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ARTICLE ON THE RELEVANCE OF MARKET POWER

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ON THE RELEVANCE OF MARKET POWER

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Market power is the most important determinant of liability in competition law cases throughout the world. Yet fundamental questions on the relevance of market power are underanalyzed, if examined at all: When and why should we inquire into market power? How much should we require? Should market power be viewed as one thing, regardless of the practice under scrutiny and independent of the pertinent anticompetitive and procompetitive explanations for its use? Does each component of market power have the same probative force? Or even influence optimal liability determinations in the same direction? This Article's ground-up investigation of market power finds that the answers often differ from what is generally believed and sometimes are surprising — notably, higher levels of certain market power measures or particular market power components sometimes disfavor liability. This gulf between conventional wisdom and correct understanding suggests the need to redirect research agendas, agency guidance, and competition law doctrine.

I. INTRODUCTION

Market power is regarded to be the most important determinant of liability in competition law.¹ Often, market power — the degree

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¹ See, e.g., 1 ABA SECTION OF ANTITRUST LAW, ANTITRUST LAW DEVELOPMENTS 550–54 (Jonathan M. Jacobson et al. eds., 6th ed. 2007); ABA SECTION OF ANTITRUST LAW, MARKET POWER HANDBOOK 5–9, 11–31 (2005) [hereinafter MARKET POWER HANDBOOK]; DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses ¶ 23 (Dec. 2005) [hereinafter Discussion Paper on Article 82], <http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf> [<https://perma.cc/6U5G-YT5U>]. It is familiar that market power is a prerequisite for most types of competition law violations: monopolization under Sherman Act section 2 requires monopoly power (understood as a great deal of market power), rule of reason violations under section 1 often call for market power, and horizontal mergers under Clayton Act section 7 are prohibited when they contribute significantly to market power. See, e.g., sources cited *infra* note 144. Many of these demands are similar throughout the world; for example, abuse of dominance under Article 102 of the Treaty on the Functioning of the European Union (TFEU) requires proof of dominance (a great deal of market power), and merger guidelines are broadly similar. See, e.g., sources cited *infra* note 145. Indeed, the European Commission has stated in guidance that the firm hold a dominant position under the heading

to which price can profitably be elevated above a competitive level — must exceed some threshold as a prerequisite to considering whether a challenged act is anticompetitive.² Market power's pivotal role grew as competition law modernized and its core tenets and techniques spread across the globe. The importance of market power inquiries is widely endorsed by lawyers and economists alike.

Nevertheless, the actual basis for market power's centrality is so taken for granted that many basic questions remain largely unaddressed. How much market power is required, and why? Is the market power inquiry separate from the analysis of the challenged practice, as the law declares, or is there an interaction between the two? If the latter, of what sort? How, if at all, should the analysis of market power depend on the proffered anticompetitive and procompetitive explanations for the act under scrutiny? Does market power have a uniform meaning or does it refer to different things in different settings? Do we care about the level of market power, the change in market power, or both? If the level, as is often formally stated, is it the level with or without the allegedly anticompetitive act? If the change in market power, how does the inquiry differ from the purportedly separate analysis of the anticompetitive effects of the act under scrutiny? Does greater market power always favor liability? Does each component of market power have the same importance, or even point in the same direction?

Answers to these questions should be sought through a single, explicitly functionalist inquiry into how market power is relevant to whether conduct should be investigated and subject to liability under competition law. Although much has been written about this subject at varying levels of generality in diverse contexts, most discourse is sufficiently loose and ad hoc that available answers to the foregoing questions are quite limited. Nor is market power's current role in competition law well-grounded in research in industrial organization economics. Most surprising, authoritative court opinions, leading treatises, and competition agency guidance documents deem market power to be essential and analyze it first, but then largely ignore it in their analyses of allegedly anticompetitive practices.

This Article presents a ground-up exploration of the proper role of market power.³ It finds, first, that market power has more channels

²“Market power,” after which it offers a standard, modern definition of that concept. See Communication from the Commission — Guidance on the Commission’s Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings, 2009 O.J. (C 45) 7, ¶¶ 9–11 [hereinafter Guidance on Article 82].

³ See *infra* sections V.A and V.C.

³ As the Article’s title states, the present subject is the relevance of market power, not how best to measure market power if and when some particular notion of market power is determined

of potential relevance than are usually recognized, many of which have not been systematically explored. Second, market power can be understood in different ways, and these different notions are relevant in different ways with respect to different channels in different settings. Third, a given notion of market power has multiple components, and these components likewise may have diverse influences. Regarding the latter two points, even the sign can vary: greater market power sometimes opposes liability, different senses of market power can have opposite effects on the desirability of liability, and different components of a given meaning of market power can have opposite implications. In short, the conventional view that greater market power favors liability is woefully incomplete. Market power is often important, but not always, and its relevance exhibits great heterogeneity and is sometimes contrary to what is generally supposed. Standard market power indices, therefore, are not close to being sufficient statistics for most applications involving the determination of liability in competition law cases.

Part II begins the investigation of market power's role by analyzing what it means for market power to be a dimension of liability, as it is taken to be in much of competition law and commentary. Under the standard approach, analysis of an allegedly anticompetitive practice involves two distinct inquiries, one into market power and another into the act itself. Often the law reflects this characterization by stating these inquiries as independent legal elements, a formulation that is shown to embody an *a priori* implausible view regarding the optimal determination of liability. Accordingly, the remainder of this Article examines a more flexible method that allows tradeoffs in the quantum of market power and the strength of the case regarding the anticompetitive nature of the practice under scrutiny. Part II explains how

to be relevant. Accordingly, the most controversial question in the field — concerning the role of market definition in ascertaining market power — and many other empirical and pragmatic matters regarding market power measurement are largely separate from the present inquiry. For example, a recent attack on market definition, Louis Kaplow, *Why (Ever) Define Markets?*, 124 HARV. L. REV. 437 (2010), argues that the methodology is logically incoherent, taking as given that the thing to be measured is the level of market power, understood as it is under competition law as the power to profitably elevate price. *See infra* section V.C. As discussed in section V.D's various criticisms of market share threshold tests, however, the arguments in the present Article on the heterogeneous relevance of market power — indicating that different senses and even different components have different (even opposing) effects in different settings — cast further doubt on the market definition paradigm, wherein decisionmakers must choose *the* relevant market for purposes of resolving a given competition law case. Simply put, if market power is relevant in different ways and even should be taken to mean different things, how can there exist a single, *a priori* technique for measuring it, whether using market definition or otherwise? By contrast, the aforementioned critique of market definition goes further, in a sense, by suggesting that it is not a valid means of helping to determine *any* standard sense of market power. Among those methods that are cogent and feasible, the best approaches will often depend, naturally, on just what we are trying to measure and why, topics that are investigated here.

even this seemingly flexible outlook entails significant and dubious restrictions on how the underlying evidence should be analyzed. In particular, two implicit assumptions are involved: that market power evidence can be assessed in a vacuum, without regard to the particulars of the allegedly anticompetitive practice; and that evidence on challenged practices can be assessed apart from the specifics that generated conclusions about the degree of market power. Both conditions fail in many settings. This Article emphasizes that, ultimately, the appropriate role of market power must be derived by induction: that is, by first assessing where, why, and how one sense or another of market power is actually relevant and then seeing what generalizations are appropriate.

Part III, the core of the Article, directly considers the channels by which market power may be relevant. It begins by articulating a decision-theoretic formulation of how liability should optimally be determined. Although obvious on a moment's reflection, the importance of grounding the role of market power (and that of other factors) in such a framework is often overlooked.

The first channel of relevance concerns classification: how market power may bear on the likelihoods of anticompetitive and procompetitive explanations for the act under scrutiny. In accord with conventional wisdom, there are a number of reasons that market power may make the anticompetitive understanding more likely, although it is often obscure what notion of market power is regarded to be pertinent. In addition, market power sometimes makes procompetitive explanations more likely, an observation that reinforces a broader point concerning the need — often disregarded in practice — to specify both anti- and procompetitive explanations from the outset. Indeed, because the relevance of much evidence on classification is comparative, it is impossible to draw inferences without articulating what is being compared to what.

The second and third channels involve how market power may influence the magnitudes of anticompetitive harm and procompetitive benefit from acts under scrutiny. These questions get too little attention in some areas of competition law,⁴ where analysis is confined primarily to classification. Because liability decisions often involve uncertainty about this matter, the optimal choice is influenced significantly by how much harm can be averted by liability if indeed the act is anticompetitive and how much benefit may be sacrificed if liability is mistakenly imposed when the act is truly procompetitive.

The assessment of anticompetitive harm begins by elaborating different meanings of market power. References typically contemplate

⁴ The primary exception is horizontal mergers. See *infra* subsection V.B.3.

market power levels, but often do not distinguish between the level with and without the effects of the allegedly anticompetitive practice, a distinction that proves to be highly significant since the two levels can have opposite implications for the desirability of liability. Also considered is the difference between these two levels, which is referred to as the market power delta.

Market power in these various guises may be thought to bear on anticompetitive harm in two qualitatively different ways. First, it may bear on the magnitude of marketplace effects, commonly viewed as the influence of an allegedly anticompetitive act on price. Conventional discussions are usually loose about just what this relationship might be. To illustrate the possibilities, a basic model from the literature on exclusion via raising rivals' costs is examined. It turns out that only one of the three contributors to greater market power in this setting implies a larger price effect; the other two instead reduce the exclusionary strategy's impact on price. That is, two out of three factors that contribute to market power, which is regarded to favor liability, actually imply that anticompetitive effects are smaller in this setting.

Second, market power may bear on the social welfare consequences of a given price increase. Under a total welfare standard, a higher level of market power implies that incremental social harm is greater, whereas under a consumer welfare standard it does not. This point casts an interesting light on modern horizontal merger guidelines because they, on one hand, often proclaim a consumer welfare standard but, on the other hand, state targets for safe harbors and likely challenges under which a higher level of market power is taken systematically to favor liability.

The relevance of procompetitive benefits that might be sacrificed by the mistaken imposition of liability is a particularly neglected subject. In many settings, this potential cost of liability is greater when market power is lower, and thus smaller (and possibly negative) when market power is higher. Hence, market power can favor liability through another unappreciated channel. However, some sorts of procompetitive benefits, including innovation in certain settings, scale with market power, another respect in which greater market power can disfavor liability.

Part III closes by illustrating some of the foregoing points through an extended example involving a significant aspect of predatory pricing analysis: the need for predation to be profitable in order to be rational (reflected in the recoupment requirement in U.S. competition law). First, it is explained that assessment of this demand may not be diagnostic vis-à-vis some procompetitive explanations (product promotion and moving down a learning curve) for what appears to be predation. Second, when this condition is diagnostic, market power may be relevant, but different senses of market power influence different factors regarding recoupment, and in different directions (conflicting with

standard formulations and their application by courts). Third, because market power's relevance arises due to its correlation with an alleged predator's profits in various scenarios, it makes more sense to estimate profits directly, eschewing assessment of market power as such for this purpose.

In all, Part III establishes that there are many channels by which market power may be relevant to the optimal determination of liability, some of which are unexplored; that different senses of market power can have different influences on the optimality of liability in different settings, with greater market power sometimes disfavoring liability; and that different components of a given notion of market power can have different effects, sometimes in opposite directions. Market power is by no means a unitary phenomenon, and proper analysis suggests that market power's appropriate role can be quite different from what is commonly supposed.

Part IV extends the analysis in two ways. One concerns the screening of cases, both by competition agencies in choosing which practices to investigate and by courts in deciding which cases should survive procedural hurdles — in U.S. civil litigation, motions to dismiss and for summary judgment. Market power is regarded to be important for screening, but its role in this regard is underdeveloped. The proper method of screening is recast once one appreciates that it is derivative of how liability should optimally be determined, which we have seen differs importantly from existing understanding.

Another subject concerns the difference between liability that involves injunctions — prohibiting the use of practices deemed to be exclusionary or barring the consummation of mergers — and liability that involves the imposition of sanctions — mainly, fines and damages — the prospect of which deters anticompetitive behavior but also has the side effect of chilling procompetitive conduct. There are subtle yet important distinctions in how liability is properly determined in these two settings, but market power is relevant (or not) to both in a roughly similar fashion.

Part V reflects on competition law doctrine and commentary in light of the foregoing analysis. It begins by revisiting market power as an element and also considers and criticizes more broadly the tendency to silo the analyses of market power and of allegedly anticompetitive practices as well as the analyses of anticompetitive and of procompetitive explanations for a given practice. Whether and how the standard analysis of horizontal mergers differs from that of other practices is considered as well. Part V then examines the meaning of market power in existing doctrine and discourse, which seems fairly uniformly to contemplate market power levels, which are understood largely in accord with the standard economic definition of the degree to which price can profitably be elevated above a competitive level, often taken as marginal cost. This accepted meaning is frequently ap-

plied in a vacuum, with substantial ambiguity and inconsistency regarding whether the level is taken to be that with or without the effects of the allegedly anticompetitive practice. In any event, competition law's typical definition of market power is one that this Article shows often to be inappropriate and even counterproductive for deciding cases. Also troubling is that competition law's standard method of instantiating market power requirements is through market share threshold tests that, on examination, do not really indicate how much market power is purportedly required and, due to the acknowledged need for flexibility in interpretation, are substantially indeterminate. This Part closes with reflections on how this problematic doctrinal configuration may have arisen.

In many respects, the present, largely uncontroversial state of doctrine, competition agency protocols, and legal and economic analysts' views regarding the role of market power is far removed from what this Article's investigation suggests to be the proper use of market power. This gulf less reflects disagreement than inattention: market power's increasingly important place in competition law throughout the world has benefited remarkably little from explicit analysis of its actual relevance to the optimal determination of liability.⁵ The time has come to press the hard questions and to lay the foundation for answers that can better guide the continued evolution of competition law and practice as well as complementary research in industrial organization economics.

⁵ As just a hint in support of this strong claim (which is documented in greater detail in footnotes throughout this Article, especially in section V.B), consider the influential article, William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937 (1981). Although the authors aim to present a rigorous, comprehensive analysis of market power in light of its crucial role in competition law, they devote virtually no attention to the rationale for assessing market power in the first place. Their main statement that relates to this subject is: "The relevance of the [nature of the alleged] violation [to the market power requirement] is twofold. First, it affects the costs of litigation because it determines both the amount of proof required for liability and the nature of the remedy. Second, as a matter of law rather than economics, the degree of market power necessary to establish liability is different for different antitrust violations." *Id.* at 955 (footnote omitted). The first factor regarding litigation costs seems sensible but hardly goes to the core of why market power is required, what it should be taken to mean, or how it is relevant. The second factor is remarkable in its suggestion that only the happenstance of formalist legal doctrine explains why requisite market power should in any way depend on the nature of the practice under scrutiny. (See section V.E on the evolution of market power's role in U.S. competition law.) It is hard to understand why Landes and Posner thought it important to add substantial economic rigor to an inquiry that they suggest has little to do with economics. Given the existence of the article as well as the authors' broader writings, it seems likely that they do believe that market power inquiries are significantly about the economic implications of allegedly anticompetitive acts, but in any event they make no sustained effort in their article to explain how this is so.

II. MARKET POWER AS A DIMENSION OF LIABILITY

What does it actually mean to say that a class of competition law offenses involves an inquiry into market power and an assessment of the allegedly anticompetitive practice? And does this formulation plausibly correspond to how industrial organization economics understands firms' behavior and its consequences for social welfare?

Section A begins by making explicit that the standard paradigm supposes the existence of a function that maps a finding on market power and another finding on the act under scrutiny into a liability decision. (A special case, revisited in section V.A, is where market power is treated as an "element" of an offense.) Section B states how this liability function utilizes informational inputs — the evidence in the case at hand — and section C questions the implied separability between market power assessments and act assessments. Section D explores generalizations that range from modest relaxations of the separability assumption to its complete abandonment, which would be tantamount to eliminating market power as a distinct inquiry in competition cases.

This Part of the investigation is confined to articulating the logical relationships entailed by the existence of a market power dimension of liability. Ultimately, the proper role of market power must be derived inductively from its actual channels of relevance to optimal liability decisions in competition law's variegated settings, the subject of Part III.⁶

A. Liability Function

The notion that liability is a function of findings about market power, here denoted MP , and findings about allegedly anticompetitive acts, A , can be expressed as $f(MP, A)$, wherein liability is assigned if and only if $f(MP, A) > k^*$.⁷ A higher value of f indicates a stronger basis for assigning liability, which may involve prohibition (such as enjoining a practice or disallowing a merger) or the imposition of sanc-

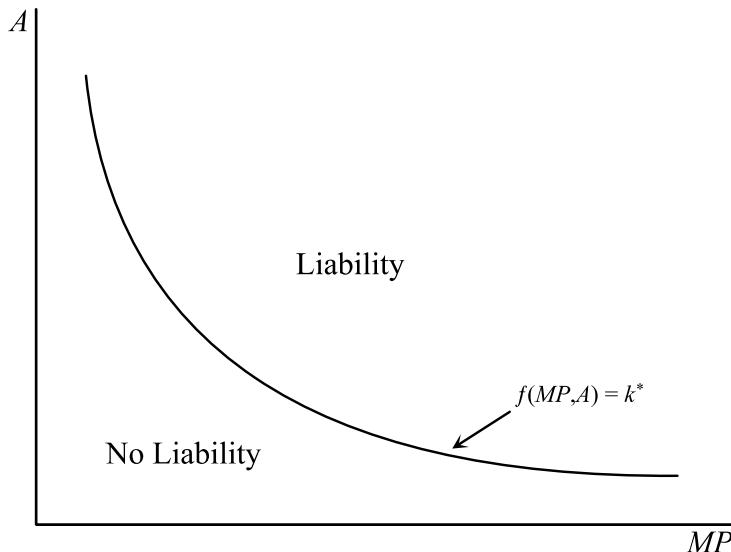
⁶ This Part's analysis, nominally on market power in competition law, is in many respects more general, encompassing a range of settings in which liability is determined as a function of the conclusions of two or more separate inquiries. This point is significant because many laws and regulations in fact have a multielement structure (as do decisionmaking modes employed in a wide array of contexts as different as medical practice, firm strategy, and foreign policy). Neither legal nor economic analysis to date has explored this matter in depth, or even in the basic ways presented here. Some preliminary work by the author suggests that different models, corresponding to different underlying structures of actions, are applicable in different domains. Part III, which contains this Article's affirmative inquiry into how market power may be relevant, will make more explicit the assumed settings while remaining informal.

⁷ As will be emphasized in section III.A, a measure (here, A) regarding allegedly anticompetitive acts needs to include pertinent procompetitive effects as well as anticompetitive ones.

tions (notably, fines or damages). The parameter k^* denotes the critical value of the function above which liability attaches.⁸

More specifically, assume that our function $f(MP, A)$ is rising in both MP and in A , a relationship that might be as depicted in Figure 1.

FIGURE 1



The curve labeled $f(MP, A) = k^*$ traces those values of MP and A for which the liability function f just equals the critical value for liability. For higher values of MP and A , which generate higher values of f , liability attaches, and for lower values, there is no liability.

As drawn, Figure 1 has three notable features. First and foremost for present purposes, the downward slope of the curve means that there is a tradeoff in the requisite levels of MP and A required for liability: when MP is greater, the finding regarding A need not be as strong to warrant liability, and, conversely, when A is greater, not as much MP is required for liability. Second, examining the lower-right portion of the Figure, we can see that even extremely high MP is insufficient to make up for a sufficiently low level of A . Were it otherwise, we would have a regime of no-fault liability, meaning that a suf-

⁸ There are a number of matters pertaining to the natural zero point for these variables. For convenience (consistent with the representations in Figures 1 and 2, to follow), MP and A will be taken to range from zero to infinity (even though for A , it might be more natural for it to span negative values, corresponding to net procompetitive assessments). Likewise, one might wish to take k^* to be zero, so that f would indicate the net contribution to welfare from assigning liability, but in any event this simply involves a normalization of the function f .

ficiently powerful firm would be liable regardless of how it acts.⁹ Such a regime could exist and is sometimes proposed, but is not reflected in the Figure. Third, examining the upper left, even when the assessment of A is very high, liability is not found when MP is negligible. This feature is also not necessary; there might be some types of acts for which the appropriate $f(MP, A)$ does reach the A axis.¹⁰

Figure 1 is offered merely as a concrete illustration; only the downward slope of $f(MP, A)$ is taken to be central in what follows. Nevertheless, in formulating policy and in analyzing particular cases using this framework wherein liability depends on MP and A , which has long been the norm in many realms of competition law, it would be necessary to know the actual function and corresponding k^* — equivalently, the shape and height of the curve in Figure 1. For example, if the left portion of the curve were more nearly vertical, even small differences in MP would be critical in a certain range while large variations in A would not matter much; conversely, if portions were more nearly horizontal, small differences in A would be decisive in a certain range almost without regard to MP . In addition, if the curve were closer to the origin, liability would apply in a broader array of cases, whereas if it were further to the northeast, liability would attach less frequently. Perhaps remarkable given the centrality of this method of liability determination, concrete content regarding the shape and location of this curve has essentially never been supplied by competition agencies, courts, or commentators.¹¹ Moreover, there is little theoretical or empirical learning in industrial organization economics that would allow us to determine appropriate answers to these questions with any specificity.¹²

⁹ Viewing the function $f(MP, A)$ and Figure 1 as applicable to a particular type of act (say, tying), a related liability scheme in this regard could be that, although the high- MP firm is not liable for merely existing, it is liable for any tie it imposes, no matter how strong is the evidence in negating anticompetitive effects and affirmatively establishing procompetitive effects. More broadly, $f(MP, A)$ and its associated graph are taken to be at some level of generality: perhaps pertaining to all allegedly exclusionary acts by a dominant firm, perhaps only tying, perhaps only certain types of tying or tying in particular market settings, and so forth. The analysis in this Article illuminates but does not specifically address the ever-present question of the appropriate level of generality for rules, agency guidelines, and practice.

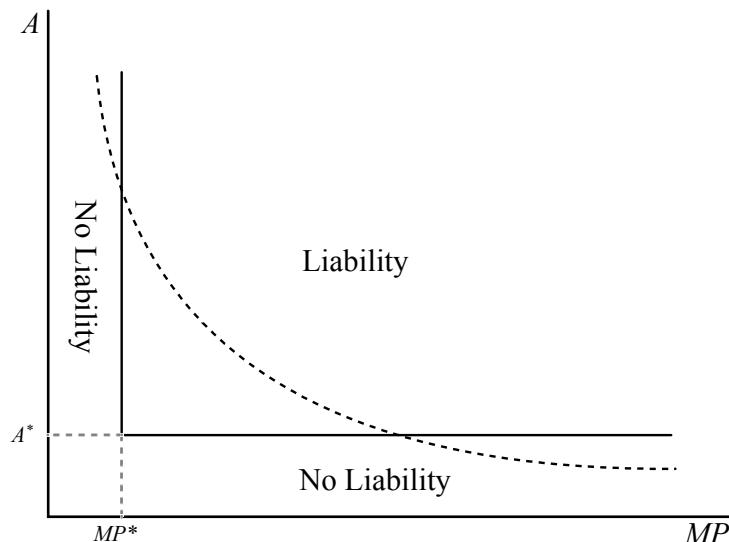
¹⁰ Consider blowing up a competitor's plant or per se offenses like price fixing. In addition, when evidence on A is sufficiently strong, it may make sense not to bother measuring MP or to assume that very low measured levels are likely to be mistaken.

¹¹ The primary instance in which it might appear as if content has been given involves market share threshold tests for various offenses; however, as section V.D discusses, such tests tell us little about requisite market power.

¹² Cf. Michael D. Whinston, *Exclusivity and Tying in U.S. v. Microsoft: What We Know, and Don't Know*, J. ECON. PERSP., Spring 2001, at 63, 79 ("Ideally, decisions in the presence of such uncertainty would rely on knowledge of the typical effects of challenged practices, accumulated from a body of economic research. What is striking about the area of exclusive contracts and tying, however, is how little the current literature tells us about what these effects are likely

Before proceeding, it is helpful to compare the depiction of $f(MP, A) = k^*$ in Figure 1 with that implied by a particular legal formulation that constitutes a special case. It is often stated not merely that liability depends on the degree of market power and on the strength of the indication that the act is anticompetitive but, more specifically, that market power and the exclusionary nature of the act (for example) are two independent elements.¹³ This formulation is illustrated in Figure 2.

FIGURE 2



Under the elements approach, we ask separately whether MP and A exceed their respective thresholds, and both must do so in order for liability to be established. That is, we require $MP > MP^*$ and $A > A^*$. Accordingly, our function is lexicographic, with the “L”-shaped curve in Figure 2 dividing the Liability and No Liability regions.

The contrast between the elements approach and the more general one is apparent, and its magnitude depends on the shape of our original $f(MP, A) = k^*$ curve and on the levels of k^* , MP^* , and A^* . Such a lexicographic function seems to be an implausible approximation of a sensibly calibrated liability function — one reflecting the consequences of firms’ actions for social welfare — including under the maintained

to be. This state of (non)knowledge is, I think, responsible to a significant degree for the very strong but differing beliefs that economists often have about whether exclusive contracts and tying are likely to have welfare-reducing anticompetitive effects.”).

¹³ See *infra* section V.A.

assumption that market power is important. For example, can it really be that whether or not MP is ever so slightly above or below some particular level, MP^* , is decisive regardless of whether our evidence on the net anticompetitive effects of the act under scrutiny is barely above A^* or massively so?

It is difficult to imagine that the tradeoff is other than continuous, without regard to whether, as will be elaborated in Part III, market power is probative because it informs us about the classification of an act (whether it is likely to be anti- or procompetitive), the magnitude of harm (conditional on its being anticompetitive), or the magnitude of the forgone benefit (conditional on its being procompetitive but nevertheless subject to liability). For example, it is generally believed that market power is relevant in significant part because it enables us to resolve uncertainty about whether a challenged practice is indeed anticompetitive, but surely the importance of market power in this regard will be greatest when there is significant uncertainty about that question and notably less important when we are almost completely certain, one way or the other.

To push this point further, consider what might be the strongest basis for the existence of a discontinuity: settings in which market power must exceed some threshold in order for an anticompetitive strategy to be profitable.¹⁴ Even then, as a practical matter a decision-maker will have significant uncertainty about the location of that threshold and about how much market power is actually present.¹⁵ This uncertainty reintroduces a nontrivial tradeoff between the measured (inferred) level of market power in the case at hand and the strength of the evidence bearing on whether the act is likely to be anticompetitive. In addition, as mentioned, both anticompetitive harm and procompetitive benefit, each conditional on classification, are relevant to a welfare-based liability decision, and these too are plausibly continuous in market power.

¹⁴ The idea is that a necessary condition for a firm to employ a practice for the purpose of achieving anticompetitive ends is that the resulting elevation of profits be at least sufficient to cover the costs of the strategy. Such a requirement is most familiar with regard to predatory pricing, an application explored in section III.E.

¹⁵ Put another way, even if there is a true threshold generating a discontinuity, our measures of the pertinent factors that determine its location and the degree of market power in the case at hand are all noisy; hence, the probability that the threshold is exceeded is a continuous function of the strength of the evidence. As elaborated in section B, MP is a function of evidence — not a revealed truth — and, as section III.A emphasizes, the question of whether to assign liability fundamentally involves decisionmaking under uncertainty. In such a setting, it is quite unlikely that an optimal decision rule would depend critically on the precise value of a measure that summarizes merely a subset of the relevant information. Even worse, traditional market power threshold tests are stated at a fairly high level of generality, so that the point of discontinuity is, in principle, taken to be the same across a broad class of practices and industrial settings.

The remainder of this Part considers the continuous formulation depicted in Figure 1. The focus will be on how this seemingly general and intuitive specification is actually restrictive in important ways. Toward the end of the Article, section V.A revisits market power as an element by addressing legal doctrine, commentary, and agency guidance documents; and section V.D examines how market power requirements as currently articulated — as market share threshold tests — are substantially vacuous, in which event what may appear to be a threshold rule that asks whether $MP > MP^*$ is significantly softened.

B. Evidence

In the function $f(MP, A)$, neither MP nor A are fundamentals that are directly observed. Rather, in a given case, there is some vector of evidence, e , that must be mapped to a conclusion regarding liability. What $f(MP, A)$ really means, then, is that there are two intermediate conclusions — one about market power, MP , and one about the nature of the act under scrutiny, A — that determine liability. Let us now make explicit the relationships among evidence, these intermediate conclusions, and the ultimate conclusion on liability.

The standard paradigm, which posits a mapping from a market power determination and an act assessment to a conclusion about liability, entails the following. First, there exists some unitary thing called market power, which may be assessed as a function of some subset of the evidence. Second, there exists some other thing called the character of the act, which in turn may be determined as a function of another subset of the evidence. Included in these two suppositions is the idea that these two things can be evaluated independently of each other. Third, these two measurements tell us what we need to know to identify the social welfare consequences of assigning liability.

This view can be translated into simple notation as follows. First, we can cluster the evidence, e , into two sub-vectors. Let e^{MP} denote all the evidence bearing on MP and e^A all the evidence bearing on A . (Defer for a moment whether these two groups of evidence may overlap.) Second, posit two subfunctions: $g^{MP}(e^{MP})$ takes all facts (components of the overall evidence vector e) pertaining to market power and maps them into a single index MP of the strength of market power. That is, $MP = g^{MP}(e^{MP})$. And $g^A(e^A)$ takes all facts (components of e) pertaining to the character of the act and maps them into a single index A of the strength of the act-related evidence: $A = g^A(e^A)$. Now, our previous use of $f(MP, A)$ can be seen as a shorthand. The complete

statement is the composite function $f(g^{MP}(e^{MP}), g^A(e^A))$, and our liability test is $f(g^{MP}(e^{MP}), g^A(e^A)) > k^*$.¹⁶

Return briefly to the decomposition of the evidence vector e into the sub-vectors e^{MP} and e^A . The simplest view is that these sub-vectors are a partition, which is to say that every component of e is either in e^{MP} or in e^A . This seems implausible and is not required by the preceding formulation: overlap is not prohibited. However, moving to the other extreme, if we were to assume that every component of e was in each of the two sub-vectors, then there might be little left of our subject, which posits that there is a distinct market power dimension of liability. (If, say, every component of e was in e^A , then $g^A(e^A)$ alone could be viewed as determining liability as a function of all of the evidence, collapsing the function $f(g^{MP}(e^{MP}), g^A(e^A))$ into $g^A(e^A)$.) Instead, the subfunctions $g^{MP}(e^{MP})$ and $g^A(e^A)$ could make very different use of their inputs (even if e^{MP} and e^A overlap substantially or completely). That is, it might be useful as a heuristic to undertake two inquiries and then combine them, even if their informational inputs are largely the same.

In light of what most analysts ordinarily suppose regarding market power and the assessment of allegedly anticompetitive behavior, it is probably most helpful as we proceed to imagine that e^{MP} and e^A are to some nontrivial extent different, although this is not logically necessary. What is required, however, for a distinct market power inquiry to be coherent is that $g^{MP}(e^{MP})$ and $g^A(e^A)$ yield different outputs that, in turn, have independent influences on the value of $f(g^{MP}(e^{MP}), g^A(e^A))$. And, of course, it is necessary that $g^{MP}(e^{MP})$ bear some resemblance to what we understand as a market power assessment, for otherwise we might indeed have a useful two-component algorithm but not one that rationalizes a market power dimension of liability.¹⁷

C. Separability

This section elucidates and then evaluates the assumption that inquiries into market power and the act are separable, as expressed by the function $f(g^{MP}(e^{MP}), g^A(e^A))$ and its initial, summary version

¹⁶ The two-element approach at the end of section A can now be re-expressed as requiring for liability that $g^{MP}(e^{MP}) > MP^*$ and $g^A(e^A) > A^*$.

¹⁷ To take what may seem to be an extreme and circular view, but one that seems implicit in some analysts' arguments, *see infra* note 195, one might first directly determine whether there should be liability and only then conclude that sufficient market power exists. Formally, this can be done by allowing both e^{MP} and e^A to be coincident with e , allowing $g^A(e^A)$ to essentially determine liability, and then dealing with the market power requirement by formulating $g^{MP}(e^{MP})$ to yield a high value (above MP^*) whenever (but only when) $g^A(e^A)$ is large enough to warrant liability. As argued below, if this circular formulation were necessary to reach appropriate outcomes, then the market power dimension of liability would best be dispensed with entirely.

$f(MP, A)$.¹⁸ The separability embodied in this function entails that the following conditions hold: (1) There are two intermediate conclusions, one captured by some measure of market power MP (g^{MP}) and another embodied in a measure that characterizes the degree to which the hypothesized act is anticompetitive A (g^A). (2) These intermediate conclusions are distinct: each is derived independently of the other, which is to say, without regard to how the other was obtained. (3) These two distinct summary measures are sufficient information to determine liability. Because this cluster of conditions is unfamiliar to some readers, and its implications in the present context are insufficiently appreciated even by those familiar with this mathematical concept, some elaboration is helpful.

The idea that each of our two intermediate conclusions can be reached independently of the other means that how we should think about determining market power, MP , is independent of (unrelated to) what we are thinking about with regard to the act assessment, A , and conversely, how we should assess the act evidence is independent of what went into our thinking about the extent of market power. A liability assessment team could be broken into two groups, each meeting in separate rooms. One team takes the market power evidence (e^{MP}) and, after its deliberations, reports MP , and the other team takes the act evidence (e^A) and reports A . Neither team is permitted to hear nor would benefit from hearing any of the analysis performed by the other.

Stated more formally using our notation: The values of g^{MP} and g^A each, through our function f , influence liability. How, in turn, g^{MP} contributes to that conclusion — that is, how g^{MP} influences the value of f — may well depend on the overall (summary measure of) strength given by g^A , but it may not depend on how that conclusion was reached, that is, on what various combinations of evidence pertaining to A (e^A) led to the given strength of the intermediate conclusion regarding A (g^A). Likewise, how g^A influences the value of f may well depend on the overall (summary measure of) strength given by g^{MP} , but it may not depend on how that conclusion was reached, that is, on what various combinations of evidence about MP (e^{MP}) led to the given strength of the intermediate conclusion regarding MP (g^{MP}). (As illustrated formally in the accompanying footnote,¹⁹ these mirror-image

¹⁸ Use of the term “separability” to describe these properties originates with Robert H. Strotz, *The Utility Tree — A Correction and Further Appraisal*, 27 ECONOMETRICA 482 (1959). In modern economics parlance, the form of separability entailed by the ability to write the function $f(e)$ as $f(g^{MP}(e^{MP}), g^A(e^A))$ is often termed “weak separability” (with “strong separability” often referring to additive separability), although, as the text explains, in the present context the assumption is highly restrictive despite this nomenclature.

¹⁹ Consider a simple example involving two subfunctions, denoted by the superscripts 1 and 2, and four pieces of evidence, denoted by the subscripts 1 through 4. Our question is whether the most general version of the function, $f(e_1, e_2, e_3, e_4)$, can be expressed using the following separable

entailments are logically distinct, which is to say that it is possible for one to hold but not the other.²⁰ Separability in the sense used here embodies both features.)

These abstract statements can be clarified and their importance better appreciated by considering some specific implications of separability regarding market power and act analysis.²¹ Begin with the latter branch, which holds that our analysis of the anti- or procompetitive nature of an act may not depend on how the quantity of market power is derived. This implies, for example, that it cannot matter whether a given *MP* arose from a rather low elasticity of market demand and an intermediate market share for a dominant firm or from a moderate elasticity but a notably higher market share. (But it is easy to imagine, for example, that exclusive dealing or tying is more likely to be successfully exclusionary in the latter case.) Nor can it matter whether *MP* arose from a rather low demand elasticity and moderate rivals' supply elasticity or conversely. (But strategies aimed at raising rivals' costs may be more potent in the former case.) Nor whether *MP* reflects higher current market power with modest entry barriers or lower current market power with higher barriers. (But strategies designed to raise entry barriers may be more relevant in the former case.) Nor whether extant *MP* reflects margins in a differentiated products or homogeneous goods industry, nor the form of strategic interaction among firms, and so forth. On reflection, it seems that how we arrive at a given conclusion about *MP* may frequently be of great significance for how we assess allegedly anticompetitive practices. Not al-

formulation: $f(g^1(e_1, e_2), g^2(e_3, e_4))$. Consider specifically the function $f(e_1, e_2, e_3, e_4) = e_1e_2e_3 + e_4$. Now, in this example, it is possible to re-express our function as $f(g^1(e_1, e_2), e_3, e_4)$, where $g^1(e_1, e_2) = e_1e_2$. That is, we can write $f(e_1, e_2, e_3, e_4) = g^1e_3 + e_4$. However, it is obvious that there does not exist any function $g^2(e_3, e_4)$ such that we can express $f(e_1, e_2, e_3, e_4) = e_1e_2e_3 + e_4$ solely as a function of g^1 and g^2 . In this example, there does exist a summary measure for e_1 and e_2 as a group, but there does not exist a summary measure for e_3 and e_4 as a group. We can separate this function in the form $f(g^1(e_1, e_2, e_3), g^2(e_4))$. However, returning to the discussion in the text, if e_3 was widely understood as pertaining to the character of the act and not to market power, this alternative separation merely shows that there exists *some* way to subdivide evidence — here, separating e_4 from the rest of the evidence — but not that there is a way to separate market power analysis (taken to depend on e_1 and e_2) from act analysis (taken to depend on e_3 and e_4). Moreover, it is easy to construct examples where even this alternative separation would not work. For example: $f(e_1, e_2, e_3, e_4) = e_1e_2(e_3 + e_4) + e_3e_4$.

²⁰ Informally, using the two teams / two rooms metaphor, whether Team Market Power may listen in on Team Act's deliberations is distinct from whether Team Act may listen in on Team Market Power's deliberations.

²¹ More concrete examples are implicitly provided throughout Part III, which presents numerous ways in which some notion of market power may illuminate liability but in ways that are not separable from the act analysis, and conversely. To be clear, not all channels of relevance are nonseparable. For example, the analysis in subsection III.C.3 of how a given degree of anticompetitive price increase translates into an impact on total welfare is, in the basic case, independent of how that price increase was generated.

ways, but often enough that strong adherence to separability seems unwarranted.

Now consider the other direction: the assumption that our analysis of the magnitude of market power may not depend on how the assessment of the act's anticompetitiveness is determined. It cannot matter whether a given conclusion on *A* reflects high confidence that the act is anticompetitive but unlikely to cause much damage or significant uncertainty about anticompetitiveness but, if the act is anticompetitive, adverse effects are likely to be large. Nor the type of alleged-ly anticompetitive act (tying? predatory pricing? exclusive dealing?). Nor any particulars (is the tie technological or contractual? is the predation single- or multi-market? is the exclusive dealing purportedly aimed at driving out a rival or keeping out new entrants?). Nor whether part of the balance reflects a plausible procompetitive explanation (which may seem to be outweighed by the anticompetitive one). Nor, when there is a plausible procompetitive explanation, what is its nature (reduction in sales cost? incentivizing innovation? encouraging product promotion?). In sum, it is supposed one can arrive at a definitive conclusion about *MP* without regard to the type of anti- and procompetitive explanations under consideration, their plausibility, or the magnitude of anti- or procompetitive effects, as the case may be. Relatedly, the foregoing also implies that there is a single notion of market power that is relevant in all situations, for after all we are assuming that we can arrive at *MP* without regard to any understanding of the analysis pertaining to *A*. Once again, on reflection, it seems that how we reach our conclusion about *A* may often be quite important for how we should analyze market power. This rejection of separability may not always be warranted, but it occurs often enough to undermine the view that the assumption is typically satisfied.

It appears implausible that there is a market power dimension of liability and an act dimension that are separable in the sense that seems to be implied by the existing paradigm and associated discourse. Focusing on market power in particular, we would need to believe that it is a single thing; that one can measure it in a vacuum, without regard to the practice under scrutiny or the proffered anti- and procompetitive explanations for it; and that the practice in turn can be examined independently of how various features of the market setting contributed to our market power assessment. Part III, which affirmatively analyzes the channels by which various notions of market power may be relevant, will provide more concrete indications of many ways that separability is violated. Some channels, to be sure, are rather generic, but many are not.

D. Generalization

This section considers whether there exist ways to relax the separability assumption without giving up altogether on the idea that, at least sometimes, there may be a distinct market power dimension (or dimensions) of liability. Ultimately, the appropriate treatment should be derived through induction. That is, it should depend on the particulars of how and why market power in one sense or another is relevant to liability and, in light of that analysis, on whether there exist sufficient regularities that some principles or rules of thumb can be articulated to guide practice in at least some domains of competition law.

One way to avoid the limitations of the assumption of our initial $f(MP, A)$ formulation — which was a summary statement of $f(g^{MP}(e^{MP}), g^A(e^A))$ — which posits two separable inquiries, one into MP and one into A , is to abandon all restrictions, stating our liability function as $f(e) > k^*$. Certainly it is not wrong in principle to take all of the evidence, e , without regard to whether it might be thought to pertain to market power or to the act, and combine it in an optimal manner in order to arrive at an overall conclusion about the social welfare consequences of assigning liability in the case at hand. Nevertheless, it makes sense to contemplate formulations short of this extreme, particularly in light of the longstanding belief of nearly all analysts that market power should be regarded as an important dimension of liability in most competition law settings.

Stepping back, it is commonplace and advantageous to organize decisionmaking by clustering information and decomposing analysis into distinct inquiries. When an environmental regulator seeks to define limits for emissions of a pollutant, it probably finds it useful to examine costs and benefits separately, leaving the balancing of the two until the end. Costs derive from engineering and related technological and economic considerations, whereas benefits are estimated using epidemiological evidence; typically, there would be little interconnection between the two.

Moreover, the resulting focus and gains from specialization make it appealing to entertain a somewhat modular approach even when separability of the underlying inquiries is somewhat imperfect. For example, a firm considering a new product line might have the production division concentrate on the estimation of costs and the marketing division on revenue, after which the two intermediate conclusions would be combined to make a decision on whether to proceed. This may be so even if there is some overlap: notably, demand may depend on the particulars of product design, which in turn will influence costs. Therefore, some interchange between the two divisions would be necessary, but perhaps most of the work could be compartmentalized. Separation may make more sense for some products than others, and

some specialization short of complete separation might sometimes be the best approach.

Returning to our question of the right functional form relating market power and act assessments, a middle ground between $f(MP, A)$ and the entirely unrestrictive $f(e)$ would be to allow three or more subfunctions under f . At some point, of course, there may be little difference between such an approach and simply going to $f(e)$ — for example, if we allowed one subfunction for each possible bit of evidence. However, there are natural compromises much closer to our starting point, such as $f(MP^1, MP^2, A)$ and $f(MP, A^1, A^2)$.²² For example, as the discussion in section C suggests, with regard to market power we may care separately about the market demand elasticity and rivals' supply elasticity, or about current market power and the state of entry barriers. Or with regard to the practice under examination, we may wish to consider an anticompetitive explanation and a procompetitive explanation, allowing our conclusion about MP to bear distinctly on each, or two different anticompetitive explanations, or whether the act is anticompetitive and the magnitude of the anticompetitive effect if indeed it is.

Our function f need not be limited to three subfunctions; it could have as many as we like. And market power in one sense or another may be one component, multiple components, or none at all.²³ As mentioned, if we introduce substantial flexibility or if we allow the function itself to vary depending on particulars of the case (which must first be analyzed to determine the choice of the function),²⁴ there may not be much structure left. Put another way, the entirely unrestrictive $f(e)$ may not be much looser than what we actually think best. Answers need to be derived from experience analyzing a range of practices and market settings. If there are regularities whose applicability can readily be determined and whose components meaningfully involve one or more inquiries that are helpfully labeled as pertaining to market power, the proof will be in the pudding.

III. CHANNELS OF RELEVANCE

This Part examines how market power in various senses may be relevant to optimal determinations of liability. Section A begins with

²² For ease of exposition, as with $f(MP, A)$, the dependence of each argument in these variations on the corresponding sub-vector — say, e^{MP_1} , e^{MP_2} , and e^A — is suppressed.

²³ For analyzing possibly anticompetitive practices, it may be helpful to identify intermediate steps (subfunctions) even if none of them pertain to market power in any recognizable sense. The focus in this Article, however, is on identifying instances in which one or more steps do involve some notion or aspect of market power.

²⁴ See *supra* note 9 (discussing the level of generality with which competition rules are selected).

an explicit decision-theoretic framework that clarifies the factors that in principle determine the desirability of assigning liability; this analysis does not itself distinguish market power from anything else that might bear on the expected effects of liability in a given case. The next three sections explore how market power may bear on these factors. Section B examines classification: how market power can influence the likelihoods of anticompetitive and procompetitive explanations for a practice under consideration. Sections C and D address the magnitude of the welfare impact conditional on an anticompetitive or a procompetitive explanation being applicable. Section E concludes by presenting an example — the profitability condition for predatory pricing (the recoupment requirement) — to illuminate a variety of ways in which market-power-related factors may be relevant, including some respects in which they are not, or may even militate against liability.

A. Decision-Theoretic Formulation

The decision whether to assign liability calls for a balancing of the expected benefits and costs. Liability is beneficial when the practice is anticompetitive and costly when it is procompetitive.²⁵ In most of this Article, liability will be understood as involving prohibition of a practice and no liability as permission, such as when liability will result in an injunction against an allegedly anticompetitive practice or disallowance of a proposed merger. Section IV.B will compare liability that involves the imposition of sanctions (fines and damages awards, mainly), the prospect of which influences *ex ante* incentives. In that setting, the prospect of correct liability assignments deters anticompetitive behavior, whereas the anticipation of mistaken ones chills procompetitive conduct.

To perform this cost-benefit assessment, attention must be paid to both sides of the balance. Therefore, contrary to much existing analysis and practice (as elaborated in subsection V.B.2), we should consider anticompetitive and procompetitive explanations side by side. With regard to each, plausible explanations should be explicitly articulated at the outset, for it is difficult to determine what evidence is relevant and how it should be weighed if we are unclear about just what hypotheses we are testing. How, after all, can one determine which evi-

²⁵ The statements in the text simplify in a number of respects for ease of exposition. Notably, costs of investigations, of the liability determination itself, and of the imposition and enforcement of liability are omitted. These matters are largely set aside in this Article, which focuses on the conceptual question of how market power is relevant in competition cases. This important subject, however, receives some attention in section IV.A's discussion of screening.

dence to gather, the sign of its effect, or the magnitude of any such impact, without first answering the question: evidence of *what*?²⁶

Regarding anticompetitive explanations, this prescription is well recognized even if not universally followed. Competition agencies are urged to identify particular theories of anticompetitive harm and to collect and assess the evidence accordingly, and in private litigation in the United States it is increasingly demanded that plaintiffs articulate specific anticompetitive accounts up front.

On the procompetitive side of the balance, however, practice is frequently deficient.²⁷ At the most basic level, the simple point that one cannot generate even a preliminary guesstimate of which way a scale tips by examining only one side seems often to be forgotten. It is commonly suggested that it is helpful to proceed sequentially, considering anticompetitive explanations first and, only if they are present, exploring procompetitive ones.²⁸ Among the many shortcomings of this approach, perhaps the most important is that the relevance of much evidence is comparative, regarding for example the relative likelihoods of anticompetitive and procompetitive explanations. One way to state the problem is that, in basic settings, the force of any evidence is given by its associated likelihood ratio, and it is impossible to assess the value of a ratio without regard to its denominator.²⁹ More concretely, as we will see, there are settings in which market power raises the anticompetitive effects side but, in a closely related (and sometimes even identical) fashion, raises the procompetitive effects side as well. In

²⁶ As we will see in subsection III.C.3, an exception arises in some settings with regard to determining the magnitude of the total welfare impact of a given price increase, once such an increase is estimated.

²⁷ Occasionally, commentators have remarked on this shortcoming. See, e.g., David S. Evans & Michael A. Salinger, *Curing Sinus Headaches and Tying Law: An Empirical Analysis of Bundling Decongestants and Pain Relievers*, in RECENT DEVELOPMENTS IN ANTITRUST: THEORY AND EVIDENCE 91, 97 (Jay Pil Choi ed., 2007) (“Even at a theoretical level, one cannot distinguish between competitive tying and anticompetitive tying by understanding anticompetitive tying alone. One needs to understand competitive tying as well to know the difference.”).

²⁸ See *infra* subsection V.B.2. Some believe that this sequential approach is justified, at least for purposes of screening. Much of the analysis in section IV.A, indicating that the sequencing of market power and act analysis is generally unwarranted even in the screening context, carries the same implication with regard to anticompetitive and procompetitive explanations. Even at a quick glance, there will be cases in which the most plausible procompetitive explanations seem powerful and others in which they seem feeble; hence, early consideration of procompetitive explanations will often be as or more helpful for screening as will an examination of anticompetitive explanations. This logic is sometimes appreciated at a categorical level. For example, with predatory pricing, the general desirability of price reductions in response to competitive pressure is taken to warrant a high bar for anticompetitive explanations, even at an early stage of the analysis.

²⁹ The likelihood ratio is the probability that the evidence in question would be generated conditional on the anticompetitive explanation being correct divided by that probability conditional on the procompetitive explanation. See Louis Kaplow, *Likelihood Ratio Tests and Legal Decision Rules*, 16 AM. L. & ECON. REV. 1, 5–10 (2014) (explaining the concept specifically in the context of legal decisionmaking).

such instances, it would hardly make sense to expend substantial investigative resources and analytical effort to measure market power for purposes of reaching an interim conclusion regarding anticompetitive effects in a vacuum.

The centrality of procompetitive explanations warrants further reflection. On one hand, their omnipresence goes to the very essence of a market economy. And, for this very reason, they loom large in the structure and operation of competition law, such as in making liability for unilateral behavior close to nonexistent for all but dominant firms and exceptional even for them, or in employing a significant hurdle for challenges to horizontal mergers despite the fact that most generate at least some upward pricing pressure in standard models. On the other hand, even when serious investigations or challenges are undertaken, procompetitive explanations often remain vague, which makes it difficult to ascertain which evidence is most relevant and how it should be combined in reaching an appropriate decision.³⁰

To restate the claim, in any serious case it ordinarily makes sense to begin by articulating with some precision both anticompetitive and procompetitive explanations for practices under investigation. Only then can one identify what evidence is most likely to be relevant, which in turn guides both information gathering and decisionmaking. This claim is quite general; for present purposes, however, its significance is to inform our exploration of market power's relevance.

Most of this Article will consider the special case in which there is a single anticompetitive explanation and a single procompetitive one (without requiring that they be mutually exclusive). For example, a tying arrangement may have exclusionary effects and also create efficiencies in production, sales, or use, and a horizontal merger may relax pricing constraints and also generate production efficiencies. Implications of the analysis for the more general case will be apparent.³¹

³⁰ If some prescriptions in agency guidelines and commentary were routinely followed, even the most basic features of practice would be badly contorted. As elaborated in subsection V.B.2, can it really make sense to gather and process data and thoroughly review firms' documents for purposes of assessing anticompetitive effects and then, only conditional on an affirmative finding, to undertake the process anew to assess procompetitive explanations? And, at the most trivial level, are ambiguous emails to be interpreted by reference only to one possible hypothesis, leaving the other possibilities unspecified until a subsequent analysis of alternative explanations? As conjectured below, one suspects (and hopes) that in fact the sequenced and siloed rubrics are largely ignored. Nevertheless, it does appear that there oftentimes is significant underinvestment of effort in specifying and pursuing procompetitive explanations when assessing anticompetitive ones.

³¹ The framework oversimplifies in other respects. For example, a procompetitive effect, through cost savings or increased value to buyers, may help satisfy a profitability condition that in turn makes an anticompetitive effect more plausible. Throughout this Article, particular formulations of the optimal rule for liability are intended to be heuristics, here for the purpose of illuminating the channels by which market power may be relevant.

In this setting, assigning liability will be optimal when $p^H \times H > p^B \times B$. In this expression, p^H indicates the probability that the anticompetitive explanation is correct, H is the expected harm (averted by prohibition) conditional on that explanation being true, p^B is the probability associated with the procompetitive explanation, and B is the expected benefit (forgone by prohibition) conditional on that explanation being right.³² Harm and benefit are understood to be in terms of some notion of social welfare, which will be apparent especially in the discussion of how market power bears on these terms, in sections C and D respectively. (Subsection C.3 in particular will address how market power can have different implications for liability depending on whether the objective is taken to be total welfare or consumer welfare, although the general logic of the framework and many of the particulars of the analysis here are independent of this choice.)

Regarding the two probabilities, p^H and p^B , it may seem natural to consider them independently (as is often done in practice). If a factor raises p^H and has no effect on p^B , it favors liability, and conversely, if it raises p^B and has no effect on p^H , it opposes liability. Note, however, that the “and has no effect on” provisos are important, and we can only know if they hold (even approximately) if we examine both probabilities. For example, it is possible that a factor would raise p^H but also raise p^B by the same proportion, in which case it would be irrelevant³³ because it would not bear on the sign of the inequality in our decision rule.³⁴ And it is even possible for a factor to raise p^H but to raise p^B by a greater proportion, which would oppose liability. Hence, considering the influence of a factor on only p^H (or on only p^B) can be dangerous. This statement merely spells out a central reason why it is important to consider anticompetitive and procompetitive explanations together.

³² It would be less restrictive and in some respects be more natural to omit p^H and p^B while letting H and B refer to the unconditional expectations of harm and benefit, respectively. Nevertheless, the mode of presentation in the text proves helpful in clarifying our thinking and also in relating the present analysis to prior discussions that often speak primarily in terms of the classification of scrutinized practices as anti- or procompetitive.

³³ The discussion in the text oversimplifies; for example, if there were administrative costs of imposing liability, the optimal liability rule might require that the expected harm exceed the expected benefit by some amount, in which case raising both sides of this inequality by the same proportion could favor liability by enlarging a positive but insufficient difference between the two sides.

³⁴ Note that this sentence and the next refer to relative proportions rather than to quantities. Consider the following example: Suppose that we initially believe that $p^H = 0.3$, $H = 10$, $p^B = 0.8$, and $B = 4$. Then, liability is not advantageous ($3.0 < 3.2$). But if we raise each probability by 0.1, liability is then advantageous ($4.0 > 3.6$). The statement of the effect in terms of proportions may be apparent from our initial expression, but is even more obvious if we rearrange our inequality as follows: $p^H/p^B > B/H$. Clearly, liability becomes more favorable as the ratio on the left side increases, which happens when p^H rises relatively more than does p^B (or falls relatively less).

Our measures of expected consequences conditional on each explanation, H and B , also merit further comment. The magnitudes of anti-competitive and procompetitive effects receive surprisingly little attention in competition policy discourse (the main exception being the focus on the predicted price effects of horizontal mergers).³⁵ One often hears — in panels of economists, academic commentary, and decisions by agencies and courts — that the outcome of a case should depend on which explanation is “right,” which in context often refers to which type of explanation is more likely. Supporting this interpretation is the frequent lack of any explicit attention to either H or B . Interestingly, legal decisionmaking in many realms shares this trait, particularly in U.S. civil litigation where the nearly universal decision rule is the preponderance of the evidence standard that assigns liability when that outcome is more likely than not to be correct.³⁶

Yet it is obvious that these magnitudes can readily be as important as the relative likelihoods in deciding whether to assign liability. If H is ten times as large as B , p^H only needs to exceed a tenth of p^B , but if it is B that is ten times H , p^H needs to exceed p^B by more than tenfold (for a difference between these cases of two orders of magnitude). In choosing whether to approve a drug or to administer it to a particular patient, we would be shocked if decisions were based solely on the probabilities of good and bad outcomes without regard to their magnitudes. (Is the positive outcome lifesaving or a slight cosmetic improvement? Are side effects that have a given probability momentous or trivial?) The almost complete failure in many competition law contexts to attend explicitly to the magnitudes of H and/or B is a significant problem.³⁷ For our purposes, the important question will be whether and when market power in various guises differentially affects H and B , which demands attention to what determines the magnitudes of H and B in the first place.

³⁵ However, even with horizontal mergers, there is usually an on/off consideration (are price effects substantial, or not); price effects are not converted into welfare units (see subsection C.3 for further elaboration), and efficiencies are rarely measured (or even guesstimated), and hence not compared. *See infra* subsection V.B.3.

³⁶ For further analysis of this and related features of burden of proof rules, see Louis Kaplow, *Burden of Proof*, 121 YALE L.J. 738 (2012) [hereinafter Kaplow, *Burden of Proof*]; Louis Kaplow, *On the Optimal Burden of Proof*, 119 J. POL. ECON. 1104 (2011) [hereinafter Kaplow, *Optimal Burden of Proof*]; and Kaplow, *supra* note 29. *See also* C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41, 61–62 (1999) (observing, in an article on the application to antitrust decisionmaking, that “[m]ore generally, the standard [of expected error-cost minimization] depends crucially on the magnitudes of potential benefits and harms, not simply the likelihood of benefit or harm”).

³⁷ Often discussion proceeds as if H and B are of the same magnitude (which would justify ignoring their levels), but do we really believe that this is so? And across all types of cases? Even across particular cases in a given class? The analysis in sections C and D will make clear that this is not so.

Before proceeding, it is useful to state the special case of our decision rule for situations in which there are two mutually exclusive and exhaustive explanations, an anticompetitive one and a procompetitive one. Then liability is optimal when $p \times H > (1 - p) \times B$, where p replaces p^H and, by assumption, p^B is then given by $1 - p$. The main reason for introducing this case is that much is stated and written as if this is so, and some of the exposition below will, as a shorthand, proceed similarly. A further justification is that, in some settings, there are respects in which much evidence that raises p^H also lowers p^B , and conversely. Consider the familiar point that, when we observe a firm employing some particular practice, we ordinarily assume that the firm believes it to be profitable.³⁸ Evidence ruling out the plausibility of the anticompetitive explanation may for that very reason rule in — make more likely — the procompetitive one. And evidence ruling out the procompetitive explanation often makes the anticompetitive one more likely for the same reason. Even if the two explanations are not mutually exclusive, this sort of relationship may be present. As previously explained, however, this way of thinking can be perilous. It is possible, for example, that a factor raises p^H without influencing p^B , raises p^H while increasing p^B by the same proportion, or raises p^H while raising p^B relatively more. Hence, routinely proceeding as if anything that raises p^H reduces p^B in lockstep (and conversely) will often lead us astray.

B. Market Power and the Likelihoods of Anticompetitive and Procompetitive Explanations

Section A states how liability should in principle be determined, reflecting the uncertainty that is typical in decisionmaking with regard to allegedly anticompetitive practices. To link this framework to our central question, we now consider explicitly the channels by which market power may be relevant to a determination of liability. To answer this question, we will examine the components of our decision rule, $p^H \times H > p^B \times B$, asking how market power may be relevant to each. This section begins by considering how market power may bear on the likelihoods of anti- and procompetitive explanations, p^H and p^B . Much of this discussion will reinforce the aforementioned value of undertaking a comparative assessment of anti- and procompetitive explanations.³⁹

³⁸ The present discussion, like many in the field, abstracts from behavioral and agency considerations that can complexify the understanding of managerial decisionmaking in firms. Even so, the general sorts of argument in the text that refer to the drawing of inferences from assumptions about firms' underlying motivations remain applicable, if in somewhat modified ways.

³⁹ Some of the analysis in sections C and D on the magnitudes of anticompetitive harm and procompetitive benefit, respectively, will bear on the probabilities p^H and p^B because it relates to

Perhaps the primary reason that market power is taken to be relevant to liability is the view that greater market power enhances the plausibility of the anticompetitive explanation. In making this argument, it is usually assumed implicitly that market power is largely irrelevant to the procompetitive explanation.⁴⁰ Consider tying arrangements: Anticompetitive explanations may involve the protection of market power in an existing market or the use of such market power to create or enhance power in a related market. By contrast, procompetitive explanations for tying include economies in the production, distribution, or use of certain products as a package, and this benefit is thought to depend on the nature of the products rather than on the market power of their producers. In such instances, greater market power favors liability through the classification channel. Perhaps this effect is larger in certain ranges, the extreme case being when there exists a threshold for an anticompetitive strategy to be profitable, although section II.A explained that, as a practical matter, uncertainty about the location of the threshold and about the true level of market power suggests a continuous relationship.

As mentioned, this familiar view imagines that greater market power systematically implies a higher p^H and that it does not influence p^B . Begin with the former assumption. On one hand, it is indeed true that, when market power is negligible and, moreover, there is no prospect of raising market power, a practice cannot be (other than trivially) anticompetitive. In addition, sufficiently low market power may render exclusionary motives implausible. For example, if there is little market power to protect, it will not be worthwhile to make significant expenditures to do so. And if low market power means that an anticompetitive strategy has little prospect of success, it would not be rational to pursue it if the cost is at all significant. For these reasons, routine employment contracts, partnership agreements, and restrictions in supply arrangements are quite unlikely to raise competitive concerns when market power is low. (Of course, most will not when mar-

the profitability of the strategies under consideration and hence to firms' motivations to pursue them. For example, subsection C.2 examines how market power relates to the price effects of raising rivals' costs strategies in the model employed by Salop and Scheffman, who themselves undertook the inquiry for the purpose of determining when dominant firms would find such strategies profitable.

⁴⁰ Typically, it is stated that market power is helpful or necessary for anticompetitive strategies, without any explicit mention of whether or how market power may bear on procompetitive explanations. See, e.g., 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 125 (4th ed. 2015) ("Nondominant firms acting unilaterally typically lack the market position to make much strategic conduct work."); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469, 488 (2001) ("Every post-Chicago article that suggests that tying might be harmful assumes some market power in both the tying and tied goods and rules out by assumption convenience or any other benefits generally associated with tying." (footnote omitted)).

ket power is high either, but when market power is low, the exceptions will be rare.)

On the other hand, greater market power does not necessarily make an anticompetitive explanation more likely. For example, one motive for anticompetitive behavior is to exclude rivals or to make their entry more difficult. Higher natural entry barriers, typically viewed as an important aspect of market power, make such attempts less necessary.⁴¹ Similarly, strategies designed to raise rivals' costs are more appealing the more rivals constrain the exercise of market power. Hence, when rivals' preexisting effect is less, which makes market power higher, the force of this motivation is reduced.⁴²

These examples suggest another important point: not all components of market power have the same force or even operate in the same direction. A lower demand elasticity, which contributes positively to market power, often makes exclusion more profitable. Conversely, a lower concern with rivals, which also augments market power, may reduce the benefit from exclusion. Or consider the point that a given level of market power that is generated by a very high market share with moderately elastic demand may make exclusive dealing or tying more effective exclusionary strategies than they are in a setting in which the same market power is generated instead by a lower share combined with less elastic demand. In sum, the relationship between market power — in various senses and with respect to different components — and the magnitude of p^H is substantially more heterogeneous than is generally appreciated.

Now turn to the latter assumption, that greater market power does not imply a higher p^B . This relationship is not universally true either. Many procompetitive explanations for practices have the character of an investment — perhaps expenditures to improve quality or to attract customers — and the profitability of an investment depends on the magnitude of the profit margin on subsequent sales.⁴³ Greater market power, conventionally defined as a larger price-cost margin, thus favors some procompetitive explanations as well. This possibility is illustrated in section E with regard to predatory pricing. For now, think of some internet giants that operated for years with substantial losses while investing in platforms and cultivating large user bases.

The point that one must consider both p^H and p^B can also be illustrated with respect to some other factors traditionally thought to favor

⁴¹ See *infra* section III.E (developing this point in the context of predatory pricing).

⁴² See *infra* subsection C.2.

⁴³ Some other procompetitive explanations, such as the elimination of double marginalization, presume market power (in this instance at two levels). See, e.g., Sreya Kolay, Greg Shaffer & Janusz A. Ordover, *All-Units Discounts in Retail Contracts*, 13 J. ECON. & MGMT. STRATEGY 429 (2004).

or disfavor liability. With exclusive dealing, long contractual duration was said to favor liability — even to be a necessary condition — because entry would not be impeded unless dealers were unavailable to potential entrants for a significant period of time. But more recent research, reflected in some agency guidance documents and court rulings, recognizes that even at-will arrangements can be sufficient if dealers who support entry would lose needed access to the incumbent's supply.⁴⁴ Moreover, important procompetitive explanations for exclusive dealing, such as incentivizing dealers' investments in product promotion, may require substantial duration to be effective. Or consider tying: That a tie is technological rather than contractual was thought to disfavor liability because it suggests the aforementioned procompetitive explanations.⁴⁵ But important modern theories of ex-

⁴⁴ See, e.g., *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 193 (3d Cir. 2005) (“Although the parties to the sales transactions consider the exclusionary arrangements to be agreements, they are technically only a series of independent sales. Dentsply sells teeth to the dealers on an individual transaction basis and essentially the arrangement is ‘at-will.’ Nevertheless, the economic elements involved — the large share of the market held by Dentsply and its conduct excluding competing manufacturers — realistically make the arrangements here as effective as those in written contracts.”); MICHAEL D. WHINSTON, LECTURES ON ANTITRUST ECONOMICS 166–67 (2006); U.S. DEP’T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 135, 140 (2008) (noting that “[t]he decision [Roland Mach. Co. v. Dresser Indus., 749 F.2d 380 (7th Cir. 1984) (Posner, J.)] is known particularly for the court’s statement that ‘[e]xclusive-dealing contracts terminable in less than a year are presumptively lawful,’ *id.* at 135 (quoting *Roland*, 749 F.2d at 395), but explaining “that, although exclusivity arrangements of short duration are less likely to harm competition than those of long duration, even arrangements that are terminable at will can at times be anticompetitive. The Third Circuit endorsed this view in *Dentsply*,” *id.* at 140) (this report was not joined by the Federal Trade Commission, which had participated jointly in the hearings and other work leading up to the report (see Press Release, Fed. Trade Comm’n, FTC Commissioners React to Department of Justice Report, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act (Sept. 8, 2008), <http://www.ftc.gov/news-events/press-releases/2008/09/ftc-commissioners-react-department-justice-report-competition-and> [<https://perma.cc/WUC7-D2V3>]), and the report was withdrawn the next year when the administration changed (see Press Release, U.S. Dep’t of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law (May 11, 2009), <https://www.justice.gov/opa/pr/justice-department-withdraws-report-antitrust-monopoly-law> [<https://perma.cc/qZN6-Y2MC>])); it appears that most of the disagreement concerned the report’s statement of substantive rules governing single-firm conduct in a manner that objectors regarded to be too lenient, such as being too generous in safe-harboring behavior or requiring that anticompetitive effects significantly outweigh procompetitive ones, with no suggestion that the overall framework or the role of market power therein was problematic); *Discussion Paper on Article 82*, *supra* note 1, at 43 n.94 (“In general the European Courts have not considered duration of single branding obligations to be of relevance for their assessment under Article 82. There are indeed good reasons to ignore duration as the dominant position implies that for a good part of demand on the market there are no proper substitutes to the dominant supplier’s product, because for instance its brand is a ‘must stock item’ preferred by many final consumers or because the capacity constraints on the other suppliers are such that a good part of demand can only be provided for by the dominant supplier. In such a case a short duration or the right to terminate the obligation are found to be illusory by the European Courts . . .”).

⁴⁵ See, e.g., JORDI GUAL ET AL., ECON. ADVISORY GRP. ON COMPETITION POLICY, AN ECONOMIC APPROACH TO ARTICLE 82, at 41 (2005), <http://ec.europa.eu/dgs/competition>

clusion may likewise be supported by ties being technological because of the precommitment that is entailed.⁴⁶

The discussion in this section lends support to the argument in section A that it is important to consider anticompetitive and procompetitive explanations side by side, both as a general matter and with respect to market power in particular. Another emerging point that will be elaborated in the sections to follow is that there are different senses and components of market power. Which if any are relevant and how they bear on liability (including the sign, that is, whether liability is favored or disfavored) often depend on the particular anti- and procompetitive explanations under consideration.

C. Market Power and Anticompetitive Harm

As section A emphasizes, the magnitudes of H and B have a direct impact on the optimal liability decision. The discussion in section B further indicates that an aspect of these magnitudes — in particular, profitability — also bears on the probabilities p^H and p^B because it determines firms' incentives to employ various practices. This section focuses on how market power bears on anticompetitive harm, H . It begins with a market power taxonomy, then considers how market power in various guises may influence the degree to which prices may be increased by an allegedly anticompetitive practice, and concludes by assessing how market power affects the social welfare loss associated with a given increase in price.

1. *Taxonomy.* — It is useful to distinguish the level of market power — which seems to be what most have in mind with regard to market power requirements for monopolization (abuse of dominance) and

/economist/eagcp_july_21_05.pdf [<https://perma.cc/4LTT-GHDS>] (summing up their assessment of tying by stating: “The potential for efficiency gains is more limited when the linkage is achieved through pricing schemes and bundling than when it is achieved through technological integration.”); Dennis Carlton & Michael Waldman, *How Economics Can Improve Antitrust Doctrine Towards Tie-In Sales: Comment on Jean Tirole’s “The Analysis of Tying Cases: A Primer,”* COMPETITION POL’Y INT’L, Spring 2005, at 27, 39 (“[O]ther than in exceptional cases, plausible efficiency justifications for a physical tie should defeat an antitrust attack on tying. For contractual ties and virtual ties achieved through pricing, the standard can be lower and a rough balancing of costs versus benefits can be done much as is now done in exclusive-dealing cases — though we would use extreme caution and require convincing evidence before intervening.”).

⁴⁶ Precommitment features prominently in the seminal modern paper, Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837 (1990), and in some models in subsequent work. See, e.g., Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECONOMICS 194 (2002) (requiring commitment in some of the models analyzed, see *id.* at 208 n.19); Dennis W. Carlton & Michael Waldman, *Upgrades, Switching Costs and the Leverage Theory of Tying*, 122 ECON. J. 675 (2012); Jay Pil Choi & Christodoulos Stefanadis, *Tying, Investment, and the Dynamic Leverage Theory*, 32 RAND J. ECONOMICS 52 (2001). (Readers will note a tension between this feature of the papers by Dennis Carlton and Michael Waldman and the quotation in the preceding note from their commentary on tying.)

other exclusionary practices⁴⁷ — from changes in the level of market power associated with an allegedly anticompetitive act — most often discussed with regard to horizontal mergers.⁴⁸ Regarding market power levels, we can further distinguish between the level in the absence of (perhaps before) the allegedly anticompetitive act, referred to here as $MP^{\sim A}$, and the level with (perhaps after effectuation of) the act, MP^A .⁴⁹ In terms of this notation, the change in market power — the market power “delta” — can be expressed as $MP^\Delta = MP^A - MP^{\sim A}$. Note that, *ceteris paribus*, MP^Δ is falling in one of our measures of the level of market power, namely, $MP^{\sim A}$. Plainly, anything we might say about the relevance of market power to H (or to B or to p^H and p^B) might depend on which of these three concepts we have in mind. In particular, we should expect that many identified relationships will differ (even in sign) across these notions.⁵⁰

⁴⁷ See *infra* section V.C.

⁴⁸ See, e.g., U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1 (2010) [hereinafter U.S. MERGER GUIDELINES] (“The unifying theme of these Guidelines is that mergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise. For simplicity of exposition, these Guidelines generally refer to all of these effects as enhancing market power.”); Guidelines on the Assessment of Horizontal Mergers Under the Council Regulation on the Control of Concentrations Between Undertakings, 2004 O.J. (C 31) 5, ¶ 8 [hereinafter EU Horizontal Merger Guidelines] (“Through its control of mergers, the Commission prevents mergers that would be likely to deprive customers of these benefits by significantly increasing the market power of firms.”). As noted in subsection 3 of this section and in subsection V.B.3, horizontal merger guidelines focus substantially on the predicted price effects of proposed mergers and often express a concern with increases in market power, yet at the same time they articulate market power requirements in terms of Herfindahl-Hirschman Indexes (HHIs) after the merger (an indicator of the post-merger level of market power) as well as changes in HHIs (an indicator of the change in market power brought about by the merger).

⁴⁹ See Louis Kaplow & Carl Shapiro, *Antitrust*, in 2 HANDBOOK OF LAW AND ECONOMICS 1073, 1095–98, 1183–86, 1189–91 (A. Mitchell Polinsky & Steven Shavell eds., 2007) (emphasizing this distinction and that between market power levels and market power deltas). Note that, if one considers marginal changes, such as in the analysis of raising rivals’ costs strategies in subsection 2, the difference between the two levels vanishes. Also, the difference between $MP^{\sim A}$ and MP^A may bring to some readers’ minds the familiar *Cellophane* fallacy, wherein one mistakenly concludes that there is a lack of significant market power from the observation that, say, an allegedly dominant firm cannot profitably increase its price — something we would expect to be infeasible regardless of the level of market power because the firm is ordinarily assumed to be charging as high a price as is profitable already. As a conjecture, this fallacy arose and is still sometimes committed for a reason at the core of this Article: market power is often examined in a vacuum, specifically, without connecting what we are trying to measure with the purpose for which it is being measured.

⁵⁰ As in most of this Article, the current section takes the underlying definition of market power to have its conventional meaning — the degree to which price can profitably be elevated above the competitive level. See *infra* section V.C. As will become increasingly apparent throughout this Part, however, standard senses of market power often do not have the implications that conventional wisdom suggests. Furthermore, the analysis does not indicate that the gap can be significantly narrowed by entertaining alternative definitions that are similar enough to the standard one to be comfortably referred to as “market power.”

A preliminary observation with regard to market power and anti-competitive harm H is that the latter might in a sense be defined by MP^Δ — reflecting the standard view that the purpose of competition law is to prevent the augmentation of market power⁵¹ — or at least a key aspect of harm might be seen as closely related to this measure of market power. Specifically, if a central element of the anticompetitive effect is the price increase and if, moreover, market power is defined in the customary fashion as power over price, then MP^Δ corresponds to the increase in the power over price and thus constitutes a measure of the price effect. As a consequence, one might simply adopt MP^Δ as the pertinent notion of market power, dispensing with the levels, MP^{-A} and MP^A , and any other market power concept.⁵²

For all of its obvious appeal, however, this interpretation of the relevance of market power renders the concept redundant in analyzing allegedly anticompetitive practices. We began Part II by noting that many competition law inquiries are taken to have two distinct components, one pertaining to market power and the other to the allegedly anticompetitive act.⁵³ If we now were to define our market power measure as our best assessment of the act's anticompetitive consequences, we would have collapsed the two inquiries into one. This way of defining market power annihilates its independent status, subsuming it into the analysis of the practice, which we need to undertake in any event. On this view, it would be odd to state, as is often done, that the first step in analyzing a case — before moving to an assess-

⁵¹ See sources cited *supra* note 1 and *infra* note 192. In discussions about this project with lawyers and economists — at agencies, in the academy, and in practice — my experience is that many slip from the idea that the law's purpose is to prevent increases in market power to the seemingly natural implication that market power is and should be seen as an element (that is, a component) of competition law offenses, failing to appreciate that their argument really amounts to defining the offense as (illegitimately) boosting market power, as discussed in the text.

⁵² See, e.g., Dennis W. Carlton, *Market Definition: Use and Abuse*, COMPETITION POL'Y INT'L, Spring 2007, at 3, 5–10; Daniel A. Crane, *Market Power Without Market Definition*, 90 NOTRE DAME L. REV. 31, 38–39 (2014); Thomas G. Krattenmaker, Robert H. Lande & Steven C. Salop, *Monopoly Power and Market Power in Antitrust Law*, 76 GEO. L.J. 241, 254–55 (1987) (“Analysis of market power often is treated as a threshold issue in antitrust litigation, to be carried out in an identical fashion irrespective of the defendant's alleged conduct. Indeed, certain antitrust standards call on courts to evaluate the market power of the defendant before any analysis of the defendant's conduct is undertaken. . . . This procedure is seriously flawed for a court concerned with the exercise of Bainian market power by a defendant engaged in exclusionary conduct. In these cases, the evaluation of Bainian market power is not merely the first step of the inquiry; it is the primary focus of the entire analysis. Bainian power cannot be evaluated in a vacuum, independent of and prior to analysis of the allegedly exclusionary conduct. It is the exclusionary conduct that creates the market power being evaluated, not the other way around.” (footnote omitted)); Steven C. Salop, *The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium*, 68 ANTITRUST L.J. 187 (2000). Some of the discussion of market power in Kaplow & Shapiro, *supra* note 49, also suggests this view. See *id.* at 1097, 1184.

⁵³ For elaboration, see Part V. And for discussion of the extent to which the treatment of horizontal mergers differs, see subsection V.B.3.

ment of whether the act has an anticompetitive effect — should involve an inquiry into market power for purposes of ascertaining whether it exceeds a stipulated threshold. Put yet another way, it makes no sense to answer the question “why inquire into market power?” by stating that market power helps us to figure out an act’s anticompetitive effect, and then to answer the question “what do you mean by market power?” by defining it as the act’s anticompetitive effect.⁵⁴ Accordingly, the remainder of this section and much of the analysis in the rest of this Article considers the relevance of market power levels, $MP^{\sim A}$ and MP^A .⁵⁵

This discussion of taxonomy raises another conundrum regarding the customary distinction between assessments of market power and of allegedly anticompetitive acts. Even if market power is understood as a level, $MP^{\sim A}$ or MP^A , assessing one of these sometimes requires determination of MP^Δ in any event. Suppose, for example, that a market power requirement is understood in terms of MP^A , but we are in a situation in which the allegedly anticompetitive practice has not yet taken effect. (Perhaps a prospective injunction is contemplated.) An assessment of the existing situation will yield an estimate of $MP^{\sim A}$, not MP^A . In order to generate an estimate of the latter from the former, one would need to estimate MP^Δ . But if the main reason to determine MP^A is to illuminate the likely consequences of the allegedly anticompetitive act under scrutiny, this approach would be circular.⁵⁶ Similar reasoning applies if our market power requirement is in terms of $MP^{\sim A}$ but we are examining a situation with the practice in place (or a contemplated practice is alleged to be something that would preserve existing market power rather than enhance it). In that case, existing facts would bear on MP^A , and we would need to estimate MP^Δ in order to determine our target, $MP^{\sim A}$.

The foregoing point hardly eviscerates possible uses of market power levels. First, in whichever situation we can observe — that with or without the act — we can estimate one of the pertinent levels, which might be helpful.⁵⁷ Second, sometimes there will exist infor-

⁵⁴ As will be explored in subsection 3, market power may bear on the magnitude of the welfare impact of a given price increase, but in that analysis it is the level of market power that matters, not the delta.

⁵⁵ Further illumination of the relevance of and relationship among these definitions of market power will be provided by the discussion of the profitability of predatory pricing in section E.

⁵⁶ This setting brings to mind the attempted monopolization offense in U.S. antitrust law, where the monopoly power requirement is generally taken to refer to whether the practice, if successful, has a dangerous probability of bringing about a monopoly. (If it was already successful in doing so, the offense would be monopolization, not an attempt.) Yet it is often stated that the offense has a separate, preliminary market power requirement. See, e.g., sources cited *infra* notes 146 & 197.

⁵⁷ A further point is that if we have some market power requirement that is independent from any consideration of the allegedly anticompetitive practice, then implicitly the strength of our re-

mation bearing on how a situation has changed during the course of a practice. If we can measure both MP^{-A} and MP^A , we can subtract to yield MP^A , although as mentioned, at that point we are measuring the anticompetitive effect of the act directly. One of the two market power levels, or an approximate level whose variation over time may be difficult to measure directly, might be estimated, and this in turn might be probative. Accordingly, the nature of any market power inquiry and how its results are used in analyzing components of our decision rule for liability will vary depending on how long an allegedly anticompetitive act has been employed and how it is thought to generate anticompetitive effects.

This brief taxonomy regarding conventional meanings of market power is suggestive of some larger lessons regarding the relevance of market power to liability. Clearly, there is no single definition of market power that is most useful to consider in all settings. Nor is it obvious that the most helpful sense of market power will conform to conventional interpretations. We will also elaborate the point that different notions of market power and even different components of a given notion of market power can have different implications in a given case. Finally, even when a standard market power measure tends to favor liability in the ordinarily contemplated fashion, there remains the question of whether it may nevertheless be better to eschew market power assessment and instead inquire directly into the relevant factors with which market power may merely be correlated. Illustrations of all of these possibilities appear in the remainder of this Part of the Article.⁵⁸

2. *Price Effects.* — Let us now turn to the question of how market power — in particular, the level of market power — may affect the degree to which prices may be increased by an allegedly anticompeti-

quirement differs depending on whether the practice has already had its effect. Suppose (making use of arbitrary units for convenience) that we have a setting in which $MP^{-A} = 7$ and $MP^A = 13$, with an implied $MP^A = 6$. Moreover, assume that our independent market power requirement is 10. Then, if the practice has not yet had its effect, the market power requirement would fail, but if it has, market power would be deemed sufficient. Indeed, an injunction *ex ante* would be denied, but once the practice was allowed to have its effect, it could be enjoined. And then, after the effect has subsided, the practice could be legally employed once again, that is, until it succeeded. This observation, like many offered in this portion of the text, suggests that, at the most basic, definitional level, insufficient attention has been given to the meaning of a market power requirement. *See also infra* note 148 (discussing logical inconsistencies with respect to the attempted monopolization offense).

⁵⁸ Notably, the raising rivals' costs example in the next subsection shows how different components of the standard (Lerner index) measure of market power can influence the desirability of liability in opposite directions. The rationality of predation example in section E both shows how different standard notions of market power can have opposite implications and questions whether, with regard to either of the channels, it makes sense to inquire into market power rather than directly into firms' profits in different scenarios, the matter of immediate concern in assessing the rationality condition.

tive practice.⁵⁹ Along with section B's question of how market power may bear on the likelihood of an anticompetitive explanation, p^H , this channel seems to be one that is often on analysts' minds when thinking about the relevance of market power. The most straightforward connection between market power and price effects would be where a practice preserves market power, perhaps entirely or in some particular proportion. Then the price effect would be given by the magnitude of market power (or that proportion), wherein market power is understood to be the degree to which price is profitably elevated above a competitive level. A similar conclusion would follow if a practice is thought to increase existing market power, MP^A , by some proportion. It is not clear, however, that many cases fit this pattern. That is, how often can we determine a practice's percentage impact on market power but not its absolute effect, so for that reason it is convenient to measure the level of market power rather than directly trying to determine MP^Δ ?

In addition, it is not obvious a priori that what matters is the level of market power, whether MP^A or MP^Δ , rather than one or another component thereof. If a practice is designed to block entry or induce the exit of a rival supplier of a common, homogeneous good, we would need to know that supplier's quantity of supply at various prices and the market elasticity of demand. If a practice is aimed at a supplier of a substitute product, the cross-elasticity of that particular substitute — which is one component of the market elasticity of demand — would be particularly relevant.

This brief sketch suggests that different aspects of market power will have different effects in different settings. Moreover, the manner in which the relevant aspects of market power will interact with other factors will vary. Both points indicate that market power is not a suf-

⁵⁹ This basic question is not much illuminated by existing literature. For exclusionary practices, one might look to economists' models thereof. Many papers, however, stipulate that one is in a monopoly situation with a prospect of entry or in a two-firm situation where one firm tries to induce the other to exit. They proceed to analyze how the strategies operate and what their success depends on. They do not, however, directly focus on how the magnitude of market power determines price effects. For horizontal mergers, by contrast, there is a significant body of literature on the prediction of price effects. See generally WHINSTON, *supra* note 44, at 100–14 (surveying literature); Jonathan B. Baker & Timothy F. Bresnahan, *Empirical Methods of Identifying and Measuring Market Power*, 61 ANTITRUST L.J. 3 (1992) (surveying techniques); Cory S. Capps, David Dranove, Shane Greenstein & Mark Satterthwaite, *Antitrust Policy and Hospital Mergers: Recommendations for a New Approach*, 47 ANTITRUST BULL. 677 (2002); Kaplow & Shapiro, *supra* note 49, at 1178–80 (surveying literature). The methods most often involve some form of merger simulation, wherein a variety of characteristics of demand systems and firms' costs are estimated in order to determine how equilibrium price may change if a pair of firms merges. In this instance, the analysis proceeds from disaggregated inputs to the bottom line without an intermediate step (as discussed in Part II) in which market power and the acts are separately assessed, followed by some means of combining those findings to generate an ultimate conclusion.

ficient statistic⁶⁰ with regard to the information it summarizes. Relevant components of market power do not have a common functional relationship in an optimal determination of liability.⁶¹

To provide greater depth and concreteness, it will be helpful to examine more thoroughly a particular setting.⁶² Consider the class of strategies designed to raise rivals' costs that have been elucidated by

⁶⁰ This term is attributed to R.A. Fisher, *On the Mathematical Foundations of Theoretical Statistics*, 222 PHIL. TRANSACTIONS ROYAL SOC'Y LONDON, SERIES A 309 (1922), where the standard usage is that no further information from the underlying probability distribution is required. The term is increasingly employed by applied economists, particularly with regard to policy assessment, where the typical meaning is that underlying information is sufficiently encapsulated in the summary measure so that policy decisions can be made directly a function of that summary measure. See Raj Chetty, *Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods*, 1 ANN. REV. ECONOMICS 451 (2009).

⁶¹ As will become clear in the raising rivals' costs example that follows, it is not even true that familiar components of market power have a nonnegative relationship to price effects. To suggest another setting in which the sign may be reversed, consider the relationship between the profitability of an anticompetitive strategy to a dominant firm and the implied price effect. For a given level of profitability, a higher dominant firm market share may well be associated with a smaller price effect because the share influences the portion of increased industry profit that the dominant firm captures. If a dominant firm has a smaller share and the practice is still profitable, the requisite price increase has to be larger. As a consequence, a larger share, *ceteris paribus*, makes it more likely that an anticompetitive strategy is profitable, which may raise p^H , but the larger share, *ceteris paribus*, reduces the minimum magnitude of price increase that is required to generate profitability. See also *infra* note 112 (showing how the standard market power measure is not a sufficient statistic for a dominant firm's profits in the model explored in the text that follows here).

⁶² It is also constructive to contemplate the relevance of market power levels in the analysis of horizontal mergers. In a simplified formula for the price in a homogeneous goods industry with Cournot interaction, a lower market elasticity of demand (one of the three components of the Lerner index, elaborated just below) raises the price effect, as does the change in the HHI; the level of the HHI is not itself relevant. See, e.g., Kaplow & Shapiro, *supra* note 49, at 1085; Janusz A. Ordover, Alan O. Sykes & Robert D. Willig, *Herfindahl Concentration, Rivalry, and Mergers*, 95 HARV. L. REV. 1857, 1865 (1982). For predicting the unilateral effects of a merger in a differentiated products industry, a higher initial degree of market power implies stronger upward pricing pressure, as does a greater cross-elasticity of demand between the merging firms' products (indicating that there is special weight on a particular component of the market demand elasticity, which in turn is one of the elements of the standard measure of market power). See, e.g., Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, B.E. J. THEORETICAL ECON., Jan. 2010, art. 9; see also U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES 16 (2006) [hereinafter COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES] ("Indeed, market concentration may be unimportant under a unilateral effects theory of competitive harm. . . . [T]he question in a unilateral effects analysis is whether the merged firm likely would exercise market power absent any coordinated response from rival market incumbents. The concentration of the remainder of the market often has little impact on the answer to that question."). For coordinated effects, greater market power conditional on (say, fully) successful coordination (versus none) directly implies greater price effects. Regarding the probability of successful coordination, the analysis is less clear. If pre-merger concentration is taken as a measure of the level of market power, the relationship between it and the increased probability of successful coordination due to a merger may be nonmonotonic (perhaps rising in some range but then falling once concentration is sufficiently high). See also the discussion at the end of subsection 3 on merger guidelines' attention to post-merger HHIs.

Steven Salop and David Scheffman in two papers that analyze the price effects of such practices in the standard homogeneous goods model of a dominant firm with a competitive group of fringe firms that equate price to their own marginal costs.⁶³ It is useful to compare the Lerner index,⁶⁴ the most commonly employed measure of (the level of) market power,⁶⁵ with Salop and Scheffman's factor that indicates how much of a price increase is generated by a unit increase in rivals' costs.⁶⁶

First, let us state the Lerner index in this familiar model:⁶⁷

$$L = \frac{P - MC}{P} = \frac{S}{|\varepsilon^D| + (1 - S)\varepsilon^R}$$

The Lerner index, L , is defined by the fraction of the price, P , that is in excess of the dominant firm's marginal cost, MC . The right side of the expression is derived from the dominant firm's profit-maximization condition: S is the dominant firm's market share (hence $1 - S$ is the market share of the competitive fringe, also referred to as the rivals), ε^D is the market elasticity of demand (the absolute value is taken because this elasticity is defined to be negative), and ε^R is the rivals' elasticity of supply.⁶⁸ The intuition behind this formula, which will be

⁶³ See Steven C. Salop & David T. Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19 (1987) [hereinafter Salop & Scheffman, *Cost-Raising Strategies*]; Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. (PAPERS & PROC.) 267 (1983) [hereinafter Salop & Scheffman, *Raising Rivals' Costs*]. The residual demand approach to analyzing the behavior of the dominant firm in such a model derives from Karl Forchheimer, *Theoretisches zum unvollständigen Monopol*, in 32 JAHRBUCH FÜR GESETZGEBUNG, VERWALTUNG UND VOLKSWIRTSCHAFT IM DEUTSCHEN REICH 1 (Gustav Schmoller ed., 1908). See Gavin C. Reid, *Forchheimer on Partial Monopoly*, 11 HIST. POL. ECON. 303 (1979); see also Ordover, Sykes & Willig, *supra* note 62 (extending the analysis to the case in which multiple firms in the homogeneous goods market are not small).

⁶⁴ The text will examine this measure of the level of market power without distinguishing whether the reference is to the level without the practice, MP^{-A} , or with it, MP^A . The justification is that the pertinent derivation, as conducted by Salop and Scheffman and replicated (with a correction) by this author, takes a derivative, which is to say, examines infinitesimal changes in the degree to which the practice is employed. Hence, the difference is immaterial. The analysis, therefore, is concerned with assessing how the level of market power bears on the marginal price effect of the practice.

⁶⁵ See *infra* section V.C and note 193.

⁶⁶ Salop and Scheffman do not offer this comparison, as their purpose was to analyze the raising rivals' costs strategy and not to examine the bearing of market power on the analysis. See *infra* note 74.

⁶⁷ On the Lerner index itself, see, for example, 2B PHILLIP E. AREEDA, HERBERT HOVENKAMP & JOHN L. SOLOW, *ANTITRUST LAW* 118–20 (4th ed. 2014); Kaplow & Shapiro, *supra* note 49, at 1080; and Landes & Posner, *supra* note 5, at 939–41. Regarding the derivation for the present model, see note 68.

⁶⁸ See, e.g., Kaplow & Shapiro, *supra* note 49, at 1081–82. This derivation begins by expressing the dominant firm's demand as the total industry demand for the product minus that portion supplied by the competitive fringe. When one takes the derivative of that expression with respect to price, rearranges terms, and uses the definitions of the pertinent elasticities and of market

helpful to have in mind for the analysis that follows, is straightforward. Regarding the numerator, a higher S means that the dominant firm captures a greater portion of the increment to industry profits due to a price increase and thus is willing to sacrifice more (by reducing its own quantity) to bring that about. The dominant firm's pricing is constrained by two forces, which are summed in the denominator. The first is the degree to which consumers respond to price increases by switching to substitute products, indicated by the magnitude of the market demand elasticity. The second is the degree to which rivals expand output, which is the product of their collective share and the percentage by which their output responds to price, the latter indicated by rivals' supply elasticity.

Next, return to raising rivals' costs. In this dominant firm model, Salop and Scheffman analyze the extent to which a unit increase in rivals' marginal costs (which might be brought about in a number of ways) raises price, under the stipulation that the dominant firm keeps its quantity constant.⁶⁹ The relevant factor (multiplier) can be expressed as:⁷⁰

$$F^{RRC} = \frac{(1 - S)\varepsilon^R}{|\varepsilon^D| + (1 - S)\varepsilon^R}$$

This raising rivals' costs factor, F^{RRC} , bears some resemblance to the Lerner index, L , but also importantly differs. Specifically, this multiplier has the same denominator but the numerator is quite different. Indeed, closer inspection reveals that two of the three elements, S and ε^R , have opposite effects in the two formulas: when changes in either of these two elements are in the direction that increases market power, L , those changes reduce the magnitude of the price effect, F^{RRC} , and, concomitantly, changes in these elements that reduce market power increase the price effect.

share, the expression in the text results. A version of this derivation first appeared in George J. Stigler, *Notes on the Theory of Duopoly*, 48 J. POL. ECON. 521 (1940). See *id.* at 523–24.

⁶⁹ Their analysis was designed to identify a sufficient condition for a raising rivals' costs strategy to be profitable, and as they explain, if the price increase is enough to cover the dominant firm's increase in average cost in pursuing the strategy, profitability will be guaranteed. Their focus bears most directly on the classification question that is the subject of section B. The analysis itself stipulates some cost to the dominant firm of the strategy and some effect on rivals' costs and then asks whether the induced price increase from the latter is sufficient (if the dominant firm holds its quantity constant) to cover the former. Accordingly, much of the actual analysis is directed toward determining how much a given strategy with stated effects on rivals would raise price, which is our question here.

⁷⁰ This statement of their factor does not directly appear in their articles. It is closest to (a rearrangement of) the left side of expression (2) in Salop & Scheffman, *Raising Rivals' Costs*, *supra* note 63, at 269. I have modified their notation in a straightforward manner, and, in my rederivation, I discovered an error in their original, which accounts for a further modest difference (which is not substantially material for present purposes).

Let us now consider each of the three elements in turn. A smaller magnitude of the market elasticity of demand, $|\epsilon^D|$, raises market power and likewise increases the factor that indicates the price effect of raising rivals' costs. The reason for the latter is that, for a given reduction in rivals' output that is induced by the anticompetitive strategy, the magnitude of the price increase is greater the less elastic is market demand.

Regarding the other two elements, the explanation for the opposite-signed effect, when compared to the measure of market power, L , is as follows: The more that rivals constrain the dominant firm's pricing, the more prices will rise for a given suppression of rivals. In both formulas, $1 - S$ and ϵ^R always appear together, as the product $(1 - S)\epsilon^R$. And in both formulas, the effect on the denominator is the same: the greater the rivals' collective share and percentage quantity response to higher prices, the more they constrain price. However, in the formula for F^{RRC} (unlike the formula for L), this product also appears in the numerator, where it indicates the direct effect of raising rivals' costs in this model. For each unit by which rivals' marginal costs are elevated, this product indicates how much their supply falls. To consider the effects of the product $(1 - S)\epsilon^R$ as a whole with regard to F^{RRC} , we can see the direct effect (the numerator) is greater when this product is larger, but only one of the two components of the denominator is larger (the market demand elasticity component is unaffected). Hence, the larger is $(1 - S)\epsilon^R$, the greater is F^{RRC} , reflecting the initial intuition that, the more important are rivals, the greater is the price impact of raising their costs. And this is so even though a higher level of these very components implies lower market power.⁷¹

It is also worth commenting briefly but more directly on the dominant firm's market share, S . The fact that the numerator in F^{RRC} features $1 - S$ rather than S , as in the formula for L , is telling us that, although a greater S implies greater market power, here its relevance is to entail a lower rivals' share and thus a smaller price effect from raising rivals' costs.⁷²

In total, then, in this illustrative case that covers a number of possible anticompetitive practices, only one of the three factors that raise market power generates a larger price effect as a consequence of a giv-

⁷¹ Put another way, the smaller is $(1 - S)\epsilon^R$, the higher will be the dominant firm's price *already* — that is, without having to employ a raising rivals' cost strategy — and the less a given strategy (specifically, a given increment to rivals' marginal costs) will relax this constraint on the firm's pricing. Regarding the degree to which a dominant firm will find it optimal to employ a raising rivals' costs strategy, the same logic indicates that there will be diminishing returns to the elevation of rivals' marginal costs.

⁷² Needless to say, this is another reason — beyond those elaborated in section V.D — that requiring a high dominant firm market share per se as a prerequisite to liability is problematic.

en increase in rivals' costs,⁷³ whereas two of the three factors that raise market power generate a smaller price effect.⁷⁴ Market power therefore can be an extremely poor summary measure for purposes of assessing the magnitude of anticompetitive effects, an important part of our overall determination of when liability is optimal. More broadly, as suggested earlier in this subsection and in section B, we should be wary of the view that market power is generally a sufficient statistic. Often its main components will be important, but not always with the same force and not always in the same direction.⁷⁵

3. *Social Welfare Consequences.* — Finally, consider the translation from price effects into social welfare consequences and, in particular, whether and how this translation depends on one or another sense of market power. The answers turn on what is taken to be the social ob-

⁷³ As with most of the examples throughout this Article, particular discussions consider only one influence at a time. Here, the raising rivals' costs factor, F^{RRC} , indicates, in Salop and Scheffman's model, the extent to which a given increase in rivals' costs translates into a price increase. The analysis does not consider how the dominant firm accomplishes any such increment to rivals' costs, and, in particular, how market power or components thereof may bear on whether and how much rivals' costs can be raised. For example, a greater S may enhance the dominant firm's ability to raise rivals' costs but generate less of a price impact per unit these costs are raised, making the overall effect of S ambiguous.

⁷⁴ The argument in the text is not meant as a criticism of Salop and Scheffman's articles, which aim to analyze raising rivals' costs strategies and do not address market power's relevance in gauging this factor. Moreover, in other writing, Salop has been among those most critical of stand-alone assessments of market power, favoring more direct examination of competitive effects. See sources cited *supra* note 52; Krattenmaker, Lande & Salop, *supra* note 52, at 255 ("Courts that erroneously think that the prior achievement of Stiglerian market power is necessary for the achievement or exercise of Bainian market power naturally assume that proof of Stiglerian market power is a threshold inquiry. However, as demonstrated earlier, Stiglerian market power is not a prerequisite for a successful exclusionary strategy. Once this is recognized, the use of a threshold market power test in exclusion cases is unwarranted." (footnotes omitted)). Hence, the fact that Salop and coauthors' raising rivals' costs analysis has the implications offered in the text here turns out to be supportive of those other views.

Nevertheless, because Salop and Scheffman use the standard dominant firm model, for which the form of the Lerner index is quite familiar, and because, as explained in the text, their own factor has precisely the same elements, it is natural to wonder how the authors may have viewed the relationship between these two measures. In the earlier paper, Salop & Scheffman, *Raising Rivals' Costs*, *supra* note 63, they specifically state, before their formal presentation, that their factor will depend on the market elasticity of demand and on the elasticity of rivals' supply. *See id.* at 269. Immediately after this remark, they further state that a lower market demand elasticity indicates a greater effect, but they do not then (or later) mention the effect of the rivals' supply elasticity. The later paper, Salop & Scheffman, *Cost-Raising Strategies*, *supra* note 63, likewise mentions that a lower market demand elasticity indicates a larger effect, but it also mistakenly states (in the same phrase) that a less elastic fringe supply curve does so as well. *See id.* at 23. A conjecture is that conventional thinking about how greater market power favors liability may have contributed to this slip. Finally, neither article comments specifically on the effect of the dominant firm's market share (or, concomitantly, on the collective share of the rivals).

⁷⁵ It is useful to remember as well, as mentioned in note 69, that price effects bear directly on profitability and thus on classification, the subject of section B. Hence, in cases in which elements of market power bear negatively on price effects, they may disfavor liability through multiple channels.

jective, and here we will examine the often-advanced total welfare and consumer welfare standards.⁷⁶

In basic settings, the reduction in total welfare due to the lack of competition is given by the deadweight loss.⁷⁷ Marginal deadweight loss rises as price is elevated ever further above marginal cost, starting from zero at the perfectly competitive price. Therefore, for a given price increment attributable to anticompetitive behavior, the social welfare cost is greater the higher is the price relative to cost, which is to say, the greater is the level of market power. In this respect, greater market power — in terms of MP^{-A} or MP^A , which are equal for marginal changes — translates directly into a larger H , *ceteris paribus*.⁷⁸ Note further that, in this instance, a conventional measure of market

⁷⁶ A total welfare standard is conventional in welfare economics and is associated with ordinary cost-benefit analysis. Its generic justification against distributive objections sometimes offered to support a consumer welfare standard is that distributive concerns tend to be most efficiently addressed directly, via taxes and transfers. See, e.g., LOUIS KAPLOW, THE THEORY OF TAXATION AND PUBLIC ECONOMICS, chs. 2, 6, 8 (2008); Louis Kaplow, *On the (Ir)Relevance of Distribution and Labor Supply Distortion to Government Policy*, J. ECON. PERSP., Fall 2004, at 159; Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994). For elaboration with regard to competition policy, see Louis Kaplow, *On the Choice of Welfare Standards in Competition Law*, in THE GOALS OF COMPETITION LAW 3, 7–18 (Daniel Zimmer ed., 2012) [hereinafter Kaplow, *Welfare Standards*]. Total welfare is also sometimes defended on the ground that it promotes long-run consumer welfare because the prospect of profits is what encourages investments, including in innovation. Conversely, consumer welfare is sometimes favored as a workable test that tends to promote long-run total welfare for various reasons, including that profits due to supracompetitive prices induce rent-seeking investments. Regarding the latter, see Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975). The present Article is agnostic. Brief further remarks will be offered at the close of this subsection, addressing horizontal merger guidelines.

⁷⁷ As is familiar, the amount of deadweight loss is given, in the simple case of linear demand, by the area of a triangle. As price rises further, this area increases, at the margin, by the difference between price and marginal cost.

⁷⁸ This general conclusion (as well as the analogous statements in section D with regard to chilling price reductions) holds in an extended model, like that in E. Glen Weyl & Michal Fabinger, *Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition*, 121 J. POL. ECON. 528 (2013), in which it is assumed that many sectors of the economy are imperfectly competitive. See *id.* at 552–53. In that case, roughly speaking, the point at which the marginal welfare cost of price elevation equals zero is not where price in the market in question equals marginal cost but rather when price is elevated above marginal cost to an average extent. Then, even starting from the point at which price equals marginal cost, the marginal welfare cost of price increases is rising with the level of market power in the given market, but starting at a negative level and turning positive when price exceeds the average markup. Note that this consideration provides a rationale for requiring a threshold level of market power as a condition for liability in such a second-best economy. Nevertheless, this view is inconsistent with much said about existing competition policy. For example, a merger that the parties conceded would significantly increase price would not be allowed on the ground that the industry was, pre-merger, more competitive than most and therefore higher prices were socially beneficial. Still, as mentioned just below in this subsection, modern horizontal merger guidelines, despite stating unambiguously that their purpose is to prevent mergers that raise prices, also contain quantitative safe harbors for mergers that result in post-merger HHIs that are below stated levels.

power (the Lerner index L) is a sufficient statistic for ascertaining the magnitude of this factor.⁷⁹

Now consider consumer welfare.⁸⁰ Here, the marginal welfare loss as price increases by one unit is given simply by the quantity demanded at the current price.⁸¹ Because quantity is usually easy to observe directly and in any case is much easier to measure than is market power, it would not make sense to undertake a market power inquiry to help determine the consumer welfare impact of a price increase. If one does look at market power levels, however, which perhaps are being ascertained for other purposes, note that higher market power, *ceteris paribus* (specifically, in a given market), implies a smaller marginal (consumer) welfare cost because, the more elevated is the price, the lower will be the quantity.

Combining the two points, we can see that the relevance of market power to the welfare consequences of a given price effect depends importantly (and qualitatively) on the welfare measure chosen. An interesting and largely unappreciated implication of this relationship concerns the rationales and metrics associated with modern horizontal merger guidelines. On one hand, consumer welfare is the commonly stated objective.⁸² On the other hand, the HHI grids that indicate safe harbors and ranges of likely challenge refer to both post-merger HHIs

⁷⁹ The ideas in this subsection (but without the linkage to market power per se) are developed in Kaplow, *Welfare Standards*, *supra* note 76, at 18–25. The origin in antitrust analysis of the point about deadweight loss can be traced to discussions of the tradeoff between allocative and productive efficiency in the merger context. The debate was launched by Oliver E. Williamson, *Economics as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18 (1968), who argued, in essence, that rectangles were larger than triangles, suggesting that productive efficiencies were particularly important. However, Raymond Jackson, in *The Consideration of Economies in Merger Cases*, 43 J. BUSINESS 439 (1970), explained that, when the pre-merger price was already elevated, this geometric analogy was inapt. Until more recently, however, the implications of this point more broadly with regard to the relevance of market power have not been elaborated. The main precursor of which this author is aware appears as a brief point that is elaborated at the conclusion of the appendix in Krattenmaker, Lande & Salop, *supra* note 52, at 268–69.

⁸⁰ If consumer welfare is the measure, it may seem sufficient to know merely whether price will rise or fall in order to assign liability. This knowledge would be sufficient in a deterministic world. However, as the analysis throughout emphasizes, assigning liability is difficult in large part because of uncertainty. Thus, in an actual case, price may rise to some degree if the anti-competitive explanation is correct, which has some probability, and price may fall by some other amount if the procompetitive explanation is correct, which has some other probability. More generally, there will be a distribution of possible outcomes. Moreover, price may rise but quality may increase by more, and so forth. As a consequence, conversion of various outcomes into a welfare measure is appropriate. (For example, even for consumer welfare, the expected price effect is not a sufficient statistic for the expected welfare impact.)

⁸¹ Consumer surplus is the area under the demand curve and above a horizontal line segment at the current price. A marginal price increase reduces this area by the length of that line segment, which is just the quantity demanded at the prevailing price.

⁸² See, e.g., U.S. MERGER GUIDELINES, *supra* note 48, § 1; *id.* § 10 (applying the consumer welfare standard to the consideration of efficiencies); EU Horizontal Merger Guidelines, *supra* note 48, ¶ 8; *id.* ¶ 79 (applying the consumer welfare standard to the consideration of efficiencies).

and HHI deltas.⁸³ The HHI deltas appear to be a surrogate for MP^Δ , which as discussed in subsection I is in turn connected with the price effect. The post-merger HHIs, however, seem to be a surrogate for MP^A , and a higher market power level (holding the price effect constant) favors a challenge under these guidelines' prescriptions, which makes sense according to the foregoing analysis if the objective is total welfare rather than consumer welfare.⁸⁴

D. Market Power and Procompetitive Benefit

Turn now to the possible procompetitive benefit, B , of an allegedly anticompetitive act. As with H , this magnitude bears directly on how optimally to decide whether to assign liability and in some respects indirectly as well, to the extent that it indicates the profitability of a procompetitive strategy and accordingly influences p^B .⁸⁵ Of all the components of the optimal decision rule, this one has received the least attention, including with regard to our questions of whether and how market power bears on B .⁸⁶

⁸³ See, e.g., U.S. MERGER GUIDELINES, *supra* note 48, § 5.3; EU Horizontal Merger Guidelines, *supra* note 48, ¶¶ 19–21. The HHI refers to “the Herfindahl-Hirschman Index . . . of market concentration[, which] is calculated by summing the squares of the individual firms’ market shares.” U.S. MERGER GUIDELINES, *supra* note 48, § 5.3, at 18.

⁸⁴ There is no necessary contradiction because the level of market power may bear on liability for other reasons, explored elsewhere in this Article. Nevertheless, the guideline documents themselves and most academic discussions thereof say precious little about the justification for the sorts of targets that are routinely employed. Much of the discussion here suggests that something like MP^A often is not a sufficient statistic with regard to most possible channels by which market power may be relevant. However, in the one instance where it most clearly appears to be so (here), MP^A has the posited sign precisely when the objective is total welfare, not consumer welfare. For further discussion of the varying relationship between traditional market power measures and the proper economic analysis of horizontal mergers, see notes 62 and 201. And for further critique of using market-share-based threshold tests for market power (of which HHI grids are one type), see section V.D.

⁸⁵ This indirect effect on profitability can be a two-edged sword. If a practice has both anti- and procompetitive effects, it may be that the expected profits generated by the former are insufficient to cover the costs of the practice (which, taken alone, would tend to rule out the anticompetitive explanation) but the combined expected profits, including those from genuine efficiencies, are sufficient to cover the costs. In such an instance, a higher p^B might be associated with a higher p^H . Furthermore, when the net welfare effect of the practice is detrimental, we may have a situation in which liability would be optimal with regard to a practice that would not be observed but for the procompetitive effect. Consider, for example, the use of exclusive dealing that hurts rivals but is very costly, yet nevertheless is profitable because it also generates some efficiencies through improving dealers’ incentives. Cf. Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515, 526–27 (1985) (noting that some exclusionary practices may have minimal costs or even generate cost savings); Kaplow & Shapiro, *supra* note 49, at 1212 (noting that anticompetitive exclusive dealing may involve little profit sacrifice, in which case even small efficiency benefits would produce net short-run gains, rendering recoupment moot).

⁸⁶ Subsection V.B.2 elaborates how existing law and commentary produce this state of affairs and some of its shortcomings in organizing investigations and decisionmaking with regard to practices under scrutiny. Given the current extent of the literature, this topic in particular warrants further attention, and the remarks here should be regarded as especially preliminary. For

On one hand, there are reasons that the costs from the mistaken imposition of liability may be larger when market power is lower, in which case greater market power would favor liability for an additional reason.⁸⁷ Suppose, for example, that the threat of mistaken liability chills ex ante behavior by inducing firms to moderate their pricing or to curtail expansion. If pricing would otherwise have been at marginal cost and investment at first-best levels, such suppression would be inefficient (although, at first, to a small extent).⁸⁸ But if prices would otherwise have been elevated well above marginal cost and, due to high margins, incentives to expand or introduce additional varieties would have been excessive, then some curtailment of price or investment would actually raise social welfare.⁸⁹ Accordingly, greater market power — specifically, a higher MP^A — reduces this social cost of chilling procompetitive activity (and this cost could be negative, becoming more so as market power rises), which favors liability.

A higher MP^A can also favor liability because it may reduce the magnitude of benefits from a given increment to scale, such as may arise from a horizontal merger or a joint venture. A manufacturing plant or other aspect of production, marketing, and distribution may have a minimum efficient scale, or, more broadly, the economies resulting from greater scale may be diminishing with size even if they do not vanish at some point. In such cases, the efficiency benefits of enhancing scale by a given amount will be falling in the initial level of market power, making liability more attractive because of the concomitant reduction on the benefit side of the balance. However, in this instance, not every aspect of the market power level is relevant. In, say, a ho-

discussion of the welfare effects of false positives that may arise with regard to price fixing, some of which has implications in the present setting, see LOUIS KAPLOW, COMPETITION POLICY AND PRICE FIXING 239–48, 346–67 (2013).

⁸⁷ Keep in mind that the present discussion focuses on B rather than p^B , so it is concerned with the size of the welfare effect given that the practice is indeed procompetitive (or has a procompetitive aspect).

⁸⁸ This statement follows under a total welfare standard. It does not seem well appreciated that such inefficiencies can be favorable under a consumer welfare standard. Suppose, for example, that the supply curve is rising and that price and quantity are initially competitive, so that price equals marginal cost. Pushing down price somewhat causes consumer surplus to rise if those rationed have the lowest valuations (although under other rationing methods consumer surplus may rise or fall).

⁸⁹ These points refine our understanding of certain ex ante effects associated with challenges to allegedly predatory pricing, where the concern is that the prospect of mistaken liability will raise rather than lower ex ante prices. It is understood that chilling competitive price cuts that are not exclusionary is socially costly, but the analysis here indicates that the (total) welfare cost of a given forgone price reduction is greater the more price would otherwise be above marginal cost. That is, greater market power raises B and thus disfavors liability. Note that similar reasoning from subsection C.3 likewise implies that if, say, stricter treatment of predatory pricing induces dominant firms to charge lower (limit) prices ex ante, then the welfare gain from this effect would be larger, favoring liability.

mogeneous goods market, such efficiencies will tend to be falling in the initial market share but be independent of the market elasticity of demand or rivals' supply elasticity. Moreover, the pertinent way to view market share in this instance is not with respect to the degree of market power it might suggest but rather in terms of how it relates to efficient scale given the applicable technology.

On the other hand, sometimes greater market power is associated with a larger procompetitive benefit, in which case greater market power may favor liability to a lesser extent than otherwise and may even oppose liability overall.⁹⁰ For example, the social payoff from innovation may be larger when market power is higher.⁹¹ If the gains from the innovation are reaped only with respect to a dominant firm's own output, then a higher market share is associated with greater benefits. (As in the preceding example with scale economies, the share is again directly relevant but not the demand or supply elasticities.⁹²) Or a firm may be a rising monopolist in a new industry that disrupts an existing one, in which case the market power it achieves may be positively associated with the benefits it delivers (recalling that the present analysis is supposing a procompetitive explanation and inquiring into how the magnitude of B is affected by market power). Or consider a practice that is net procompetitive in a manner that is manifested by a price reduction on an existing product; then the social benefit (under a total welfare standard) is greater the higher is the preexisting level of market power, as explained in subsection C.3.⁹³

In sum, it appears that market power, in various senses or with regard to certain components, may also have important effects on the magnitude of B , the size and direction of which vary by the context. Like with much of the rest of the analysis in this Part, we see that market power has more channels of possible relevance than are generally appreciated and also that market power is far from a unitary con-

⁹⁰ When both procompetitive benefits and anticompetitive harm rise in market power, they need not, of course, rise at the same rate. Even if both rose linearly, the slopes might differ. In addition, on the benefit side, there could be increasing returns in the presence of network externalities, and, on the cost side, harm could rise at an increasing rate as well.

⁹¹ As is familiar, the incentive to engage in innovation, which bears on p^B , may rise or fall with a firm's market power. Consider also the illustration in section E wherein some procompetitive explanations involve a profitability condition that is essentially the same as that for investments in exclusion.

⁹² Indeed, a lower market elasticity of demand and a lower rivals' supply elasticity may reduce the benefits because a dominant firm that, for example, reduces its marginal cost will on that account capture fewer additional sales from substitutes and rivals.

⁹³ This statement refers to the benefit from a pure price reduction, such as would be generated by a change in the nature of competitive interaction in the market. If instead the source of the price drop were a cost reduction, the total welfare benefit would depend directly on the total cost savings, whereas under a consumer surplus standard, the gain would depend (at the margin) on the existing quantity and the pass-through rate (which determines the price reduction).

struct with regard to how it or certain of its components bear on the optimal assignment of liability.

E. Illustration

To further illustrate some of the ways that market power can be relevant, let us consider a particular aspect of the analysis of predatory pricing: the assessment of whether it is rational for a firm to incur the requisite short-run profit sacrifice that is needed to generate the ensuing long-run boost to profits.⁹⁴ This profitability inquiry has long been featured in economists' writing on predation and other exclusionary strategies⁹⁵ and is reflected explicitly in some jurisdictions' competition rules as a recoupment requirement.⁹⁶ Analysis of this condition and how its satisfaction is influenced by market power in various guises directly illuminates section B's discussion of p^H , but we will see that it also relates to p^B and to aspects of H in many settings. (This section does not attempt to analyze predatory pricing fully — indeed, not even all the ways that market power may bear on the subject.⁹⁷)

Consider the following simple scenario. If the firm abstains from predation, it earns profits of π^A in both the short and long run. If it engages in predation, its short-run profits fall to π^{pred} but its long-run profits rise to π^A . The condition for profitability can be stated as⁹⁸:

⁹⁴ For further exploration of this subject (mostly without regard to its connection to market power), see Louis Kaplow, Recoupment and Predatory Pricing Analysis (Dec. 9, 2016) (unpublished manuscript) (on file with author).

⁹⁵ See, e.g., Janusz A. Ordover & Garth Saloner, *Predation, Monopolization, and Antitrust*, in 1 HANDBOOK OF INDUSTRIAL ORGANIZATION 537, 552–53 (Richard Schmalensee & Robert Willig eds., 1989). In some other types of models of exclusionary practices, there are also profitability conditions that exhibit some similar properties (notably, greater market power with the practice in effect makes the condition more likely to hold whereas greater market power in the absence of the practice makes it less likely to hold). See, e.g., John Asker & Heski Bar-Isaac, *Raising Retailers' Profits: On Vertical Practices and the Exclusion of Rivals*, 104 AM. ECON. REV. 672 (2014). The profitability requirement is also addressed in the context of Salop and Scheffman's model of raising rivals' costs that is discussed in subsection C.2. See *supra* note 69.

⁹⁶ See *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224–26 (1993). Cases in the European Union variously discuss recoupment but have not made it a separate requirement. See, e.g., Miguel de la Mano, Renato Nazzini & Hans Zenger, *Article 102*, in THE EU LAW OF COMPETITION 329, 409–10 (Jonathan Faull & Ali Nikpay eds., 3d ed. 2014). For further discussion, see subsection V.B.1 and also note 105 later in this section. The present and subsequent treatments of the recoupment requirement in this Article abstract from particulars of various legal formulations and focus solely on the question of the alleged predator's ability, upon the success of its allegedly exclusionary campaign, to recover the profit sacrifice incurred in the short run in executing its strategy.

⁹⁷ For example, note 89 in section D addresses ways in which market power may affect chilling costs associated with predatory pricing enforcement and also the welfare impact of predation.

⁹⁸ See, e.g., Ordover & Saloner, *supra* note 95, at 552–53. This familiar expression and corresponding simple model is restrictive (in abstracting, for example, from uncertainty about success and changes over time in what profits would be obtained both under abstention and in the event

$$\pi^{\sim A} - \pi^{pred} < \frac{\delta}{1 - \delta} (\pi^A - \pi^{\sim A})$$

The left side is the short-run profit sacrifice from predation. The term in parentheses on the right side should be understood as the per-period enhancement in profits due to predation.⁹⁹ This latter term is weighted by a fraction to reflect two aspects of discounting: the δ in the numerator, a discount factor (taken to be less than one), indicates that profits do not begin until the next period, and the $1 - \delta$ in the denominator reflects that in the posited model this profit stream is assumed to continue indefinitely (hence we are summing a series that is discounted additionally by the factor δ for each subsequent period). One interpretation of a higher discount factor (closer to one) is that the expected duration of the predation period is shorter; another is that the number of markets in which a reputation for predation will be established is larger.¹⁰⁰

Let us now examine this profitability condition to see when and how it helps distinguish anti- and procompetitive explanations — that is, to estimate p^H and p^B — and then to understand how market power in various senses bears on whether the condition is satisfied. The conventional story with regard to the former, as stated, is that future profit recoveries (properly discounted) must exceed the short-run profit sacrifice in order for predation to be profitable, so that if it is doubtful that the condition is satisfied, the anticompetitive explanation is not very plausible. This familiar logic is facially correct but substantially incomplete. As emphasized in sections A and B, we also need to consider how the analysis bears on the plausibility of procompetitive explanations for what we observe.

With predatory pricing, some alternative explanations also contemplate a future profit recovery. If a price reduction is promotional — such as when a seemingly dominant firm in some markets aims to enter new markets or a rising firm seeks to become a major player in a new market — there will be a short-run profit sacrifice that makes sense only if the firm expects to earn positive margins in the future. Likewise, the early production of a greater quantity to move more rap-

of success), but it will be apparent that the main insights that will be drawn from it here are fairly general.

⁹⁹ This difference might also be expressed as π^A , which is suggestive of one of the points below. See also *infra* note 110.

¹⁰⁰ Note further that this profitability condition is based on expected (not realized) consequences, including expected duration, which may be difficult to ascertain ex post when a practice is investigated. For example, in Jean-Pierre Benoit, *Financially Constrained Entry in a Game with Incomplete Information*, 15 RAND J. ECONOMICS 490 (1984), both the requisite duration and recoupment are uncertain ex ante, so there will be cases in which predation is profitable ex ante but not ex post.

idly down a learning curve entails a profit sacrifice predicated on thereby earning higher profits in the future.¹⁰¹ Variants of these explanations might be apropos, for example, when a firm like Wal-Mart enters new geographic or product markets or when tech start-ups run significant losses for years. As we know, predatory pricing allegations have arisen in such settings.¹⁰²

These procompetitive strategies, like the anticompetitive predatory pricing strategy, are profitable and hence rational if and only if essentially the same condition holds. The profit term $\pi^{\sim A}$ can be interpreted as the profit from abstention from any action the firm might consider, π^{pred} as profit in the short run when any costly strategy is deployed, and π^A as the future profit flow when the strategy has had its effect. Accordingly, the left side of the condition, $\pi^{\sim A} - \pi^{pred}$, the short-run profit sacrifice, can be understood as just the cost of some investment undertaken in the present, and the term in parentheses on the right side, $\pi^A - \pi^{\sim A}$, as just the per-period return from the investment. Our condition reflects no more than that a firm will undertake an investment (any strategy with present costs and future returns) only if it is profitable. On its face, therefore, the profitability condition does not discriminate between anti- and procompetitive strategies when both involve investments of sorts.¹⁰³

Let us now suppose instead that the competing explanation for the initial low price is that it is not predatory but merely accommodating, which for present purposes may be understood as the short-run profit-maximizing price, the one that would be maintained indefinitely if conditions (including the presence and behavior of any rival) remained unchanged.¹⁰⁴ In that event, there is no short-run profit sacrifice that must be recovered. Accordingly, showing that our condition is unlike-

¹⁰¹ The discussion here assumes that product promotion and moving down one's own learning curve to reduce future production costs are procompetitive, which is not obvious. For example, when learning-by-doing is important, to the extent that a dominant firm's lower short-run prices lead to its making additional sales, its own costs will fall, but those of rivals, if subject to a similar learning curve, accordingly will rise (so we have a strategy that raises rivals' costs while lowering, not raising, one's own costs).

¹⁰² See, e.g., *Wal-Mart Stores, Inc. v. Am. Drugs, Inc.*, 891 S.W.2d 30 (Ark. 1995).

¹⁰³ Examining the profitability condition may still be probative because the precise condition and the factors contributing to various components may differ for the different strategies. More broadly, the best means of distinguishing these explanations from an exclusionary one often will be unrelated to this profitability condition (and also may have little to do with market power).

¹⁰⁴ Here it is simply assumed that such a price response is procompetitive and thus should (or would) not give rise to liability — setting to the side debates about what sorts of price responses should be permissible. See, e.g., Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975); Aaron S. Edlin, *Essay, Stopping Above-Cost Predatory Pricing*, 111 YALE L.J. 941 (2002); Einer Elhauge, *Why Above-Cost Price Cuts to Drive Out Entrants Are Not Predatory — and the Implications for Defining Costs and Market Power*, 112 YALE L.J. 681 (2003).

ly to be satisfied would tend to render unlikely a predation strategy relative to one of accommodation.¹⁰⁵

The first lesson from this example, therefore, is to reinforce the claim that it is important to specify the pertinent anti- and procompetitive explanations for a practice and to assess their likelihoods in a comparative manner. Here, we have an often-emphasized condition that is diagnostic with respect to one type of procompetitive explanation but not others.

The remainder of this section assumes that the procompetitive explanation is that the observed pricing reflects mere accommodation rather than predation, in which case satisfaction of the profitability condition is necessary only for the anticompetitive explanation. This brings us to the question of how market power bears on whether this condition is satisfied. Here as well, the analysis is less straightforward than is sometimes imagined.

Market power does not appear directly anywhere in our formula, but market power does bear on the profit terms. Suppose that greater market power (here, referring to levels) is associated with higher profits and, moreover, that all of the profit terms rise with market power by the same proportion. In this case, it is evident that there would be no effect on whether the condition held because both sides of the inequality would rise by the same factor. Hence, we are particularly interested in whether market power influences the profit terms differentially.

One candidate is π^A , which is most naturally (positively) associated with MP^A . That is, greater market power when the allegedly anticompetitive act (here, predatory pricing) has had its effect indicates greater profits in that state. As a practical matter, MP^A may be susceptible to direct estimation primarily in cases in which the strategy

¹⁰⁵ The presentation in the text, which tracks conventional wisdom, is overly simple. Under the accommodation explanation, there is no short-run profit sacrifice whereas, under the predation explanation, there is a short-run sacrifice. Hence, one might think that the question of whether there was a short-run sacrifice would be most directly diagnostic: if there is such a sacrifice, relative to accommodation, then accommodation has already been ruled out. For there to be both a short-run sacrifice and no prospect of recovery is inconsistent with both explanations. Furthermore, the stronger is the demonstration of a large price reduction and thus the more forceful the inference that the observed price was predatory rather than accommodating, the greater must be the demonstrated ability to earn profits in the future and thus the harder it is for the profitability condition to be met. And conversely: the smaller the alleged price reduction and thus the more plausible is the accommodation explanation on that account, the easier it is to show a prospect of recoupment and thus the plausibility of predation. See C. Scott Hemphill, Note, *The Role of Recoupment in Predatory Pricing Analyses*, 53 STAN. L. REV. 1581, 1592–93 (2001) (raising this tension); Kaplow, *supra* note 94 (elaborating on the tension).

has been effective.¹⁰⁶ In any event, we have a notion of market power that does bear positively on liability in this instance.¹⁰⁷

Next consider π^A , which is most naturally (positively) associated with MP^A . When considering an allegedly anticompetitive act prospectively, the observed level of market power would correspond to MP^A . In this case, however, the higher is market power, the less likely our profitability condition is to be satisfied. There are two reasons for this. First, the greater is π^A , ceteris paribus, the larger is the profit sacrifice (the left side of our formula). Second, the greater is π^A , ceteris paribus, the smaller is the future increment to profitability from a given, achieved level of π^A (the term in parentheses on the right side of our formula).

This result has a straightforward intuitive basis. When MP^A is higher, the firm's situation in the absence of predation is more profitable, which makes predation less attractive. Of course, some factors (a lower market demand elasticity) raise the other profit terms as well. Importantly, some factors bear differentially on market power with and without predation.¹⁰⁸ Predation in particular is often designed to create what may be termed a behavioral or strategic barrier to entry. Erecting such a barrier is especially valuable when other, preexisting entry barriers are weaker. And weaker preexisting barriers imply a lower MP^A , making predation more likely to be profitable — that is, our condition is more likely to be satisfied.¹⁰⁹

¹⁰⁶ As discussed in subsection C.1, if the practice has not yet had its effect (or if a challenge involves a practice that failed but was argued, *ex ante*, to be likely to have a posited anticompetitive effect), measuring extant market power may involve estimating MP^A . To move from that measure to MP^A may then require directly ascertaining MP^A , which is to say the anticompetitive effect of the act.

¹⁰⁷ The present discussion raises another question, one of legal doctrine and of economic analysis: Does it make sense to have a separate, initial market power requirement for predation (or other allegedly exclusionary behavior) and, when one comes to analyzing the act, to consider a separate recoupment requirement, which in turn is assessed in significant part by analyzing market power? *See* Kaplow, *supra* note 94; *infra* subsection V.B.1 (especially note 159).

¹⁰⁸ Specifically, in plausible models, a lower market demand elasticity will raise π^A by more than it raises π^A . A lower elasticity raises the profit-maximizing price, but in a more competitive world (one without the predation), firms' prices fall short of the industry profit-maximizing price to a larger degree and the dominant firm captures a smaller fraction of this smaller quantum of profits.

¹⁰⁹ This point is often attributed to B.S. Yamey, *Predatory Price Cutting: Notes and Comments*, 15 J.L. & ECON. 129, 142 (1972), and is elaborated in the manner presented in the text by David Easley, Robert T. Masson & Robert J. Reynolds, *Preying for Time*, 33 J. INDUS. ECON. 445, 456 (1985) ("By simply making life tough for entrants the monopolist may intimidate future entry. By the same token, large entry barriers need not be present for predation to be an optimal strategy. Indeed relatively low entry barriers and the threat of rapid mass entry may motivate a monopolist to artificially manufacture an additional entry deterrent through predation." (footnote omitted)). *See also* ALISON JONES & BRENDA SUFRIN, EU COMPETITION LAW 359 (5th ed. 2014); U.S. DEP'T OF JUSTICE, *supra* note 44, at 57; Patrick Bolton, Joseph F. Brodley & Michael H.

Combining these points reinforces a second lesson from previous sections: Market power may well be relevant to liability, but when it is, we must be careful to identify both the particular channels and the particular senses of market power that we have in mind. Different notions of market power or different components thereof may affect the optimality of liability with different signs. Here, both of our measures of market power levels, MP^A and MP^4 , are relevant, but in opposite directions.¹¹⁰ And a low elasticity of market demand may influence our condition in the opposite direction from that of greater entry barriers.¹¹¹

A further caveat concerning the relevance of market power is in order. In the foregoing discussion, certain senses of market power are relevant because they are associated with certain profit terms, but notions of market power and their corresponding profit measures are not the same. Specifically, the relevant sense of market power is not a sufficient statistic in the determination of the corresponding profit term. This being true would require that changing any component that contributes to market power has relatively the same effect on profits, which ordinarily is not the case — not even close, as elaborated in the margin.¹¹² This disconnect raises the question of why it would be

Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239, 2265 (2000); Crane, *supra* note 52, at 51–54; Krattenmaker, Lande & Salop, quoted *supra* note 52.

¹¹⁰ To round out the discussion, consider MP^A , which most naturally relates to (but is not one-to-one with) π^A . As mentioned in note 99, the term in parentheses on the right side of our formula is π^A , but we also have the profit terms on the left side, including π^{A^4} , which we have just been discussing. As the text explains, the reason that a higher MP^{A^4} disfavors liability (with regard to this channel in this context) goes beyond the definitional observation in subsection C.1 that this tends generally to be so in light of the fact that $MP^A = MP^A - MP^{A^4}$.

¹¹¹ Many of the points in this section — wherein different senses or components of market power have different, even opposite, influences on the optimality of liability — may have been obscured as a consequence of the siloing of market power analysis and act analysis, *see infra* subsection V.B.1, and also the siloing of the analysis of anti- and procompetitive explanations, *see infra* subsection V.B.2. The reason is that the various subtleties and complications arise from particular linkages between aspects of market power and features of the act and of particular anti- and procompetitive explanations that may be operative, all of which are submerged by siloing.

¹¹² First, let us restate the rough assertion in the text more precisely. When a given measure of market power is a sufficient statistic for a given measure of profit, it follows that the ratio of any pair of derivatives of the market power measure with respect to each of two underlying parameters must be the same as the ratio of the corresponding derivatives of the profit measure. If this were not so, then when we changed the two pertinent parameters in a way that kept market power constant, profits would nevertheless change, so the same level of market power could be associated with a wide range of profit levels. And conversely.

Next, we can assess whether this property holds. Consider the standard model from subsection C.2 with a dominant firm that supplies a homogeneous good and is constrained by a competitive fringe of rival firms. Simplify further by assuming that the dominant firm has constant marginal cost and faces linear market demand and a linear aggregate supply function for the rivals. Once again, define the market power of the dominant firm by the Lerner index, and now compare that formula to one for the dominant firm's profits. The assumption of constant marginal cost (and no fixed cost) means that the firm's profits equal the Lerner index times firm revenue (be-

helpful to measure market power for purposes of determining whether the profitability condition holds rather than measuring the profit terms directly; the same underlying information is required, but market power captures it in a manner that obscures the information's true implications for profits. In other words, it does not follow from market power's correlation with a factor of interest that it makes sense to examine market power as such rather than to evaluate the factor directly.

In concluding, it is important to recall that this section considers market power's possible relevance only to the profitability condition: that, to be plausible, an explanation for a practice — here, predatory pricing — must involve a strategy that is profitable. Market power might be relevant in other ways, such as through the channel identified in subsection C.3, wherein a higher level of market power implies greater marginal deadweight loss from additional price elevation, conditional on such elevation being generated by the allegedly anticompetitive practice. The purpose of this section is to illuminate the analysis of Part III, not to exhaustively analyze predatory pricing or even all the channels by which market power may be relevant to it.

IV. ADDITIONAL CONSIDERATIONS

This Part extends the analysis in two ways. Section A considers the use of market power inquiries to screen cases. Often advocated and regularly practiced, this tactic is less well grounded than it should be. Its fundamental shortcoming is that the proper use of market power screens is dependent on an adequate understanding of the channels by which market power should bear on ultimate decisions on liability, and previous exploration of that subject has been inadequate.

Section B elaborates qualitative differences between two types of competition regulatory decisions. The first type, which has been the focus of most of the analysis so far, consists of those that directly regulate proposed conduct, such as prohibitions of mergers and the issuance of injunctions that restrict allegedly exclusionary behavior going forward. The second type involves the application of sanctions, notably fines and damage awards, the prospect of which deters anticompetitive conduct but also tends to chill some procompetitive activity. The

cause the Lerner index indicates, in this special case, the fraction of revenue that is profit). To assess our property for market power to be a sufficient statistic, we can take derivatives of the Lerner index and of the expression for profits with respect to each of the five underlying parameters: two slopes (of the demand curve and of rivals' supply curve), the two corresponding intercepts, and the dominant firm's marginal cost. Each of these three sets of derivatives involves substantially different terms for the Lerner index and for revenue, and hence for the Lerner index and for the dominant firm's profits. That is, in our simple, standard, and in various respects favorable special case, the requisite conditions for market power to be a sufficient statistic for profits are sharply violated.

subtle yet significantly different formulations of the optimal decision rule for liability in these two contexts are explained in general terms and then with regard to market power's relevance.

A. Screening

Screening here is taken to refer to the use of preliminary diagnostic tools in order to select a portion of a population for additional assessment and possible action.¹¹³ Doctors perform physical examinations and administer tests to identify possible ailments. Employers review resumes to select job candidates to consider further. Customers peruse ratings websites to identify potential vendors. In a similar fashion, market power inquiries are thought to be important in significant part because of their usefulness in screening.¹¹⁴ This section identifies various screening activities in competition cases¹¹⁵ and then examines

¹¹³ Dictionary definitions of the verb “screen” are internally inconsistent in this regard, offering as one definition of the term a systematic or methodical assessment, yet illustrating this definition with opposite cases. *See, e.g.*, Oxford English Dictionary Online, <http://www.oed.com/view/Entry/173441> [<https://perma.cc/SKY6-FFAX>] (last updated Dec. 2016) (giving as a definition of the verb “screen” “[t]o examine systematically in order to discover suitability for admission or acceptance” and offering as an example a customs inspector who “screens [a person’s bag] in fifteen seconds flat”). The seemingly mixed usage of the term in the antitrust context is illustrated in the next footnote.

¹¹⁴ *See, e.g.*, JONES & SUFRIN, *supra* note 109, at 303–04 (describing opposition to an economists’ report that favored deemphasizing dominance as a distinct inquiry under now–Article 102 by commentators who argued, in part, that a dominance “screen” was desirable); U.S. DEP’T OF JUSTICE, *supra* note 44, at 19–20; Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 22–23 (1984); Kaplow & Shapiro, *supra* note 49, at 1181–86; cf. Carlton, *supra* note 52, at 3–4, 27 (advancing the use of market definition and resulting market shares primarily to eliminate weak cases). *But see* A. Douglas Melamed, Principal Deputy Assistant Gen., Antitrust Div., U.S. Dep’t of Justice, Address to the American Bar Association, Antitrust Section: Exclusionary Vertical Agreements 6, 8 (Apr. 2, 1998), <https://www.justice.gov/atr/file/519516/download> [<https://perma.cc/QVU9-JV9A>] (arguing that, due to difficulties of assessment, market power should not be a screen or even required for ultimate liability determinations). Although, as will be discussed in this section, screening usually brings to mind early-stage triage, such as at the outset of an investigation or the filing of a case, many invocations of the notion seem to suggest that what is intended is merely a way of organizing the sifting of the evidence, as reflected by the fact that the sorts of evidence that are mentioned would usually come to light only well into an investigation or the discovery process. *See, e.g.*, Carlton, *supra* note 52, at 20–21 (referring to the use of econometric techniques); Easterbrook, *supra*, at 22 (“At other times it is obvious on even the briefest inquiry that a firm has no power. . . . A court might use either evidence of inability to raise price or evidence of price covariance between the defendant’s goods and the products of rivals.”).

¹¹⁵ The focus in this section, following the rest of this Article, is on decisions by legal authorities, but the present analysis also bears fairly directly on *ex ante* guidance to business decisionmakers with regard to their ability to predict whether contemplated actions are likely to result in costly scrutiny and, ultimately, liability. Note, for example, that even aside from the difficulties of employing a simple market power requirement in a given class of cases, it will often be difficult to predict how much market power will actually be required and how much market power a legal authority will deem to be present in a particular setting. Nevertheless, if, as discussed below, competition agencies and courts routinely ignore or dismiss challenges involving

whether and how market power should be used in screening.¹¹⁶

Screening can come in many forms at competition agencies, the locus of investigation and enforcement in most jurisdictions.¹¹⁷ Because decision processes are often informal and sequential, it may well be that no particular test is employed at a designated moment to make a decision whether to terminate or proceed. Nevertheless, it usually makes sense to begin with a quick scan of certain features, both to prioritize and to guide subsequent efforts. Moreover, given workloads and available resources, most filed mergers, competitor and customer complaints, and day-to-day practices of myriad firms in numerous industries will never be examined at all or will be set aside fairly promptly.

Courts — which play an especially significant role in the United States with regard to private antitrust suits — also engage in screening.¹¹⁸ U.S. civil procedure formalizes this function through motions to dismiss at the outset and for summary judgment after discovery (and therefore in light of all the available evidence) but before trial.¹¹⁹ The formal rules and doctrines may appear to give judges little scope

very low market power, which characterization will often be obvious in advance, at least with high probability, there may be significant predictability in substantial domains.

¹¹⁶ For prior analysis of the general problem of multistage decisionmaking — involving a sequence of decisions whether to assign liability or no liability based on current information or to expend resources to obtain additional information — see Louis Kaplow, *Multistage Adjudication*, 126 HARV. L. REV. 1179 (2013) [hereinafter Kaplow, *Multistage Adjudication*]; and Louis Kaplow, Optimal Multistage Adjudication (Aug. 15, 2016) (unpublished manuscript) (on file with the Harvard Law School Library) [hereinafter Kaplow, *Optimal Multistage Adjudication*]. See also Beckner & Salop, *supra* note 36 (explaining the virtues of gathering information sequentially in antitrust cases, beginning with that which is easiest to obtain). As will be implicit in the analysis in section B, for decisions regulating future conduct, this problem is an instance of information valuation in decision analysis, whereas for decisions that generate ex ante incentives, it involves a qualitatively different sort of information valuation. In both contexts, it is important to keep in mind that an optimal screening decision is not one that eliminates only cases in which we are certain that liability is inappropriate. In addition, as the cited articles discuss, optimal screening decisions are not necessarily more lenient (generous to continuation) than are interim termination decisions or final decisions on liability.

¹¹⁷ Agencies may need to go to court to formally initiate or conclude affirmative decisions to enforce, or their decisions may be appealable in court, but that is ordinarily after completion of substantial investigation and thus subsequent to internal screening decisions.

¹¹⁸ Both procedural and substantive developments in U.S. law (including competition law) seem to be motivated in significant part by the combination of private suits (which provide for treble damages and recovery of attorneys' fees) and distrust of factfinders, particularly juries. Even unsuccessful suits can generate significant legal costs and, because many such costs are borne by defendants, the prospect thereof can chill desirable behavior that generates a threat of litigation. On the other hand, frivolous suits are to a degree self-deterring because of uncompensated costs incurred by plaintiffs' attorneys.

¹¹⁹ Judgments as a matter of law may be issued for the defendant after a plaintiff has presented its case to the factfinder or for either party at the conclusion of a case. Particularly in the latter setting, where such decision may also effectively be made on appeal, the tool serves more as a means of error correction than resource economization.

for weighing the evidence, although these limitations are to a degree legal fictions and many judges undoubtedly make such assessments in cases they find to be sufficiently weak.¹²⁰

Despite their popularity as screening mechanisms, market power inquiries face two significant obstacles in this regard. The first goes to the core of this Article: if market power is to be employed as a screen, there is a strong presumption that the right way to do so is parasitic upon its proper role in determining liability.¹²¹ To be sure, there may

¹²⁰ On motions to dismiss, see, for example, RICHARD A. POSNER, THE FEDERAL COURTS: CHALLENGE AND REFORM 180 (1996) (writing before *Twombly*: “More important, district judges are increasingly prone to evaluate . . . complaints . . . as if [they] were a summary of evidence. If the judge is not impressed . . . he dismisses the suit . . . And this irregular practice the courts of appeals are increasingly inclined to condone too.”); 5B CHARLES ALAN WRIGHT & ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 1357 (3d ed. 2004) (writing before *Twombly*: “In more recent years, however, a number of federal courts, as has been true with summary judgment motion practice, have been more willing to dismiss under Rule 12(b)(6), particularly in certain substantive contexts such as securities litigation.”); Robert G. Bone, *A Proceduralist’s Perspective on Court Access After Twombly*, GCP: ONLINE MAG. FOR GLOBAL COMPETITION POL’Y, July 2009, Release Two, at 3, <https://www.competitionpolicyinternational.com/file/view/6069> [<https://perma.cc/HZ2V-ZFA2>]; Christopher M. Fairman, *The Myth of Notice Pleading*, 45 ARIZ. L. REV. 987, 988 (2003) (arguing, pre-*Twombly*, that “notice pleading is a myth” because “substance specific areas of law,” including antitrust law, environmental law, conspiracy law, and copyright law, “are riddled with requirements of particularized fact-based pleading”); Richard L. Marcus, *The Revival of Fact Pleading Under the Federal Rules of Civil Procedure*, 86 COLUM. L. REV. 433 (1986). On summary judgment, see, for example, *Shager v. Upjohn Co.*, 913 F.2d 398, 403 (7th Cir. 1990) (Posner, J.) (“The growing difficulty that district judges face in scheduling civil trials . . . makes appellate courts reluctant to reverse a grant of summary judgment merely because a rational factfinder could return a verdict for the nonmoving party, if such a verdict is highly unlikely as a practical matter because the plaintiff’s case . . . is marginal.”); POSNER, *supra*, at 179 (“Nowadays summary judgment is likely to be granted, and the grant upheld on appeal, if the district judge and the appellate panel are reasonably confident that the party opposing the motion has ‘no case,’ in the practical sense of being highly unlikely to win if the case is tried.”); *id.* at 179 n.37 (“Since judges at best have only imperfect insight into the reactions of jurors, the criterion of ‘plaintiff’s likelihood of prevailing at trial’ may in practice mean simply whether the judge thinks that the plaintiff’s case has some merit.”); 10A CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE § 2727 (3d ed. 2012) (“[T]aken together, [the *Celotex* trilogy] signal[s] to the lower courts that summary judgment can be relied upon more so than in the past to weed out frivolous lawsuits and avoid wasteful trials, and the lower courts have responded accordingly.” (footnote omitted)); Samuel Issacharoff & George Loewenstein, *Second Thoughts About Summary Judgment*, 100 YALE L.J. 73, 89 (1990) (“There is evidence in the post-trilogy case law that summary judgment has moved beyond its originally intended role as a guarantor of the existence of material issues to be resolved at trial and has been transformed into a mechanism to assess plaintiff’s likelihood of prevailing at trial.”). For further exploration of the meaning of the standards under U.S. federal civil procedure, particularly with regard to motions to dismiss, see Kaplow, *Multi-stage Adjudication*, *supra* note 116, at 1252–96. For an application to predatory pricing claims, see Bolton, Brodley & Riordan, *supra* note 109, at 2284 (stating that “the jury role has been confined by the strong supervisory controls exercised by federal judges, including frequent summary disposition”).

¹²¹ This section addresses qualitatively how market power should be used as a screen, but similar logic should generate quantitative guides when it does make sense to use market power in this fashion. That is, setting thresholds raises empirical questions, but in adducing pertinent evidence and in making judgments, we obviously need to have firmly in mind: evidence and judgments

be simplifications, shorthands, and such. Nevertheless, we should expect even crude screening devices to be significantly probative of the matter of ultimate concern. With regard to market power in particular, we have seen that its relevance varies greatly across cases, that the pertinent sense of market power (if any) is hardly uniform, and that different components of market power can have different influences (even in different directions). Furthermore, these matters depend on the particular anti- and procompetitive explanations that must be distinguished. Hence, even in some identified subclass of cases — perhaps tying or predatory pricing, perhaps even narrower categories — identification of approximately one-size-fits-all market power measures that can appropriately serve as simple screens seems to be a daunting task.¹²²

Second, for market power to serve as a valuable screen, it must be possible to measure — or at least plausibly guesstimate — its magnitude at an early stage. Depending on the setting, this may need to be done with little or no evidence, or without engaging in significant assessment thereof. For a question that is often subject to extensive and conflicting expert reports in contested cases, this requirement also seems to fail.¹²³

about what. Section III.A's basic framework for an optimal decision on liability provides the benchmark, and one should keep in mind the analysis throughout Part III, which emphasizes that the problem is not merely one of proper classification but also one that considers the welfare consequences of both types of outcome. These features are just as important at the screening stage; moreover, as we have seen, market power in different senses may be relevant to all of them.

¹²² An indicator can be a useful screen even if it is useless in making a final decision when more complete information is available. For example, a factor may have no causal role and yet be correlated with one that does but whose magnitude will not be quantified until later, perhaps because it is more costly to assess. Nevertheless, the probative force for screening purposes of such a factor is properly understood as something to be derived entirely from our understanding of the pertinent correlation of the factor to something that itself is directly relevant. Relatedly, it generally does not make sense to add a screen that is not properly part of the correct liability function for purposes of narrowing liability so as to reduce false positives; instead, it tends to be a dominant strategy to use relevant information correctly while raising the threshold with respect to that determination. See Kaplow, *Multistage Adjudication*, *supra* note 116, at 1229–35.

¹²³ See also *supra* note 114 (noting that some commentators advocating market power as a screen seem to have in mind the examination of econometric evidence, implying that their notion of screening has more to do with the process of analyzing evidence than with formulating early conclusions drawing on limited information). Some believe that the process of market definition often solves this problem, but that method is logically incoherent, presupposes that one can formulate a best estimate market power by other means in order to choose the best market definition, and can lead us badly astray under standard procedures. See, e.g., Kaplow, *supra* note 3; Louis Kaplow, *Market Definition and the Merger Guidelines*, 39 REV. INDUS. ORG. 107 (2011). For skepticism by experienced practitioners regarding the ability to predict the outcome of market definition inquiries, see Joint Hearings, U.S. Dep't of Justice & Fed. Trade Comm'n, Understanding Single-Firm Behavior: Conduct as Related to Competition 44 (May 8, 2007) (statement of A. Douglas Melamed) (“From my experience in counseling, market share-type screens are of limited value because market share depends on market definition, and it is a binary concept and we are often sitting there saying, well, gadgets might be in the market with widgets, but they might not

In reflecting on both impediments, it is useful to revisit our original distinction between market power analysis and act analysis. The view that market power is particularly appealing as a screen presupposes not only that it is distinct from analysis of the act but also that at early stages it is often relatively easy to assess market power. Even setting to the side the contentiousness and complexity of market power inquiries, it is not clear why market power is singled out for its relative ease of assessment. Perhaps this view reflects a healthy appreciation of the challenges in assessing the acts themselves — requiring either successful extraction of firms' strategic thinking or predictions of hypothetical outcomes in complex settings — combined with a "grass is greener" framing: surely market power is easier than *that*. Or perhaps it's just wishful thinking.

A priori, it seems more plausible to suggest that, to the extent they can be distinguished, market power and acts are each quite difficult to assess, especially at early stages. Given the vast sea of firm behavior, however, substantial triage is essential at the outset, with additional winnowing of cases thereafter. Some of this might be done by reference to crude estimates of some sense of market power, some by examining acts, and some with an eye on both, reflecting some sort of sliding scale like that depicted in Figure 1 in section II.A.¹²⁴

Act-based screening is actually quite prevalent, even if not always labeled as such in the academic literature or agency guidance documents.¹²⁵ Allegedly exclusionary acts ordinarily must appear on a

be and who knows."); Joint Hearings, U.S. Dep't of Justice & Fed. Trade Comm'n, Understanding Single-Firm Behavior: Section 2 Policy Issues 54 (May 1, 2007) [hereinafter Joint Hearings, Section 2 Policy Issues] (statement of Jonathan M. Jacobson) (noting that "there are a lot of differentiated products where you do not know where the market definition fight is going to come out"). See also Easterbrook, *supra* note 114, at 22 ("An inquiry into power does *not* entail the definition of a 'market,' a subject that has bedeviled the law of mergers. Usually the search for the 'right' market is a fool's errand."). As will be noted in the text to follow, sometimes it may be fairly obvious that market power is quite low, and it is only in such cases that market definition would be easy, but in that event it does not actually help either.

¹²⁴ This seemingly banal claim is advanced surprisingly infrequently despite the significant attention to screening in the competition enforcement context. For an exception, see 10 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 45 (3d ed. 2011) ("Second, [with regard to tying,] one might choose to require proof of power rather than effect in the belief that the former is vastly easier to prove. However, while detrimental effects are seldom obvious, presumptions can be formulated to indicate substantial threats to competition more accurately than might be inferred merely from 'power' in the tying market. Often, indeed, the effects are so obviously trivial that focusing on them would simplify litigation more than a power screen that declines to consider the share of the tied market foreclosed. In sum, the second belief does not support the selection of power rather than effect as the *sole* key element to be proved. A more sensible approach would require two thresholds, power and effect, and apply first the one that seems easiest to determine in the case at hand.") (footnote and some emphasis omitted).

¹²⁵ For example, Michael Carrier's examination of 215 cases disposed of (mostly pretrial) under section 1's rule of reason in the period 1999–2009 concludes that 110 found a failure to show an anticompetitive effect without addressing market power; 66 found insufficient market power

standard, limited list to be taken seriously, and usually at least some indication that the posited practices are indeed exclusionary is required. And perhaps this sort of screening should play a larger role.¹²⁶

Screening based on market power can also be potent in spite of its limitations.¹²⁷ Consider charges of monopolization (abuse of dominance): in light of the countless unilateral acts, the resource costs of assessing even a tiny fraction of them, and the adverse side effects of the mistaken imposition of liability,¹²⁸ it is appealing to have additional ways to eliminate many conceivable but insubstantial cases from the outset. To exempt entirely most firms — all but one or a few industry leaders¹²⁹ — is one way to accomplish this, and it is one that often may be fairly easy to implement. On the other hand, for many leading

without addressing anticompetitive effects; 32 found both a lack of an anticompetitive effect and an absence of market power; and 7 found a lack of anticompetitive effect and a procompetitive justification. Michael A. Carrier, *The Rule of Reason: An Empirical Update for the 21st Century*, 16 GEO. MASON L. REV. 827, 830 (2009).

¹²⁶ An instructive illustration is *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447 (1993), where the U.S. Supreme Court reversed a jury verdict because of a failure to engage in a distinct inquiry into market power (even though it was not obvious, given the nature of product differentiation in the case, that market power was low). Might it have been easier to reject the complaint — from the outset — on the ground that the act of replacing one exclusive distributor with another is not in itself an abusive practice (perhaps all the more so when the new distributor was the defendant co-owner's son, *id.* at 449–50)? Although the decision did not formally involve screening, its import is that, in future cases, earlier termination is appropriate without adequate demonstration of market power. By contrast, had the Supreme Court found the practice to be on its face insufficient to support a finding of attempted monopolization, the case would have been a precedent supporting greater act-based screening. Note that when defendants can be shown to have market power, this decision does not impede cases from proceeding to trial.

Spectrum Sports (and other cases and commentary) is also elusive in the following respect: on one hand, we are considering attempted monopolization cases, so what must be shown is that the practice has the potential to create significant market power (where high market power is taken not to exist already, for then it would be a case of monopolization, not a challenge to an attempt), but on the other hand, the requirement seems to be advanced as one requiring that the market power already exists. *See id.* at 459 (“[D]emonstrating the dangerous probability of monopolization in an attempt case also requires[, apart from proof regarding conduct,] inquiry into . . . the defendant’s economic power in that market.”). This latter subject is elaborated later in this section.

¹²⁷ As mentioned in note 114, by screening some commentators seem to have in mind guiding the ultimate decisions of (perhaps unsophisticated) decisionmakers (rather than early triage based on limited information), a subject considered further at the end of subsection V.B.2.

¹²⁸ As will be emphasized in section B, chilling costs are included as well. Moreover, in this regard, even if the ultimate probability of liability is minuscule, the prospect of costly investigation and adjudication can create serious impediments to ex ante behavior.

¹²⁹ This suggestion begs the question of market definition, which will be explored further in section V.D on market share threshold tests. Moreover, it confronts the problem of the logical incoherence of the market definition process. *See* sources cited *supra* note 123. However, if one sticks to homogeneous goods markets (or fairly narrow markets that are approximately homogeneous, when that can be determined), the literature that is critical of market redefinition explains that we do have ways of making some inferences about market power, including ones that make use of market shares, in those settings. And here we are contemplating quick, early, crude screens, not assessments of actual market power (or aspects thereof) upon further analysis.

firms — those that pass any simplistic market power screen — it is necessary to engage in heavy act-based screening unless all of their countless decisions are to be scrutinized. Undoubtedly, competition agencies routinely engage in some mix of market power screening, act-based screening, and mixed screening, both in abstaining from any action in the vast majority of instances and in narrowing the pool of cases under examination as additional information is gathered and analyzed. (Another common method of screening that does not obviously fit into the current dichotomy of market power and acts involves the use of crude size measures, such as filing thresholds for mergers.¹³⁰ Keep in mind, for example, that two individuals in the same occupation forming a partnership and even an existing firm hiring an additional employee in a nonempty occupational class formally constitute horizontal mergers or asset acquisitions.)

For screening to be based even in part on market power, it is necessary to say more about what we have in mind. The taxonomy introduced in subsection III.C.1 is helpful. We presumably do not mean the market power delta, MP^Δ , for, as explained there, determination of this magnitude is tantamount to analyzing the effects of the allegedly anticompetitive act and thus involves act-based screening. Therefore, when it is stated in reference to some case that it should be rejected because it is highly implausible that the alleged act could contribute much if at all to market power, the screening is act-based in the present usage. This point of clarification, of course, does not make such screening any less important.

Screening based on market power levels, whether MP^{-A} or MP^A , also must be interpreted carefully. When it is asserted that a firm's market power is quite low, reference is ordinarily being made to the currently existing level. On one hand, if the allegedly anticompetitive act is regarded to have already had its effect, then if MP^A is obviously very low, it follows that the maximal anticompetitive effect is likewise low: even if MP^{-A} were zero, the total effect would be MP^A , which we are supposing to be quite small. On the other hand, if the act is merely contemplated or arguably has not yet had its effect, then we have the difficulty that the observed level of market power is MP^{-A} , and its being low does not automatically place a cap on MP^A and thus on the magnitude of the potential anticompetitive effect. Hence, when such

¹³⁰ Landes and Posner argue that market size should be a central factor because, for a given measure of market power (the Lerner index), total deadweight loss scales with market size. See Landes & Posner, *supra* note 5, at 953–54. They do not consider, however, whether the welfare costs of mistaken assignments of liability (of just about any type) might tend to scale with market size as well (it seems that some would and others would not). A central justification for a market size screen (or factor), as they emphasize, is to reduce administrative costs, which tend to scale less than proportionately.

cases are screened out, the underlying logic is that the act itself must not be significantly anticompetitive, which would be act-based screening. Nevertheless, this may involve market power screening if the rationale is that the very fact of an obviously low MP^A means that the act cannot plausibly be effective in significantly reducing competition. Another strategy in cases with a very low MP^A and uncertainty regarding MP^A is to wait and see, allowing a later challenge, but only if in fact significant market power is ultimately generated.¹³¹

Because the use of a factor as a screen should be derivative of its ultimate relevance under the proper decision rule, the analysis in Part III is necessarily at the center of how we should think about market power in this regard. We have learned that the relevance of market power varies significantly across cases and in ways that depend on particular anti- and procompetitive explanations, that market power has different meanings, and that different components of market power can have different effects, sometimes even in different directions. Therefore, when we consider how market power should best be used to screen cases (beyond the crudest ways mentioned above), we can see that market power cannot be considered in a vacuum but rather must be combined with at least some information about allegedly anticompetitive practices and possible explanations for their use.¹³²

This central conclusion may not be that important for the countless trivial cases that are best ignored with virtually no analysis whatsoever, which is to say that there is significant room for simplistic screening based on guesstimated low levels of market power.¹³³ But once past that point, it does not seem that we can employ a single, stand-alone notion of market power, the magnitude of which can readily be measured and then matched against a standardized catalogue of thresholds, one for each significant category of cases.¹³⁴ Nor, as mentioned, does it appear that serious screening should be confined to market power.

¹³¹ This strategy can be costly if the main remedy involves regulation that requires intrusive supervision and difficulties in reversing history, such as by restoring the viability of now-defunct competitors. On the other hand, if remedies primarily involve sanctions (notably, fines and damages), deterrence becomes the primary means of regulation.

¹³² An implication is that, in certain respects, screening that makes some reference to market power may be more, not less, useful than is generally believed to be the case. In realms in which a standard market power measure is not very helpful, there may be subsets of cases where particular practices and explanations point to some different sense or specific component of market power that can readily be approximated and used to eliminate many cases that are likely to be meritless.

¹³³ See, e.g., Easterbrook, *supra* note 114, at 22–23.

¹³⁴ This formulation of the question poses yet again the issue raised in section II.A, when first presenting $f(MP, A)$, concerning the level of generality with which decision rules are to be stated. See *supra* note 9. The finer are the categories and the more subtle are the factors that determine their boundaries, the more analysis of acts is required to determine which screening threshold is applicable, even when employing what seems to be a pure market power screen.

B. Deterrence Versus Regulation of Proposed Conduct

This section sketches an extension of the central framework presented in Part III. There, the optimality of assigning liability is determined using a standard cost-benefit test that weighs the expected benefits and costs of prohibition according to the condition: $p^H \times H > p^B \times B$. To elaborate on the previous description of the contemplated setting, this decision rule implicitly assumes that there is a given flow of cases before a decisionmaker, that liability corresponds to prohibition of the proposed conduct, and that no liability constitutes permission. The p^H and p^B factors are the Bayesian posterior probabilities that the proposed act will generate harm and benefit, respectively, and H and B indicate the corresponding expected (average) social welfare consequences conditional on each outcome.¹³⁵

Competition rulings that involve whether to enjoin practices — such as allegedly exclusionary acts of dominant firms — or to prohibit proposed mergers roughly fit this description. But liability under competition law often involves the application of sanctions for past behavior. Notably, fines or damages may be imposed on a firm that has engaged in price fixing or has employed acts deemed to be abusive. In this instance, the primary effect of the legal system is to create deterrence — and also, as a byproduct, to chill beneficial conduct — through the prospect of sanctions.¹³⁶ Although not widely appreciated, the optimal determination of liability is subtly but importantly different in this type of setting.¹³⁷ The key distinctions will now be described briefly.¹³⁸

Suppose that we wish to determine whether to impose fines or award damages in some subset of possible scenarios, say, ones in which market power is in a given range just below which liability is already imposed. (Here, choosing to assign liability would correspond to weakening the market power requirement.) Taking no liability as our

¹³⁵ See Kaplow, *supra* note 29, at 10–13, 16–20.

¹³⁶ It is apparent that deterrence and chilling both involve discouraging activity and that the determinants of each are, in the abstract, the same. Different terminology is nevertheless employed to aid intuition (and because the word deterrence ordinarily connotes discouraging harmful activity).

¹³⁷ Mixed cases, which will not be separately considered, are also important. For example, the prospect that a proposed merger will be prohibited influences *ex ante* behavior in considering merger partners and also, to some extent, other substantive decisions concerning entry, investment, and so forth. Or the prospect that a dominant firm's practice might be enjoined may discourage *ex ante* investment associated with developing and implementing it (which would constitute deterrence or chilling, depending on the welfare effects of the practice).

¹³⁸ For a formal analysis, see Kaplow, *Optimal Burden of Proof*, *supra* note 36. Informal analysis and substantial elaboration appear in Kaplow, *Burden of Proof*, *supra* note 36; and Kaplow, *supra* note 29. The analysis is extended to multistage decisionmaking in Kaplow, *Multistage Adjudication*, *supra* note 116; and Kaplow, *Optimal Multistage Adjudication*, *supra* note 116, which relates to section A's analysis of screening.

baseline (by analogy to our baseline of permission in the previous analysis), the consequences of assigning liability will be to raise the expected sanctions on certain types of harmful and beneficial activity, which will increase deterrence and chilling, respectively. The magnitudes of these effects on *ex ante* behavior are given by the product of the increase in the expected sanction and the height of the density function for the distribution of firms' private gains from acts in the corresponding range (because the acts deterred or chilled will be those with private gains just above the expected sanction when there is no liability in the scenarios in question but just below the expected sanction when there is liability).¹³⁹ The increase in the expected sanction, in turn, is the product of the size of the sanction and the likelihood that the acts, if committed, will enter the legal system and present themselves as being in the scenarios in question.

Some of these factors are analogous to p^H and p^B in our previous formula. However, instead of Bayesian posterior probabilities — themselves the product of base rates and marginal probabilities (associated with the evidence, or signal, in the case at hand) — we have multiple factors, none of which is a Bayesian posterior probability. The evidence (signal) plays a similar role in both sets of weightings, but the other determinants are different. Accordingly, the discussion of how market power relates to the likelihoods of anticompetitive and procompetitive explanations in section III.B would have to be modified and supplemented for the present case, although much of the logic presented there would have similar implications. In both settings, the frequency with which anticompetitive and procompetitive acts, when proposed or committed, are associated with market power information of one sort or another will be probative in a similar fashion.¹⁴⁰

The analogues to H and B are also qualitatively different in this setting. Instead of expected (average) differences for proposed acts that may be prohibited, we are concerned with the social welfare consequences associated with the marginal acts that would be deterred or chilled if liability is to be applied. Note that, here, the firms themselves determine, through their *ex ante* decisions, which acts no longer occur when expected sanctions are raised. The social welfare effects of those acts depend on firms' private benefits as well as on externalities. Thus, for a harmful act that is deterred, the social gain is the differ-

¹³⁹ Individuals commit acts if and only if their private benefits exceed the expected sanction; hence, the marginal acts deterred or chilled as expected sanctions increase are those for which private benefits just equal the pertinent expected sanction.

¹⁴⁰ Put another way, the likelihood ratio associated with the signal will, in simple settings, be a sufficient statistic for the evidence, and an optimal liability rule can be formulated as a likelihood ratio test. The determinants of the (optimal) critical value for the likelihood ratio are, however, quite different in the two settings. See Kaplow, *supra* note 29.

ence between the external harm and the firm's private benefit. And, the higher is the base level of the expected sanction, the greater will be the latter, *ceteris paribus* (because the private benefit of acts just deterred equals the level of the expected sanction).¹⁴¹ This in turn implies that, the higher is deterrence to begin with, the lower is the social welfare gain per deterred act, although there are important qualifications to this point.¹⁴² Similar logic indicates that the social cost of chilling the marginal beneficial act is rising in the expected sanction because the private benefit is higher (and the external social cost is taken to be zero for all such acts). These differences with regard to welfare consequences, therefore, amend the analysis in sections III.C and III.D on how market power may affect anticompetitive harm and procompetitive benefit, although once again many of the basic intuitions carry over. For example, the point that a higher level of market power is associated with a greater marginal deadweight loss from a given price increase continues to have essentially the same implication.

Due to the fairly high level of abstraction in most of this Article, there do not appear to be many sharp differences with regard to the relevance of market power in these two types of regulatory settings. Nevertheless, if we hope to fashion sensible, empirically grounded guidance for adjudicating various types of allegedly anticompetitive acts, wherein quantitative judgments are required, it is important to have the correct decision framework in mind. Finally, observe that the present analysis raises another significant question of legal system design: When should liability involve prohibitions versus sanctions, or employ some combination of the two? Much academic work and agency guidance takes particular answers largely for granted, more so than seems warranted.¹⁴³

¹⁴¹ See *supra* note 139.

¹⁴² There may be a correlation between social harm and private benefit. In some settings, the two will be positively related: greater profit from monopolization will be associated with larger social costs. In that case, the social gain from deterring the marginal act need not be falling with the expected sanction. In addition, recall from the previous analysis of the degree of deterrence that the number of acts deterred for a given increase in the expected sanction depends on the height of the density function for firms' benefits, which in general will not be constant.

¹⁴³ For example, agency guidance documents in the United States and European Union assume for the most part, and without discussion, that exclusionary behavior by dominant firms will be enjoined rather than sanctioned. The 2008 DOJ monopolization report, U.S. DEP'T OF JUSTICE, *supra* note 44, in Chapter 9 on remedies, features injunctions and does not even include deterrence in its articulation of the "three central goals" of remedies for exclusionary conduct. *Id.* at 144. The typical approach of commentators is similar. See, e.g., 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 489 (4th ed. 2015) ("Prospective injunctions against repetition or continuation of offensive behavior [in attempted monopolization cases] are the most obviously appropriate remedy . . ."). This view is perhaps surprising given economists' general preference for price instruments over command-and-control regulation, as well as lawyers' and regulators' skepticism about the ability to formulate and administer conduct remedies. Many seem particularly cautious about using sanctions when uncertainty is great, see, e.g., *id.* at 473–74

V. DOCTRINE AND COMMENTARY

Part II of this Article examined the underlying meaning and implications of market power as a dimension of liability. Part III then explored the channels by which market power is relevant to optimal liability determinations, with some further extensions in Part IV. These three Parts constitute this Article's assessment of how best to think about the proper role of market power in competition law.

This Part now draws on that analysis to illuminate core aspects of existing doctrine and related views of commentators. Section A expands on the brief discussion in section II.A of market power as an element in a competition law offense. Section B addresses two important respects in which competition analysis tends to be siloed, which is to say, it examines separately subjects that are substantially intertwined. The first involves market power analysis and act analysis, which has been the primary focus throughout. The second is within act analysis, where anti- and procompetitive explanations are assessed in isolation, a methodology that is problematic in many respects, including with regard to the role of market power. Section C reflects on what is ordinarily meant by market power in competition law. Section D comments on market share threshold tests, which in one form or another constitute the nearly universal way that market power requirements are implemented. Section E contemplates how competition law has arrived at this state of affairs.

A. Market Power as an Element

Under many competition law rules, market power is treated as an element of the offense. The simplest version would have two elements, such as with the market power / act dichotomy used throughout this Article. Leading exemplars are the laws of monopolization in the United States and abuse of dominance in the European Union. “The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”¹⁴⁴ Article 102 of the

(suggesting that less market power is necessary for liability when the remedy is to involve an injunction rather than payment of damages), yet economic analysis does not support this leaning, *see, e.g.*, Louis Kaplow & Steven Shavell, *On the Superiority of Corrective Taxes to Quantity Regulation*, 4 AM. L. & ECON. REV. 1 (2002).

¹⁴⁴ United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966); *see* United States v. Dentsply Int'l, Inc., 399 F.3d 181, 191 (3d Cir. 2005) (“Having demonstrated that Dentsply possessed market power, the Government must also establish the second element of a Section 2 claim, that the power was used ‘to foreclose competition.’” (quoting United States v. Griffith, 334 U.S. 100, 107 (1948)); AREEDA & HOVENKAMP, *supra* note 124, at 72 (“An antitrust plaintiff always bears the

Treaty on the Functioning of the European Union (TFEU) prohibits the abuse of a dominant position, which requires both a dominant position (the possession of significant market power) and some form of abuse.¹⁴⁵ In the United States, one way to see that market power is an element in many antitrust offenses is by reference to its depiction as such in model jury instructions.¹⁴⁶ Note as well that, to the extent that there are market share threshold requirements for competition law violations in the manner described in section D, a surrogate for market power in essence constitutes an element of the offense.

Conceiving of market power as an element carries a number of implications. In this section, we will revisit the formal demand that market power must exceed some stated level, which is to say that meeting a market power threshold is an independent, necessary condi-

burden of proving each element necessary for its cause of action. Because the defendant's power in the tying market is such an element, the plaintiff must prove it. This means that it must offer evidence allowing a reasonable finder of fact to conclude that such power is more likely than not.”).

¹⁴⁵ See, e.g., DAMIEN GERARDIN, ANNE LAYNE-FARRAR & NICOLAS PETIT, EU COMPETITION LAW AND ECONOMICS 175 (2012) (“Article 102 TFEU prohibits dominant firms from abusing their dominant position. Two elements need to be present for Article 102 to apply to a given firm’s conduct: (i) that firm must be dominant on one or several markets and (ii) it must have abused that dominant position.”); Christopher Cook & Ruchit Patel, *Dominance*, in 5 EU COMPETITION LAW: ABUSE OF DOMINANCE UNDER ARTICLE 102 TFEU, at 61, 61 (Francisco Enrique González-Díaz & Robbert Snelders eds., 2013) (“Article 102 TFEU prohibits the abuse of a dominant position. In accordance with case law, an infringement consists of two elements: showing that the firm in question holds a dominant position and showing that the conduct in question is abusive.”). Regarding the first element, see Guidance on Article 82, *supra* note 1, ¶ 9 (“The assessment of whether an undertaking is in a dominant position and of the degree of market power it holds is a first step in the application of Article 82.”); RICHARD WHISH & DAVID BAILEY, COMPETITION LAW 180 (7th ed. 2012) (“The expression ‘dominant position’ will not be found in textbooks on economics; economists would ask whether a firm or firms have substantial market power. Paragraph 65 of the Court’s judgment in *United Brands* can be understood to equate dominance with substantial market power; the Commission does so in paragraph 10 of its *Guidance on Article 102 Enforcement Priorities* The same definition of dominance is used in the ICN’s *Unilateral Conduct Workbook*.”). Some recent cases in the European Union may bend the element-like structure of Article 102 in that dominance is still an independent requirement, but very high levels of dominance may relax the proof requirement regarding the presence of an abuse, creating a sliding scale above a certain point. See Commission Decision, Case 37.792 — Microsoft, C(2004) 900, ¶ 435 & n.560; WHISH & BAILEY, *supra*, at 187–89 (on the emergence of a notion of super-dominance). EU guidance documents also state that there is a sliding scale wherein a higher level of market power (greater dominance) makes it more likely that an abuse will be found. See *infra* note 152. However, the European Court of Justice’s subsequent decision, Case C-52/09, Konkurrensverket v. Teliasonera Sverige AB, 2011 E.C.R. I-564, casts this approach into question. See *id.* ¶¶ 81–82.

¹⁴⁶ See, e.g., ABA SECTION OF ANTITRUST LAW, MODEL JURY INSTRUCTIONS IN CIVIL ANTITRUST CASES, 2005 EDITION, C-2 (2005) [hereinafter MODEL JURY INSTRUCTIONS] (listing monopoly power as an element in its monopolization instruction); *id.* at C-84 (listing a dangerous probability of achieving monopoly power as an element in its attempted monopolization instruction); *id.* at B-121 (listing market power as an element in exclusive dealing challenges).

tion for liability.¹⁴⁷ In section II.A's Figure 2, market power as an element is contrasted with market power as a variable in a decision rule having the form $f(MP, A) = k^*$ that entertains tradeoffs between the requisite strengths of market power evidence and act evidence. That discussion suggests that the tradeoff depiction is *a priori* much more plausible.¹⁴⁸ Moreover, this is so even when in theory there may exist

¹⁴⁷ Typically, elements are each taken to be dichotomous, and an element must be established with some level of confidence. In U.S. civil litigation, ordinarily this requires that each element be proved by a preponderance of the evidence (the aforementioned more-likely-than-not standard). Market power itself, however, is understood as a continuous measure; hence, a market power requirement must also entail a quantitative cutoff (in addition to a requisite likelihood). As a consequence, there are additional sources of ambiguity that go unmentioned. For example, one could require that the mean value of estimated market power exceed a cutoff, or that there is more than a fifty percent probability that market power exceeds the cutoff, which corresponds to the median of the distribution rather than the mean. The text throughout abstracts from such matters and speaks simply in terms of some threshold. As section D explains, however, market power thresholds are often implemented as market share thresholds, which raise additional difficulties. (By contrast, under an explicitly welfare-based decision rule, expected welfare consequences count, not means or medians of particular factors.)

¹⁴⁸ The elements formulation — and the siloing of market power and act analysis more broadly, as explored in subsection B.1 — is particularly strange with regard to attempted monopolization. There, the market power element is ordinarily taken to be that there is a dangerous probability that the allegedly anticompetitive practice will result in monopoly power. *See, e.g.*, Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993); MODEL JURY INSTRUCTIONS, *supra* note 146, at C-84; AREEDA & HOVENKAMP, *supra* note 143, at 431–32. This seems to entail a market power level requirement with respect to MP^A . To illustrate the problem, suppose that without the practice, market power, MP^{-A} , was 10 (using some abstract unit of measure), and that the legal target for MP^A was 100. Then an act that would result in an MP^A of 99 would not generate sufficient market power to constitute an offense, whereas an act that would move from an initial MP^{-A} of 99 to an MP^A of 101 would. It seems surprising that we would be more confident condemning an act with an estimated MP^A of 2 than one with an estimated MP^A of 89. Another implication is that if a practice moves market power from 10 to 101, thus constituting a violation, one arguably could rectify the problem with an injunction that merely required scaling the practice back slightly, to result in an MP^A of 99, since had that outcome been the result in the first place, there would have been no violation.

This paradox is even stronger in jurisdictions such as the EU that do not recognize an analogue to the offense of attempted monopolization. *See, e.g.*, GERADIN, LAYNE-FARRAR & PETIT, *supra* note 145, at 175 (“Similarly, Article 102 applies only to firms that already hold a dominant position. Unlike in US antitrust law, . . . the acquisition of monopoly power through anti-competitive means[] is not an offence under EU competition law.”); ROBERT O’DONOGHUE & JORGE PADILLA, THE LAW AND ECONOMICS OF ARTICLE 102 TFEU, at 141 (2d ed. 2013) (“However, if dominance is not proven, no abuse can be made out, regardless of the anticompetitive effects of the conduct in question. This is an important point of distinction from other legal regimes that sanction unilateral conduct [such as the United States].”). Moreover, once there is dominance, there is taken to be no *de minimis* exception, so that even the slightest anticompetitive effect suffices for liability. *See Case C-23/14, Post Danmark A/S v. Konkurrenserådet (Post Danmark II)* ¶¶ 73–74 (Judgment of Oct. 6, 2015, not yet published in E.C.R., ECLI:EU:C:2015:651), <http://curia.europa.eu/juris/celex.jsf?celex=62014CJ0023> [<https://perma.cc/DS6W-2MSW>] (“It follows that fixing an appreciability (*de minimis*) threshold for the purposes of determining whether there is an abuse of a dominant position is not justified. . . . It follows from the foregoing considerations that Article 82 EC must be interpreted as meaning that, in order to fall within the scope of that article, the anticompetitive effect of a rebate scheme operated by a dominant undertaking must be probable, there being no need to show that it is

a critical level of market power — say, the level minimally necessary for an anticompetitive strategy to be profitable — because there exists significant uncertainty over what that threshold is in a given case and about how much market power is present. Regarding the latter, *MP* is an estimated level of market power, not a precisely observed true value.

In addition to the a priori implausibility of the function $f(MP, A)$ being lexicographic (“L”-shaped), subsequent analysis raises numerous reasons to be skeptical. Sections II.C and II.D question in the abstract whether market power and acts can be examined separately and whether market power is even a unitary concept. More important, the analysis throughout Part III indicates that market power’s relevance to optimal determinations of liability is too complex, varied, subtle, and multidimensional to be captured by a single notion of market power (without regard to which components contribute to its magnitude) and a single target value. Accordingly, our original *prima facie* concerns about market power as an element are magnified, not assuaged, on further examination.

To round out our discussion of market power as an element, consider briefly the extent to which formal statements of this requirement actually constrain decisionmaking by competition agencies and courts. Agencies in particular are substantially free as a practical matter to set aside doctrinal constraints when they conduct initial analysis and when their decisions involve inaction: abstention from investigation or from assigning liability. Moreover, all decisionmakers to some extent, consciously or subconsciously, tend to make findings that reduce dissonance and lead to conclusions that are thought to be sensible. For example, if a practice seems almost surely to be anticompetitive, there will be an inclination to find the market power element satisfied in cases subject to some doubt on the matter. Finally, as will be elaborated in section D, legal doctrine and enforcement guidelines are often obscure about how much market power is actually required, so in addition to some flexibility in factual determinations, the target itself is fuzzy.¹⁴⁹ The suggestion here is not that market power elements entail

of a serious or appreciable nature.”); James S. Venit, *Making Sense of Post Danmark I and II: Keeping the Hell Fires Well Stoked and Burning*, 7 J. EUR. COMPETITION L. & PRAC. 165, 178–79 (2016) (criticizing the ECJ’s inattention to anticompetitive effects, as reaffirmed by *Post Danmark II*).

¹⁴⁹ As explained there, market power requirements are often stated as market share threshold tests, which may appear more determinate. However, in addition to the manipulability of market definition (on which market share depends), it is also fully accepted that market shares must be interpreted in context, it being commonly stated they are only rough or presumptive, with inferences to be adjusted upward or downward as appropriate in light of the facts of a particular case. See, e.g., *infra* note 206 (citing the famous statements in *Brown Shoe* and *General Dynamics*); MODEL JURY INSTRUCTIONS, *supra* note 146, at C-86 (commenting on the attempted monopo-

lization instruction, stating that the instruction “does not, however, establish any rigid criteria or any minimum market share that must exist before a dangerous probability of success may be found, since the probability of success may vary with the egregiousness of the conduct, the determination of the actor, the trend in market shares, and the characteristics of the market,” and relegating to a footnote, which is not part of the instruction, a number of cases that offer a wide range of market share targets). Note how this understanding regarding market shares, which in turn are the typical metric for market power, is in tension with market power constituting an independent (and first) element, one to be assessed without regard to the practice in question. (This tension could be dissolved if none of the context-relevant factors for interpreting market shares had anything to do with the practice being challenged or the anti- and procompetitive explanations for its use, which would be a surprising stance.)

In addition, even though market power is often depicted as an element of an offense, it is also commonly stated that the market power inquiry is purposive, being relevant with regard to how it illuminates competitive effects. *See, e.g.*, *FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447, 460–61 (1986) (“Since the purpose of the inquiries into market definition and market power is to determine whether an arrangement has the potential for genuine adverse effects on competition, ‘proof of actual detrimental effects, such as a reduction of output,’ can obviate the need for an inquiry into market power, which is but a ‘surrogate for detrimental effects.’” (quoting *7 PHILLIP AREEDA, ANTITRUST LAW* ¶ 1511, at 429 (1986)); *U.S. MERGER GUIDELINES*, *supra* note 48, at 7 (“The measurement of market shares and market concentration is not an end in itself, but is useful to the extent it illuminates the merger’s likely competitive effects.”); *LAWRENCE A. SULLIVAN, WARREN S. GRIMES & CHRISTOPHER L. SAGERS, THE LAW OF ANTITRUST* 74 (3d ed. 2016) (“2.6d. A Showing of Anticompetitive Effect May Obviate the Need for Market Definition [(section heading.)] Antitrust focuses on abusive exercise of market power. The exercise of defining the market is merely a tool for determining if market power exists, a stepping stone for proving a violation. There are, however, other ways of establishing a violation. In *Eastman Kodak Co. v. Image Technical Services, Inc.*[, 504 U.S. 451, 466–67, 477 (1992)], the Supreme Court stressed that ‘legal presumptions that rest on formalistic distinctions rather than actual market realities are generally disfavored in antitrust law.’ Confronted with Kodak’s arguments that aftermarkets were not appropriate for measuring market power, the Court wrote: ‘It is clearly reasonable to infer that Kodak has market power to raise prices and drive out competition in aftermarkets, since respondents offer direct evidence that Kodak did so.’ Disputes about market definition, then, are of little consequence in the face of actual evidence of anticompetitive effects.” (footnotes omitted)); *see also NCAA v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 110 n.42 (1984) (endorsing the Solicitor General’s argument that: “While the ‘reasonableness’ of a particular alleged restraint often depends on the market power of the parties involved, because a judgment about market power is the means by which the effects of the conduct on the market place can be assessed, market power is only one test of ‘reasonableness.’” And where the anticompetitive effects of conduct can be ascertained through means short of extensive market analysis, and where no countervailing competitive virtues are evident, a lengthy analysis of market power is not necessary.”). On the use of proven anticompetitive behavior to infer market power (dominance) in the European Union, see, for example, Commission Decision, Case 31043 — Tetra Pak II, 1992 O.J. (L 72) 1, ¶ 146 (“It is barely conceivable that undertakings whose conduct is dictated by the laws of the market would be able to impose contractual clauses on their clients as restrictive as those outlined above.”); *GUAL ET AL.*, *supra* note 45, at 14 (“In contrast to a form-based approach, an effects-based approach needs to put less weight on a separate verification of dominance, except possibly for a de minimis consideration. If an effects-based approach yields a consistent and verifiable account of significant competitive harm, that in itself is evidence of dominance. Traditional modes of establishing ‘dominance’ by recourse to information about market structure are merely proxies for a determination of ‘dominance’ in any substantive sense, i.e., the ability to exert power and impose abusive behaviour on other market participants. If an effects-based approach provides evidence of an abuse which is only possible if the firm has a position of dominance, then no further separate demonstration of dominance should be needed — if

no significant practical constraint, but rather that they may exert less force than appears on the surface. In addition, returning to the central theme of this Article, which focuses on proper analysis rather than on existing law or the legal system's actual operation, it is important as a guide to researchers and policymakers as well as for decisionmakers to have a clear understanding of how market power actually is relevant rather than to be influenced (even if not straitjacketed) by legal maxims that obscure or directly conflict with the sensible processing of pertinent information.

B. Siloing of Analysis

1. Market Power and Acts. — Even if market power is not regarded strictly as an element — so that tradeoffs between the strengths of market power evidence and act evidence are permitted in determining liability — the quality of liability assessment can be significantly eroded by siloing the analysis of market power and of the allegedly anticompetitive act (assuming that market power may be relevant in the first place).¹⁵⁰ Such siloing is common in competition law doctrine and commentary. Specifically, the two inquiries are ordinarily taken to be performed sequentially: first, market power; then, the act. To the extent that market power is analyzed in a vacuum, one aspect of siloing is exhibited.¹⁵¹ Because the act is considered second, one might suppose that analysis of it would benefit from the preceding exploration of market power, but this direction of interaction as well often seems absent.

The siloing of market power analysis and act analysis is well illustrated by policy statements on exclusionary conduct by dominant firms issued by U.S. and EU competition authorities. After various executive summaries and preliminary comments, each has a major part devoted to market power that makes virtually no reference to how its assessment might depend on what sort of allegedly anticompetitive act is under consideration (or, foreshadowing subsection 2, on what particu-

no separate demonstration of dominance is provided, one may however require the abuse to be clearly established, with a high standard of proof.”).

¹⁵⁰ Regarding the distinction between market power as an element and siloing, some of the analysis in Part II is instructive. As noted in section A just above, market power as an element refers to the lexicographic functional form shown in Figure 2 of section II.A. Siloing, by contrast, refers to the separability assumption elaborated in section II.C.

¹⁵¹ This siloing also renders it difficult to find in existing analysis a basis for choosing the quantity of market power that should be required, and indeed most stated thresholds (articulated in terms of market shares, discussed in section D) are largely asserted, drawn neither from suggestive models nor empirical evidence. The HHI grids in horizontal merger guidelines have a more scientific air, yet as discussed in note 201, they do not seem ever to have been given any real justification and can generate massive inconsistencies by reference to predicted price effects, which are what they purport to illuminate.

lar anti- and procompetitive explanations might be offered). Instead, there is a single thing that is to be measured, implicitly without regard to the use to which the measurement is to be put. Then, this siloed market power assessment is implicitly ratified by all that follows in that the all-important market power measure is put to essentially no use whatsoever. Subsequent parts of these guidance documents address various types of potentially anticompetitive behavior, such as predatory pricing, tying, and exclusive dealing. In those analyses, market power is rarely mentioned, either with regard to whether a practice is actually anticompetitive or to aid in the quantification of its impact.¹⁵² This latter feature of siloing is particularly surprising in

¹⁵² In the DOJ's 2008 monopolization report, U.S. DEP'T OF JUSTICE, *supra* note 44, Chapter 2 is devoted to monopoly power. That chapter gives little attention to the rationale for the requirement, focusing instead on the definition of monopoly power and how to go about proving it. See, e.g., *id.* at vii (stating in the executive summary that "Chapter 2 addresses the meaning and identification of monopoly power"). The chapter's preamble does, however, offer a brief statement of the justification: "This monopoly-power requirement serves as an important screen for evaluating single-firm liability. It significantly reduces the possibility of discouraging 'the competitive enthusiasm that the antitrust laws seek to promote,' assures the vast majority of competitors that their unilateral actions do not violate section 2, and reduces enforcement costs by keeping many meritless cases out of court and allowing others to be resolved without a trial. Accordingly, it is important to determine when monopoly power exists within the meaning of section 2." *Id.* at 19 (footnotes omitted). Implicit in the report's approach to market power is that the proper ways to define and analyze it are independent of the practice under scrutiny as well as the anti- and procompetitive explanations that may be associated with it. Most of the remaining chapters address particular exclusionary practices, wherein one finds passing mentions of market power that typically refer either to the fact that the defendant will be a firm with monopoly power (in order to have reached the second element) or that the concern is whether a practice contributes to market power. Almost entirely absent is how an understanding of the defendant's market power may aid in any of the analysis of whether a practice has anti- or procompetitive effects. (This author arrived at this conclusion upon carefully reading much of the report and performing electronic searches on the document for the word "power." The only nontrivial (nonpassing) exception identified involves the discussion of efficiency defenses to predatory pricing. See *id.* at 71–72.)

In the European Union, the analogous agency statements are *Discussion Paper on Article 82*, *supra* note 1, and *Guidance on Article 82*, *supra* note 1, in 2005 and 2009, respectively. Both documents are broadly similar to each other, beginning with a discussion of market power (dominance) that essentially takes no account of the practice under consideration or the anti- or procompetitive explanations offered for it, and then proceeding to analyze specific forms of abuse (a list similar to that in the 2008 U.S. report), with passing mentions of market power (dominance) of a similar sort. The main difference is that, in the EU documents, there are clear suggestions that a sliding scale will be employed, wherein a stronger showing of dominance strengthens the case for liability (rather than asking whether market power exceeds some critical threshold and, if it does, proceeding in essentially the same manner regardless of the extent to which the threshold is exceeded). See, e.g., *Discussion Paper on Article 82*, *supra* note 1, ¶ 59 (in presenting its framework for the analysis of exclusionary abuses, stating: "In addition the degree of dominance will be a relevant factor. In general, the higher the capability of conduct to foreclose and the wider its application and the stronger the dominant position, the higher the likelihood that an anticompetitive foreclosure effect results. In view of these sliding scales, . . . it needs to be kept in mind that these descriptions can not be applied mechanically."); *Guidance on Article 82*, *supra* note 1, ¶ 20 ("The Commission will normally intervene under Article 82 where, on the basis of cogent and convincing evidence, the allegedly abusive conduct is likely to lead to anti-competitive foreclo-

light of the general recognition that market power inquiries are purposive and that the purpose is to illuminate anticompetitive effects.¹⁵³ Moreover, the U.S. report's siloing mirrors a broad swath of testimony, much by economists, at Department of Justice (DOJ) and Federal Trade Commission (FTC) joint hearings in 2006–2007: in discussing the requisite level of market power, reference was not made to the practices under consideration or the pertinent anti- and procompetitive explanations for their use, and, despite the widespread agreement on the central importance of market power, witnesses at these hearings made virtually no use of market power in analyzing various practices.¹⁵⁴

Court opinions are often structured similarly. Although courts more frequently mix aspects of the two subjects, this seems to be done in an ad hoc and sometimes confused fashion.¹⁵⁵ It is also noteworthy

sure. The Commission considers the following factors to be generally relevant to such an assessment: the position of the dominant undertaking[,] . . . the conditions on the relevant market[,] . . . the position of the dominant undertaking's competitors[,] . . . the position of the customers or input suppliers[,] . . . the extent of the allegedly abusive conduct[,] . . . possible evidence of actual foreclosure[, and] . . . direct evidence of any exclusionary strategy . . ." (emphases and footnotes omitted).

The European Competition Commission, unlike the U.S. antitrust agencies, also issues substantial written opinions that in many respects are like court opinions. These too silo discussions of market power (often under the rubric of market definition and dominance) and of allegedly abusive acts. *See, e.g.*, Commission Decision, Case 39523 — Slovak Telekom, C(2014) 7465; Commission Decision, Case 39985 — Motorola, C(2014) 2892.

¹⁵³ *See, e.g., supra* note 149. In addition, it is sometimes said that the requisite amount of market power is that which is sufficient to bring about the allegedly anticompetitive effects, a rationale that on its face makes it difficult to sustain a methodology that assesses market power to determine whether that element of the legal test is satisfied before even considering the act in question. This formulation of the requisite amount of market power more broadly suggests a possible collapse of market power analysis into the act analysis, although formal statements of the market power requirement, agency guidance documents, and treatises are elsewhere overwhelmingly inconsistent with that outcome.

¹⁵⁴ These hearings were a foundation for the DOJ's 2008 monopolization report, U.S. DEP'T OF JUSTICE, *supra* note 44, discussed *inter alia* in note 152. The hearing days themselves were siloed: a couple of days on market power and many of the rest on various practices. Regarding the latter, substantial review of the hearing transcripts by this author and research assistants, aided by (but not limited to) electronic searches, indicates that the witnesses made little use of market power in addressing anticompetitive practices, largely confining market power references to passing mentions that the market power element is taken to be satisfied, that market power was necessary for anticompetitive effects (without saying much about why this was true, how much market power was necessary, or what aspects of market power were relevant), or that exclusionary practices are undesirable because they enhance market power. That is, they made very little use of market power as such in offering their views about how competition agencies or other actors should determine which practices should be subject to liability. In particular, there is very little mention of the broad array of ways, catalogued in Part III, that market power may be relevant to the optimal determination of liability.

¹⁵⁵ For example, in *United States v. Dentsply International, Inc.*, 399 F.3d 181 (3d Cir. 2005), the court proceeds sequentially, with a section on monopoly power, *id.* at 187–91, followed by one on anticompetitive effects, *id.* at 191–96. Although there is content overlap between these sections, there is little sense in the section on competitive effects that it might be useful to draw on

that much influential commentary likewise silos the analysis of market power and acts,¹⁵⁶ although some analysts are critical of this approach.¹⁵⁷

what was established in the monopoly power section. Moreover, the monopoly power section has a second subsection on the “Power to Exclude,” *id.* at 188–90, which one would think would be relevant to the effects analysis in the next section of the opinion. Indeed, that later section claims that the evidence demonstrates that the practice did in fact exclude competition, raising the question of why that finding is not the end of the matter, essentially rendering moot the monopoly power section, including in particular its need separately to address whether there existed the “Power to Exclude.” Also mysterious is that, in the final subsection on monopoly power, entitled “Pricing,” the court states: “It is noteworthy that experts for both parties testified that were Dealer Criterion 6 abolished, prices would fall.” *Id.* at 190–91. One might have expected this part of the opinion on monopoly power to be highly probative of the anticompetitive effects of the practice, yet it is not featured in that later section. Although various fragments bear on some of these points, the discussions do not reveal an appreciation of what seem to be the most obvious connections. A conjecture is that the fault lies not primarily with the court but rather reflects the state of existing doctrine and commentary as well as aspects of how the case was briefed and argued.

The primary deviation from the siloing of market power analysis and act analysis arises when proof of anticompetitive effects is taken as important evidence of market power (a path of influence that obviously is difficult to incorporate if market power is assessed first, before considering anti- and procompetitive effects). This line of reasoning is suggested by the foregoing discussion of *Dentsply* and is endorsed by some courts. *See, e.g., Re/Max Int'l, Inc. v. Realty One, Inc.*, 173 F.3d 995, 1016 (6th Cir. 1999); *Rebel Oil Co. v. Atlantic Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). This mode of inference, however, raises the question of why the market power inquiry is not thereby rendered moot if the purpose of that inquiry was to illuminate anticompetitive effects, an implication embraced by *Indiana Dentists* and *Kodak*, as quoted in note 149. *See also supra* subsection III.C.1 (discussing how deeming the increase in market power caused by an allegedly anticompetitive act to be the appropriate measure of market power undermines the commonly offered rationale for the market power inquiry: that it helps determine the act’s anticompetitive effects).

¹⁵⁶ Notably, the Areeda and Hovenkamp treatise devotes many (separate) volumes to these two subjects. Their treatment of market power distinguishes broad classes of offenses (such as monopolization versus mergers, *see, e.g., AREEDA & HOVENKAMP, supra* note 143, at 417–18), but it makes little reference to specific practices or to various anti- and procompetitive explanations for them. And the extensive treatments of different exclusionary practices, which cover a number of volumes, make little reference to how the analysis of market power may prove to be illuminating. Indeed, in large spans, market power is not even mentioned. (These characterizations are based on the author’s extensive but not exhaustive reading of the treatise over the years and a research assistant’s targeted assessment, aided by electronic searches.) The primary instance in which market power and acts are discussed together is where the authors argue against employing a sliding scale under which less market power would be required for more egregious acts, which is to say, they endorse a lexicographic version of $f(MP, A)$, largely on grounds of administrability and concerns for chilling effects. *See, e.g., id.* at 415, 421–23, 462–63. (For one of many problems with this view, see the illustration in note 148.) They are, however, more receptive to a sliding scale approach for tying. *See AREEDA & HOVENKAMP, supra* note 124, at 46.

¹⁵⁷ The commentators referenced in note 52 suggest that analysis should focus entirely on allegedly anticompetitive effects, eschewing any inquiry into market power or defining it in such a way (with a focus on the market power delta) that it collapses into analysis of the acts. *See also* Salop, *supra* note 52, at 188–90 (arguing that market power should not be analyzed in a vacuum, but instead in the context of the conduct under examination). For criticism of the siloing of market power and act analysis in the European Union, see RENATO NAZZINI, THE FOUNDATIONS OF EUROPEAN UNION COMPETITION LAW: THE OBJECTIVE AND PRINCIPLES OF ARTICLE 102 (2011) (expressing fundamental disagreement with the mode of analysis employed by the EU

This state of affairs may in part reflect that the channels of market power's relevance have not been systematically examined and developed with regard to various types of practices.¹⁵⁸ Inattention to this subject, in turn, may seem less glaring when official pronouncements do not suggest that such understanding is necessary.¹⁵⁹ Although the implicit separability of our liability function $f(MP, A)$ may have been less obvious and less obviously restrictive than was the lexicographic functional form entailed by viewing market power as an independent element of an offense, the discussion in section II.C offered a number of reasons to have serious doubts about whether the separability as-

competition agency and EU courts, arguing that instead they should be more effects-based, specifically in analyzing various aspects of dominance in light of the abuse under consideration); *id.* at 358 (“This test requires an integrated analysis of barriers to entry in the light of the alleged abusive behaviour under review. The case law and the Commission enforcement practice are often out of line with this approach. However, there are notable examples both in the case law and the Commission practice under Article 102 . . . that show that a dynamic approach to barriers to entry is both administrable and only incrementally different from the current application of Article 102.”); John Vickers, *Market Power in Competition Cases*, 2 EUR. COMPETITION J. (SPECIAL ISSUE) 3, 10–14 (2006).

¹⁵⁸ Another important possibility is that often — particularly with economists at agencies but also to a degree with lawyers and economists on both sides of a challenge, at early stages of their efforts — analysts take a more open-ended approach, largely considering together whichever facts seem relevant, in whatever ways they may illuminate the case at hand. Then, if a matter nears adjudication or an agency decision to challenge a practice, components may be rearranged to fit doctrinal formulations more closely. To that extent, internal analysis may suffer fewer infirmities, but we should nevertheless be concerned by the lack of transparency in agency guidance, the tendency of the anticipation of later stages to distort earlier analysis, the ultimate application of misguided rules to distorted factual presentations, and more broadly the interference with research and impediment to the improvement of understanding that arises when the proper questions and lines of analysis remain submerged while others are emphasized instead. *See also supra* section A (discussing how agencies and courts, even at the back end, may loosen doctrinal straightjackets through purposive reasoning); *infra* section D (explaining how the indeterminacy of market share threshold tests, through which market power requirements are implemented, can relax market power requirements).

¹⁵⁹ The emergence of the recoupment requirement (analyzed in section III.E) in court opinions and commentary and the manner in which it is reflected in agency guidance documents are puzzling, and in a way that may be a product of the siloing of market power analysis and act analysis. Recoupment was introduced as part of the assessment of exclusionary practices because of how it illuminates the plausibility of an anticompetitive explanation. Much recoupment analysis concerns whether the alleged predator has sufficient market power to render the alleged predation profitable, yet many such discussions do not relate this demand to the existing market power requirement or, more specifically, to the fact that, under the standard rubric, significant market power must already be established in order to reach the act analysis, of which recoupment is a part. Those cases and commentators that do address both market power and recoupment offer varying, inconsistent, and largely unsatisfactory explanations of whether, why, and how these two separate but related requirements should coexist. *See, e.g.*, Christopher R. Leslie, *Predatory Pricing and Recoupment*, 113 COLUM. L. REV. 1695, 1740–51 (2013) (criticizing courts that “confuse the two concepts by suggesting that they necessarily go together,” *id.* at 1748, and advocating that the recoupment requirement be abandoned, relying instead on the monopoly power requirement — but without addressing how much power is or should be deemed to be necessary under that requirement or how the answer relates to what is demanded by the recoupment requirement). For further exploration, see Kaplow, *supra* note 94.

sumption was appropriate in most instances. These concerns, in turn, were magnified by the analysis in Part III. To identify potential channels of relevance, we began by stating the basic cost-benefit test for when liability is optimal. For market power to be relevant, it has to bear on one or more factors in that test. The three candidates that market power may affect are the relative likelihoods of anticompetitive and procompetitive explanations, the magnitude of anti-competitive harm that liability would avert, and the size of any procompetitive benefit that the mistaken imposition of liability would sacrifice. Most channels of possible relevance depend on the act under consideration as well as on the particular anti- and procompetitive explanations that are offered.¹⁶⁰ As a consequence, the further siloing of these two types of explanations, as elaborated in the next subsection, both reinforces and magnifies the problems with the siloing of market power analysis and act analysis.

Moreover, we learned that there are different meanings of market power and that different components of market power (understood in some particular way) often have qualitatively different effects (even in different directions) depending on the practices and pertinent explanations. Accordingly, there is no such thing as a single notion of market power that is relevant, which undermines the efficacy of the first aspect of siloing: analyzing market power in a vacuum.¹⁶¹ Likewise, attempting to classify allegedly anticompetitive acts or to estimate the welfare impacts associated with anti- and procompetitive explanations is often illuminated by one or another sense of market power or by components thereof, so to ignore market power analysis when examining acts makes no sense. Nor does an intermediate approach of attending to market power wherein it is taken to be some unitary, one-size-fits-all notion — the typical technique when market power is not left behind altogether.

Finally, there are additional costs from the siloing of market power analysis and act analysis related to the manner in which investigations and legal proceedings are conducted. And, relatedly, we should contemplate whether purported siloing interferes with the communication of complex decision methods to generalist factfinders or busi-

¹⁶⁰ The principal exception is that the total welfare consequences of a given price increase depend on the level of market power, largely without regard to how the price increase is brought about. *See supra* subsection III.C.3. Of course, whether the practice is indeed anticompetitive and how much price increase it may generate — and accordingly how market power bears on these factors — do depend on the practice and explanations for its use.

¹⁶¹ One could attempt, in a first, market power stage, to estimate market power under alternative definitions and likewise to quantify each component separately, enabling one to pick and choose from the results when subsequently analyzing the practice. Such is not done, would be wasteful, and is problematic because understanding many aspects of market power requires analyzing the allegedly anticompetitive act in any event.

ness decisionmakers. Because these issues manifest themselves similarly with respect to the siloing of the consideration of anti- and procompetitive explanations, consideration is deferred to the next subsection.

2. *Anticompetitive and Procompetitive Explanations.* — Another common form of siloing that constitutes a substantial obstacle in many of the paths identified in Part III is the separate assessment of anticompetitive explanations and procompetitive explanations.¹⁶² And, like the siloing of market power analysis and act analysis, the standard approach is sequential but still embodies bidirectional independence. That is, after market power, possible anticompetitive effects are considered, in a vacuum; then, if and only if they meet some threshold (adding an elements-like structure), procompetitive benefits are considered, on their own. If there are none (again, implicitly by reference to a separate threshold), there is liability, but if some are adequately demonstrated, then in a final step these anti- and procompetitive effects are balanced in order to determine liability. Or so it is often said.¹⁶³

¹⁶² Much of the analysis in this subsection is generic, applicable to other realms in which legal formulations involve the separate, sequential treatment of issues. The most direct analogy to anti- and procompetitive explanations for acts scrutinized under competition law is affirmative bases for liability and defenses thereto more generally.

¹⁶³ On one hand, this framing is often advanced in the United States. *See, e.g.*, U.S. DEP’T OF JUSTICE, *supra* note 44, at viii (The executive summary of the section on “General Conduct Standards” in the monopolization context begins as follows: “The plaintiff should have the initial burden of establishing that challenged conduct harms the competitive process and therefore has a potentially anticompetitive effect. If plaintiff carries that burden, defendant should have the opportunity to proffer and substantiate a procompetitive justification for the challenged conduct. If defendant does so, plaintiff then should have the burden of establishing that the challenged conduct is anticompetitive under the applicable standard.”); United States v. Microsoft Corp., 253 F.3d 34, 58–59 (D.C. Cir. 2001) (en banc) (per curiam) (in monopolization context); United States v. Dentsply Int’l, Inc., 399 F.3d 181, 196 (3d Cir. 2005) (same); MODEL JURY INSTRUCTIONS, *supra* note 146, at A-4 (“Instruction 3A Rule of Reason — Overview[.] Under Section 1 of the Sherman Act, a restraint of trade is illegal only if it is found to be unreasonable. . . . [Y]ou must first determine whether the plaintiff has proven that the challenged restraint has resulted in [or is likely to result in] a substantial harm to competition in a relevant product and geographic market. If you [do] . . . , then you must consider whether the restraint produces countervailing competitive benefits. If you find that it does, then you must balance the competitive harm against the competitive benefit.” (third alteration in original)); *id.* at A-10 & notes (“Instruction 3C Rule of Reason — Evidence of Competitive Benefits[.] . . . The defendant has the burden of producing evidence regarding the existence of competitive benefits, and if the defendant produces such evidence, the burden shifts to the plaintiff to prove that the restraint was not reasonably necessary to achieve the benefits.”); Jonathan B. Baker, *Exclusion as a Core Competition Concern*, 78 ANTITRUST L.J. 527, 543–51 (2013) (arguing that the sequenced, multielement, burden-shifting framework under section 1’s rule of reason is increasingly being applied to exclusion claims, including under section 2). In addition, similar decisionmaking rubrics have been proposed by academics to address particular exclusionary practices. *See, e.g.*, Bolton, Brodley & Riordan, *supra* note 109, at 2262–85 (proposing a sequential, burden-shifting rule for predatory pricing).

On the other hand, it is uncertain the extent to which this framework reflects blackletter

law. Notably, under Sherman Act section 1, the prevailing rule of reason, announced in *Standard Oil Co. v. United States*, 221 U.S. 1 (1911), calls simply for a determination of whether the net effects of a challenged restraint are anti- or procompetitive. *Id.* at 60, 62; see, e.g., *Chi. Bd. of Trade v. United States*, 246 U.S. 231, 238 (1918) (“The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition.”); *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 690–91 (1978). (Of course, it is also true that, under the banner of the rule of reason, various particular rules have been articulated, such as that declaring the per se illegality of price fixing. See, e.g., *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 223 (1940).) It is interesting in this regard that the ABA's Model Jury Instruction on the structure of the rule of reason, quoted just above, is accompanied by a footnote (not part of the instruction itself) that states: “In an effort to make the rule of reason instruction less confusing, it has been separated into four separate, but interrelated, instructions.” MODEL JURY INSTRUCTIONS, *supra* note 146, at A-4 n.1. This statement suggests that the drafters do not in fact view the sequenced structure to be part of the rule but rather as merely an aid in communicating its essence to juries, although the drafters also chose to withhold this explanation, including about the interrelationships, from the jury.

A sequential, siloed approach is also reflected in EU policy statements and guidance documents. See *Discussion Paper on Article 82*, *supra* note 1, ¶ 60 (“Where a certain exclusionary conduct is clearly not competition on the merits, in particular conduct which clearly creates no efficiencies and which only raises obstacles to residual competition, such conduct is presumed to be an abuse. However, the dominant company will have the possibility to rebut that presumption. Such rebuttal can be brought by providing convincing evidence that the conduct does not and will not have the alleged likely exclusionary effect, or that the conduct is objectively justified” (footnote omitted)); *id.* ¶ 77; Guidance on Article 82, *supra* note 1, ¶ 31 (concluding its statement regarding procompetitive justifications by stating: “It is incumbent upon the dominant undertaking to provide all the evidence necessary to demonstrate that the conduct concerned is objectively justified. It then falls to the Commission to make the ultimate assessment of whether the conduct concerned is not objectively necessary and, based on a weighing-up of any apparent anti-competitive effects against any advanced and substantiated efficiencies, is likely to result in consumer harm.”); Communication from the Commission — Guidelines on the Application of Article 81(3) of the Treaty, 2004 O.J. (C 101/08) 97, ¶ 11 (“The first step is to assess whether an agreement between undertakings . . . has an anti-competitive object or actual or potential anti-competitive effects. The second step, which only becomes relevant when an agreement is found to be restrictive of competition, is to determine the pro-competitive benefits produced by that agreement and to assess whether these pro-competitive effects outweigh the anti-competitive effects.” (footnote omitted)); see also Hans W. Friederiszick & Linda Gratz, *Hidden Efficiencies: The Relevance of Business Justifications in Abuse of Dominance Cases*, 11 J. COMPETITION L. & ECON. 671 (2015) (criticizing the separation of the analysis of anti- and procompetitive effects under Article 102); Miguel de la Mano & Benoît Durand, *A Three-Step Structured Rule of Reason to Assess Predation Under Article 102* (DG Competition, European Comm'n, Office of the Chief Economist, Discussion Paper, 2010) (proposing a structured rule for predatory pricing).

There is another respect in which these agency guidance documents are puzzling. When they address anticompetitive explanations, usually at length, they seem to adopt a skeptical stance under which exclusionary effects are quite difficult to demonstrate, a reluctance that would seem to be motivated by an underlying belief that procompetitive effects are ubiquitous and often significant. Yet when that hurdle is overcome, they seem to take an equally skeptical view toward procompetitive effects, often giving them short shrift. See, e.g., *Discussion Paper on Article 82*, *supra* note 1, ch. 7 (devoting barely over a page of its fifteen-page treatment of single branding (exclusive dealing) to efficiencies, the discussion of which presents a gauntlet that seems almost impossible to get past). A similar set of inclinations is familiar in the treatment of horizontal mergers, wherein few are challenged because of the difficulty of finding sufficient anticompetitive effects while, once a challenge is contemplated, efficiencies are rarely deemed to be adequately established. See *infra* subsection 3. It seems less plausible that this apparent inconsistency would

This familiar structure for analysis and decisionmaking is subject to a number of infirmities that lie at the heart of the shortcomings of current market power analysis while also having wider implications. First, this isolation of anti- and procompetitive explanations impedes assessment in ways we have previously seen. Section III.A's articulation of the appropriate decision-theoretic framework emphasized that, because the test for whether liability is optimal is a comparative one, it is important to have clearly in mind both anti- and procompetitive explanations from the outset. Moreover, section III.B explained that diagnosticity with regard to classification depends precisely on how evidence bears on the relative likelihood of different explanations. Although the focus was on market power — indeed, the sequential siloing of anti- and procompetitive explanations substantially undermines the ability to undertake much of the analysis developed in this Article — the underlying logic extends to all manner of evidence. The probative force of any information bearing on classification depends on the associated likelihood ratio, and it is impossible to ascertain the magnitude of a ratio without regard to its denominator.

Evidence is relevant to classification either when it is consistent with the anticompetitive explanation but also inconsistent with the procompetitive one, or, alternatively, when it is consistent with the procompetitive explanation but also inconsistent with the anticompetitive one. Knowing merely that evidence is, say, consistent with or even necessary for the anticompetitive explanation — such as that the firm exists, that its CEO is breathing, and the like — is irrelevant because it is equally consistent with or necessary for the procompetitive explanation. Of course, no one engaged in sequenced, siloed analysis would consider such obviously unilluminating factors when assessing anticompetitive effects. Implicitly, one is always searching for evidence that is somehow distinctive. But it is impossible in principle to know which evidence is diagnostic, how so, and to what degree unless one knows what explanations one is seeking to distinguish.

As mentioned, this point was developed in section III.B with regard to market power. For example, a certain level of market power may be necessary for an anticompetitive strategy to be effective or to be profitable. But we also saw that the same was true of some, but not other, procompetitive explanations. In section III.E's illustration with regard to the profitability condition for predatory pricing, whether the condition was diagnostic depended on the procompetitive explanation. Moreover, when the condition was diagnostic, analysis of how this was so was also helpful in determining which senses of market

arise if the discussion and analysis of anti- and procompetitive explanations were understood to be explicitly comparative rather than siloed.

power favored liability and to what extent. Similar discipline should be applied to assessing other sorts of evidence. For example, section III.B noted that long contract duration was traditionally thought to be important for exclusive dealing to be exclusionary, whereas more careful analysis reveals both that this is not always so and that long duration may well be necessary for important procompetitive explanations. Having both the anti- and procompetitive explanations clearly in mind is essential for the proper assessment of evidence, whether pertaining to aspects of market power or otherwise.

The siloing of anti- and procompetitive explanations is, in some respects, quite surprising in settings involving allegedly exclusionary practices. After all, one of the most commonly offered definitions of such practices is that they consist of acts that exclude competitors *other than by competition on the merits*.¹⁶⁴ Similarly, the previously quoted test from *United States v. Grinnell Corp.* for monopolization defines the second element as “the willful acquisition or maintenance of [monopoly] power *as distinguished from* growth or development as a consequence of a superior product, business acumen, or historic accident.”¹⁶⁵ These familiar statements reflect that it is often difficult to understand what an anticompetitive explanation *is* except by contrast to possible procompetitive explanations. They also suggest the difficulty of ascertaining the import of internal documents that indicate a firm’s desire to overcome competitors, without distinguishing whether the contemplated means are exclusionary in the sense meant by competition law. This challenge casts further doubt on the analytical soundness of investigating and assessing anticompetitive explanations in a vacuum.

¹⁶⁴ See, e.g., U.S. DEP’T OF JUSTICE, *supra* note 44, at 166 n.6 (“All jurisdictions agree that unilateral conduct laws address specific conduct and its anticompetitive effects, rather than the mere possession of dominance/substantial market power or its creation through competition on the merits.” (quoting UNILATERAL CONDUCT WORKING GRP., INT’L COMPETITION NETWORK, DOMINANCE/SUBSTANTIAL MARKET POWER ANALYSIS PURSUANT TO UNILATERAL CONDUCT LAWS 1 (2007), <http://www.internationalcompetitionnetwork.org/uploads/library/doc317.pdf> [https://perma.cc/B2HY-W47F])); MODEL JURY INSTRUCTIONS, *supra* note 146, at C-26 to C-27; AREEDA & HOVENKAMP, *supra* note 143, at 423; Commission Decision, Case 39523 — Slovak Telekom, C(2014) 7465, ¶ 355 (“It follows that Article [102 of the Treaty] prohibits a dominant undertaking from eliminating a competitor and thereby strengthening its position by using methods other than those which come within the scope of competition on the merits.” (quoting Commission Decision, Case C-457/10 P, AstraZeneca v. European Commission, ¶ 75 (Judgment of Dec. 6, 2012, not yet published in E.C.R., ECLI:EU:C:2012:770), <http://curia.europa.eu/juris/celex.jsf?celex=62010CJ0457> [https://perma.cc/8N9F-2952])); Guidance on Article 82, *supra* note 1, ¶ 1 (“Article 82 . . . prohibits abuses of a dominant position. In accordance with the case-law, it is not in itself illegal for an undertaking to be in a dominant position and such a dominant undertaking is entitled to compete on the merits. However, the undertaking concerned has a special responsibility not to allow its conduct to impair genuine undistorted competition on the common market.”).

¹⁶⁵ 384 U.S. 563, 570–71 (1966) (emphasis added).

This deficiency with regard to the siloing of the analysis of anti- and procompetitive explanations might also help to explain the siloing of market power analysis and act analysis. If the act analysis itself is bifurcated, with most attention, at least initially, confined to anticompetitive explanations — and if, moreover, one of the major ways that market power is relevant to the analysis of acts is through its assistance in distinguishing particular anticompetitive explanations from particular procompetitive ones — then, perhaps when the latter two are isolated from each other, it becomes less clear how to integrate market power analysis with act analysis.

Let us now consider a second problem with the siloing of anti- and procompetitive explanations. This sequential separation, along with market power siloing, makes little sense as an investigative (evidence-gathering) strategy because of the large overlap in the types of information one would examine for each and because prioritization (including screening) is often best done with a fuller view in mind, as explained in section IV.A. Beginning with the former point, economies of scale and scope militate against this aspect of siloing, and agencies probably do not ordinarily organize their investigations and analyses in this fashion. That is, in developing a work plan, one would naturally begin by identifying both anti- and procompetitive explanations, next contemplate what sorts of evidence (relating to market power or otherwise) would best indicate how the liability assessment should be made, and then proceed in light thereof.

Note also that, in U.S. civil litigation, where this multi-siloed structure is often advanced in stating various prohibitions, legal proceedings are nevertheless integrated. If a case survives a motion to dismiss (if such a motion is filed), the case moves to discovery, ordinarily a single stage covering all issues. Trial is also conducted in a single stage, although a case can be dismissed after a plaintiff's presentation if it is insufficient to meet its burden of proof, which may cover market power and anticompetitive effects but not affirmatively rule out procompetitive explanations. Even then, for the reasons just given, a plaintiff's initial presentation may well include much pertaining to the latter in any event. And, when a case does reach a factfinder — after millions of dollars have been expended in a major contest — the savings to be gained at the back end from omitting a final step or two are likely to be minimal (on which, more in a moment). Nor do judicial opinions routinely omit the later steps if the plaintiff or the government has failed on earlier ones.¹⁶⁶

¹⁶⁶ These uncontroversial accounts of civil litigation also call into question the meaning of another aspect of the standard rubric: the supposed burden-shifting that takes place as one proceeds through the steps. As documented in note 163, it is often said that the plaintiff has the burden of proof on anticompetitive effects, that once this burden is met the burden shifts to the defendant to

Particularly for investigations conducted by competition agencies, which constitute the bulk of cases in most jurisdictions, expenditure of effort is usually a continuous process, in the manner discussed in section IV.A on screening. There is not a single, up-or-down decision made at the outset, to either terminate or to undertake a full investigation of all issues, whatever that may mean. Investigations are presumably guided by purposive analysis that focuses on which information not yet in hand is most diagnostic relative to the cost involved in obtaining it. Whether about market power or about acts, and whether about anti- or procompetitive explanations, it makes sense to figure out which evidence has the most favorable combination of illumination and ease of collection, to gather it first (or next, as the case may be), and then to make a further decision whether to decide one way or the other — to terminate or to conclude that one has enough to attempt to

demonstrate procompetitive effects, and that if and when that burden is met, the burden shifts back to the plaintiff to show that the anticompetitive effects exceed the procompetitive effects. Just when these shifts in the burden of proof take place and how such shifts are manifested, however, is mysterious. One might suppose that the plaintiff first amasses evidence of anticompetitive effects in discovery and generates expert reports, and that if and when the tribunal certifies that it has met its burden, then the defendant begins discovery and commissions expert reports on procompetitive effects. But this is not how litigation proceeds. Or perhaps summary judgment motions are sequential, wherein if a plaintiff is held to have met its burden on anticompetitive effects, the judge then assesses the defendant's procompetitive effects to see if summary judgment might be granted to the plaintiff. However, a plaintiff's success in overcoming its summary judgment hurdle on anticompetitive effects means only that its case is sufficient to proceed to trial, not that it will necessarily establish this element by a preponderance of the evidence, so no such switch happens at that point either. Likewise, after the plaintiff's presentation of its case at trial, if it has met its burden (that is, if a defendant cannot win a motion for a judgment as a matter of law), this again only means that there is enough evidence to reach the factfinder, not that the factfinder must find for the plaintiff unless the defendant proves a procompetitive justification. In all, then, it is unclear what any of these "shifts" in the burden of proof entail. The burden-shifting metaphor draws to mind the image of a referee in a sports contest, pointing a flag toward one team, then the other, as the burden of proof shifts from side to side during the course of the contest. This metaphor parallels some rhetoric in the literature but not the reality of adjudication. An alternative explanation is that the burdens for anticompetitive effects and balancing are with the plaintiff and for procompetitive effects are with the defendant. But in that case, none of the burdens ever shift. (A further mystery is that much of the focus is on who bears the burden of persuasion, but under the preponderance standard — ordinarily interpreted as more-likely-than-not — this would only affect exact ties. For further discussion of this matter, see Baruch Fischhoff & Wändi Bruine de Bruin, *Fifty-Fifty = 50%?*, 12 J. BEHAV. DECISION MAKING 149 (1999); Kaplow, *Burden of Proof*, *supra* note 36, at 758 n.34; Charles M. Yablon, *A Theory of Presumptions*, 2 LAW, PROBABILITY & RISK 227 (2003).)

Observe further that even imagining the existence of such a burden-shifting regime — wherein the burden on anticompetitive effects is placed on the government or private plaintiff and the burden on procompetitive effects is placed on the defendant — encourages the two issues to be siloed. When we look to different parties to demonstrate different claims, it is difficult to analyze the evidence bearing on those claims in an integrated fashion. Differential placement of proof burdens, however, is hardly necessary for siloing to occur.

impose liability — or instead to continue, gathering additional information before undertaking a further assessment.¹⁶⁷

In some cases and at some stages — depending on the practice, the anti- and procompetitive explanations, and the evidence thus far at hand — it may make sense to focus assessment or further efforts on one thing or another. For example, if it quickly seems apparent that significant procompetitive effects are likely, one may terminate or ask next what evidence might demonstrate anticompetitive effects of sufficiently greater magnitude to justify liability. If anticompetitive effects early on seem substantial — even if not yet certain or precisely quantified — it may make sense to turn next to the best sources of evidence on the most plausible procompetitive explanation; if such were quickly ruled out, one may be nearly ready to assign liability, whereas if procompetitive effects seemed notable, one might then press further on the anticompetitive explanation. Often, it may become fairly clear early on (or even before commencing formal investigation) that either expected anticompetitive effects or likely procompetitive effects are almost certainly much larger, making the outcome clear or greatly focusing any further efforts.¹⁶⁸ Note that these observations hold independently of the first point in this subsection, that much relevant evidence, including on market power, may be explicitly comparative, bearing on both types of explanation simultaneously, in which case the notion that sensible investigation considers them separately and sequentially makes no sense.

In sum, the notion that most practices are best investigated and assessed one element at a time — first market power, then anticompetitive effects, and finally procompetitive effects — seems foolish. In other decisionmaking contexts, whether involving medical diagnosis and treatment, career choice, or vacation planning, insisting on such a rigid, *a priori* structure would be odd. Perhaps there are some minor, simple decisions that should proceed this way: at a restaurant, one might choose a wine, then an appetizer, next an entree, and finally dessert. But not really. When choosing the wine, one usually looks ahead to the entree, and when expecting to order a heavy dessert, one might go light on the appetizer. On reflection, it seems surprising that siloed analysis in competition cases is so widely endorsed and allegedly practiced.

A third problem is that the clarity in decisionmaking purportedly produced by this sort of siloing is illusory. Following the familiar rubric neither economizes much on decisionmaking effort nor gener-

¹⁶⁷ See Beckner & Salop, *supra* note 36; Kaplow, *Multistage Adjudication*, *supra* note 116; Kaplow, *Optimal Multistage Adjudication*, *supra* note 116.

¹⁶⁸ See also *supra* section IV.A (discussing screening).

ates the highest quality decisions — and the more it does the former, the worse it performs with regard to the latter. Here, it is helpful to state more explicitly the sequenced, element-based structure, using the notation from Part II. Instead of the most general statement of a liability decision rule, $f(e) > k^*$, or the more particular one, $f(g^{MP}(e^{MP}), g^A(e^A)) > k^*$, which entails separate assessment of market power and act evidence (but without constraining the liability function to have an element-like, that is, lexicographic structure), we instead have the following four-step rule:

- (1) Is $g^{MP}(e^{MP}) > k^{MP}$? If not, no liability (and stop). If yes,
- (2) Is $g^{AH}(e^{AH}) > k^{AH}$? If not, no liability (and stop). If yes,
- (3) Is $g^{AB}(e^{AB}) > k^{AB}$? If not, assign liability (and stop). If yes,
- (4) Is $g^{AH}(e^{AH}) > g^{AB}(e^{AB})$? If not, no liability. If yes, assign liability. (And stop.)

(The previous superscript *A* has been augmented with an *H* or *B* to refer to harmful and beneficial effects, respectively, following the notation from section III.A.¹⁶⁹)

Step 1 asks if market power (some subfunction mapping the market power evidence to an overall assessment of market power) exceeds a stated threshold. If not, there is no liability and our analysis concludes. If it does, we proceed to step 2, which asks if anticompetitive effects (some subfunction mapping the anticompetitive effects evidence to an overall assessment of anticompetitive effects) exceeds a stated threshold. Again, if not, there is no liability. If it does, we proceed to step 3, which asks the same question with regard to procompetitive effects. Here, if it does not, we assign liability (and stop) because we have sufficient anticompetitive effects and no procompetitive effects that are recognized. Else, we proceed to step 4, where we weigh anti- and procompetitive effects and assign liability if and only if the former is greater.

On minimal examination, this procedure is mysterious and surprising in a number of ways. Steps 1 through 3 each require a decision threshold, but for any allegedly anticompetitive type of practice, does anyone know what these thresholds are or how they were derived? (Section D elaborates this point with regard to market power, step 1.) In addition, echoing Parts II and III as well as subsection 1 just above, it is unclear how or why one would set a market power threshold without regard to how it may illuminate anti- or procompetitive effects.¹⁷⁰

¹⁶⁹ This rule might be seen, in part, as an instantiation of the generalization from section II.D of $f(MP, A^1, A^2)$, where the two act indices refer to the anticompetitive and the procompetitive aspects and a lexicographical functional form is supposed.

¹⁷⁰ Some elaboration appears in section IV.A on screening, analysis that is also applicable more broadly to this sequenced decision rubric.

One can also press further on how in principle one should set the thresholds in steps 2 and 3, regarding the requisite sufficiency of the demonstrations of anti- and procompetitive effects, respectively. For example, should the threshold in step 2 really be independent of plausible procompetitive effects, which we are not supposed to even peek at until step 3? Are anticompetitive effects of \$1 million (say, in lost consumer surplus) large or small? In a small-town retailing market, presumably large, but in a national broadband market, minuscule. And market size seems compelling here precisely because procompetitive effects probably tend to scale with market size, so in the latter case even a sliver of a procompetitive effect would come out to well in excess of \$1 million, whereas in the former case it may be almost impossible to conceive of an effect that large. To restate the obvious, it is absurd to set the threshold in step 2 for anticompetitive effects with no regard for the plausible magnitude of procompetitive effects, which are formally ignored until step 3. The only way to avoid a substantial incidence of false negatives in a variety of settings is to set the threshold for step 2 near zero. And similarly, to then avoid false positives, one would also have to set the threshold for step 3 near zero. The combined effect of these calibrations would be largely to eliminate the intermediate steps and go straight to the balancing in step 4.¹⁷¹ This problem is essentially that associated with an element-like approach in any form, wherein being just above a threshold is sufficient to proceed — no matter how slightly the threshold is exceeded — whereas being just below it leads to no liability, no matter how small is the gap and without regard to other considerations.

Consider further the question of how we should think of the threshold for procompetitive effects in step 3. Specifically, contemplate how k^{AB} , the threshold for procompetitive effects, might compare to $g^{AH}(e^{AH})$, the already demonstrated anticompetitive effects. One would suppose from formal statements that they have no relationship whatsoever, since k^{AB} is part of the legal rule stated before one examines the evidence on the practice at hand. But think about this for a moment: $g^{AH}(e^{AH})$ had to be evaluated in step 2.¹⁷² If we have $k^{AB} > g^{AH}(e^{AH})$, then there is a range of practices for which procompetitive effects exceed anticompetitive effects (those with $g^{AB}(e^{AB})$ in the range $g^{AH}(e^{AH}) < g^{AB}(e^{AB}) < k^{AB}$), but we are assigning liability — and, moreover, we are aware of this fact when we do so. If

¹⁷¹ As examined in section IV.A and revisited briefly below, some screening benefits may remain.

¹⁷² Perhaps $g^{AH}(e^{AH})$ was merely guesstimated in step 2. In that event, a softened version of the argument in the text would apply. For example, if all we know from step 2 is that $g^{AH}(e^{AH}) > k^{AH}$, it would seem hard to rationalize setting $k^{AB} \neq k^{AH}$. As mentioned, because we have no clue what either k^{AB} or k^{AH} is deemed to be, the status of the entire apparatus is unclear.

we instead have $k^{AB} < g^{AH}(e^{AH})$, then step 3 is redundant, because in step 4 we will impose the more demanding threshold that procompetitive benefits must exceed (or equal) $g^{AH}(e^{AH})$ in any event. Hence, the only logical way to set k^{AB} is case specific and adheres to the rule: $k^{AB} = g^{AH}(e^{AH})$. But then step 3 is identical to step 4 (except that exact ties are resolved the opposite way). In short, stating a separate step 3 and step 4 is either perverse or redundant.¹⁷³

For these reasons, one should be skeptical about how much this rubric — whether the segmentation of market power in the first step or the sequencing of anti- and procompetitive assessments in the subsequent steps — in fact guides decisions by agencies or courts, even when it is formally invoked. One suspects that a more holistic analysis might be undertaken; then, given the liability decision that seems optimal, the decisionmaker may back out conclusions on the constituent parts and draft a formal decision accordingly.¹⁷⁴ Moreover, it is possi-

¹⁷³ Some commentators motivate this multi-step construction because of the difficulty of step 4's required balancing, a task to be avoided whenever possible. Phillip Areeda and Herbert Hovenkamp accordingly entitle one subsection of their treatise: "Balancing generally to be avoided; burden-shifting." AREEDA & HOVENKAMP, *supra* note 40, ¶ 651e3. Their position, however, is puzzling. When the measurements required for steps 2 and 3 are sufficiently clear that the proper outcome is obvious, the balancing required by step 4 would not in fact be difficult. Conversely, when the balancing would be difficult, it can only be avoided at step 2 or step 3 if the pertinent decision thresholds are set in ways that may often generate suboptimal liability determinations. One could as well flip a coin in close cases, or perhaps have a rule or practice that decides them for defendants. Such a leaning toward defendants when conducting the balancing in the section 2 context was previously endorsed by the DOJ. See, e.g., U.S. DEP'T OF JUSTICE, *supra* note 44, at ix ("In the absence of an applicable conduct-specific test, the Department believes that conduct should be unlawful under section 2 if its anticompetitive effects are shown to be substantially disproportionate to any associated procompetitive effects." (executive summary)). This leaning appears to have been a factor in the FTC's decision not to join the report and in the next administration's decision to withdraw it. See sources cited *supra* note 44.

Another motivation for this decisionmaking rubric is to economize on effort. See, e.g., U.S. DEP'T OF JUSTICE, *supra* note 44, at viii ("This allocation can enable courts to resolve cases more quickly and efficiently."); *id.* at 36 (elaborating the claim). As explained in the text in this subsection and in note 166 on burden-shifting, it is obscure how these suggestions relate to the existing legal process. Moreover, much of the suggested economization seems far-fetched. For example, if a defendant in fact makes no showing of a procompetitive justification and yet we skip step 3, which would have told us to stop and assign liability, just how burdensome will it be to perform the balancing in step 4 (now promoted to step 3), keeping in mind that anticompetitive effects are taken to be significant and procompetitive effects are now supposed to be nonexistent?

¹⁷⁴ See, e.g., Joint Hearings, U.S. Dep't of Justice & Fed. Trade Comm'n, Understanding Single-Firm Behavior: Exclusive Dealing Session 201 (Nov. 15, 2006) (statement of Benjamin Klein) ("I mean, I think [the courts] go backwards, and they figure out — you know, they do some kind of implicit balancing, and then they say — they make it easy and they say it was not an anticompetitive effect or there is no procompetitive efficiency rationale . . ."); Joint Hearings, Section 2 Policy Issues, *supra* note 123, at 60 (statement of William J. Kolasky) ("But, in fact, when you look at the decisions, the courts never reach that final balancing stage, because they obviate the need for that by adjusting the degree of scrutiny that they engage in with respect to steps two and three [regarding procompetitive justifications and less restrictive alternatives], depending on how

ble that this process is to a significant degree informal or subconscious. For example, if procompetitive explanations seem exceedingly weak and disingenuous (having peeked ahead or having already been exposed to all the evidence), one may resolve doubts about market power and anticompetitive effects in favor of liability rather than assessing these issues in a vacuum and applying strict thresholds to each. To the extent that this is the case, the frequent invocation and endorsement of siloed analysis is largely a fiction that does not much influence liability under competition law's prohibitions. However, to restate a theme of this Article, it is likely to be costly for investigations and decisions — as well as for ongoing research designed to inform competition policy and practice — to operate under a misleading and counterproductive official understanding of the task at hand.

Finally, as a modest counterpoint to the foregoing criticism, it may be argued that the siloed approach, if not taken literally (or even close to it), does serve some valuable function in screening cases and in focusing thought, particularly for those unfamiliar with competition law issues, notably generalist judges and lay juries.¹⁷⁵ Regarding step 2 in particular, an explicit, formal reminder that there must be nontrivial anticompetitive effects may well be useful.¹⁷⁶ And then a further reminder that, if such effects are established, one should check to see if there are procompetitive effects before assigning liability. In addition, stating them separately, and subject to their own thresholds, may impress on the mind the need to think carefully not only about whether they can be asserted with a straight face but also about whether they have some oomph behind them. In all, this sort of rubric may encourage more serious scrutiny rather than naive acquiescence. Particularly with regard to jury instructions, having separately numbered and stated "elements," requiring that one come to a conclusion on each one,

strong a showing the plaintiff makes in step one [regarding anticompetitive effects], an inquiry meet for the case, and I think that is the sound analytical approach.").

¹⁷⁵ This sort of motivation seems to be at the heart of then-Professor Frank Easterbrook's article that advances five "filters" to aid in the resolution of competition cases. See Easterbrook, *supra* note 114. "The judge should employ some presumptions and filters that will help to separate the pro- and anti-competitive explanations." *Id.* at 9. "A court could try to conduct a full inquiry into the economic costs and benefits of a particular business practice in the setting in which it has been used. But it is fantastic to suppose that judges and juries could make such an evaluation. The welfare implications of most forms of business conduct are beyond our ken." *Id.* at 11. The first of Easterbrook's proposed filters is market power. *Id.* at 19–23.

¹⁷⁶ Some regard an initial focus on demonstrating anticompetitive effects to be helpful not only for the uninitiated but also to impose further discipline on competition agencies out of the concern that those pursuing cases may sometimes be overzealous, a tendency that may be combated by an internal commitment to begin with an insistence on articulating and substantiating the plausibility of an anticompetitive explanation. Nevertheless, the foregoing analysis in this subsection raises substantial doubt about how far the investigation and analysis of anticompetitive explanations should proceed in a vacuum, specifically, without regard to pertinent procompetitive explanations.

may focus jurors' thinking, by contrast to the alternative of mushing everything together and calling for an all-things-considered judgment.¹⁷⁷ Moreover, juries may largely ignore particulars of their instructions in any event, but the exaggerated statements may nevertheless exert some helpful influence. Or they may not.¹⁷⁸

Aspects of the sequenced, element-based approach might also be useful for screening, although there are notable caveats implied by the analysis earlier in this subsection and examined explicitly in section IV.A with regard to separate requirements for market power and the act. Simply put, quick screens that eliminate much of the vast sea of ordinary activity in the economy as well as many routine mergers and myriad complaints from aggrieved competitors may, depending on the circumstances, draw primarily on one or another type of evidence. For many practices, obviously low market power may be sufficient to set a case aside, but how low is low may well depend on the nature of the practice and, in particular, on the most plausible anti- and procompetitive explanations. Demanding a minimally plausible anti-competitive explanation may often be a good screen for leading firms — more so than is a market power threshold — because the market power screen may not as quickly (or at all) eliminate many baseless potential cases. In yet other instances, the fact that significant procompetitive explanations are obvious may be the swiftest and most reliable basis for truncating further inquiry. Or some combination. Sometimes the standard ordering will be best, but there is no reason to insist on it, and in many areas of activity it does not seem to be the most promising approach to screening.¹⁷⁹

We can also ask whether this formal, sequenced, element-like decision rubric is helpful to guide the behavior of primary actors: firms receiving legal advice about competition law, with which they are unfa-

¹⁷⁷ This point is suggested by the discussion in note 163 of the ABA's Model Jury Instruction on the structure of the rule of reason.

¹⁷⁸ Compare: Under the standard negligence test, liability requires that the expected reduction in harm associated with the omitted precaution exceed the cost of undertaking the precaution. One could have a three-element structure: (1) Is the expected harm reduction above some threshold? If not, no liability. If yes: (2) Is the cost of the omitted precaution above some threshold? If not, liability. If yes: (3) Does the expected harm reduction exceed the cost of the omitted precaution? If yes, liability; if not, no liability. Does anyone propose such a rule? Perhaps only for complex cases, like medical malpractice or product defects?

¹⁷⁹ The discussion in the text emphasizes screening out weak cases, which is the typical framing of screening discussions. It is just as important that the screening process avoid an excessive screening out of cases that would prove to be strong. Simply put, for a given flow of cases into the system, if one holds constant the fraction screened out, then the mirror image of screening out a greater number of truly weak cases is screening in a greater number of relatively strong cases. Therefore, whatever is the ideal intensity of screening, it is by definition better to implement it through an optimal use of available information. See generally Kaplow, *Multistage Adjudication*, *supra* note 116; Kaplow, *Optimal Multistage Adjudication*, *supra* note 116.

miliar. It is unclear the extent to which this is useful here either. One can readily imagine those in the business world asking their counselors basic questions about what the decision thresholds in each step actually are, or to predict the outcome of each step with respect to the practices being considered. Absent quantification (albeit with guesstimation employing hunches drawn from experience), it is hard to understand how coherent answers could be offered. Also, it is hardly true that basic cost-benefit balancing (step 4) is inherently befuddling to business actors. On the other hand, if legal advisors believe that liability under competition law is in fact determined in a rigid manner that closely reflects this structured framework and as a consequence often deviates from the outcome under balancing, then one would expect advice to be couched in such a fashion.

3. *Are Mergers Different?* — In an important respect, the standard analysis of horizontal mergers differs from that pertaining to other practices with regard to the siloing of market power analysis and act analysis. As mentioned in subsection III.C.1's taxonomy, the notion of market power that involves the change in market power, MP^A , rather than a market power level, is most often noted in connection with horizontal mergers. Indeed, a substantial portion of the numerous references to "market power" in the 2010 U.S. Horizontal Merger Guidelines are preceded by some variant of the word "enhance," and many of the passages containing "market power" in the 2004 EU Guidelines include a variant of the word "increase."¹⁸⁰ Subsection III.C.1 further explained how understanding market power as MP^A entails the collapse of market power analysis and act analysis, the opposite of siloing the two. Note that a unitary approach is implicit in merger simulations that employ a range of inputs directly, unmediated by an intermediate step in which a subset of the evidence is combined to reach a conclusion about market power.¹⁸¹

There are, however, other respects in which market power appears to maintain a separate, siloed existence in modern horizontal merger guidelines, court opinions, and commentary. Specifically, these guidelines employ a rubric that begins with market definition (typically undertaken using the hypothetical monopolist test¹⁸²), which enables the decisionmaker to compute the post-merger HHI — which seems to be a surrogate for the post-merger level of market power, MP^A — along with the change in the HHI — a seeming surrogate for the aforemen-

¹⁸⁰ See U.S. MERGER GUIDELINES, *supra* note 48, *passim*; EU Horizontal Merger Guidelines, *supra* note 48, *passim*. See also quotations from these merger guidelines appearing in note 48.

¹⁸¹ See sources cited *supra* note 59.

¹⁸² See also *infra* note 201 (discussing fundamental failings of the hypothetical monopolist test).

tioned MP^Δ .¹⁸³ Then, importantly, these two figures are matched against a grid that indicates whether, in the case of low figures (for either measure), the merger is essentially safe harbored; for high figures (for both the post-merger HHI and the increase in the HHI), it is deemed likely to be anticompetitive; or, for intermediate values, the result is somewhere in between.¹⁸⁴ These portions of the analysis are performed first (that is, before reaching the analysis of particular ways that mergers may cause price increases), and in the guidelines themselves¹⁸⁵ and in practice¹⁸⁶ it appears that the post-merger HHI level — and not just the change in the HHI — is given significant weight. Nevertheless, the seeming importance of the level of market power is largely ignored in the subsequent analysis of price effects, in a manner analogous to the siloing examined in subsection 1 with regard to alleg-

¹⁸³ On the problematic nature of the use of market-share-based measures (including HHIs) as stand-ins for market power measures, see section D. *See also supra* subsection III.C.3 (discussing how modern merger guidelines' emphasis on the post-merger HHI, as a surrogate for the level of market power, might be rationalized if the objective of merger enforcement was the maximization of total welfare and not just consumer surplus).

¹⁸⁴ See, e.g., U.S. MERGER GUIDELINES, *supra* note 48, § 5.3; EU Horizontal Merger Guidelines, *supra* note 48, ¶¶ 14–21. The origin of this approach in U.S. horizontal merger guidelines (which has in rough terms been imitated in other jurisdictions) is generally associated with Supreme Court cases in the 1960s and in particular the so-called structural presumption deriving from *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963). *See id.* at 363 (“[A] merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market, is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects.”).

¹⁸⁵ The central role of market definition and resulting HHI measures is indicated, for example, by the portion of the U.S. Horizontal Merger Guidelines they consume (nearly twice as many pages as those devoted to explicit analysis of price effects, *compare* U.S. MERGER GUIDELINES, *supra* note 48, at 7–19, *with id.* at 20–27), and the debate among commentators about how such analysis is best undertaken.

¹⁸⁶ For endorsement by U.S. courts, see 4 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 932c (4th ed. 2016). For empirical evidence on the role of post-merger HHIs and other factors in explaining merger challenges by enforcement agencies, see JOHN KWOKA, MERGERS, MERGER CONTROL, AND REMEDIES: A RETROSPECTIVE ANALYSIS OF U.S. POLICY ch. 2 (2015); Mats A. Bergman et al., *Comparing Merger Policies in the European Union and the United States*, 36 REV. INDUS. ORG. 305 (2010). (Note, however, that the correlation of post-merger HHIs with merger challenges does not demonstrate causation because the post-merger HHI may well be correlated with other variables that influence agency decisionmaking but are not included in the reported regressions. Also, analyses of the determinants of merger challenges are, due to data availability, performed on selected samples of the cases that the enforcement agency chose to investigate more thoroughly, with the selection presumably based in significant part on preliminary indicators of the same explanatory variables. In addition, some of the independent variables are themselves the product of the agencies' analysis and hence are subject to the caveat of potential reverse engineering. *See, e.g.*, KWOKA, *supra*, at 241 n.16.) On the actual relevance of market power levels to the analysis of the price effects of horizontal mergers, see the discussion in note 62.

edly exclusionary practices.¹⁸⁷ In all, the approach toward the role of market power in horizontal merger analysis appears schizophrenic.¹⁸⁸

With respect to the siloing of the analysis of anticompetitive and procompetitive explanations, the approach toward horizontal mergers appears to be similar to that employed elsewhere in competition law. It is noteworthy that, even though most mergers generate at least some upward pricing pressure in standard models, few mergers are challenged,¹⁸⁹ and, relatedly, the demonstration of anticompetitive effects faces a substantial burden. The explanation is presumably that mergers are ordinarily regarded to be efficient, an important feature of a dynamic market economy. Nevertheless, modern merger guidelines relegate the analysis of efficiencies to the end, and explicit efficiency defenses formally appear to receive short shrift.¹⁹⁰ In this respect as well, the treatment of the procompetitive explanations for mergers is

¹⁸⁷ If one examines these merger guidelines' explicit discussions of particular ways that price effects may arise, see U.S. MERGER GUIDELINES, *supra* note 48, §§ 6–7; EU Horizontal Merger Guidelines, *supra* note 48, ¶¶ 22–63, different interpretations are possible. To place the subject in context, recall from subsection 1 that, with respect to unilateral exclusionary practices, where the siloing of market power and act analysis is strong, the analyses of the acts themselves evidence the separation by essentially ignoring market power per se. In a similar fashion, in discussions of price effects in the U.S. Horizontal Merger Guidelines, mentions of market power (in any way) are almost entirely absent: the term appears in only a single paragraph (on coordinated effects) in this portion of the Guidelines, whereas references to market power appear in nearly twenty paragraphs elsewhere in the Guidelines. Compare U.S. MERGER GUIDELINES, *supra* note 48, at 26, with *id., passim*. (Likewise, despite the familiar importance of the HHI grid, *id.* § 5.3, the term "HHI" appears only once in the subsequent analysis of price effects, and negatively — specifically, to indicate that the HHI is less relevant than another indicator, the value of diverted sales. See *id.* at 21.) Interestingly, the EU Guidelines do not display this contrast in the use of language referring to market power. See EU Horizontal Merger Guidelines, *supra* note 48, *passim*. (Also, much like the U.S. Guidelines, after laying out their analogue to an HHI grid, *id.* § III, they make no mention of "HHI" in their analysis of possible anticompetitive effects, *see id.* § IV.) In any event, in both sets of guidelines, the analysis generating HHI measures and the grids indicating their significance play almost no role in the subsequent analysis of price effects.

¹⁸⁸ See also *supra* note 84 (discussing the lack of explicit justification in the guidelines themselves or in academic commentary for the guidelines' treatment of market power).

¹⁸⁹ For example, from 2003–2012, of mergers large enough to require reporting in the United States, second requests were issued in 3.1% of the cases and 60% of those generated some form of opposition. See KWOKA, *supra* note 186, at 9–10.

¹⁹⁰ The statement in the text is consistent with general lore in the competition law and economics community and with the treatment of efficiencies in merger guidelines. See, e.g., U.S. MERGER GUIDELINES, *supra* note 48, § 10 (after noting the potential importance of merger efficiencies to the economy, beginning the next three paragraphs as follows: "The Agencies credit only those efficiencies Efficiencies are difficult to verify and quantify Efficiency claims will not be considered if"). This formal reticence, however, may deviate from actual internal agency practice and in part may reflect historical resistance to efficiencies as justifying mergers and agencies' desires to bolster their litigation positions, wherein they challenge mergers they do not believe to be efficient and hope to make it easy to dispense with efficiency defenses when appearing before judges who may be influenced by the guidelines' hostile formulation.

similar to that of procompetitive explanations for single-firm behavior that is alleged to be exclusionary.¹⁹¹

C. The Meaning of Market Power

This section compares conventional understandings of market power in competition law doctrine and commentary to the various senses of market power that emerged in Part III as most plausibly relevant to the analysis of allegedly anticompetitive practices. It appears that there is a substantial consensus on the meaning of market power but one that only occasionally maps onto the channels of relevance identified in this investigation. The failure to recognize this gap may be in part a cause and in part a byproduct of viewing market power as a separate element in competition law offenses and the related siloing of market power analysis and act analysis.

The most commonly advanced meaning of market power in competition law and associated discourse is the power over price: the degree to which a firm or group of firms can profitably elevate price above the competitive level.¹⁹² This definition maps closely to the Lerner in-

¹⁹¹ See *supra* note 163.

¹⁹² For the United States, see, for example, COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES, *supra* note 62, at 1 (“In the context of sellers of goods or services, ‘market power’ may be defined as the ability profitably to maintain prices above competitive levels for a significant period of time.”); AREEDA, HOVENKAMP & SOLOW, *supra* note 67, at 109 (“Market power is the ability to raise price profitably by restricting output.”); *id.* at 112 (“Accordingly, the degree of a monopolist’s market power is commonly defined by the excess of its profit-maximizing price above its marginal cost.”); MARKET POWER HANDBOOK, *supra* note 1, at 5–6; MODEL JURY INSTRUCTIONS, *supra* note 146, at C-4 (“Instruction 2: Monopoly Power Defined[.] Monopoly power is the power to control prices and exclude competition in a relevant antitrust market. More precisely, a firm is a monopolist if it can profitably raise prices substantially above the competitive level for a significant period of time.” (footnotes omitted)); Carlton, *supra* note 52, at 5; Landes & Posner, *supra* note 5, at 937, 939; Gregory J. Werden, *Demand Elasticities in Antitrust Analysis*, 66 ANTITRUST L.J. 363, 373–74 (1998) (tracing the U.S. Supreme Court’s acceptance of the economic definition of market power beginning in the 1960s); and *id.* at 373 (“The courts of appeals have widely used the economic definition of market power.”).

For the European Union, see, for example, *Discussion Paper on Article 82*, *supra* note 1, ¶ 24 (“Market power is the power to influence market prices, output, innovation, the variety or quality of goods and services, or other parameters of competition on the market for a significant period of time.”); Guidance on Article 82, *supra* note 1, ¶ 11; *EU Horizontal Merger Guidelines*, *supra* note 48, ¶ 8; Communication from the Commission — Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements, 2011 O.J. (C 11) 1, ¶ 39 (“Market power is the ability to profitably maintain prices above competitive levels for a period of time or to profitably maintain output in terms of product quantities, product quality and variety or innovation below competitive levels for a period of time.”); and VALENTINE KORAH, *AN INTRODUCTORY GUIDE TO EC COMPETITION LAW AND PRACTICE* 119 (9th ed. 2007) (“In *Continental Can*, the ECJ impliedly accepted the Commission’s definition of a dominant position based on the economists’ concept of power over price.” (footnote omitted)).

With respect to the focus on price effects in particular, see, for example, U.S. MERGER GUIDELINES, *supra* note 48, § 1 (“A merger enhances market power if it is likely to encourage

dex of monopoly power (utilized in subsection III.C.2), a standard measure used by economists that has increasingly penetrated the field of competition law.¹⁹³ As mentioned before, this definition views market power as a level, one that does not on its face indicate whether we are to consider MP^A or $MP^{~A}$, that is, the level with or without the effects of the allegedly exclusionary practice.¹⁹⁴ Regarding this conventional definition of market power, it is sometimes mentioned as well that one must attend to entry barriers and other considerations that bear on the ability to continue profitably charging elevated prices, suggesting a longer-run view with regard to the level of market power.¹⁹⁵

one or more firms to raise price, reduce output, diminish innovation, or otherwise harm customers as a result of diminished competitive constraints or incentives. . . . For simplicity of exposition, these Guidelines generally discuss the analysis in terms of . . . price effects.”), and Guidance on Article 82, *supra* note 1, ¶ 11 (“In this Communication, the expression ‘increase prices’ includes the power to maintain prices above the competitive level and is used as shorthand for the various ways in which the parameters of competition — such as prices, output, innovation, the variety or quality of goods or services — can be influenced to the advantage of the dominant undertaking and to the detriment of consumers.”).

¹⁹³ See Kenneth G. Elzinga & David E. Mills, *The Lerner Index of Monopoly Power: Origins and Uses*, 101 AM. ECON. REV. (PAPERS & PROC.) 558 (2011). “The term market power came into use in the 1950s following . . . Judge Knoxl’s use of] the term in *United States v. Aluminum Company of America*, 91 F. Supp. 333, 341 (S.D.N.Y. 1950). Walter Adams’s and Alfred E. Kahn’s analyses of Alcoa also spoke of the firm’s ‘market power.’ Carl Kaysen’s (1965) *Antitrust Policy* moved the term and the economic conception of market power to center stage in antitrust, where it remains today.” *Id.* at 560 & n.9 (citations omitted). “It was only as antitrust became infused with economic theory that the Lerner Index surfaced in the scholarly literature of antitrust. For example, Phillip Areeda and Donald Turner’s (1978) influential antitrust treatise indicated that a ‘monopolist’s degree of market power is commonly defined by the excess of his profit-maximizing price above his marginal cost,’ where the ‘difference is expressed by the so-called Lerner Index $(P - MC)/P$ ’ (¶ 502). It was William Landes and Richard Posner (1981) who sought to ‘introduce greater rigor into the analysis of market power’ by making explicit use of the Lerner Index.” *Id.* at 560 (footnote and citation omitted).

¹⁹⁴ As alluded to previously, reference is usually made to the current level of market power, so whether it refers to $MP^{~A}$ or MP^A would depend, respectively, on whether the practice had not yet taken effect or instead had been in place sufficiently long for its impact to be manifest. On another note, for some readers this distinction may bring to mind the familiar *Cellophane* fallacy. See *supra* note 49. Both $MP^{~A}$ and MP^A , with the Lerner index interpretation, refer to the proportion by which price exceeds marginal cost under the assumption that profit-maximizing prices are being charged.

¹⁹⁵ A commonly cited definition is that “[m]onopoly power is the power to control prices or exclude competition.” *United States v. E.I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377, 391 (1956). Note that this formulation adds the alternative of being able to exclude competition. Some have rationalized this phrasing as indicating that a monopolist (the focus of inquiry in *Cellophane*) might use its power either to raise price or instead, perhaps in a predatory manner, to exclude competition. Others have interpreted the “or” as “and,” emphasizing that the ability to raise prices over a significant period of time requires somehow keeping competitors at bay. See, e.g., Richard Schmalensee, Comment, *Another Look at Market Power*, 95 HARV. L. REV. 1789, 1795 (1982). (Yet another interpretation of the “power to . . . exclude” is examined in the final paragraphs of this footnote.) A further, more subtle feature of this familiar definition is its reference to the ability to “control” price. In similar fashion, others have referred to a firm having discretion or to a firm’s ability “to behave to an appreciable extent independently of its competitors and customers.” Case 322/81, NV Nederlandsche Banden-Industrie Michelin v. Comm’n, 1983

E.C.R. 3466, ¶ 30; *see also* Guidance on Article 82, *supra* note 1, ¶ 10. Most such alternative formulations are vague and potentially misleading. On one hand, a firm with little market power can still control price, although significant elevations would be unprofitable, and, on the other hand, a firm with great market power cannot simply ignore competitors and customers and, if it wishes to maximize profits, will feel compelled to select a single, particular price, just as would its low-power counterpart. *See, e.g.*, PHILLIP AREEDA, LOUIS KAPLOW & AARON EDLIN, ANTITRUST ANALYSIS 528 (7th ed. 2013); Kaplow & Shapiro, *supra* note 49, at 1098; *see also* Discussion Paper on Article 82, *supra* note 1, ¶ 23.

Another tack advanced by some commentators (and criticized in Kaplow, *supra* note 3, at 498–502) is that market power should only be deemed to exist after one has concluded, in essence, that the allegedly anticompetitive practice is indeed so, for fear that otherwise decisionmakers may leap too quickly from a finding of market power to a conclusion of liability. *See, e.g.*, Franklin M. Fisher, *Diagnosing Monopoly*, Q. REV. ECON. & BUS., Summer 1979, at 7, 18 (“If the share is maintained solely because of low prices or better products, then we are looking at what competition is supposed to do and not at a monopoly. This is, of course, closely related to the legal position that a monopoly acquired by ‘superior skill, efficiency, or foresight’ does not violate the antitrust laws. I would prefer to say that a large share acquired in such ways is not a monopoly at all.”); *id.* at 28; *cf.* Carlton, *supra* note 52, at 3 (expressing a concern about inferring market power from market share on the ground that it is difficult to weigh increased market power against possible efficiency gains); *id.* at 19 (“My experience is that courts ask whether market power exists in the presence of the alleged bad act, a question with the potential to be answered in a misleading way if one ignores the efficiency justification for the alleged bad act . . . ”). Such a view might underlie some criticism of recent actions by the EU competition authority against Intel, Google, and other dominant high-technology firms, wherein it is argued that EU law’s notion that dominance implies duties and its somewhat ambiguous and perhaps elastic definition of what constitutes an abuse has generated an excessive inclination of the EU competition commission and EU courts to find liability for abuse of dominance without sufficient demonstration of actual anticompetitive behavior. Whatever the merits of this concern in practice, the attempt to redefine market power as embodying anticompetitive behavior obscures the issue. In essence, this approach eliminates market power as a separate element or even as a distinct area of inquiry, collapsing the decision rule into a unitary, open-ended analysis of the practice. In light of the arguments in this Article, such a result often has appeal, but any such conclusion should be derived analytically and empirically rather than arrived at through semantic attempts to redefine the concept of market power. *See* Schmalensee, *supra*, at 1808 n.74 (“It would cause considerable confusion if ‘market power’ were to be redefined (as Landes and Posner implicitly suggest) so that ‘clean-handed’ firms could never possess it.”).

The aforementioned approach may also be related to an interpretation of the “power to . . . exclude” language in the *Cellophane* definition of market power and many others. If the determination of whether sufficient market power exists turns on whether the firm or firms under scrutiny in fact were able to (impermissibly) exclude competitors, we again have a situation where the market power inquiry has collapsed, at least to a significant degree, into the analysis of the practice’s allegedly anticompetitive effects. Because these relationships often are not well in focus, analysis sometimes becomes confused. A possible illustration is the court’s discussion in *Dentsply*, described in note 155.

Tying is perhaps the setting in which the conception of market power as the ability to exclude is most often advanced. Here, the meaning of market power is somewhat inconsistent and mysterious. On one hand, it is said that market power, conventionally understood, in the tying market is an element of the offense. *See, e.g.*, Ill. Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 46 (2006) (“[I]n all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product.”); Discussion Paper on Article 82, *supra* note 1, ¶ 184 (“For tying to be abusive the company concerned needs to be dominant in the tying market.”). On the other hand, the requisite power is often described, following various leading cases, as the power to coerce or otherwise force customers to accept the tie, which in most cases has indeed happened. *See, e.g.*, Jefferson Par. Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 13–14 (1984) (“Accord-

In contrast, the central lessons of Part III on market power's actual relevance are that there are many possible channels, they vary by context, different senses of market power may be pertinent and can have different implications for liability, and different components of a single notion of market power may have different effects, sometimes in opposite directions. Even sticking to market power levels, conventionally defined, section III.E's illustration regarding the rationality of predatory pricing showed how a higher MP^A renders the strategy less profitable, not more so. Moreover, a key part of the explanation for how this may arise concerned long-run entry barriers that many argue to be

ingly, we have condemned tying arrangements when the seller has some special ability — usually called ‘market power’ — to force a purchaser to do something that he would not do in a competitive market. . . . When ‘forcing’ occurs, our cases have found the tying arrangement to be unlawful.”). Compare AREEDA & HOVENKAMP, *supra* note 124, at 41 (“At least in the case of single-firm tying, therefore, the power that triggers the *per se* rule is single-firm power over price . . .”), with *id.* at 75–76 (“For purposes of the *per se* rule [against tying], the relevant power is not the defendant’s enjoyment of supracompetitive prices or profits in the tying market, but rather its ability to compel those desiring the tying product to take the defendant’s second product.”). To this, a further nuance is added, wherein the power to effectuate the tie is often interpreted as existing only when customers are led to buy products they would not otherwise want (at all, or from the seller in question). See *Jefferson Parish*, 446 U.S. at 12 (“Our cases have concluded that the essential characteristic of an invalid tying arrangement lies in the seller’s exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms.”); *id.* at 27. How this latter inquiry relates either to market power as conventionally understood or to particular anticompetitive explanations for tying is not explained. A firm with any given level of (conventionally defined) market power, however high or low, can induce (force? coerce?) customers to purchase something “unwanted” if and only if it offers a sufficient price reduction or other concession to make the package desirable overall. Consider, for example, the purchase of an automobile. Most buyers would prefer to do without some feature or another (and some might wish to eschew many), that is, if the price were lower by at least some amount. Setting aside the question whether the components of the car constitute a single product within the meaning of tying law, how is one to think about this case? Or the sale of a container of some product wherein the smallest package is not infinitesimal, and some purchasers would prefer a smaller size for, say, a proportionately lower price? Returning to the other part of the initial statement of concern about the formulation, one must wonder how such thinking relates to exclusion. Under most theories of how tying might exclude, the anticompetitive effect is not the direct impact of the tie on the immediate customer but rather the effect of the practice across the market as a whole on the viability of rivals. To be sure, if rivals are excluded, customers may be worse off in the long run, but that injury is distinct from whether such later customers would even have been purchasers at the time of the exclusionary behavior, much less with how much they may at that earlier time have wished to purchase a different set of products on some other terms. In sum, it appears that these discussions of market power in the tying context constitute another instance in which the lack of conceptual clarity regarding the channels through which market power is relevant to the desirability of assigning liability is an impediment to sound analysis. Interestingly, in this setting, problems arise in spite of the fact that there is some attempt being made to relate market power to a particular practice rather than to view market power in a vacuum. The current state of affairs seems to reflect an admixture of evolution from particular language in older cases and more widespread efforts to instantiate market power requirements in antitrust offenses rather than to be the result of a conscious and sustained effort to analyze how market power bears on whether, when, and how tying is in fact anticompetitive.

an important aspect of proper market power measurement; that is, being sure to properly account for such barriers in measuring the extant (pre-predation) level of market power is the main reason that a higher MP^A renders the strategy less profitable and thereby disfavors liability. Recall as well the analysis in subsection III.C.2 of strategies to raise rivals' costs, wherein two of the three components that contribute to a higher level of market power (the Lerner index) indicate that the price effects of this exclusionary strategy are smaller. Of course, not nearly all channels of relevance suggest that greater market power or particular components thereof disfavor liability. And in some instances, such as in subsection III.C.3's analysis of the total welfare loss from a given price increase, the level of market power as defined by the Lerner index is an entirely appropriate measure; a higher level does systematically translate (under a total welfare standard) into greater social harm from anticompetitive effects and thus a stronger case for liability.

This juxtaposition reinforces the need to work backward, deriving the proper meaning of market power from the use to which the concept is to be put. In significant contrast to the standard approach, which posits *a priori* a notion of market power and then asks whether it exceeds some threshold, the right way to define and deploy market power is entirely derivative of the ways it may be relevant to an optimal liability decision in a given setting. Sometimes it may be useful to measure MP^A or MP^4 as conventionally defined (although a higher level will not necessarily favor liability, even if often it does). Sometimes, in addition or instead, one needs to consider some other notion, or just some of the components, or all of the components but separately measured since each has a different effect, possibly even with a different sign.

In short, the present analysis suggests that the whole idea that we should agree on *the* proper meaning of market power, or *the* proper measure or index thereof, is largely mistaken. *A fortiori*, the notion that there is some single threshold — which not only is constant across some nontrivial class of cases but also presupposes that there is a common thing whose measure must exceed it — is mistaken. Inquiries into the various determinants of market power and related concepts are often of great importance in analyzing allegedly anticompetitive practices, but the uses to which the results are appropriately put often differ markedly from those conventionally advanced in competition law doctrine and commentary.

D. Market Share Threshold Tests

To round out the discussion of doctrine and commentary on the role of market power in competition law, this section addresses an oddity that is widely recognized and understood but frequently ignored in

pertinent literature and in competition law practice.¹⁹⁶ Specifically, articulations of the law and analyses of allegedly anticompetitive practices routinely refer to market power and yet, when it comes to implementation, revert to an examination of the market share of the firm or firms under investigation or adjudication. This latter point holds across jurisdictions, including the United States¹⁹⁷ and the European Union.¹⁹⁸

¹⁹⁶ For a complementary discussion of some of the points in this section, see Louis Kaplow, *Market Share Thresholds: On the Conflation of Empirical Assessments and Legal Policy Judgments*, 7 J. COMPETITION L. & ECON. 243 (2011). See also Pinar Akman, *The Reform of the Application of Article 102 TFEU: Mission Accomplished?*, 81 ANTITRUST L.J. 145, 153 (2017) (“How market share on its own can indicate possible serious effects of abuse and how an authority can reach conclusions about abuse without even having identified market power (as opposed to market share) remains unexplained; it clashes with the ‘modern economic approach’ the Commission claims to adopt and is more in line with a form-based approach.”).

¹⁹⁷ On monopolization, see, for example, *United States v. Aluminum Co. of America (Alcoa)*, 148 F.2d 416, 424 (2d Cir. 1945) (announcing that a market share over ninety percent “is enough to constitute a monopoly; it is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three per cent is not”); U.S. DEP’T OF JUSTICE, *supra* note 44, at viii (“When a firm has maintained a market share in excess of two-thirds for a significant period and the Department concludes that market conditions likely would prevent the erosion of its market position in the near future, the Department will presume that the firm possesses monopoly power absent convincing evidence to the contrary.”); *id.* at 21–24; AREEDA & HOVENKAMP, *supra* note 143, at 418–20, 419 n.19 (collecting cases identifying the levels of market share required in a monopolization case); *id.* at 409 (stating the authors’ preferred presumptive requirement of a share exceeding 70–75% for five years); AREEDA, HOVENKAMP & SOLOW, *supra* note 67, at 263–64 (discussing varied pronouncements by U.S. courts regarding market share minimums in monopolization cases); and Gregory J. Werden, *Assigning Market Shares*, 70 ANTITRUST L.J. 67, 71 n.24 (2002) (citing cases in support of the proposition that appellate courts require more than a 50% market share in monopolization cases). See also AREEDA & HOVENKAMP, *supra* note 143, at 456 (“Principally as an aid to predicting dangerous future probability, the cases [on attempted monopolization] require that the defendant possess a measure of present proximity to completed monopoly. This requires some measure of power in a properly defined relevant market. As with monopoly, this requisite market position is normally measured through an analysis of market share.”); *id.* at 469–71, 469 n.60 (presenting cases articulating market share thresholds for attempted monopolization cases and offering their own market share recommendations). On tying, see, for example, *Jefferson Parish*, 466 U.S. at 26–27; AREEDA & HOVENKAMP, *supra* note 124, at 62–64, 84–85 (discussing required market shares in *Jefferson Parish* and subsequent cases); *id.* at 86 (“There is substantial merit in a presumption that market shares below 50 or 60 percent do not imply such power.”). For mergers, see, for example, U.S. MERGER GUIDELINES, *supra* note 48, § 5.3; AREEDA & HOVENKAMP, *supra* note 186, at 244–51 (summarizing the U.S. Merger Guidelines’ approach, offering the authors’ views thereon, and describing courts’ endorsement of the Merger Guidelines’ thresholds).

¹⁹⁸ See, e.g., *Discussion Paper on Article 82*, *supra* note 1, ¶ 31 (“It is very likely that very high market[] shares, which have been held for some time, indicate a dominant position. This would be the case where an undertaking holds 50% or more of the market, provided that rivals hold a much smaller share of the market. In the case of lower market shares, dominance is more likely to be found in the market share range of 40% to 50% than below 40%, although also undertakings with market shares below 40% could be considered to be in a dominant position. However, undertakings with market shares of no more than 25% are not likely to enjoy a (single) dominant position on the market concerned.” (footnotes omitted)); *EU Horizontal Merger Guidelines*, *supra*

Market power, as section C explains, is defined in modern competition law discourse as the degree to which price can profitably be elevated above the competitive level, so how can it be that tests for market power are articulated as market share thresholds (or as thresholds derived from market shares, notably, HHIs)? Market shares are at best a factor bearing on the magnitude of price elevation — consider the formula for the Lerner index in subsection III.C.2 — so a market share threshold test does not clearly communicate what the market power requirement actually is. As a thought experiment, suppose that both a competition agency and a defendant under scrutiny for monopolization or abuse of dominance agree precisely on market power: say, they stipulate that the Lerner index is 0.163. Who wins on the issue? Are there any statutes, agency guidance documents, authoritative court opinions, or treatises that answer this question?

In addition, it is well known that any market share measure depends on how one defines the market, and the market definition process in turn is widely regarded to have infirmities. Some (including this author) go further in arguing that this method of market power assessment is logically incoherent.¹⁹⁹ But even those most enthusiastic about the technique acknowledge that, in the so-called relevant market, the resulting market share can be associated with a very wide range of market power levels.²⁰⁰ This implies, as just mentioned, that market share threshold tests do not even approximately convey some particular, legally requisite level of market power and that the market share in a given case does not tell us the extant level of market power. As a matter of law and fact, we are thus at sea, which renders obscure what the law actually says about the facts of a given case with regard to the market power requirement.²⁰¹

note 48, ¶¶ 19–21; MAHER M. DABBAH, EC AND UK COMPETITION LAW 330 (2004); KORAH, *supra* note 192, at 121–23; WHISH & BAILEY, *supra* note 145, at 46–48 (stating that “it is interesting to consider the large range of situations in which EU and UK competition law require competition lawyers and their clients to consider market share figures for the purpose of deciding how to handle a particular case,” *id.* at 46, and presenting a two-page table of market share thresholds followed by forty-three supporting notes).

¹⁹⁹ See Kaplow, *supra* note 3; Kaplow, *supra* note 123.

²⁰⁰ See, e.g., Landes & Posner, *supra* note 5, at 947–48, 955 tbl.1, 958 tbl.2 (elaborating this point and presenting numerical examples documenting large variation).

²⁰¹ Many seem to believe that the hypothetical monopolist test (HMT) that arose in connection with modern merger guidelines can somehow address these questions, but how this can be so has never been explained and, as further analysis and reflection establishes, such is not possible. See Kaplow, *supra* note 123. Among the points developed in the cited article are: no target price effect is identified in various merger guidelines or related to the HMT and the benchmark HHI measures employed; the HMT is a counterproductive way to assess price effects in the three main types of mergers addressed (unilateral effects with homogeneous goods, unilateral effects with differentiated products, and coordinated effects); and application of the HMT method and HHI targets to simple cases can lead to wildly inconsistent results (safe harboring a merger to monopoly

These further puzzles about doctrine and commentary are secondary for purposes of this Article, which investigates how market power itself, in various guises and with respect to particular components, is actually relevant to an optimal determination of liability. Indeed, given the substantial heterogeneity in the relevance of senses and aspects of market power, it should be even harder to rationalize market share threshold tests that themselves are a significant step removed from a measure of the level of market power.²⁰² Nevertheless, given this Part's concern with how the Article's core analysis relates to the law and to existing understandings, and given the centrality of market share threshold tests in implementing the market power requirements examined in sections A through C, it is useful to elaborate the disconnect between market share tests and market power.²⁰³

First, consider the conceptual relationship between market power and market share. Market power is understood to refer to the ability profitably to elevate price above a competitive level. If one were to measure market power, the natural units would be percentages or absolute amounts of price elevation. Market share, by contrast, is a fraction of sales in some “market.” Granting that in many settings market shares are positively correlated with market power, it does not follow that they can in any sense be understood as measures of market power. Speed limits are not stated in revolutions-per-minute of vehicle engines. Weight limits are not delineated in cubic feet. Cost is not measured by the number of components, somehow defined. Whether

that would generate a price increase (of 4.9%) that is more than thirty-five times higher than that (0.13%) produced by another merger that would be presumptively challenged).

As discussed in Kaplow, *supra* note 3, at 459–65, and Kaplow, *supra* note 196, at 258–65, in principle there exists a solution to this problem involving the use of what might be termed a standard reference market: in essence a commonly agreed translation table from market shares to market power. For example, a 30% market share may simply be taken to mean — under this special convention — a Lerner index of 0.213; a 40% market share, an index of 0.339; and so forth. In fact, however, the requisite secret decoder ring does not exist; much less do agencies, experts, and adjudicators all have such rings with identical settings. This point further bears on market share grids in merger guidelines, for neither the guidelines themselves nor commentators, including those involved in creating the grids, indicate what market power — what price elevations — they believe to be associated with any of the HHI figures reported.

²⁰² To be clear, this section is not advancing the argument that market shares are unimportant. As mentioned below, all else equal, they are positively related to market power. In homogeneous goods markets, there exist formulas, such as those used in subsection III.C.2, wherein market shares can be combined with other information to yield particular measures (there, of the level of market power, conventionally defined, possessed by a dominant firm, and of the effect on price of a given increase in its rivals' marginal costs). Moreover, as noted at various points, there are particular settings in which market shares may be of direct interest; for example, a dominant firm with a greater market share may find it easier to exclude rivals through exclusive dealing arrangements. This section's concern is confined to the use of market shares and, in particular, market share threshold tests as measures of actual or legally requisite market power.

²⁰³ In essence, this section takes for granted that market power, as conventionally defined (see section C), is something that counts and assesses market share threshold tests accordingly.

in articulating rules that encapsulate a legal policy judgment or in performing measurements to ascertain compliance with the rules, it makes no sense to employ metrics that are not apropos to the actual dimension of interest. Doing so involves a category mistake. That competition policy routinely makes such a mistake, and that commentators are at some level aware of the gulf but nevertheless proceed as if the problem does not exist, is a rather odd state of affairs.

Second, from a pragmatic perspective, this conceptual error both in stating legal rules and in measuring market power in individual cases creates great difficulty. As mentioned at the outset of this section, even if opposing experts agreed precisely on market power, we would not know the outcome on the question. They could still disagree on market share (most likely because they disagree on the relevant market), and in any event the decisionmaker does not know how to match a market power estimate against the legal command, which is articulated in terms of market share rather than market power.

More typically — and precisely because market power requirements are embodied in market share threshold tests — disputes about facts revolve around market definition,²⁰⁴ which is required to generate a market share.²⁰⁵ The deep problems with this approach were already noted and will be set to the side here. Consider a narrower and familiar challenge, but one that proves on reflection to be intractable. It has been acknowledged for over half a century that market shares,

²⁰⁴ See, e.g., *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 469 n.15 (1992) (“Because market power is often inferred from market share, market definition generally determines the result of the case.”); AREEDA, HOVENKAMP & SOLOW, *supra* note 67, at 135 (“In resolving market or ‘monopoly’ power issues, the courts have typically relied heavily on market definition and on the defendant firm’s share of the market thus defined.”); RICHARD A. POSNER, *ANTITRUST LAW* 147 (2d ed. 2001) (“The importance of concentration ratios in the administration of the antitrust laws makes the definition of the market in which to compute the defendant’s market share critical.”); Jonathan B. Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L.J. 129, 129 (2007) (“Throughout the history of U.S. antitrust litigation, the outcome of more cases has surely turned on market definition than on any other substantive issue. Market definition is often the most critical step in evaluating market power and determining whether business conduct has or likely will have anticompetitive effects.”); Landes & Posner, *supra* note 5, at 938; Robert Pitofsky, *New Definitions of Relevant Market and the Assault on Antitrust*, 90 COLUM. L. REV. 1805, 1807 (1990) (“Knowledgeable antitrust practitioners have long known that the most important single issue in most enforcement actions — because so much depends on it — is market definition.”).

²⁰⁵ In understanding the centrality of market definition and the seeming unwillingness to abandon the method despite its shortcomings, a conjecture is that this practice is indeed driven by the presence of market share threshold tests: if one must show that the market share does or does not exceed a threshold, it appears necessary to define a market in which to measure the market share. There may also be causation in the other direction: given all the focus on market definition in assessing market power, it may seem natural that market share would become one’s market power metric.

even in a properly defined market, need to be interpreted in context.²⁰⁶ But what does this really mean? In light of the aforementioned difficulties, it does not appear that it can mean anything.

To illustrate the problem, consider the question of monopoly power or dominance, and suppose that it is agreed that the normal market share threshold is 50%. (For a more extended discussion that examines Judge Hand's famous market share pronouncement in *Alcoa*,²⁰⁷ see the reference cited in the margin.²⁰⁸) Assume further that the defendant's market share in the case at hand is 60% in the agreed-upon relevant market. However, as frequently happens, our defendant asserts that its 60% share conveys substantially less market power than is ordinarily associated with that share for various reasons (ease of entry, the presence of some substitutes), so that, with proper adjustment and interpretation, the 50% threshold test should not be deemed to be satisfied in this instance.

How can we assess this claim? Suppose that all the facts are agreed upon by both parties. Even so, a decisionmaker confronts basic hurdles in assessing the defendant's argument. To begin, no one knows (or has ever really stated) how much market power is "ordinarily" associated with a market share of 60%. So, even if we knew this defendant's market power exactly, how could we tell if it was more or less market power than that ordinarily implied by its 60% share? Since we have no idea, even on stipulated facts, we cannot know in

²⁰⁶ *United States v. General Dynamics Corp.*, 415 U.S. 486 (1974), is taken to stand for this view, and it in turn cited *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962), for the proposition that "statistics concerning market share and concentration, while of great significance, [are] not conclusive indicators of anticompetitive effects." 415 U.S. at 498 (citing *Brown Shoe*, 370 U.S. at 321–22); see Kaplow & Shapiro, *supra* note 49, at 1187–88 (stating that the supposition "that a given share in a properly defined market conveys the same market power, regardless of the market[,] . . . is emphatically false"); Landes & Posner, *supra* note 5; Pitofsky, *supra* note 204, at 1810–11 ("Most important, it does not necessarily follow that a firm accounting for 90% of sales in a properly defined market has substantial market power, nor that a firm with only 30% of sales in a properly defined relevant market lacks market power."); Schmalensee, *supra* note 195, at 1800–01; see also MODEL JURY INSTRUCTIONS, *supra* note 146, at C-17 ("A market share above 50 percent may be sufficient to support an inference that defendant has monopoly power However, if you find that the other evidence demonstrates that defendant does, in fact, have monopoly power despite having a market share below 50 percent, you may conclude that defendant has monopoly power.").

The view that market shares require interpretation is not confined to the United States. See, e.g., *Discussion Paper on Article 82*, *supra* note 1, ¶ 30; *id.* ¶ 32 ("The strength of any indication based on market share depends on the facts of each individual case. Market share is only a proxy for market power, which is the decisive factor. It is therefore necessary to extend the dominance analysis beyond market shares, especially when taking into account the difficulty of defining relevant markets in Article 82 cases"); Guidance on Article 82, *supra* note 1, ¶¶ 13–15.

²⁰⁷ *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 424 (2d Cir. 1945) (quoted *supra* note 197).

²⁰⁸ See Kaplow, *supra* note 196, at 265–70.

which direction (if any) to adjust our market power inference — up or down? — and, a fortiori, by how much.

The same problem arises with regard to the 50% threshold test. Even if we agreed that the defendant's market power was less than that conveyed by its 60% market share, how do we know if it is enough less to indicate that the market share threshold test of 50% is not satisfied? Because it is never stated how much market power is taken to be implied by market share threshold tests,²⁰⁹ there is no way to know this either.²¹⁰ It is clear that the actual market share — the facts of the case at hand — must somehow be translated into market power to be able to proceed, and likewise with the 50% market share threshold. That is, the conceptual problem with which we began — that market share is in the wrong type of units for purposes of the legal test and for assessment of the facts in a given case — manifests itself in an intertwined pair of practical obstacles in deciding cases intelligibly with regard to market power.²¹¹

This section examines a core problem with competition law's approach to market power, one sufficiently deep that it substantially undermines the intelligibility of the enterprise as officially articulated. It also casts doubt on the extent to which market power requirements serve as binding constraints on agencies or courts. This analysis also helps to explain why agencies and courts may often work backward (including in their choice of market definition) in order to produce the legal outcome that seems to make the most sense in light of the facts, as best they can be interpreted. From the perspective of the present Article, however, this set of difficulties is secondary.

The analysis of Part III, on the channels by which market power is relevant, emphasizes that market power is not a unitary concept: dif-

²⁰⁹ Ask oneself: Does a market share of 50% ordinarily convey a profit-maximizing price elevation of 2%? 22%? 72%? Or, conversely, if the required market power were stated as a minimum price elevation, say, of 20%, what market share would need to exist in a “typical” case in order for this threshold to be met? At least 28%? 88%? Neither authoritative legal pronouncements nor commentary purports to answer either type of question.

²¹⁰ This situation reflects the more general phenomenon that requisite market power levels, as such, are never articulated. A few comparative statements are commonplace, such as that “[m]onopoly power under § 2 requires, of course, something greater than market power under § 1.” *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 481 (1992). How much more? And more than *what*? The Court, like everyone else, does not give us even a hint. Instead, it immediately reverts to discussion of market shares. *See id.*

²¹¹ Reliance on market shares also cannot be justified on grounds of administrability. First, market share is parasitic on market definition, which cannot be undertaken coherently without first deciding on one's best estimate of market power (itself derived without regard to market definition). *See Kaplow, supra* note 3, at 465–74. Second, as just explained, because it is formally open to both sides in a dispute to contest the implications of any resulting market share, and moreover this is routinely done, one is then subject to the problem identified in the text, which brings one back to ascertaining directly how much market power is present and how much is deemed to be legally required, neither of which can be answered in market share terms.

ferent senses or components of market power matter in different ways in different settings, and not always in the familiar direction. Competition analysis that correspondingly grounds market power's relevance in an explicit decision-theoretic framework would not generate and sustain a formalistic, market-share-based approach that is so far removed from the economic reasoning that motivates attention to market power in the first place. Interestingly, this basic understanding of market power is not an esoteric one but rather is embraced, in rough terms, by agencies and courts as well as analysts and commentators, all of whom have long appreciated that the status of market shares as indicia of market power is rather dubious. Market share threshold tests stand between competition law's acknowledged purposes and the basic concept of market power. Competition law analysis and practice would be greatly clarified by eliminating this meddlesome middleman. However, the rest of this Article demonstrates that this correction would go only a small part of the way toward sorting out the true relevance of market power in competition policy.

E. Reflections

Consider briefly how competition law may have arrived at its current predicament, in which there is a fairly broad demand for demonstrations of market power in a vacuum, and where the concept is taken to have a particular meaning that is at best haphazardly related to competitive consequences (which are generally agreed to be what matters). Consider as well that this glaring gulf somehow remains largely invisible.

The seminal competition law prohibitions in the United States did not speak in terms of market power. Sherman Act section 1 prohibits agreements in restraint of trade, and when this edict was thought to be overly inclusive, it was embellished with the rule of reason, which in turn was defined a century ago in terms of whether practices promoted or suppressed competition.²¹² No market power requirement there. Yet. Various provisions of the Clayton Act likewise spoke explicitly in terms of substantially lessening competition. But they also spoke of tending to create a monopoly, and of course Sherman Act section 2 famously speaks of monopolization. Taken literally, these references would refer to the case in which there is only a single firm. But U.S. antitrust laws have been seen as purposive from the beginning, so section 2's notion of monopoly evolved into the current monopoly power requirement.²¹³ Similarly, Article 102 TFEU speaks of a dominant po-

²¹² See *supra* note 163.

²¹³ Doctrinally, consider two of the more prominent U.S. precedents. In *Alcoa*, Judge Hand famously proclaimed that possessing more than a ninety percent market share "is enough to con-

sition, terminology that (unlike monopoly) is not literally absolute but rather connotes a commanding stature. This term as well has come to be understood in terms of substantial market power.

There has been a longstanding symbiosis between the competition law sphere and economics.²¹⁴ In spite of past and continuing controversies regarding many of the particulars, it has not been contentious that economics has substantial relevance to competition law and policy. Courts and competition agencies have, from the outset, drawn on economic analysis, evidence, language, and metaphors. Hence, in attempting to develop a purposive notion of monopoly or dominance, it is unsurprising that competition law imported the concept of market power. Moreover, as suggested in Part III and embodied in a range of scholarship in economics and competition policy, there are a variety of ways that factors pertaining to market power are often relevant to the analysis of allegedly anticompetitive practices. Overall, the current state of affairs regarding market power's central role in competition law seems natural.

The analysis in this Article both celebrates and denounces this state of affairs. Market power — or, more often, factors bearing on its various components — is relevant in a wide range of settings. Part of the problem, actually, is the richness of this connection: there are many channels of relevance, which differ qualitatively (including in the direction of effects) and across contexts. As a consequence, the standard view of the role of market power — its meaning and its place in competition analysis — obscures so much that, in many respects, it is more misleading than helpful. It is unimportant to decide whether the glass is half full or half empty. We should retain and refine that which has value but be spurred by the void to undertake substantial additional research and contemplate large-scale revision.²¹⁵

stitute a monopoly; it is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three per cent is not." *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 424 (2d Cir. 1945). He offered neither reasoning nor precedent to support these figures, but it is easy to suppose that 90% felt close to 100% for a nonliteralist judge, whereas the lower figures did not. Similarly, *Grinnell*, perhaps the Supreme Court case most cited for section 2's monopoly power requirement, offered no citation for its proclamation thereof. *See United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966). In that case, a central dispute concerned market definition, and under the one adopted by the lower court and affirmed by the Supreme Court, *see id.* at 567, the defendant's share was 87%, again comfortably close to 100% for a nonliteralist court.

²¹⁴ See generally Louis Kaplow, *Antitrust, Law & Economics, and the Courts*, LAW & CONTEMP. PROBS., Autumn 1987, at 181.

²¹⁵ It is beyond the scope of this Article to delineate the extent to which, in various legal systems, one or another refinement or revision is consistent with current legal directives. It seems relevant that much of the current apparatus — including market power's role, in particular — is a creation of courts and agencies, who derived it from legislative commands that are recognized to be incomplete and often are not taken literally. Moreover, those derivations were thought to be purposive and, in particular, were guided by views regarding what was thought to make economic sense. *See also supra* note 158 (considering the extent to which practice in analyzing cases may

VI. CONCLUSION

This Article is motivated by a conundrum. On one hand, market power is the most important consideration in competition law decisionmaking across the globe, and this critical role is largely uncontroversial. On the other hand, the most basic questions about market power's true relevance are unanswered and, for the most part, not even asked. To illustrate the puzzle, many agency guidance documents, legal treatises, and court opinions, as well as economists' statements, extol market power's centrality and devote substantial effort to measuring it, but then largely ignore it when analyzing the potentially anticompetitive practices that market power supposedly illuminates. The standard definition of market power is one drawn from economics, yet the operation of market power requirements in competition law is largely ungrounded in existing research in industrial organization economics. Few seem to have noticed.

The present investigation begins by articulating and reflecting on what it means for market power to be a dimension of liability. At its core, the key feature is that the analyses of market power and of allegedly anticompetitive acts involve two distinct inquiries, which is to say that each can be properly undertaken without regard to the constituents of the other. This implicit separability assumption is powerful but highly implausible.

An explicit framework for optimal competition law decisionmaking identifies three channels by which market power may be relevant. The first involves classification: how market power bears on the likelihoods of anticompetitive and procompetitive explanations. Contrary to common practice, it is necessary to articulate both sorts of explanations at the outset because market power's relevance is relative, and its diagnosticity varies qualitatively and quantitatively across them. Greater market power is not always informative, and when it is, greater market power can even favor the procompetitive explanation.

Market power may also influence the magnitudes of anticompetitive harm and procompetitive benefit, both of which are significant in optimal liability determinations because there often exists substantial uncertainty about classification. Regarding anticompetitive harm, market power may affect the size of the price (and other) effects of challenged practices as well as the amount of social welfare loss from a given effect. Different notions of market power and even different components of a given notion may be relevant in different ways. For example, in a well-known model involving raising rivals' costs, two of

already deviate from doctrine, in which event practice may more readily adjust as new understandings emerge).

the three factors that contribute to a higher level of market power imply smaller, not larger, price effects.

Market power can also affect the degree of procompetitive benefit that may be sacrificed as a consequence of the mistaken imposition of liability. Greater market power can favor liability because procompetitive benefits fall (and may become negative) as market power rises. In other settings, however, including some involving innovation, the size of forgone procompetitive benefits may rise with market power, disfavoring liability.

Some of the foregoing points are illustrated by examination of the profitability condition for predatory pricing, referred to in some competition regimes as a recoupment requirement. It is explained why this condition is not always diagnostic. When it is, one sense of market power (the level of market power with the effects of the allegedly anti-competitive act) favors liability whereas another sense (the market power level without the act's effects) opposes liability — and this latter possibility is notable because it underlies a primary motivation for predation. Furthermore, in all of the instances in which market power is relevant, one way or the other, it nevertheless makes more sense to analyze directly the factor that market power bears on rather than to measure market power as such, which is merely correlated with the object of interest.

Taken together, the analysis demonstrates that there are many channels by which market power can be relevant, that its relevance varies greatly across channels and contexts, that the relevant notion of market power varies as well, and that different components of a given notion of market power can have different effects. Among the particular conclusions are that sometimes market power is not relevant to channels where its probative force is ordinarily taken for granted and sometimes greater market power or particular components thereof disfavor liability. The idea that we can and should ascertain *the* appropriate definition of market power and then set out to measure it is not merely an oversimplification; it is an enormous mistake.

These unconventional conclusions are then related to competition law doctrine and associated commentary. Taking market power to be an independent element in various competition law offenses stands in stark contrast to the actual relevance of market power to optimal decisionmaking. More broadly, the frequent siloing of market power analysis and act analysis — and the additional siloing of the analysis of anticompetitive effects and procompetitive effects — also clashes with sound analysis and serves to hide many of the shortcomings in existing approaches. Although the standard definition of market power in competition law is an economic one, referring to the ability to elevate price above a competitive level, this notion of market power need not be one that turns out to be useful. Finally, market power requirements are nearly always instantiated using market share thresh-

old tests that do not really speak in market power terms and are confused in other respects, adding another layer of obscurity to existing doctrine and discourse.

What, then, is the genuine relevance of market power to the optimal determination of liability? This Article suggests that there is not one channel of relevance but many, that market power's role is highly heterogeneous, and that the correct implications can be surprising, notably, when greater market power in some sense or along some dimension disfavors liability. Determination of market power's proper role must proceed by analysis and induction. First, we need to formulate the appropriate decision rule and use it to identify the channels by which market power may be relevant. Next, the resulting framework needs to be applied systematically to the large assortment of possible anticompetitive practices, associated anti- and procompetitive explanations, and different industry settings. Only then — and with attention to empirical evidence indicating the frequency of different pathways and permutations — can we hope to discern regularities that might justify particular rubrics, shorthands, or presumptions. This endeavor would benefit greatly from economic research that focuses more explicitly on the particular competition policy problem of distinguishing anti- and procompetitive explanations, the quantification of the harms and benefits associated with them, and the relative frequency of various phenomena explored here. Designing the most promising program of study, in turn, is only possible if one first specifies just how it is that market power might be relevant in the first place.