Richard S. Markovits

Economics and the Interpretation and Application of U.S. and E.U. Antitrust Law

Volume II Economics-Based Legal Analyses of Mergers, Vertical Practices, and Joint Ventures

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To Robert Leslie Markovits, my brother,
for his intelligence, sense of humor, generosity,
and courage—for always doing the best that
he can.

Foreword to Volume II

This two-volume study of *Economics and the Interpretation and Application of U.S. and E.U. Antitrust Law* has two parts. Part I (which is presented in Chapters 1–9 and appears entirely in Volume I) focuses on Basic Concepts and Approaches. Part II (which is presented in Chapters 10–15 and is divided between Volumes I and II) focuses on Applications. Oligopolistic conduct and predatory conduct are examined in Volume I (respectively in Chapters 10 and 11). Horizontal mergers, conglomerate mergers, vertical mergers and the pricing techniques, contract-of-sale provisions, and sales/consignment policies that are surrogates for vertical integration, and joint ventures and other types of functionally-analogous collaborative arrangements are examined in Volume II (respectively in Chapters 12, 13, 14, and 15). Volume II also contains a lengthy Conclusion, which (1) reviews the most important economic and legal concepts the study uses, its critique of market-oriented approaches to the analysis of antitrust-law issues, and the basic features of the non-market-oriented approaches to such issues it proposes; (2) compares post-1950 U.S. antitrust law as written with pre-EMCR and post-EMCR E.C./E.U. competition law as written; and (3) analyzes the extent to which errors in interpretation and application made respectively by U.S. and E.C./E.U. government antitrust authorities have increased or decreased the divergence between U.S. and E.C./E.U. antitrust law as applied. Detailed summaries of each of Volume II's chapters and of the Conclusion to the study that Volume II contains appear in Volume I in its Introduction to Part II: Applications, starting with the last paragraph of page 326 and continuing through the end of page 342.

This two-volume Law Study is written as a continuous work—*i.e.*, I have not included in Chapters 12–15 definitions of concepts those chapters use that are articulated in Volume I or summaries of analyses that those chapters rely on that are executed in Volume I. Still, much of Volume II should be fully comprehensible to readers who have not read Volume I. Thus, Chapter 13's critique of the toe-hold-merger doctrine and most of its critique of limit-pricing theory, Chapter 14's economic analyses of the functions of vertical integration and its various surrogates, and Chapter 15's economic analyses of joint ventures and the restraints that joint-venture agreements impose on the joint venture and/or its parents can be understood without reading Volume I. Moreover, although some of Part II's legal analyses are critically affected by specific features of Part I's conclusions about the legally-correct way to interpret respectively (1) the (specific-anticompetitive-intent) test of illegality, which I claim is promulgated by the Sherman Act, the object-branch of Article 101's test of illegality, and the exclusionary-abuse branch of Article 102's test of illegality and (2) the (lessening-competition) test of *prima facie* illegality, which I claim is promulgated by the Clayton Act, the effect-branch of Article 101's test of illegality, and the EMCR, many of its legal analyses do not turn on any non-obvious elements of the operationalizations of these tests that I believe are correct as a matter of law.

Nevertheless, I think it would be helpful for me to supply at this juncture definitions of some of the key concepts developed in Volume I and a summary of some related conclusions reached in Volume I on which Volume II relies. Volume I argues that antitrust law is concerned not only with price competition but also with "quality-or-variety-increasing-investment (QV-investment)" competition—the process through which product rivals compete away their potential profits by introducing additional, sometimes-superior product variants, opening up additional, sometimes-superior distributive outlets, or adding to their capacity or inventory (which enables them to offer buyers faster average speed of supply throughout a fluctuating-demand cycle). Volume I also develops a QV-investment-focused conceptual system, which it uses to analyze the determinants of equilibrium QV investment in any area of product-space, the impact of business conduct on the intensity of QV-investment competition in a relevant area of product-space, the conditions under which potential competition will be effective, the soundness of limit-price theory, when and why firms that face an effective potential competitor will find it most profitable to respond to the threat of entry by making a limit QV investment to deter entry, and the economically and legally correct definition of the concept of a predatory QV investment. That conceptual system distinguishes three QV-investment equilibria, which differ according to the relationship between the equilibrium QV-investment level in an area of product-space and the entry-preventing QV-investment level in that area of product-space, four barriers to entry and four counterpart barriers to QV-investment expansion that may be faced by an established firm (each of which refers to a specified subset of the factors that can cause the certainty-equivalent post-investment supernormal rate-of-return for a new QV investment [QV-investment incentives and disincentives aside—see below] to be lower than the pre-investment supernormal rate-of-return generated by the most-supernormally-profitable QV investments in the relevant area of product-space), the monopolistic QV-investment incentives or disincentives an established firm faces in relation to its making an additional QV investment in an area of product-space in which it is already operating (which reflect the impact that the new QV investment will have on the profit-yields of the investor's pre-existing projects by taking sales from them, by inducing rivals to make non-retaliatory responses, and/or by deterring rivals from making QV investments in the relevant area of product-space that would reduce the profit-yields of the investor's pre-existing projects in the above two ways more or less than its contemplated QV investment would do), and the natural oligopolistic QV-investment disincentives an established firm faces to make a QV investment when that investment's overall profitability will be reduced not only by monopolistic QV-investment disincentives but also by its inducing a rival to make an additional QV investment in the relevant area of product-space that would not otherwise be made.

Volume I also develops a conceptual system for describing the supra-competitiveness of prices, determining whether actual prices manifest horizontal price-fixing ("contrived oligopolistic pricing") or predatory pricing, and analyzing the impact of business conduct on the intensity of price competition. Although the details of this system vary according to whether the sellers in the relevant area of product-space set prices on an "individualized," customer-by-customer basis or establish a set of terms that apply "across-the-board" to all potential buyers, five concepts play an important role in the system's account of the gap between a seller's price and (conventional) marginal costs in all pricing contexts: (1) the seller's highest non-oligopolistic price (HNOP), the highest price the seller would find profitable to charge if its rivals know that it cannot react to their responses; (2) the seller's natural oligopolistic margin (NOM), the price-increase the seller obtains because its rivals know that, if they beat its initial offer, the buyer will give the seller an opportunity to rebid and the seller will find it inherently profitable to beat their offers; (3) the seller's contrived oligopolistic margin, the price-increase the seller obtains (or tries to obtain) by informing its rivals that it will react to their responses to its offer in inherently-unprofitable ways that will make it unprofitable for them to beat its offer—*viz.*, by retaliating against their beating its offer in one or more inherently-unprofitable ways to inflict harm on them and/or reciprocating to their foregoing the opportunity to make profits by beating its offer by allowing them to make additional profits by supplying other buyers by passing up the inherently-profitable opportunity to beat their contrived oligopolistic prices to those other buyers; (4) the seller's basic competitive advantage (BCA) in relation to a particular buyer (the sum of the number of dollars [monetary units] by which the buyer prefers the seller's product over the product of the buyer's second-placed supplier [the best-placed seller's buyer preference advantage or BPA] and the number of dollars by which the conventional marginal [or incremental] cost the best-placed seller must incur to supply the buyer in question are lower than their counterpart for that buyer's second-placed supplier [the best-placed seller's marginal cost advantage or MCA]); and (5) the contextual marginal costs (CMC) a best-placed individualized pricer's closest competitor must incur to match the best-placed seller's HNOP-containing offer (costs that arise primarily because the price that the second-placed supplier must include in its bid to match the best-placed supplier's HNOP-containing offer is discriminatory) or those costs' across-the-board-pricing counterpart (the number or dollars by which the price that an across-the-board pricer would find most profitable to charge if no-one engaged in oligopolistic pricing is increased by the fact that its rivals' BCAs would make it profitable for them to charge supra-marginal-cost prices even if no one practiced oligopolistic pricing).

Volume I also explains why definitions of both classical economic markets and (allegedly-functional) antitrust markets are inevitably arbitrary, not just at their peripheries but comprehensively, indicates that for this reason this study usually substitutes the acronym ARDEPPS (for arbitrarily-defined portion of product-space) for the conventional term "market," critiques a large number of protocols for market definition proposed by economists and government antitrust authorities, and explains why market-oriented approaches to analyzing the antitrust legality of business conduct can never be cost-effective (because market definitions achieve the remarkable double of increasing cost while decreasing accuracy in that data on the non-market-aggregated parameters that are used to define markets have more predictive power than data on any market-aggregated parameter could have).

Finally, I think it would be helpful for me to articulate the operationalizations of the two tests of illegality that Volume I argues are promulgated by both some provisions of U.S. antitrust legislation and some provisions of the E.C./E.U. treaty (or the EMCR). In my judgment, correctly interpreted as a matter of law, the specific-anticompetitive-intent test declares covered conduct illegal if its perpetrator's or perpetrators' *ex ante* perception that the conduct would be profitable was critically affected by the perpetrator's or perpetrators' belief that it would or might increase its or their future profits by reducing the absolute attractiveness of the best offers against which it or they would have to compete in one or more ways that would render the conduct profitable though economically inefficient if the profits the conduct would yield would not otherwise diverge from the conduct's impact on economic efficiency. In my judgment, correctly interpreted as a matter of law, the lessening-competition test declares covered conduct *prima facie* illegal if the conduct inflicts a net equivalent-monetary loss on the potential customers of the perpetrator(s) and the potential customers of the perpetrator's or perpetrators' product-rivals "combined" by reducing the absolute attractiveness of the best offers they respectively receive from any inferior supplier.

I hope that the preceding material will enable those readers of Volume II who have not read Volume I to fully comprehend Volume II. Readers of Volume II who are experiencing difficulties that they think can be traced to their not having read Volume I can always refer to the relevant sections of that volume, which the chapter-by-chapter summaries in pages 1–5 of Volume I should help them identify.

Introduction to This Study

This Study's Coverage and Distinctive Features

This study analyzes the non-monopolizing private functions, possible monopolizing or abusive character, and competitive impact of the various types of business conduct that antitrust laws cover. More specifically, it addresses these issues as they apply to

1. the so-called "abuse" of monopoly power,
2. the various types of oligopolistic conduct in which firms can engage,
3. the various types of predatory conduct in which firms can engage and some types of business conduct that have been incorrectly characterized as predatory,
4. horizontal mergers and acquisitions,
5. conglomerate mergers and acquisitions,
6. various contractual and sales/consignment-policy surrogates for vertical integration—price discrimination of different sorts, tie-ins, reciprocity, systems rivalry, bundling, resale price maintenance, vertical territorial restraints and customer-allocation clauses, long-term full-requirements contracts, single-brand and non-single-brand exclusive dealing, and sales (consignment) policies of supplying only those independent distributors (using only those independent consignees) whose pricing, promotion, and other choices the supplier deems appropriate,
7. vertical mergers and acquisitions, and
8. horizontal, conglomerate, and vertical joint ventures (including R&D joint ventures and patent pools).

In addition to developing its own economic analyses of these types of business conduct and explaining how U.S. and E.U. antitrust "agencies" and courts should analyze their legality, it criticizes the standard economic analysis of many of these types of conduct, the conclusions that economists and legal scholars have reached about the way in which courts should analyze their legality, and the ways in which U.S. and E.U. antitrust agencies and courts have actually handled such conduct.

There is nothing unusual about the set of business practices this study investigates or the broad issues it addresses. However, the study's approach to these issues is in several respects unique. This Introduction provides preliminary accounts of the study's five major distinguishing features. The separate Introductions to the study's two parts and the Table of Contents contain respectively chapter-by-chapter and section-by-section summaries and outlines of the study's coverage.

This study's first major distinguishing feature is its explicit definition of various key antitrust-economics concepts. The study provides a basis for its definitions by delineating the criteria one should use to evaluate definitions of the kinds of concepts in question—*viz.*, (1) the extent to which the definition conforms with professional and, when relevant, popular usage and intuitive understanding and (2) the extent to which the definition creates a concept that can play a useful role in a valuable analysis. It then articulates operational definitions of such concepts as "the impact of a choice on economic efficiency," "the impact of a choice on the intensity of competition," "monopolization," "oligopolistic conduct," and "predatory conduct" and applies the criteria it has delineated to justify the definitions it proposes.

This feature of this study rectifies a deficiency in the literature: economists and lawyers that use economics to execute antitrust-law analyses (1) have never discussed the criteria one should use to evaluate definitions of these sorts of concepts, (2) have never articulated explicit definitions of "oligopolistic conduct" and "predatory conduct" and have articulated various underspecified, inconsistent, and I believe inappropriate or "incorrect" operationalizations of "the impact of a choice on the intensity of competition" and "the impact of a choice on economic efficiency," and (3) have never tried to justify the definitions of these concepts they have implicitly or explicitly adopted.

Even at this juncture, an example may be useful. This study defines a choice to be a "primary oligopolistic choice" if and only if the chooser's *ex ante* perception that it would be profitable was critically affected by its perception that its rivals would or might realize that it could react to their responses to the choice in question. The study further refines this concept to distinguish between primary oligopolistic choices to initiate a "contrived" oligopolistic interaction and primary oligopolistic choices to initiate a "natural" oligopolistic interaction. On this study's definition, an oligopolistic interaction is "contrived" if its initiator induced the responder to believe that the initiator would react to its response in a way that would render unprofitable for the responder a non-cooperative response the responder would otherwise have found profitable by promising to reciprocate to the responder's otherwise-unprofitable cooperation (*i.e.*, to react to a cooperative response in an inherently-unprofitable[873] way that would benefit the cooperative responder) and/or

[873] In my vocabulary, a business believes that a choice it is contemplating making is "inherently profitable" if its perception that the choice will be profitable does not depend on any tendency it believes the choice may have to reduce the absolute attractiveness of the offers against which the business will have to compete in the future in some way that would tend to make the choice more profitable than economically efficient in an otherwise-Pareto-perfect economy—most commonly, by driving a rival out or inducing a rival to compete less hard against it. By way of contrast, in my vocabulary, a business choice is said to be "strategic" if the business' *ex ante* perception that the

by threatening to retaliate[874] against a responder that made a non-cooperative response (*i.e.*, to react to a non-cooperative response in an inherently-unprofitable way that would impose losses on the non-cooperative responder). By way of contrast, on this study's definition, an oligopolistic interaction is "natural" if its initiator did not have to rely on any such anticompetitive promise and/or threat to induce the responder to conclude that the initiator would react to the responder's cooperative and non-cooperative responses in ways that would render unprofitable for the responder non-cooperative responses the responder would otherwise find profitable—more positively, if the initiator could rely on the responder's realization that it would be both possible and inherently profitable for the initiator to react to a non-cooperative response in a way that would render unprofitable for the responder a non-cooperative response the responder would otherwise find profitable (for example, on the responder's realization that the relevant buyer would give the initiator the opportunity to rebid and that the initiator would find it inherently profitable to beat any non-cooperative response-offer the responder would otherwise find profitable to make to the buyer in question).

As we shall see, although some "oligopolistic pricing" models focus on conduct that is oligopolistic in my sense, other so-called "oligopolistic pricing" models focus on conduct that is not oligopolistic in my sense—specifically, focus on conduct that is influenced by the actor's realization that the pay-off to its choice will be affected by the response it elicits from one or more particular, identifiable rivals. As we shall also see, economists and lawyers have also not distinguished contrived and natural oligopolistic interactions. This study explains why both (1) the distinction between the three-stage interaction I denominate "oligopolistic" and the two-stage interaction economists consider to be oligopolistic and (2) the distinction between oligopolistic interactions that are contrived and natural in my sense are legally critical.

The study's second major distinguishing feature is its recognition that the economy generates a wide variety of categories of economic inefficiency whose magnitudes business conduct and antitrust policies can affect and that the impact of business conduct on the magnitudes of only some of these categories of economic

choice would be profitable is critically affected by the business' belief that the choice will or may reduce the absolute attractiveness of the offers against which it will have to compete in the future in some way that would tend to make the choice more profitable than allocatively efficient in an otherwise-Pareto-perfect economy. For an explanation of the point of the qualification articulated at the end of the preceding sentence, see Chaps. 3 and 4 *infra*.

[874] In my usage, a business' response to a rival's choice is said to be retaliatory if it is a strategic response that is designed to increase the retaliator's future profits by deterring rivals that it does not drive out from competing as hard against the retaliator in the future as they would otherwise have done. This usage distinguishes "retaliatory responses" not only from non-strategic responses but also from "predatory" strategic responses—*i.e.*, responses made by actors that would not have found them profitable *ex ante* but for their belief that they would or might increase their profits in the long run by driving a rival out or deterring a rival from entering when this effect would make the choice in question profitable through economically inefficient in an otherwise-Pareto-perfect economy.

inefficiency are relevant to the conduct's legality under either U.S. antitrust law or E.C./E.U. competition law. Thus, the study explains why the impact that business conduct has on the amount of misallocation the relevant economy generates (1) by producing the goods it does produce in economically-inefficient proportions, (2) by allocating too many resources from the perspective of economic efficiency to the creation of quality and variety in some areas of product-space relative to the amount of resources it allocates to creating quality and variety in other areas of product-space, (3) by allocating too many resources from the perspective of economic efficiency to research designed to discover more-economically-efficient production processes to use to produce goods in some areas of product-space relative to the amount of resources it allocates to research designed to discover more-economically-efficient production processes to produce goods in other areas of product-space, and (4) by allocating resources among unit-output-increasing, quality-or-variety-creating, and production-process-research-executing uses in economically-inefficient proportions are irrelevant to its legality under both U.S. antitrust law and E.C./E.U. competition law while any tendency business conduct has to increase economic efficiency (5) by increasing the proficiency with which its perpetrator or perpetrators produce their products using known technologies, distribute their products, and finance their operations, (6) by increasing the intrinsic economic efficiency of the product and production-process research-projects they undertake, (7) by increasing the proficiency with which they execute the research projects they undertake, and (8) by increasing the economic efficiency of the portfolio of research projects a group of businesses execute by enabling them to avoid executing a set of projects that is less-economically-efficient than an alternative set of the same magnitude could be because the projects they executed were economically-inefficiently duplicative is relevant to its legality under U.S. antitrust law and E.C./E.U. competition law.

The study's third major distinguishing feature is the conceptual system it uses to analyze the impact of conduct on the intensity of price competition. Conventional analyses (1) focus on the total difference between price and marginal cost and (2) do not analyze separately the determinants of the intensity of price competition in individualized-pricing contexts (in which sellers set separate prices to each of their potential customers) and in across-the-board-pricing contexts (in which sellers set a single per-unit price that applies to all buyers). This study distinguishes a number of components of the gap between price (P) and marginal cost (MC) and focuses separately on individualized-pricing and across-the-board-pricing contexts. Chapter 2 delineates in detail all the components of the difference between a seller's actual price and marginal cost that are useful to distinguish, including various components of the gap between a seller's actual price and the price it would find most profitable to charge if no-one made any relevant error and its rivals assumed that it could not react to their responses to its price (the firm's NEHNOP or no-error highest-non-oligopolistic price) and various components of the gap between a firm's NEHNOP and its conventional marginal cost. I argue that one should distinguish the components in question because only by doing so can one understand the relationships between or among the components in question, accurately predict the impact of various types of conduct such as horizontal mergers on the prices the merger partners and their independent rivals charge, or accurately assess whether the price a given seller is charging is "oligopolistic" or "predatory." The study focuses separately on individualized-pricing and across-the-board-pricing contexts because some of the components of the P–MC gap of a seller that is setting individualized prices that are useful to distinguish have no exact across-the-board-pricing counterpart, because the determinants of the magnitudes of some of the components of the gap between an individualized-pricing seller's P–MC gap are different from the determinants of the magnitudes of the counterpart components of an across-the-board-pricing seller's P–MC gap, and because one therefore cannot accurately predict the impact of given conduct on the P–MC gap of its perpetrator(s) and its (their) rivals or accurately assess whether a given seller's price is oligopolistic or predatory without paying attention to this distinction between individualized and across-the-board pricing.

The study's fourth major distinguishing feature is (1) the fact that it analyzes the impact of business choices and government policies on quality-or-variety-increasing-investment (QV-investment) competition separately from their impact on price competition and (2) the conceptual system it uses to analyze the impact of business choices or government decisions on QV-investment competition. In my vocabulary, the expression "QV-investment competition" refers to the process in which firms compete away their supernormal profits by making quality-or-variety-increasing (QV) investments in a given area of product-space—*i.e.*, by introducing additional or superior product variants, by opening up additional or superior distributive outlets, or by adding to their capacity or inventory to increase the average speed with which they can supply their customers throughout a fluctuating-demand cycle.

Obviously, economists recognize that firms engage in QV-investment competition as well as price competition. However, because they think that (1) the same factors have the same impact on the intensities of price and QV-investment competition, (2) increases of the same magnitude in price and QV-investment competition (*i.e.*, of equal net equivalent-dollar value to relevant buyers) have the same positive impact on economic efficiency, and (3) increases of the same magnitude in price and QV-investment competition have the same impact on the distribution of income and/or its desirability, they see no need to analyze the impact of any business choice or government decision on the intensity of QV-investment competition—*i.e.*, they believe that one can learn everything one needs to know about the competitive impact, economic efficiency, distributive desirability, and overall desirability of any business choice or government decision by analyzing its impact on price competition. I disagree with this conclusion because I reject all of its predicates. In particular, I believe that

1. as Chap. 2 makes clear, the determinants of the impact of a business choice or government decision on the intensity of price competition are different from the determinants of such a choice's impact on the intensity of QV-investment competition and a given choice can increase price competition while decreasing QV-investment competition and *vice versa*;

2. for reasons that The Welfare Economics of Antitrust Policy and U.S. and E.U. Antitrust Law explains in great detail, although increases in price competition almost always increase economic efficiency in our actual, highly-Pareto-imperfect economy, increases in QV-investment competition usually decrease economic efficiency on balance in our actual economy; and
3. because increases in price competition usually benefit the poor more than do comparable increases in QV-investment competition, both the distributive impact of and the distributive desirability from a wide variety of normative perspectives of increases in the two types of competition are almost certainly quite different.

This study, therefore, analyzes the impact of the business choices and government decisions it examines on QV-investment competition as well as on price competition, and its policy companion analyzes separately the economic efficiency/overall desirability of any tendency that relevant business choices and government decisions have on QV-investment competition and price competition. For this purpose, I have developed another unique conceptual scheme. This scheme defines eleven determinants of the intensity of QV-investment competition in any arbitrarily-designated area of product-space (ARDEPPS)[875]: four barriers to entry, four barriers to expansion, the monopolistic QV-investment incentive a potential QV investor that is already operating in the relevant area of product-space may face, the monopolistic QV-investment disincentive such a potential QV investor may face, and the natural oligopolistic QV-investment disincentives that two or more such potential QV investors may face. Chapter 2 carefully defines all of these concepts.

I have already indicated that this conceptual system is unique. Admittedly, economists do talk about "barriers to entry." However, they do not define such barriers in the way I have done—indeed, do not define them clearly or consistently and do not use them to analyze QV-investment competition (use them instead to predict whether established firms will engage in "limit pricing"—*i.e.*, will charge lower prices than they would otherwise charge to deter new entry). Moreover, to my knowledge, economists have never discussed either the barriers to expansion established firms face or any of the QV-investment incentives and disincentives I identify.

The study's fifth major distinguishing feature is its rejection of market-oriented approaches to the measurement of monopoly and oligopoly power, the analysis of the monopolizing character of any type of business conduct, or the prediction of the competitive impact of any type of business conduct. None of the analyses this study executes uses such an approach—*i.e.*, bases predictions or post-dictions on any kind of market-aggregated data (for example, on market-share figures, four-firm or

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[875] The text refers to an arbitrarily-designated portion of product-space rather than a market because, for reasons that the text of this Introduction outlines below and Chap. 6 explains in detail, regardless of the plausible criterion one uses to evaluate any set of market definitions, market definitions are inherently arbitrary not just at their periphery but at their core.

eight-firm seller-concentration ratios, post-merger Hirschman-Herfendahl Indices [HHIs—the sum of the squares of the market shares of all firms placed inside an allegedly-relevant market], or merger-induced increases in HHIs). Admittedly, the study's definitions of barriers to entry and expansion and its analyses of the impact of business choices and government decisions on the intensity of QV-investment competition do make reference to arbitrarily-designated areas of product-space (ARDEPPSes). However, my use of these concepts is not inconsistent with my claim that the study consistently rejects market-oriented approaches. At no point do I propose doing anything that requires the oxymoronic non-arbitrary definition of an ARDEPPS—*i.e.*, my use of the concept of an ARDEPPS is always purely heuristic.

As Chap. 6 explains, I reject market-oriented approaches to any of the issues with which this study and/or its policy sequel are concerned for two partially-overlapping reasons. First, I reject market-oriented approaches to any type of antitrust-economics analysis because, regardless of whether one evaluates sets of market definitions (approaches to market definition) by the extent to which they (the market definitions they yield) (1) satisfy professional (and perhaps popular) assumptions about the competitiveness of products placed within the same market and the difference between the competitiveness of products placed in the same market and the competitiveness of products placed in different markets or (2) play a useful role in a valuable analytic protocol,[876] market definitions (the choice among alternative approaches to market definition) are arbitrary not just at their periphery but at their core. Second, I reject market-oriented approaches to antitrust-economics analyses because, even if (contrary to my conclusion) some set of market definitions could be shown to be superior to all its alternatives, market-oriented approaches would not be cost-effective. In my judgment, regardless of the question at issue, market-oriented approaches always achieve the remarkable double of increasing cost while decreasing accuracy because (1) market definitions are costly and (2) the non-market-aggregated data one uses to define relevant markets have more predictive power than the market-aggregated figures (on market shares, market-concentration ratios, and HHIs) that market-oriented approaches use market definitions to generate.

Five final introductory points. First, I want to admit at the outset that the question to ask about conceptual systems and analytic approaches is not whether they are "right" or "wrong" but whether they are useful—whether (1) the conceptual systems call attention to important issues that could not be articulated without them (or, at least, without paying attention to the distinctions they draw) and (2) whether the conceptual systems and theoretical approaches enable the analyst to resolve more accurately or cost-effectively both the novel issues the conceptual systems enable the analyst to identify and important issues that have been or can be

[876] Note that the criteria in question are exemplars of the two criteria by which I think one should evaluate any conceptual definition of the type to which the concept of a market belongs: respectively, (1) is the definition consistent with professional and, when relevant, popular usage and intuitive understanding and (2) will the definition create a concept that can perform a valuable role in a useful analysis.

articulated without making reference to any of the conceptual innovations under scrutiny. Second, I want to assure readers that all the innovative concepts and approaches just outlined will be described and discussed in far more detail in the chapters that follow. Third, and relatedly, I want to point out that readers will not be able to assess the value of the distinguishing conceptual and analytic features of this study until they have seen them in use (until they have read the study). The proof of this pudding is in the eating. Fourth, a vocabulary point: throughout this text, I refer to the *categories* of resource allocation and resource misallocation I distinguish (while referring to *types* of Pareto imperfections and resource-uses) to remind readers that the categories in question are usually counterfactual (though analytically useful—*i.e.*, are in one sense artificial as opposed to natural).

And fifth, because the two volumes in which this study is being printed have been given different ISBN numbers, the first page of Vol. 2 must begin with page-number 1. To differentiate the page-numbers in the two volumes, upright page-numbers are used in Vol. 1, and italicized page numbers are used in Vol. 2. The Index incorporates this font-practice—*i.e.* in the Index, upright page-reference numbers refer to page-numbers in Vol. 1, and italicized page-reference numbers refer to pages in Vol. 2.

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