fast-forward to the 1980s and we find antitrust law reshaped yet again. Warren Court antitrust had 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.”⁸¹ But just as the Warren Court’s stand on antitrust law was fading, the Chicago School philosophy of scholars like Robert Bork, Frank Easterbrook, and Richard Posner was gaining steam. Activist Reagan-era political appointees were all the catalyst that was needed to erupt a bubbling transformation in the field.⁸²

Thus, in 1983, Lawrence Sullivan summarized the views of many experts in stating that “Antitrust is being cut to a new pattern.”⁸³ The changes were not just in competition policy, but also in how it would be enforced.

As far as policy was concerned, proponents of Chicago-School antitrust fiercely pursued a narrow objective: prevent certain exercises of market power and harm to consumer welfare as a way of preserving the economic efficiency of trade. Populist goals like the protection of small and local businesses were either alien to, or enemies of, this single-minded pursuit of

⁷⁹ 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 incipiency before that trend developed to the point that a market was left in the grip of a few big companies.”).

⁸⁰ 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).

⁸¹ Baker & Blumenthal, *supra* note 51, at 320 n.41 (referring to *Gulf Oil Corp. v. Copp Paving Co.*, 419 U.S. 186, 207 (1974) (Douglas, J., dissenting)).

⁸² 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”).

⁸³ Sullivan, *supra* note 80, 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”).

efficiency, and were briskly swept aside.⁸⁴ Thus, when the DOJ updated its merger guidelines in 1982,⁸⁵ the only principle that motivated its merger policy was the promotion of economic efficiency.⁸⁶ Within a few years, judges were extending this stand on antitrust policy to all of antitrust law in cases like *Morrison v. Murray Biscuit Company*: “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.”⁸⁷

As far as enforcement was concerned, proponents of Chicago-School antitrust focused on a few specific ways that market power might be acquired. The primary injury contemplated by the 1982 Merger Guidelines, for example, was that a merger would facilitate the exercise of market power through either explicit or tacit collusion.⁸⁸ The idea was that, by eliminating an independent competitor, a merger could lift a constraint that had previously prevented—or at least frustrated—the efforts of competitors to collude on joint price increases.⁸⁹ Richard Posner crisply summarized this view of merger law 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.”⁹⁰

⁸⁴ 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).

⁸⁵ U.S. DEP’T OF JUSTICE, MERGER GUIDELINES (June 14, 1982) [hereinafter 1982 MERGER GUIDELINES].

⁸⁶ See Baker & Blumenthal, *supra* note 51, 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.”).

⁸⁷ *Morrison v. Murray Biscuit Co.*, 797 F.2d 1430, 1437 (7th Cir. 1986); 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.”).

⁸⁸ See Baker & Blumenthal, *supra* note 51, 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.”); *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.”).

⁸⁹ Pitofsky, *supra* note 73, 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.”).

⁹⁰ *Hosp. Corp. of Am. v. F.T.C.*, 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.).

Courts needed to define markets and measure market concentration in order to decide whether a merger was likely to facilitate collusion, but not for the reasons that motivated the Warren Court. 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 theory suggested that concentrated markets were more susceptible to collusion than unconcentrated markets.⁹¹ In short, while courts still needed to define markets to decide merger cases, the reasons for doing so were now quite alien to the objectives that had motivated market definition only twenty years earlier.⁹²

A creature of that earlier time, *Brown Shoe's* practical indicia test was wholly inadequate to this new task. Influential economists like Janusz Ordover and Robert Willig criticized the practical indicia and earlier tests of market definition as “an inadequate substitute for, and a diversion from, sound direct assessment of a merger’s effects.”⁹³ Joseph Stigler called previous market definition analysis “an almost impudent exercise in economic gerrymandering.”⁹⁴ Baker and Blumenthal castigated Warren Court market definition as “ad hoc evidentiary selection, hand-waving, or result orientation.”⁹⁵ The common theme in all these critiques was the need for a new test of market definition.

The 1982 revisions to the Merger Guidelines supplied this new test.⁹⁶ The Hypothetical Monopolist Test (HMT) delineated relevant markets not by reference to commodity concepts or by evidence of public perception of

⁹¹ See *infra* notes 171–175 and accompanying text.

⁹² See *Hospital Corporation of America*, 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 51, 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.”).

⁹³ Janusz A. Ordover & Robert D. Willig, *The 1982 Department of Justice Merger Guidelines: An Economic Assessment*, 71 CALIF. L. REV. 535, 536 (1983).

⁹⁴ George J. Stigler, *The Economists and the Problem of Monopoly*, 72 AM. ECON. REV., May 1982, at 1, 8.

⁹⁵ Baker & Blumenthal, *supra* note 51, at 324.

⁹⁶ 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., LAWRENCE SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST 4 (1977) (defining markets by whether a price increase in a provisional market could be maintained for some time); 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); 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); Kenneth D. Boyer, *Is There a Principle for Defining Industries?*, 50 S. ECON. J. 761, 763 (1984) (defining markets as ideal collusive groups).

market boundaries, but by analytically identifying a scope of trade in which collusion among constituent competitors could lead to higher prices.⁹⁷ The approach of the HMT was to start by hypothesizing a small provisional market and then to ask whether the firms in that market would, if they were 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 the provisional market was validated as a relevant market; if “no,” other firms and products were 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 bring about a price increase.⁹⁸

The antitrust community of the 1980s loved the HMT. Ordovery 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.⁹⁹ Robert Pitofsky called it a “formidable achievement”¹⁰⁰ and credited its “orderly, intellectual approach” with making market definition “a more coherent exercise during the 1980s than in previous decades.”¹⁰¹ Though the test was announced by the DOJ, the FTC appears to have adopted the HMT internally,¹⁰² and formally joined the DOJ in endorsing it a few years later.¹⁰³ Lower courts similarly accepted the HMT as an appropriate test for defining markets in merger cases.¹⁰⁴

Enthusiasm for the HMT owed to its tight connection to the substantive policy it supported. Like Chicago-School antitrust generally, the HMT was

⁹⁷ The HMT has been revised over the years but has retained its core structure. Compare 1982 MERGER GUIDELINES, *supra* note 85, § II.A, with 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 4.1.

⁹⁸ See SULLIVAN, *supra* note 12 (proposing a similarly relaxed version of the test).

⁹⁹ Ordovery & Willig, *supra* note 93, at 539. See also *id.* at 537 (describing the HMT as “consistent with economic learning and helpful for logically resolving otherwise difficult [market delineation] issues”).

¹⁰⁰ Pitofsky, *supra* note 73, at 1822.

¹⁰¹ *Id.* at 1808.

¹⁰² 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.”).

¹⁰³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1.11 (April 2, 1992) [hereinafter 1992 HORIZONTAL MERGER GUIDELINES].

¹⁰⁴ 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).

about market power, its accretion, and its exercise.¹⁰⁵ Like Chicago-School merger control specifically, the HMT sought out groups of competitors that could potentially collude to raise prices after a merger.¹⁰⁶ This made markets defined by the HMT helpful tools of antitrust analysis. Only within such markets did it make any sense to explore whether a merger could facilitate anticompetitive coordination.¹⁰⁷ And within such a market, the HMT connected the number and size of competitors to economic theories about the probability of successful coordination.¹⁰⁸

Chicago-School antitrust extended beyond merger control, and even within merger control it at least recognized the possibility of other types of anticompetitive harm.¹⁰⁹ But the triumph of the HMT was in connecting market definition to the type of joint market power at issue in collusion-facilitation theories of merger control. Where the HMT was extended to other antitrust concerns, it required refinements to fit them.¹¹⁰

D. Tests based on individual market power

Jump ahead another twenty years and the HMT no longer commanded such tight connections to merger enforcement. As its connections faded, so did infatuation with the test.¹¹¹ In fact, the HMT honeymoon ended in such a crash that some commentators wondered whether not just the HMT but all of market definition would soon be kicked to the curb.¹¹²

¹⁰⁵ See Pitofsky, *supra* note 73, 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.”).

¹⁰⁶ See Areeda, *supra* note 82, 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.”).

¹⁰⁷ See Baxter, *supra* note 83, at 623 (“The idea behind [the HMT] is quite simple. The merger of two sellers of a product in an area can create a significant danger of collusive price increases only if the merger of all sellers of that product in that area would cause price to rise significantly.”).

¹⁰⁸ See *infra* notes 171–175 and accompanying text.

¹⁰⁹ 1982 MERGER GUIDELINES, *supra* note 85, § III.A.2 (devoting a total of one paragraph to a different theory of harm under the heading of the “leading firm proviso”).

¹¹⁰ See Glasner & Sullivan, *supra* note 49, at 312–24 (discussing the need to customize the HMT to meet other theories of anticompetitive harm).

¹¹¹ David S. Evans, *Lightening Up on Market Definition*, in RESEARCH HANDBOOK ON THE ECONOMICS OF ANTITRUST LAW 53, 72 (Einer Elhauge ed., 2012) (“While the hypothetical monopoly test was viewed as a significant methodological advance when it was introduced in 1982, the antitrust profession has become less enamored with it over time.”).

¹¹² 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.”).

A quick look around reveals what had happened. The simple models of competition behind Chicago-School antitrust were known from the start to be oversimplified in some important respects,¹¹³ and efforts to enrich them had begun immediately.¹¹⁴ From the early 1990s to the 2010s, this research took several derelict antitrust concerns—like predatory pricing and vertical restraints of trade—and revealed them to have greater anticompetitive potential than Chicago-School antitrust had supposed.¹¹⁵ This research also uncovered new and previously unexplored antitrust concerns.

One such concern was about the unilateral effects of mergers. The underlying injury in unilateral effects analysis differs from the coordinated effects focus of the 1980s. In coordinated effects analysis, the problem with a merger is that it may facilitate joint exercises of market power—helping competitors to collude on price increases, for example. In unilateral effects analysis, by contrast, the problem with a merger is that it eliminates direct competition between the merging parties, thereby enabling the merged company to individually raise its prices after the merger.

A prototypical example of unilateral effects concerns was presented in *FTC v. Swedish Match*, a case involving the attempted merger of loose-leaf tobacco sellers Swedish Match and National Tobacco.¹¹⁶ 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

¹¹³ 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).

¹¹⁴ E.g., Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, AM. ECON. REV., May 1983, at 267 (illustrating how a dominant firm might profit by strategically raising the production costs of its rivals); Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515 (1985) (critiquing the persuasiveness of Chicago-School arguments against antitrust intervention in some leveraging cases); Robert D. Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, 1991 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 281, 299–305 (1991) (describing a modern unilateral effects model for a merger of competitors in a differentiated product space).

¹¹⁵ 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).

¹¹⁶ *FTC v. Swedish Match*, 131 F. Supp. 2d 151, 153–54 (D.D.C. 2000).

the preferred and next-best choice of many customers. If Swedish Match tried to raise its prices, many of its customers would switch to National, and vice versa if National tried to raise its prices.¹¹⁷ The unilateral effects concern presented by a merger of such close competitors is that the elimination of their special rivalry will give the post-merger company an individual incentive to raise its prices—it no longer facing the risk of customers fleeing to the arms of the (now-merged) competitor.

This incentive to raise prices following a merger of close competitors in a differentiated product space can be described mathematically within basic economic models of the competitive process.¹¹⁸ In fact, an economist with adequate data and an appropriate model of competition can produce a sharp numeric prediction of what the unilateral effects of a merger will be. In *Swedish Match*, for example, 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.”¹¹⁹ No one who has ever litigated an antitrust matter could fail to see the power of this type of simple numeric prediction in the narrative arc of a case.

Unsurprisingly, then, unilateral effects exploded onto the scene. Using data compiled on FTC investigations, Malcolm Coate reports that unilateral effects rose from being the primary focus of less than 20 percent of merger investigations at the start of the 1990s to well over 75 percent of investigations by 2010.¹²⁰ The same change in focus is reflected in the Merger Guidelines. Where the 1982 Merger Guidelines devoted barely a paragraph to a precursor of unilateral effects analysis, the 1992 revisions

¹¹⁷ *Id.* at 169.

¹¹⁸ See generally Margaret 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 & Luke M. Froeb, *Unilateral Effects of Horizontal Mergers*, in *HANDBOOK OF ANTITRUST ECONOMICS* 43 (Paolo Buccirossi, ed., 2008) (same); 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); Willig, *supra* note 114 (providing an early and clear articulation of this approach).

¹¹⁹ *Swedish Match*, 131 F. Supp. 2d at 169.

¹²⁰ Malcolm B. Coate, *The Merger Review Process at the Federal Trade Commission from 1989 to 2016*, Table 4 (SSRN Working Paper No. 2955987, February 28, 2018), <https://ssrn.com/abstract=2955987> (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) (“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.”).

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 to a noticeably looser coverage of coordination concerns.¹²¹

Returning to how this relates to the HMT, one input that is not usually required in unilateral effects analysis is the definition of an HMT market. As a product of a time when the major antitrust concern was joint market power—not individual market power—the iterative algorithm of the HMT simply focuses on different issues than unilateral effects analysis. For economists and practitioners bent on looking for unilateral effects, this meant that time spent on the HMT was time wasted. Before long, the HMT had become as fashionable as green shag carpeting.

One common complaint was that the HMT ultimately had to place competitors either inside or outside of a market, without accounting for differences in the closeness of each competitor.¹²² This had always been true, but its visibility was accentuated in the differentiated products context of the unilateral effects models. Economists like Joseph Farrell and Carl Shapiro warned that in the differentiated-products unilateral-effects context efforts to delineate markets via the HMT created “a risk that the outcome of a merger investigation or case may turn on an inevitably artificial line-drawing exercise.”¹²³

Another complaint was that the HMT’s “indirect” path to assessing the market power implications of a merger was obviated by the more “direct” economic estimation of market power in unilateral effects models and via similar economic techniques in other contexts.¹²⁴ In contrast to the crisp price predictions of unilateral effects models, Dennis Carlton called the use

¹²¹ Compare 1982 MERGER GUIDELINES, *supra* note 85, § III.A.2, with 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 103, §§ 2.1–2.2, with 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, §§ 6–7.

¹²² *E.g.*, 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 50, ¶ 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. REV. 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”).

¹²³ Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON., March 2010, art. 9, at 1, 4.

¹²⁴ *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. ANTITRUST ENFORCEMENT 422, 448 (2014) (describing an analytical choice between market definition and direct estimation of the likely effects of a merger).

of HMT markets a “crude” way to predict market power.¹²⁵ Farrell and Shapiro called the use of HMT markets “clumsy.”¹²⁶ Louis Kaplow called it “counterproductive,”¹²⁷ and also a number of less flattering things.¹²⁸

We’ve seen enough of market definition’s history to guess how this plays out. The HMT was not designed with differentiated-product unilateral-effect concerns in mind. And, as a process of market definition, it served the needs of unilateral effects analysis about as well as the practical indicia test had served the needs of coordinated effects analysis—which is to say, not at all. Fortunately, there was an obvious replacement. The market power predictions of unilateral effects models identified mergers with the potential to bring about the unilateral exercise of independent market power. So, just as the HMT had replaced the practical indicia test as the appropriate test for scoping market boundaries in the assessment of post-merger collusion concerns, the prediction of a unilateral price increase would replace the HMT as the appropriate test for scoping market boundaries in the assessment of post-merger individual market power concerns, right?

Well, almost right. This substitution was indeed envisioned, but the wrinkle is that unilateral effects models came to be described not just as an alternative to the HMT, but as an alternative to market definition itself.¹²⁹ Thus, the current merger guidelines say that “[s]ome of the analytical tools used by the Agencies to assess competitive effects do not rely on market definition,”¹³⁰ and antitrust scholars are even more explicit in stating that market definition is unnecessary in unilateral effects analysis.¹³¹ There are always surprises to be found in matters of classification—the male seahorse gives birth to babies and the platypus is a mammal that lays eggs—but what justification could there be for treating the predictions of unilateral effects models as somehow *not* market definition?

¹²⁵ Dennis W. Carlton, *Market Definition: Use and Abuse*, 3 COMPETITION POL’Y INT’L 3, 3 (2007).

¹²⁶ Farrell & Shapiro, *supra* note 123, at 1.

¹²⁷ Louis Kaplow, *Market Definition and the Merger Guidelines*, 39 REV. IND. ORGAN. 107, 109 (2011).

¹²⁸ See generally Louis Kaplow, *Why (Ever) Define Markets?*, 12 HARV. L. REV. 437 (2010); Louis Kaplow, *Market Definition Alchemy*, 57 ANTITRUST BULL. 915 (2012); Louis Kaplow, *Market Definition: Impossible and Counter-Productive*, 79 ANTITRUST L.J. 361 (2013).

¹²⁹ See Farrell & Shapiro, *supra* note 123, at 1-2 (proposing one unilateral effects model as an alternative to market definition); see also *supra* note 124 (citing sources for the implicit claim that market definition is not needed merger effects can be directly estimated).

¹³⁰ 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 4, para. 2.

¹³¹ E.g., Herbert Hovenkamp & Carl Shapiro, *Horizontal Mergers, Market Structure, and Burdens of Proof*, 127 YALE L.J. 1996, 2015 (2018) (“Economic analysis of unilateral effects can proceed without defining a relevant market”); John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B. U. L. REV. 1169, 1196 (2018) (similar).

Is the scope of trade bounded by predicted unilateral effects perhaps too narrow to be called a market?¹³² This seems doubtful. “Relevant market” has long been a term of art in antitrust.¹³³ The HMT does not identify broad and intuitive markets,¹³⁴ but merely reveals a scope of trade in which a certain type of market power could be exercised. So, too, does a unilateral effect prediction. In fact, if we take the merging parties as the provisional market in the HMT, and if we take the substantial price-increase prediction of a unilateral effects model as evidence that the hypothetical monopolist would increase its price by a small but substantial amount, then the unilateral effects prediction would validate the merging parties as a relevant market under the methodology of the HMT. How could one of these things be market definition if the other isn’t?

Maybe the difference is relative precision. Does the ability of some unilateral effects models to predict specific price effects differentiate this analysis from more qualitative market-based inferences? This, too, seems doubtful. Experienced antitrust practitioners never naïvely accept the specific predictions of a given unilateral effects model.¹³⁵ Like everything in economics, these models depend on maintained assumptions about human behavior and the competitive process,¹³⁶ and the predictions of these models can be sensitive to even slight changes in these underlying assumptions.¹³⁷

¹³² See Hovenkamp, *supra* note 51, at 908 (commenting that unilateral harm in a differentiated product space “does not fit well into our conception of market definition”).

¹³³ See *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 50 (D.D.C. 2011).

¹³⁴ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 4, para. 8 (“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.’”).

¹³⁵ 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.”).

¹³⁶ See *supra* note 114 (listing references to model parameters and assumptions).

¹³⁷ See Philip Crooke, Luke Froeb, Steven Tschantz, & Gregory J. Werden, *Effects of Assumed Demand Form on Simulated Postmerger Equilibria*, 15 REV. INDUS. ORGAN. 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., May 2010, art. 21, at 1, 8 (observing that “the accuracy and reliability of the [a unilateral effects price-pressure index] depends crucially on the accuracy of the diversion ratio [parameter]”); Luke Froeb, Steven Tschantz, & Gregory J. Werden, *Pass-Through Rates and the Price Effects of Mergers*, 23 INT’L J. INDUS. ORG. 703, 710–11 (2005) (noting demand curvature sensitivity); Slade, *supra* note 118, at 331–338 (illustrating the sensitivity of costs, demand systems, and unilateral effects predictions to various possible modeling assumptions); 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

Of course, the accuracy of maintained assumptions can be bolstered by qualitative evidence that they seem to match observed patterns of behavior; and, of course, the reliability of predictions can be bolstered by evidence that different assumptions lead to qualitatively similar predictions.¹³⁸ But this is at best only a repackaging of the range-of-possible-outcomes predictions of market-based inferences in things like coordinated effects analysis. Again, if one is market definition, then how is the other not?

Perhaps the point of distinguishing unilateral effects analysis from market definition is a pragmatic interest in trying to prevent generalist judges from defining markets by reference to the HMT. If that was the aim, then it backfired. Judges, accustomed to defining markets in antitrust cases, balked at the idea of deciding cases without defining markets.¹³⁹ And, with unilateral effects identified as “not market definition,” judges predictably reached for things like the HMT as the standard for defining markets in this setting—precisely the wrong result.¹⁴⁰ This mistake might have been avoided if unilateral effects predictions had simply been identified as a form of market definition from the start.

If an intelligent but disinterested observer sat down to compare market definition under the HMT with the prediction of substantial price increases under unilateral effects analysis, they would conclude that the only real difference between the two ways of scoping market boundaries is the type of market power in question. The HMT defines a market around the potential exercise of joint market power, tacit collusion with others in the relevant market, while the unilateral effects prediction defines a market around the potential exercise of individual market power, the ability of the merged entity to raise its own prices after the constraint of a unique competitor is removed. The two processes are different, but they are both self-evidently processes of market definition, each suited to a distinct antitrust inquiry.

“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”).

¹³⁸ Cf. 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 6.1, para. 7 (“The Agencies . . . place more weight on whether their merger simulations consistently predict substantial price increases than on the precise prediction of any single simulation.”).

¹³⁹ E.g., *FTC v. Whole Foods Mkt., Inc.*, 548 F.3d 1028, 1036 (D.C. Cir. 2008) (objecting that “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).

¹⁴⁰ E.g., *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 19–21 (D.D.C. 2017); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 25–38 (D.D.C. 2015); *FTC v. Swedish Match*, 131 F. Supp. 2d 151, 159–60 (D.D.C. 2000).

* * *

The history of market definition is a bit like the history of western architecture. The norms of Victorian architecture dominated one period; Brutalist aesthetics another; the small-house movement is the most striking architectural fad today. These are all ways to build a house, but no architect would sit a client down to say “you need the façade to reflect the elegance of the time, but you can never have too much concrete, and if you can’t fit it on the back of a trailer then don’t even bother.” That is obviously absurd, but equally absurd statements now appear regularly in judicial descriptions of the standard for market definition.¹⁴¹ This is the hammer analogy at work. The history of market definition resists the hammer analogy at every turn. Different tests of market definition were developed to address different issues. Recognizing this allows us to exploit the specialties of each test.

II. The Common Purposes of Different Tests

Trekking up the mountain paths of market definition’s history, one may at times feel that the different tests are, if familial at all, distant cousins, many times removed. Far from the all-the-same-tool idea of the hammer metaphor, one might feel that the different tests of market definition are actually unrelated tools, each performing an entirely different job, perhaps at an entirely different jobsite.

But standing at the peak of the mountain, and looking back over market definition’s many tests, we can see the fabric of some common purposes running throughout the changing processes. Nearly all tests of market definition have served three related purposes in their respective contexts: (1) scoping an area of impact for the relevant harm, (2) connecting market structure in that scope of trade to the risk of the relevant harm, and (3) contextualizing further assessment of the relevant harm.

A. Scoping an area of impact for the relevant harm

Imagine all of commerce as a complex, interconnected web of products, consumption uses, and potential trading partners. Market definition drops a magnifying glass on a part of this web in which the anticompetitive sting of a challenged act might be felt. The Supreme Court alluded to this scoping function in *FTC v. Indiana Federation of Dentists* when it said that the purpose of market definition “is to determine whether an arrangement has

¹⁴¹ See *supra* notes 32–33.

the potential for genuine adverse effects on competition.”¹⁴² It had earlier expressed the idea even more clearly in *Philadelphia National Bank*, stating that market definition identifies the part of trade where “the effect [of the challenged act] on competition will be direct and immediate.”¹⁴³

Statements like these are helpful in understanding market definition, but do not fully explain its scoping function. Is the objective to exhaust the range of potential harm? If so, we would draw markets broadly and magnify weakly, capturing all parts of the web where harm is possible but catching lots of irrelevant parts, too. Or is the objective to clearly identify individual areas of potential harm? If so, we would draw markets narrowly and magnify strongly, sharply focusing on particular areas of concern without necessarily capturing every area of harm, at least not all at once. Most tests of market definition take the latter path; only the early and largely unhelpful commodity concept tests sought broad relevant markets.

During the early days of antitrust, there may have been reasons to prefer broad markets. Rule of reason analysis was a vague and shifting target in early cases.¹⁴⁴ So, before attempts to draw inferences from market structure necessitated tighter markets,¹⁴⁵ there would have been a certain appeal in matching the wide and unpredictable range of rule of reason analysis with markets that were almost guaranteed to encompass the full range of potential harm. Commodity concept tests, including *Times Picayune* and *Cellophane*, served this purpose—but little else.¹⁴⁶

Commodity concept markets are an outlier in this and other respects. Subsequent tests of market definition were addressed to specific concerns and sought narrow markets that would help to evaluate those concerns. In one of its most frequently quoted passages, *Brown Shoe* clarified the limited role of the *Times Picayune* and *Cellophane* tests as merely identifying the “outer boundaries of a product market.”¹⁴⁷ Since then, market definition has

¹⁴² *FTC 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* *FTC 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).

¹⁴³ *United States v. Phila. Nat. 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).

¹⁴⁴ *See, e.g., Bd. of Trade of City of Chicago 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).

¹⁴⁵ *Cf. Kovacic & Shapiro*, *supra* note 34, at 49–52 (describing the late introduction of market structure inferences in rule of reason analysis).

¹⁴⁶ *See supra* notes 48–50 and accompanying text.

¹⁴⁷ *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

shown little interest in these outer bounds, instead seeking markets narrowly scoped around particular injuries and concerns.

Brown Shoe is an example. The motivating concerns at this time were increases in the concentration of producers in recognizable industries and the protection of small and local competitors in recognizable markets.¹⁴⁸ *Brown Shoe*'s practical indicia test identified scopes of trade in which these concerns could be evaluated and addressed. To measure changes in the concentration of recognizable markets, judges needed a test that would identify recognizable markets; to protect the interests of small businesses, judges needed a test that would identify groups of small businesses whose common interests could be evaluated and protected.¹⁴⁹ The practical indicia test scoped markets around these concerns.

This scoping function was not just valuable but vital. In other opinions of the time, the Court commented that market definition was necessary because the challenged act “must be one which will substantially lessen competition within the area of effective competition”¹⁵⁰ and that “there is no way to measure . . . ability to lessen or destroy competition” without defining a relevant market.¹⁵¹ Neither statement makes an ounce of sense by modern market power standards.¹⁵² At the time, however, these claims were certainly right. How could judges possibly address structural or protectionist concerns without identifying the kind of recognizable markets to which these concerns applied?¹⁵³

Of course, a single transaction could affect seller concentration and small business interests in multiple recognizable markets. The public could perceive a national shoe market at the same time that it perceived a local,

¹⁴⁸ See *supra* notes 51–57 and accompanying text.

¹⁴⁹ *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.

¹⁵⁰ *United States v. E. I. du Pont de Nemours & Co. (du Pont-General Motors)*, 353 U.S. 586, 593 (1957) (internal quotation marks omitted).

¹⁵¹ *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965).

¹⁵² See *Glasner & Sullivan*, *supra* note 49, at 339 (criticizing the continued invocation of these claims by judges today).

¹⁵³ *Cf. Crown Zellerbach Corp. v. F. T. C.*, 296 F.2d 800, 811–12 (9th Cir. 1961) (“All that the Commission was required to do was . . . find a product line which was sufficiently inclusive to the meaningful in terms of trade realities. . . . [O]therwise, it would be a practical impossibility to apply the prohibitions of § 7 in the case of an absorbed concern which produced a multitudinous number of inconsequential and minor products.”).

city-level shoe market.¹⁵⁴ Structural and protectionist concerns could require intervention at either level. The Supreme Court responded to this in *Brown Shoe* by inviting the definition of multiple markets.¹⁵⁵ It was not always necessary to focus on every possible market, however, since anticompetitive injury in any market was sufficient to establish illegality.¹⁵⁶

For all its differences, the scoping function of the HMT tracks that of the practical indicia test in many ways. Here, the concern is that a merger could facilitate something like tacit collusion among competitors on a jointly implemented price increase.¹⁵⁷ By its terms, the HMT identifies a scope of trade in which just this type of injury could occur. The HMT's algorithm expands the candidate market until it encompasses a group of competitors with the joint market power to profitably implement a joint price increase.¹⁵⁸ The scope of an HMT market is thus an area of trade in which post-merger tacit collusion is a potential concern.

Again, this scoping function is valuable for assessing the relevant concern. First, it ensures that efforts will not be wasted on an impossible theory of harm. If not even a monopolist encompassing all the competitors in a group would impose a price increase, then even if that group did engage in post-merger collusion, it would not have the market power to actually raise prices as a result.¹⁵⁹ Second, the scoping function guarantees that in exploring a coordination theory, it is the interaction of competitors in the relevant market that most directly informs the potential injury. This, too, follows from the way the HMT scopes a market: it draws a line around those

¹⁵⁴ See, e.g., *Brown Shoe*, 370 U.S. at 325 (identifying a national shoe market for one aspects of a merger and a series of local shoe markets defined around cities with populations exceeding 10,000 for another aspect of the merger).

¹⁵⁵ *Id.* at 325, 336 (commenting that within any broader market there may exist submarkets that are also appropriate markets for antitrust scrutiny).

¹⁵⁶ 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).

¹⁵⁷ See *supra* notes 88–90 and accompanying text.

¹⁵⁸ See 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 50, ¶ 533e, 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.”).

¹⁵⁹ See Philip Areeda, *Market Definition and Horizontal Restraints*, 52 ANTITRUST L.J. 553, 562 (1983) (commenting that the initial analytical question in assessing concerns about anticompetitive collaboration is to ask “whether the collaborators, viewed collectively, possess market power”); Baxter, *supra* note 83, at 623 (“The merger of two sellers . . . can create a significant danger of collusive price increases only if the merger of all sellers of that product in that area would cause price to rise significantly.”).

competitors whose competition currently frustrates the hypothesized exercise of joint market power today.¹⁶⁰

Also like the practical indicia test, the HMT drops the magnifying glass over a possible area of harm but does not exhaust the full range of potential harm. A merger of two steel manufacturers-and-fabricators might facilitate collusion among manufacturers, or among fabrications, or both. Nested markets are also possible: if joint market power could be exercised by the firms in a narrowly scoped market, then it could usually be exercised by the firms in any arbitrary expansion of that market as well.¹⁶¹ Some judges and antitrust commentators have reacted to this multiplicity of potential markets by looking for the market that best represents the coordination concerns raised by a merger.¹⁶² But the more natural approach is to see the HMT as similar to the practical indicia test: both can be used to identify multiple simultaneous scopes of potential harm, and injury in any one of these scopes is a sufficient basis for illegality.

The scoping function of unilateral effects predictions is similar as well. Here, the concern is that a merger could facilitate the individual exercise of market power by the merged firm—market power that was, before the merger, suppressed by the unique competitive constraint that each of the merging parties exerted on the other.¹⁶³ A credible prediction of substantial unilateral price increases scopes a market around this concern. Unilateral effects predictions identify competitors who, by merging, could potentially unlock new individual market power.¹⁶⁴

The value of this scoping function arises from the uncertain accuracy of these predictions. Unilateral effects predictions identify potential harm, but only further analysis can confirm how likely it is that these predictions will actually come true.¹⁶⁵ Fortunately, unilateral effects predictions highlight the customers and competitors whose actions are most critical to the realization of the potential harm. The unilateral effects prediction typically characterizes the consumers who are most likely to feel the direct effects of a

¹⁶⁰ Cf. Franklin M. Fisher, *Economic Analysis and “Bright-Line” Tests*, 4 J. COMPETITION L. & ECON. 129, 133 (2008) (suggesting that “a useful market definition should include in the market all of the firms and products or services that constrain the exploitation of monopoly power by the firm (or group of firms) under consideration”); Willig, *supra* note 114, at 284 (“[T]his process of delineating relevant markets calibrates the market power that is of concern in a horizontal merger.”).

¹⁶¹ See Glasner & Sullivan, *supra* note 49, at 332–33 (elaborating on this point and providing an illustrative example).

¹⁶² *Id.* at 328–29.

¹⁶³ See *supra* notes 116–121 and accompanying text.

¹⁶⁴ See sources cited *supra* note 118 (summarizing unilateral effects models).

¹⁶⁵ See *infra* notes 192–197 and accompanying text.

post-merger price increase,¹⁶⁶ and who thus have the strongest incentive to seek other options. The predicted injury also helps to identify the non-merging competitors who are best suited to prevent a unilateral price increase through their own pricing behavior, product repositioning, or the like.¹⁶⁷

Finally, in common with other tests of market definition, the scope of potential harm identified by a predicted unilateral effect is demonstrative but not exhaustive of the range of potential harm. A merger could, for example, raise both unilateral and coordinated effects concerns. If so, a market scoped around the potential exercise of individual market power is not preclusive of other markets scoped around the exercise of joint market power, or vice versa.

B. Connecting market structure to the risk of the relevant harm

The next function performed by most tests of market definition—again, excluding the early commodity concept tests—is to connect the structure of competition in an identified scope of trade to the risk of the relevant harm. Learned Hand’s *Alcoa* opinion launched market structure’s importance in monopolization cases;¹⁶⁸ *Brown Shoe* and *Philadelphia National Bank* made market structure central in merger cases;¹⁶⁹ there are actually few areas of antitrust law in which market structure is not important evidence today.¹⁷⁰ The visibility of this consistent use of markets to support market structure inferences is sometimes obscured, however, by differences in the way that market structure relates to different antitrust concerns.

The most conventional use of market structure today is in assessing the potential for mergers of competitors to lead to collusive price increases. Economic models of oligopolistic competition paint collusion on joint price

¹⁶⁶ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 6.1, para. 4 (identifying the subset of consumers most likely affected by such a merger).

¹⁶⁷ See *id.* § 6.1, para. 8 (discussing the potential responses of non-merging competitors).

¹⁶⁸ *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416, 424 (2d Cir. 1945).

¹⁶⁹ *Brown Shoe Co. v. United States*, 370 U.S. 294, 343 (1962) (“The market share which companies may control by merging is one of the most important factors to be considered when determining the probable effects of the combination on effective competition in the relevant market.”); *United States v. Philadelphia Nat’l Bank*, 374 U.S. 321, 363 (1963) (inferring competitive effects from undue changes in market concentration).

¹⁷⁰ Even rules of per se illegality may require a look at market structure in certain circumstances. See, e.g., *Am. Needle, Inc. v. Nat’l Football League*, 560 U.S. 183, 195 (2010) (making a type of structural separation prerequisite to finding collusive agreement).

elevation as possible but unstable.¹⁷¹ Every member of the collusive group has a private incentive to undercut the collusive price. Because this source of instability increases with the number of competitors in the collusive group, the threat of collusion appears low when many competitors would need to cooperate in order to exercise joint market power.¹⁷² But when only a few competitors would need to cooperate to successfully raise prices, the threat of collusion can be serious. This structural relationship, between the number of competitors in a collusive group and the probability of successful collusion, is recognized in both antitrust law¹⁷³ and economics.¹⁷⁴ By changing the structure of competition to eliminate one or more independent members of the potential collusive group, a merger can increase the probability of post-merger collusion taking hold.¹⁷⁵

The HMT enables reliance on market structure inferences by drawing the scope of the market around a potential collusive group: a group of competitors with the joint market power to successfully collude. Within a market defined by the HMT, features of market structure—like the number of competitors in the market, their respective sizes and incentives, and how all of this is changed by a merger—help to predict the risk of post-merger collusion. These connections are special to HMT markets. The same features of market structure, in a market defined by another test, may have little to no bearing on the risk of potential collusion.

Other tests of market definition connect market structure to other competitive concerns. Unilateral effects predictions, for example, identify

¹⁷¹ 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).

¹⁷² See *id.* 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.”).

¹⁷³ E.g., *FTC. v. H.J. Heinz Co.*, 246 F.3d 708, 715 (D.C. Cir. 2001) (“Merger law rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding . . .”) (internal quotation marks omitted).

¹⁷⁴ Ordover & Willig, *supra* note 93, at 553 (describing the connection between coordination, market concentration, and market shares as “well-supported and generally accepted” though noting the importance of other variables as well); Steffen Huck, Hans-Theo Normann, & Jörg Oechssler, *Two Are Few and Four Are Many: Number Effects in Experimental Oligopolies*, 53 J. ECON. BEHAV. & ORG. 435, 443 (2004) (reporting experimental evidence on the relationship between number of competitors and collusion); George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 55 (1964) (modeling cartel stability as a function of market concentration).

¹⁷⁵ See, e.g., Ordover & Willig, *supra* note 93, 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.”).

structural separation between two competitors as the thing that is preventing one or both of these competitors from exercising unilateral market power. This is equivalent to saying that these competitors are now duopolists in a market containing only their products; that, if they were to act as a monopolist, they would have the market power to raise their prices; and that they are now merging to monopoly.¹⁷⁶ Compared to the role that market structure plays in the collusion context, the only difference is that, here, the structural implications are beyond dispute.

Zooming out to look at trade just beyond the perimeter of the unilateral effects market, we can see another sense in which unilateral effects predictions connect market structure to the evaluation of this potential injury. Just outside the market may be other competitors that are ready and willing to quickly introduce new products, or reposition existing ones, to replace the unique competition otherwise lost through the merger. By identifying the scope of trade in which competition is being lost, unilateral effects predictions helps to identify the competitors that may be willing and able to respond in this way.¹⁷⁷

Brown Shoe's practical indicia test connects market structure to anticompetitive concerns in a different way yet. During the heyday of Warren Court antitrust in the 1960s, market structure inferences did not run from increased concentration to particular theories of increased market power as in the previous examples. The inference was more direct. The structural economic philosophy of the time left little space between increasing concentration and harm to competition.¹⁷⁸ The goal of preserving markets composed of small and local competitors was likewise offended by

¹⁷⁶ *Cf. id.* at 557 (“If the merger partners were the only actual and potential participants in the relevant market, then the merger would have the effect of forming the very cartel whose existence was postulated in the [HMT] market definition process.”).

¹⁷⁷ Whether we call this market structure or entry analysis, the substance is the same. See Cameron, Glick, & Mangum, *supra* note 135, at 726 (“The market definition exercise identifies what products and firms are important constraints [on a potential exercise of market power].”); Coate & Fischer, *supra* note 124, at 433 (suggesting that market structure analysis, entry analysis, and repositioning considerations all address common concerns).

¹⁷⁸ *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 Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y. U. L. REV. 135, 138 (2002) (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).

acts that increase concentration. In short, for these antitrust concerns, an increase in market concentration was not evidence of a potential problem; an increase in concentration *was* the problem.¹⁷⁹ By scoping the boundaries of recognizable industries and markets in which concentration could be controlled, the practical indicia test directly connected market structure to this particular set of antitrust concerns.

C. Contextualizing further assessment of the relevant harm

Yet another function of market definition is to help focus and give context to further analysis of the relevant harm. This is necessitated by the breadth of antitrust’s rule of reason inquiry.¹⁸⁰ Even in cases where market structure inferences play an important role, there are always other things to consider. The act of defining markets helps to organize this analysis.¹⁸¹ It also flattens the complex web of trade into a more manageable picture. A potential injury occurs within a market; the injury accrues to those trading partners who cannot leave the market; the injury might, however, be prevented if other competitors enter the market.¹⁸² In these and other examples, market definition transforms antitrust concepts from flighty economic abstractions into stories about living actors taking physical actions in the world.¹⁸³

For the structuralist and protectionist concerns that motivated Warren Court antitrust, market definition also opened the door for a judge to look at the history and character of a particular industry. In *Brown Shoe*, the Court

¹⁷⁹ 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”).

¹⁸⁰ Rule of reason analysis has always been broad. See *Bd. of Trade of City of Chicago v. United States*, 246 U.S. 231, 238 (1918) (including among the considerations “facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable”).

¹⁸¹ See SULLIVAN, *supra* note 96, 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.”); Fisher, *supra* note 160, at 130 (“Market definition can be a useful tool, a way to begin organizing the material that must be studied.”)

¹⁸² See Gregory J. Werden, *Why (Ever) Define Markets? An Answer to Professor Kaplow*, 78 ANTITRUST L.J. 729, 729 (2013) (“Even if antitrust analysis never used market shares, the relevant market would remain essential for examining entry prospects and the durability of market power.”).

¹⁸³ *Id.* at 740–43 (discussing market definition in the narrative of antitrust litigation).

referred to “Congress’ express intent” that mergers be assessed “within an industry framework almost inevitably unique in every case.”¹⁸⁴ Market definition provided the context for this individualized inquiry: “only a further examination of the particular market—its structure, history and probable future—can provide the appropriate setting for judging the probable anticompetitive effect of the merger.”¹⁸⁵ Subsequent cases made heavy use of this context. A historic trend toward concentration in a market could turn an otherwise insignificant acquisition into an anticompetitive merger.¹⁸⁶ Or a company’s predicted future insignificance in a market could turn an otherwise problematic acquisition into an innocuous one.¹⁸⁷

For the analysis of possible post-merger tacit collusion, HMT markets contextualize similarly expansive inquiries. Philip Areeda made this point immediately after the HMT was first introduced, rattling off a long list of the further factual considerations that informed the risk of coordination:

[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.¹⁸⁸

He could easily have kept going. Historic market stability is an important consideration,¹⁸⁹ as are things like multiple instances of contact between competitors across different markets¹⁹⁰ and the way that a merger affects the

¹⁸⁴ *Brown Shoe Co. v. United States*, 370 U.S. 294, 322 n.38.

¹⁸⁵ *Id.*

¹⁸⁶ *See, e.g., United States v. Von’s Grocery Co.*, 384 U.S. 270, 277–78 (1966).

¹⁸⁷ *See, e.g., United States v. Gen. Dynamics Corp.*, 415 U.S. 486, 498–501 (1974).

¹⁸⁸ Areeda, *supra* note 82, at 309.

¹⁸⁹ *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 also* Subhasish M. Chowdhury & Carsten J. Crede, *Post-Cartel Tacit Collusion: Determinants, Consequences, and Prevention*, 70 *INT’L J. OF INDUS. ORG.*, May 2020, at 1 (discussing experimental evidence on how prior success at collusion may similarly facilitate coordination).

¹⁹⁰ *See* B. Douglas Bernheim and Michael D. Whinston, *Multimarket Contact and Collusive Behavior*, 21 *RAND J. ECON.* 1 (1990) (suggesting how multimarket contact may facilitate collusion); Federico Ciliberto & Jonathan W. Williams, *Does Multimarket Contact*

strategic incentives of the merging firms.¹⁹¹ Many of these factual considerations are either features of markets defined by the HMT or topics most easily discussed in the context of such markets.

Finally, similar contextualizing functions are again performed by the prediction of substantial unilateral price effects. This is easy to miss if we focus too intently on the apparent precision or directness of predicted price effects.¹⁹² But while quantitative unilateral effects predictions can feel more precise and direct than something like the tacit collusion predictions of coordinated effects analysis, a look under the hood reveals this isn't so. The literal accuracy of unilateral effects predictions is limited to the toy models of competition that they assume.¹⁹³ And the more that actual competition diverges from the assumptions of these toy models, the more that unilateral effect predictions savor of simple guesses.¹⁹⁴ This is reflected in empirical studies that show unilateral effects predictions to be inaccurate descriptions of actual outcomes across a range of applications.¹⁹⁵

Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry, 45 RAND J. ECON. 764 (2014) (providing empirical evidence on this relationship).

¹⁹¹ See Baker, *supra* note 178, at 166-77 (describing different ways that a merger may facilitate collusion by changing the incentives of one of the merging parties).

¹⁹² See *supra* note 124 and accompanying text.

¹⁹³ See Cameron, Glick, & Mangum, *supra* note 135, 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”).

¹⁹⁴ See *supra* notes 136–138 and accompanying text.

¹⁹⁵ See 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 in ownership on unilateral pricing incentives, do not generally provide an accurate forecast”); Dennis W. Carlton & Mark Israel, *Will the New Guidelines Clarify or Obscure Antitrust Policy?*, ANTITRUST SOURCE, Oct. 2010, 1, at 4 (“[T]here is only weak empirical evidence establishing the usefulness of merger simulation as a tool to predict anticompetitive mergers.”); 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 UPP analysis); Matthew C. Weinberg, *More Evidence on the Performance of Merger Simulations*, 101 AM. ECON. REV., May 2011, at 51 (reporting a retrospective study in which merger simulations substantially underpredicted the actual estimated price effects of a merger); 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.).

Does this mean that unilateral effects predictions are unhelpful? Not at all. It simply means that—just like the contextualizing function of the HMT in coordinated effects analysis—the prediction of price increases in unilateral effects analysis is a contextualizing step in the full analysis of this potential injury. Shapiro has made this very point, saying that “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.”¹⁹⁶ When not a part of the underlying model, the potential price responses of other firms must also be considered. The scope of trade in which all of these questions must be evaluated is that in which the exercise of individual market power is predicted. Unilateral effects analysis is focused and contextualized by the market scoped by its predicted effects.¹⁹⁷

* * *

Why, given all the dissimilarities between the different tests of market definition, do judges try to use these tests like simple, interchangeable hammers? Perhaps they detect—but misinterpret—hints of the common purposes that run throughout the different tests. For all their many dissimilarities, the various tests of market definition do serve sufficiently similar purposes to be helpfully grouped together in the toolbox. This grouping can make it easy to reach for a test at the appropriate time—so long as the result is the selection of the right test for the job.

III. Modular Market Definition

Ever since 1945, judges and litigants have needed a systematic and reliable tool for defining markets in antitrust cases. Has this need been met? If we’re talking about the hammer approach to market definition, then the answer is a resounding “No.” Running together and conflating different tests of market definition results in unpredictable and unreliable markets.¹⁹⁸ But the situation is not without hope. The history of market definition does reveal several market definition processes designed to produce predictable

¹⁹⁶ Carl Shapiro, 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>.

¹⁹⁷ Cf. Crane, *supra* note 112, 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”).

¹⁹⁸ See *supra* notes 15–25 and accompanying text.

and reliable markets in particular applications. Put another way, the building blocks of a systematic and reliable tool of market definition are already in place.

Decoupling the process of market definition from the purpose of the exercise opens the door to an intuitive rule for selecting the appropriate test in a given application: select the process of market definition that best serves the purposes of market definition in that application. This modular approach recognizes the common purposes that market definition serves across different contexts, but also recognizes that different tests of market definition are, well, *different* and each specialized to the needs and affordances of a particular set of concerns.

Is modular market definition the systematic and reliable tool we seek? We can test this by looking at the results it provides: how does modular market definition work in practice, and how would it change the status quo? In terms of how it works, modular market definition selects tests by looking to the analytical purposes that markets are meant to serve. One way to imagine this is like choosing a drill bit to match the desired hole. Another way is to see it like a cookbook: the busy judge can flip to the page of a relevant concern to find the appropriate market definition recipe. In terms of what it would change, modular market definition reveals some old and entrenched misconceptions about the way that relevant markets inform antitrust analysis. Merely stating some of these errors is enough to indicate the need for change.

A. The Market Definition Cookbook

Modular market definition makes the reasons for defining a market the guiding force behind the exercise. In a given context, the appropriate test should serve the common purposes of market definition: (1) scoping an area of impact for the relevant harm, (2) connecting market structure in that scope of trade to the risk of the relevant harm, (3) contextualizing further assessment of the relevant harm. But the prime directive is always helpfulness. The right test for the job is the one that most helpfully supports the antitrust analysis of a particular concern.

We can use this prime directive to fill out the pages of a cookbook for market definition. Following the narrow-scope and strong-magnification strategy of the useful tests of market definition,¹⁹⁹ these recipes provide tests addressed to specific concerns and theories of harm. Where a case or transaction raises multiple concerns, modular market definition will usually

¹⁹⁹ See *supra* note 147 and accompanying text.

prescribe different tests, and thus different markets, for each concern.²⁰⁰ Here are a few pages of the cookbook.

1. Coordinated Effects of Mergers, Enabling Tacit Collusion

In a traditional coordinated effects theory, the concern is that a merger will, by eliminating at least one member of a potential collusive group, enable the remaining competitors in this group to tacitly collude on something like a price increase. Put more simply, the concern is that the merger will enable the exercise of joint market power by the members of this group. This is the context for which the HMT was designed.²⁰¹ And the HMT, implemented by hypothesizing a small but substantial price increase over prevailing prices, is the right test for this concern.

With that said, some of the fussier mechanics of the HMT, as outlined in the current Horizontal Merger Guidelines, can probably be omitted. The Guidelines contemplate expanding markets to fill perceived gaps in the set of products in the market,²⁰² and narrowing markets to focus attention on the smallest set of competitors that could plausibly collude to raise prices.²⁰³ These heuristics are fine as descriptions of agency practice but are not requirements of market definition under the HMT. A potential collusive group that could profitably impose a price increase does not cease to describe a helpful relevant market simply because another broader or narrower market would also satisfy the HMT criteria.²⁰⁴

2. Coordinated Effects of Mergers, Entrenching Tacit Collusion

Less commonly, a coordinated effects theory may posit that tacit collusion has already taken hold among a group of competitors yet worry

²⁰⁰ This approach was endorsed by the Supreme Court in *Brown Shoe*. The Court, in that case, recognized the relevance of multiple, possibly nested markets. *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962) (recognizing “submarkets” within a broader market which may themselves be relevant markets). It also defined markets around concerns, rather than a single market for the transaction as a whole. *Id.* at 324–28, 335–39 (conducting separate market definition for the vertical and horizontal concerns raised by the merger). The approach enjoys theoretical justifications as well. See Glasner & Sullivan, *supra* note 49, § III (providing an extended argument for defining multiple markets).

²⁰¹ See *supra* notes 105–108 and accompanying text.

²⁰² 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 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).

²⁰³ *Id.* 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.”).

²⁰⁴ See *supra* notes 161–162 and accompanying text.

that a merger among competitors in this collusive group could further entrench the exercise of that joint market power. The concern, in this version of the coordinated effects theory, is not that the merger will enable the exercise of new market power, but rather that it will preserve an ongoing exercise of market power.²⁰⁵ There are obstacles to proving this type of coordinated harm²⁰⁶ but, for purposes of considering the argument, how should markets be defined?

Because it scopes markets around joint exercises of market power, the HMT is again the appropriate framework. But the standard approach of hypothesizing a small but substantial price increase over prevailing prices no longer makes sense. The relevant concern, here, is not an increase in prices. The concern is preservation of already increased prices. An analytically helpful version of the HMT would therefore need to scope an area of trade in which competitors could already be exercising joint market power. This is the scope of trade in which continued harm could occur and in which market structure and other considerations need to be evaluated.

One way to use the HMT to achieve these purposes is to implement the hypothesized price increase not as an increase over the prevailing price but as an increase over a reasonable estimate of what the price would be but for the assumed ongoing tacit collusion.²⁰⁷ A variant would be to seek a scope of trade in which the defection of one of the merging parties could be sufficient to individually destabilize an ongoing pattern of coordination.

3. Concerted Action, Generally

Joint market power concerns often arise from the concerted action of competitors outside of the merger context. Unless the conduct in question would obviously be illegal per se—something like naked price fixing or

²⁰⁵ See Areeda, *supra* note 159, 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); 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 1, para. 5 (“[M]ergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise.”); see generally Sean P. Sullivan, *Anticompetitive Entrenchment*, 68 U. KAN. L. REV. 1133 (2020) (discussing entrenchment theories of harm in merger enforcement).

²⁰⁶ See Sullivan, *supra*, note 205, at 1148–49 (2020) (noting potential difficulties in proving entrenchment theories in merger cases).

²⁰⁷ See Glasner & Sullivan, *supra* note 49, 319–24 (discussing this point as an example of a broader need to match the HMT to the specifics of alleged collusion).

naked market division—market definition will often be helpful in trying to decide if such concerted conduct is anticompetitive.²⁰⁸

Since the focus is similarly on exercises of joint market power, market definition in this setting follows the pattern of market definition in the coordinated effects context. Where the concern is that the concerted action in question will enable a new joint price increase, the HMT scopes markets around the relevant concern. The focus here is on the concerted conduct of the members of a potential collusive group and how that conduct may enable collusion. But, apart from the special relevance of conduct, the role that market definition plays in this setting is largely the same as the role it plays in assessing the potential coordinated effects of mergers.

Also like the merger context, where the concern is not a price increase but instead that the challenged conduct is already facilitating an ongoing exercise of joint market power, the HMT would need to be modified to fit the concern. In this case, the market should be scoped not by a hypothesized price increase over the prevailing price, but instead by a hypothesized price increase over the price that would prevail in the absence of the ongoing exercise of joint market power enabled by the concerted conduct.²⁰⁹

4. Unilateral Effects of Mergers, Undifferentiated Product Space

Back in the merger context again, a specific type of unilateral effect can arise when competitors merge in an undifferentiated product space. The concern here is that a merger which substantially increases the market share of the merged firm in an undifferentiated product space can give that firm a unilateral incentive to suppress its output of the product. The artificial scarcity that this output suppression creates has the effect of driving up the market price of the product for all producers, not just the merged firm.²¹⁰ Assuming the merged firm accounts for a large part of the total trade in this

²⁰⁸ See *Cal. Dental Ass'n v. FTC*, 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).

²⁰⁹ See *supra* note 207 and accompanying text. Put another way, the *Cellophane* fallacy, widely recognized as complicating market definition in the monopolization context, applies in the concerted action context as well. *Cf.* sources cited *supra* note 50 (discussing the *Cellophane* fallacy).

²¹⁰ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 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)).

product, it reaps enough benefit from joint price elevation to make the output suppression strategy worthwhile.²¹¹

In economics models of this behavior, features of a market like the relative shares of the merging parties inform the seriousness of the output suppression concern.²¹² How should markets be defined when trying to identify these features?

While this is a theory of unilateral conduct—the merged firm does not need the cooperation of others to motivate its anticompetitive actions—the effect is still an increase in joint market power across all producers of the product. This means that the HMT is, again, the appropriate test for identifying market boundaries. In fact, in this context the fussier aspects of the HMT may be most appropriate. Since the theory of harm is that the retraction in supply results in an automatic price increase for all producers of the product, scoping the impact of this price increase may well mean filling in gaps in the chain of substitutes and focusing on the narrowest markets in which this type of price effect may be felt.²¹³

5. Unilateral Effects of Mergers, Differentiated Product Space

The more common example of a unilateral effects concern today is that which arises 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 the merger will facilitate the exercise of joint market power by all competitors in a wider group, but that it will facilitate the exercise of individual market power by the merging parties, who no longer face each other's unique competitive constraint after the merger.²¹⁴ The appropriate test of market definition in this setting is the credible prediction of a unilateral exercise of market power,²¹⁵ a prediction which can be supplied by various economic models.²¹⁶

The only important exception to this rule is a special case of unilateral effects analysis in which market shares in a broader relevant market are used to substitute for more precise measures of the closeness of competitors.²¹⁷

²¹¹ See 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 6.3 (discussing this concern in greater detail).

²¹² See generally Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 AM. ECON. REV. 107 (1990); R. Preston McAfee & Michael A. Williams, *Horizontal Mergers and Antitrust Policy*, 40 J. INDUS. ECON. 181 (1992).

²¹³ Cf. *supra* notes 202–203 and accompanying text.

²¹⁴ See *supra* notes 116–119 and accompanying text.

²¹⁵ See *supra* notes 129–140 and accompanying text.

²¹⁶ See sources cited *supra* note 137.

²¹⁷ See, e.g., Willig, *supra* note 114, at 299–305 (explaining this approach).

There are serious theoretical limitations to this approach, and these typically limit share-based unilateral effects models to the shallow waters of data scarcity or time constraints.²¹⁸ But where this approach is used, the HMT would be as a reasonable process for scoping a market in which shares could potentially identify unique head-to-head competition.

6. Monopolization, Generally

In contrast to the simple identification of market definition tests in the previous pages of the cookbook, finding the proper way to define markets in monopolization cases is complicated by tough veins of uncertainty running throughout monopolization doctrine. It is settled law that monopolization has two elements: (1) the possession of monopoly power, and (2) the acquisition or maintenance of that power through exclusionary conduct.²¹⁹ It is also settled law that market definition can help in establishing both elements.²²⁰ But that's about as far as settled law can take us. Unresolved questions about the meaning of these terms and how they interact limit what modular market definition can tell us in this setting.

The possession of monopoly power, for example, has been described at times as “the power to control prices or exclude competition,”²²¹ at times as “something greater than [normal] market power,”²²² at times as insufficient availability of alternatives within an area of trade,²²³ and at times as a size, presumably in terms of total assets, “great enough to cause just anxiety on the part of those who love their country more than money.”²²⁴ These are not

²¹⁸ See Jerry Hausman, *2010 Merger Guidelines: Empirical Analysis*, ANTITRUST SOURCE 1 (Oct. 2010) (noting that this approach requires the IIA property, which is “unrealistic in many situations”); Willig, *supra* note 114, at 301 (commenting that the assumptions behind this approach “are unlikely to be valid in many areas of application”).

²¹⁹ *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966).

²²⁰ Market shares can help to establish the monopoly power element of the offense. See *supra* notes 5–9 and accompanying text (describing the identification of monopoly power by market share in *Alcoa*). Market shares can also help to establish the exclusionary conduct element. 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”).

²²¹ *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 391 (1956).

²²² *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 481 (1992).

²²³ *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”).

²²⁴ *N. Sec. Co. v. United States*, 193 U.S. 197, 407 (1904) (Holmes, J., dissenting).

the same thing and a test of market definition suited to evaluating one meaning of monopoly power may be unsuited to another meaning. If monopoly power means significant market power, for example, then a modified version of the HMT could suffice. This version of the test would ask whether the monopolist in a candidate market would find it profitable to raise prices a “significant amount” above a competitive starting price—not typically the prevailing price. This modified HMT would not be much help, however, if monopoly power was defined as having a dominant share of a recognizable industry or as having the ability to exclude one’s competitors. For these meanings of the term, the practical indicia test would be a better approach. And if monopoly power is instead defined by total asset size alone, then market definition is not needed at all.

The second element, acquisition or maintenance of monopoly power by exclusionary acts, exposes further doctrinal ambiguities. Assume for the moment that monopoly power means significant market power. Must the exclusionary act be grand enough to generate significant market power by itself? Or is it enough that a firm which already possesses significant market power engages in conduct that does something to increase or entrench this power at least a little bit? If the latter, then the scope of trade appropriate for assessing the market power consequences of the exclusionary act will not generally coincide with the scope of trade appropriate for assessing the freestanding possession of monopoly power. Two potentially different markets would need to be defined in this setting. The same applies in any understanding of monopolization in which the two elements have different substantive meaning.

This page of the cookbook is inescapably ambivalent. Because modular market definition selects the test of market definition by looking to the analytical needs of the substantive law, it can never be more definite than the substantive law.²²⁵ Until remaining questions about the standard of monopolization are resolved, all that modular market definition can do is prescribe a series of market definition tests appropriate to different possible interpretations of the underlying law.

7. Concentration and the Protection of Small Businesses

It has been a long time since antitrust fought for the retention of local control and the protection of small businesses. But while these concerns do not move antitrust cases today, the history of antitrust law is one of shifting

²²⁵ 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).

norms and policy goals.²²⁶ Against this background, recent political events may signal the return of structuralism, and perhaps even protectionism, to the antitrust stage.

A bill introduced before the Senate in 2019 recites that “unprecedented consolidation is reducing competition ... in the United States.”²²⁷ Bearing the short title “Consolidation Prevention and Competition Promotion Act of 2019,”²²⁸ this bill instructs judges to presume a merger to be illegal if it “would lead to a significant increase in market concentration.”²²⁹ A different bill, also before the Senate, instructs judges to presume exclusionary conduct to be illegal if undertaken by an entity with more than a fifty percent share of a relevant market.²³⁰ Meanwhile, a recent House subcommittee report urges greater congressional attention to “increased market concentration in our economy”²³¹ and cites with apparent approval a suggestion that Congress should “investigate factors which tend to ... injure small business ... or promote undue concentration of economic power”²³²

The results of these early initiatives remain to be seen. Perhaps nothing will come of them. But if the outcome is indeed the return to antitrust of the type of structuralism that was concerned with concentration itself²³³ or the type of protectionism that sought to defend small businesses against larger and more efficient rivals, then this will have follow-on effects in market definition. Simply put, the HMT is not the right test for pursuing industry-level concentration concerns or the protection of small businesses. Changes in joint market power have no systematic relationship with either of these concerns. Instead, the return of these interests to antitrust would require a corresponding return to *Brown Shoe*'s practical indicia test.²³⁴ Markets scoped by the practical indicial test are an appropriate setting for addressing concerns about industrial concentration and the protection of small business interests.

²²⁶ See sources cited *supra* note 34 (discussing the evolution of antitrust norms); see also Robert Pitofsky, *The Political Content of Antitrust*, 127 U. PA. L. REV. 1051, 1052–52 (noting attention to “political” concerns throughout most of antitrust history).

²²⁷ S. 307, 116th Cong. § 2(a)(9) (2019).

²²⁸ *Id.* at § 1.

²²⁹ *Id.* at § 3.

²³⁰ S. 3426, 116th Cong. § 4 (2020).

²³¹ 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].

²³² *Id.* at 7–8.

²³³ See Herbert Hovenkamp, *The Looming Crisis in Antitrust Economics*, B.U. L. REV., 43–44 (forthcoming 2021) (critiquing at least one Senate bill as “focused far too much on increased concentration or absolute size for their own sake”).

²³⁴ See *supra* notes 76–80 and accompanying text.

B. The Problems that Modularity Reveals

At the dinner table, modular market definition is polite and orderly. It keeps the salad in the salad bowl, the soup in the soup bowl. Thus, a market defined for evaluating a coordinated effects concern will be scoped around a potential coordinated effect and the structure of competition in this market will be used to evaluate a potential coordinated effect. A different market may be defined around a unilateral effects concern and the structure of competition in this market will be used to evaluate a potential unilateral effect. In modular market definition, everything is kept neat and separate; all market-based inferences are localized to the particular concern for which the market in question was defined.

Current market definition, on the other hand, eats its dinner from a trough. It slops together all the different tests of market definition and lets the market-based inferences of one concern swirl around and mix into the evaluation of other concerns. This sloppiness is responsible for stumbling antitrust policy down some unproductive garden paths.

One example is the strained history that antitrust has had with the inference of market power from measures of market concentration.²³⁵ In the 1950s and 1960s, industrial organization economists claimed to find a strong empirical relationship between industrial concentration and various measures of market power. This conclusion was soon attacked as suffering from measurement problems (market power is hard to measure) and causality issues (concentration can be the result of market power as well as its cause).²³⁶ After decades of handwringing over how to address these concerns, only a few cautious variants of the initial claims remained—for example, working agreement on a positive but difficult-to-generalize relationship between concentration and price in many industries.²³⁷ The usual summary, today, is that industrial organization economists have failed

²³⁵ See generally Richard Schmalensee, *Inter-industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951 (Richard Schmalensee & Robert Willig eds., 1989) (providing a critical review of this literature).

²³⁶ See Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSP. 44, 46–47 (2019) (summarizing similar concerns); 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).

²³⁷ See Schmalensee, *supra* note 235, 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”).

to establish more than a “weak” empirical relationship between market concentration and market power.²³⁸

Does this make sense? Both the research and its modern interpretation seem to assume that market structure inferences can be averaged across different markets and different market power concerns. But modular market definition draws attention to the differences between alternative ways of defining markets.²³⁹ It also reveals differences in how the structure of competition relates to market power in different theories of harm.²⁴⁰ If different market definition processes connect market structure to market power in different ways, then what exactly are we averaging here?²⁴¹ Looked at from this perspective, the whole project feels a bit like trying to measure the average pain-killing effect of every drug in a supermarket pharmacy. In both cases, aren’t we almost guaranteed to find a weak average effect?

Another example of inadequately localized market-structure inferences, and how they lead to faulty antitrust policy, is the operation of safe harbor provisions in U.S. merger policy. Ever since 1982, the merger guidelines have taken the position that certain mergers are unlikely to be problematic and thus require no serious analysis. These unproblematic mergers are identified by their small effect on the concentration of competitors in a market defined by the HMT.²⁴² Mergers not meeting a minimum market concentration threshold are usually not investigated at all—a safe harbor or quasi-safe harbor depending on who you ask.²⁴³

Looked at from the perspective of modular market definition, it is quite astonishing that this practice has gone undisturbed for so long. Why do we use the lack of concentration in a single type of market as a transaction-level

²³⁸ See, e.g., Carlton, *supra* note 125, at 4 (“Unfortunately, there is only a weak link between change in market share and change in competitive performance . . .”).

²³⁹ See *supra* Part I.

²⁴⁰ See *supra* Part II.B.

²⁴¹ Cf. Berry, Gaynor & Scott Morton, *supra* note 236, 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).

²⁴² See 1982 MERGER GUIDELINES, *supra* note 85, § III.A.1.a; 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 103, §§ 1.0, 1.51; 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 12, § 5.3, para. 6.

²⁴³ Cf. FED. TRADE COMM’N & U.S. DEP’T OF JUSTICE, HART-SCOTT-RODINO ANNUAL REPORT 5–6 (FY 2019), https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau-competition-department-justice-antitrust-division-hart-scott-rodino/p110014hrsannualreportfy2019_0.pdf (reporting that only about two to three percent of merger notifications were subject to requests for additional information and documentary material in recent years).

screen for unproblematic mergers?²⁴⁴ Sure, evidence that a merger secures high concentration in an HMT market may flag it as having the potential to enable tacit collusion in this market.²⁴⁵ And sure, an unconcentrated HMT market eases concern about coordinated effects within that scope of trade.²⁴⁶ But neither of these inferences tells us anything about other anticompetitive concerns. A merger may give rise to significant unilateral effects without creating any risk of coordinated behavior at all.²⁴⁷

Is there a justification for giving low concentration in an HMT market the effect of immunizing a merger? This implementation of the safe harbor can be defended as economizing on agency budgets and as increasing the predictability of merger enforcement.²⁴⁸ But similar arguments could be made for turning patients away at the hospital doors if they do not present with high blood pressure. Both practices save resources and increase predictability; and both practices leave a lot of problems uninvestigated.²⁴⁹ The safe harbor approach may also be excused on the grounds that a really narrow HMT market may approximate a unilateral effects prediction in some cases. This is fair, but why should we try to torture and contort HMT markets to serve this role when perfectly appropriate tests of market definition are already available for unilateral effects concerns?²⁵⁰

In the end, there is no salvaging the practice of conditioning exploration of one competitive concern on the plausibility of another entirely different concern. Safe harbors based on market structure may be a principled way of screening out individual competitive concerns—of saying, for example, that a merger does not risk enabling tacit collusion in a given scope of trade—but they are not a principled way of screening across concerns. This limited form of safe harbor may not offer the same economy or predictability that we would hope to achieve. But to the extent that our aspirations conflict with substantive antitrust law, it is clear which must give way.

²⁴⁴ Cf. Shapiro, *supra* note 120, at 69 (commenting that despite the increased emphasis on unilateral effects concerns, the “DOJ continues to apply the HHI thresholds to all horizontal mergers”).

²⁴⁵ See *supra* notes 171–175 and accompanying text.

²⁴⁶ See 1982 MERGER GUIDELINES, *supra* note 85, § III.A.1.a (commenting that “implicit coordination among firms is likely to be difficult [in unconcentrated markets]”).

²⁴⁷ See *supra* notes 122–128 and accompanying text.

²⁴⁸ 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).

²⁴⁹ Steven C. Salop, *The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium*, 68 ANTITRUST L.J. 187, 191–98 (2000) (similarly critiquing of the idea that market definition acts as a preliminary “filter” for ruling out competitive effects).

²⁵⁰ See *supra* notes 129–140 and accompanying text.

Conclusion

Today, intuitive claims about market boundaries and market power seem to be everywhere. Apple is said to have “market power in the market for mobile operating systems and mobile app stores.”²⁵¹ Facebook is said to dominate “the social media market.”²⁵² Amazon has “market power in the U.S. online retail market.”²⁵³ And Google “dominates the market for general online search”²⁵⁴ as well as “digital advertising” and “search advertising.”²⁵⁵ These are bold claims. But do they identify scopes of trade that would facilitate and withstand antitrust scrutiny?

The answer, for current antitrust practice, is a big fat “Who knows?” Decades of treating different tests of market definition like interchangeable hammers has produced an approach to antitrust market definition that is neither systematic nor reliable. Some tests of market definition might justify the above claims; others probably would not. Without knowing which test a judge would favor, it is difficult to predict how the market would be defined in a given application. And without knowing the boundaries of the market, it can be hard to assess the plausibility of market power claims. This is a real problem for antitrust law.

Modular market definition responds to this problem with a tool for systematically and reliably defining markets in antitrust cases. Instead of uncritically mashing together different tests of market definition, modular market definition recognizes that different tests have different strengths and seeks to exploit this by identifying the best test of market definition for the purposes of every job. This streamlines market definition, turning what was once an unguided choice of test into a simple lookup exercise in what is effectively a market definition cookbook. In the process, modular market definition also uncovers serious flaws in how market definition is currently used in antitrust thinking and enforcement policy.

Do these advantages allow modular market definition to immediately say whether the above claims about market boundaries are valid? Sadly, no, but only because these claims are not fully formed as presented here. Modular market definition does not define markets as abstractly right for every context. On the contrary, it recommends different tests of market definition for different contexts, looking to the substantive purposes of the resulting market as the guiding force in selecting a test. The question is not

²⁵¹ DIGITAL MARKETS REPORT, *supra* note 231, at 333.

²⁵² *Id.* at 90.

²⁵³ *Id.* at 254.

²⁵⁴ *Id.* at 177.

²⁵⁵ *Id.* at 206-07.

whether a given scope of trade is right, full stop. The question is how to find the right scope of trade for evaluating a particular antitrust concern. This keeps substantive antitrust law at the forefront of analysis, as it always should be. To decide whether the above markets are appropriate we must first pause to decide: What are the antitrust concerns, here? When we are clear on our objectives, appropriately defined markets will follow.