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## Issue Overview

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Today's generation, far more than its predecessors, recognizes and pursues the rewards of highly competitive, global markets. Worldwide support for more open-market economic activity is still strong. However, there is resistance. Some is ideological, but much is structural. Structural resistance includes remaining border barriers to fully global market integration, such as tariffs, and entry (or behind-the-border) barriers to fully competitive markets, such as restrictions on the number of suppliers of banking, insurance, transportation, and telecommunications services.

What are the most important remaining barriers to open markets? No one has a persuasive answer. But most agree that border barriers are waning in importance relative to entry barriers. More precisely, tariffs, quotas, and border discrimination are being negotiated away, while regulatory and other barriers that protect incumbent firms by keeping out new suppliers are declining more slowly, especially in large service sectors. Sometimes even privatization replaces a public monopoly with a private monopoly. Consequently, many would agree that, over the past several decades, international trade has liberalized faster than domestic markets have.

This book tries to answer the questions that follow from these observations: If more open global markets are still desired, what is the most promising route? Is that route freer trade, freer entry, or some artful combination of the two? What provides the greatest resistance to open global markets? Is it public border barriers, private anticompetitive practices, proincumbent regulation, or some mix of these? What are the most feasible and attractive ways to enhance market access worldwide (what we will call contestability). Is it access for exporters, foreign investors,

and new domestic suppliers alike, or is there already too much contestability? If there is too much, in what sense and under what circumstances does this occur? Finally, what policies support contestability, both within and among countries?

The answers lie in judicious experimentation with a blend of principles, policies, and institutions. The ingredients come from the worlds of competition policy and international trade policy.

This study flows from fundamentals. However, to avoid boring the specialist, our account puts the fundamentals in new light and new context. In this introduction, we describe the *raison d'être* of competition policy: how it interacts with trade policy, and why that interaction has become an international concern. Efficiency, fairness, and conflict are the key features.

In the concluding chapter of this volume, we outline policy initiatives that are both desirable and feasible in light of the fundamentals. First, we propose sensible first steps toward international cooperation that include fact-finding, consultation, dispute settlement, and maintenance of sovereign initiative. Then we propose a tougher but more rewarding second step: an agreement on Trade-Related Antitrust Measures (TRAMs) patterned on the Uruguay Round's Trade-Related Intellectual Property (TRIPS) agreement. The agreement would cover cartels, market-access-foreclosing practices, and mergers and acquisitions that are international in scope. Finally, we explore the long-run potential for replacing anticompetitive aspects of current trade remedies (antidumping and countervailing duties) with more efficient and more equitable competition-policy safeguards.

Competition policy and international trade policy are already being blended in the World Trade Organization (WTO) via two routes. First, a formal working group on trade and competition policy has been established to examine many of the same issues this book raises (see box 1). Second, certain recent international trade disputes before the WTO spring from issues of competition policy (see box 2).

## **The Philosophy and Economics of Competition Policies in Open Economies**

Concern with competition policy in global trade negotiations has mushroomed.<sup>1</sup> It is at the root of negotiations in airlines, basic telecommuni-

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1. Scherer (1994) and Green and Rosenthal (1996) compare competition-policy regimes over time and in multiple countries and make policy recommendations. This volume covers these topics but emphasizes the fundamental economics and institutions as well as the integration of existing competition-policy and trade-policy structures at the global level. Scherer (1994) and Levinsohn (1996) are excellent introductions to the economics of competition policies in a global economy. Kühn, Seabright, and Smith (1992) and Ordober

### **Box 1 The WTO Working Group on Trade and Competition Policy**

At the first-ever ministerial-level meeting of the member nations, the WTO authorized the creation of a Working Group on Trade and Competition Policy. Leadership on this matter was exercised largely by the European Union. The formal charge of the working group is as follows (as excerpted from the declaration of the meeting):

to study issues raised by Members relating to the interaction between trade and competition policy, including anti-competitive practices, in order to identify any areas that may merit further consideration in the WTO framework.

In a press release issued by the WTO, it was emphasized that “[t]he issue is not whether the WTO should negotiate rules in this area but whether it should initiate an exploratory and analytical work programme to identify areas requiring further attention in the WTO framework.”

In May 1997, it was announced that the chairman of the working group is Frédéric Jenny of France.

cations, financial services, insurance, and intellectual property. In these areas, international differences in regulatory regimes and rules have created highly varied competitive structures. As noted earlier, differences in generic competition policies have been central to recent trade disputes over market access for autos and auto parts and, more recently, for film and photographic products (see box 2). Such differences have also led to conflict over the announced merger of the US aerospace firms Boeing and McDonnell Douglas, which we address later.

Most of what has been written on competition policy is by and for specialists. By contrast, we make the case for a worldwide approach to competition policy based on economic principles. We then outline a judicious agenda for action, ideally to inform the progress of the WTO's new working party.

### **Market Competition and Competition Policy: An Introduction**

In the broadest sense, competition policy determines the institutional mix of competition and cooperation that gives rise to the market system.

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(1990) are equally good introductions to the economics of competition policy, but they pay less attention to the global economy. First, Fox, and Pitofsky (1991); Gifford and Matsushita (1996); and Mathewson, Trebilcock, and Walker (1990) are excellent introductions to legal aspects. Hindley (1996), Hoekman (1997a), Hoekman and Mavroidis (1994), and Lloyd and Sampson (1995) are good political and diplomatic introductions. See Graham (1994, 1995, 1996a, 1996b), Graham and Lawrence (1996), and Richardson (1995, 1997) for our contributions to this literature.

## **Box 2 Behind-the-border practices and international trade disputes**

A number of recent international trade disputes have centered on barriers to market access that are behind-the-border in nature and fall into the domain of competition policy. One such case was the 1995 dispute between the governments of the United States and Japan over auto parts.

The issues raised in this dispute had little or nothing to do with border measures. Rather, the main issue was the level at which Japanese automakers (and firms engaging in servicing automobiles in Japan) purchased parts used as inputs to the production process from nontraditional suppliers. The United States Trade Representative (USTR) alleged that for most purchases of parts the Japanese automakers relied on traditional Japanese suppliers with whom they have long-standing business relations. Foreclosure allegedly resulted, causing US auto parts manufacturers to lose potential sales even though (it was argued that) the US-made product was either better or lower in cost (or both) when compared to the Japanese-made product. It was further alleged that the same exclusive dealing was practiced by the US subsidiaries of Japanese automakers—that is, the Japanese firms Toyota, Nissan, and Honda also sourced most of their parts from only their traditional suppliers (including US subsidiaries of these suppliers).

It is not our intent here to evaluate the allegations or the remedial actions that were announced in June 1995 as part of a negotiated bilateral settlement of the dispute. We simply note that this was not a traditional trade policy dispute. Instead, it centers around basic issues of competition policy: the alleged exclusive dealing by the Japanese firms—a restrictive business practice that is considered a vertical restraint.

This is not the only such case in recent times that has raised issues of market foreclosure by virtue of vertical restraints. Earlier trade disputes between the United States and Japan over semiconductors raised many of the same issues as in the auto parts case, with the key difference that the vertical relationships in this instance were often intrafirm, that is, Japanese users of semiconductors often sourced these items from different divisions of the same company.

A recent US complaint against Japan involves control of distribution channels by Japan's major producer of photo-graphic film and paper products, with the effect of allegedly foreclosing US exports. This case is currently before the WTO disputes settlement body.

While competition is familiar to most, few reflect deeply on cooperation. Almost all market competitors are firms—business organizations (social groupings) that are, for the most part, internally cooperative, not competitive. Firms are the principal suppliers and buyers of most products and services, while consumers (households) generally buy only final goods, which are assembled from materials and components bought and sold many times by firms, through a long series of exchanges in input markets and intrafirm transactions. The economic man or woman so common in

elementary economics textbooks is a stylized fiction, and so is the individual entrepreneur. Typical market transactions involve competition among firms. Many of these firms, including subtypes such as labor unions, can legally own and exchange property and differentiate and isolate their legal liability as a group from the liability of their members.

Thus, the market system is socially populated, socially rooted, socially conditioned, and socially constructed. It is far from the chaotically competitive law of the jungle that it is sometimes confused with. A global market system will be socially constructed and conditioned, too, by both policy design and cultural inertia.

This competitive-cooperative market system is governed by formal social regulations called competition policy. Competition policy aims to make the market work better. If designed properly, it is a market-perfecting part of the social infrastructure. It regulates the intensity of competition and the scope of cooperation and defines the legal boundaries for both. Examples of impermissible competition and impermissible cooperation, respectively, are predation (equivalent to the premeditated murder of a market competitor) and coercive collusion (one firm being forced to join a group of others).

Like all social regulations, competition policy reflects history and culture. Therefore, it is constantly changing, and it always differs among countries. Not all countries have a formal, codified competition policy,<sup>2</sup> but all have informal competition conventions. As markets become global, however, differing competition policies and conventions have come into contact. Some of this contact has led to conflict, for example, over market access in China; some has led to constructive comparison, with an eye to identifying the fittest policies for growing global markets, as in deciding the type and duration of protection that an innovator needs from rivals who would copy his or her intellectual property.

To meet the two broad objectives of competition policies, efficiency and fairness, every country has developed conventions or rules of conduct for firms acting alone and together, over short intervals of time, and over their entire corporate lifetime. Below, we group these conventions into four concerns of competition policy. It turns out, unsurprisingly, that what is welcome competition policy from the perspective of one firm, one industry, or one country is not always welcome in other firms, industries, or countries. In many places, but especially in the last section of this introduction, we describe the ways that competition-policy objectives and concerns differ for an economy as a whole and for multiple economies in global interaction.

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2. The number of countries implementing formal competition policies in recent years has risen sharply (Green and Rosenthal 1996; Tineo 1997). Most Eastern European and Latin American countries and South Korea, Mexico, and Taiwan have recently promulgated or revised their legislation. A number of other countries have policies in planning or drafting stages.

## Objectives of Competition Policy: Efficiency and Fairness

Surprisingly, competition is not the objective of competition policy. Efficiency and fairness are the objectives, and when these conflict, the objective is to evaluate the trade-off between them.

### *Goals and Instruments*

Competition policies around the world seek a blend of efficiency and fairness<sup>3</sup> in their markets. Efficiency has a fairly clear economic meaning. It is a conservational objective; it aims to minimize waste. Efficiency is the ideal of getting the most out of the resources at hand. Examples are an efficient market that generates goods that buyers really want at least cost and an efficient charity that moves resources from one project to another so that the value of the good generated by those resources is at its highest. Likewise, an efficient society seeks the highest standard of living (material and nonmaterial) consistent with its available resources.

If society includes only those people currently living, and the relevant time frame is short (days, months, or even a few years), then that society pursues static efficiency. But if it includes future generations, and the relevant time frame is longer (five years, a decade, a new generation), it pursues dynamic efficiency. Practices that are statically efficient may not be dynamically efficient; the converse is also true. Thus, the simultaneous pursuit of dynamic and static efficiency involves trade-offs.

The meaning of fairness, by contrast, is internationally nuanced and culturally distinctive. In the United States, it often means equality of opportunity or (in our context) free entry into a business endeavor. In other countries, it sometimes means that favored activity or loyalty should be rewarded, or that equity of process or outcome (market division according to historic shares) is valued. Years of acrimonious bilateral negotiations have revealed that Japanese auto and consumer electronics firms characterize loyalty toward and from their traditional suppliers as “only fair,” while potential US rivals find it to be an unfair foreclosing of their market access.

Indeed, emphasizing fairness almost invites contention, acrimony, and even international conflict when the protagonists are of different nationalities. But there is no denying the importance of fairness as a motive

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3. Some countries de-emphasize fairness as an explicit goal of competition policy (e.g., the United States today). Others give it more prominence (e.g., the United Kingdom and France), as seen in chapters in this volume by Hay and Jenny. Virtually all countries, however, include fairness considerations implicitly in implementing their competition policies. Neven, Nuttall, and Seabright (1993, 11) remark that an effective competition authority “must assist in the enfranchisement in the economic process of many of the interests that are naturally underrepresented in the alliance of managers and politicians that makes up the modern corporatist state. Shareholders, consumers, and potential employees. . . . an effective competition authority is the ally of all these excluded groups. . . .”

for competition policy; hence, there is a clear need for definition of what is and what is not fair in a market system and for mutual recognition of threshold standards of fairness in international competition. This need is great because the concepts of fairness and, especially, fair trade have been much abused by special interest groups.

Competition can be a means to attaining efficiency and fairness. For example, a perfectly competitive market—in which there are many small firms that freely enter and exit an industry that produces a standardized product—often achieves efficiency and equality of opportunity (fairness). But this is not always the case. In the market for innovation, perfect competition is generally believed to deliver (inefficiently) too little (see below).<sup>4</sup> For a natural monopoly, a single supplier for the entire market is efficient—competition is not. Where buyers of a product have varied needs and specifications, such that efficiency requires a multitude of varieties rather than one standardized product, monopolistic competition—where numerous producers of those varieties have limited monopoly power and can enter and exit freely—is efficient. And perfect competition makes no promise about fairness of process or outcome, only fairness of opportunity.

Efficiency and fairness are the prizes for competition policy; competition is a secondary objective or, more accurately, an instrument.<sup>5</sup> It will, however, be convenient to use the term anticompetitive (somewhat like the term antisocial) to describe practices and structures that interfere with the objectives of efficiency or fairness. Rule of reason is a corollary legal concept that is relevant to many cases where considerations of fairness or efficiency (and trade-offs between these) require subtle judgments and balancing of arguments. Under rule of reason, these judgments are made on the basis of circumstances and probable outcome rather than fixed per se rules.

### *Efficiency-Fairness Trade-offs and Cross-Country Conflicts*

Efficiency and fairness, like oil and water, do not mix easily. Under most circumstances, neither objective can be met without some sacrifice on the other. Conflict between these objectives occurs within countries and among them.

Within countries, conflict occurs when business practices that enhance the efficiency of some firms appear unfair to others, or when policies that treat all situations fairly have a high efficiency cost. Mergers between firms (e.g., between two large telecommunications companies)

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4. See also Scherer (1992, 22-40) and Scherer and Ross (1990, chapter 17).

5. Countries differ to the extent that this is true. The United States has sometimes made having many small competitors the chief goal of competition policies, as in the days of trust-busting. Japan, by contrast, explicitly worries about excessive competition (see Suzumura's chapter in this volume).

often involve efficiency for insiders at the apparent cost of fairness to outsiders. Grants of exclusive property rights to patented innovations and unique industrial processes involve the same trade-off.

Nonetheless, apparently even-handed bans on all forms of collusion can force fairness at the cost of efficiency. For some purposes, such as product standard setting, cooperation among firms (collusion to a cynic) can reduce resources expended on the promotion of competing standards (the early competition between VHS and Beta formats for videotapes may be an example of such inefficient expenditures). Global cooperation among firms and governments, as occurs in Mutual Recognition Agreements (MRAs) over the standards each country sets for various products, can also reduce waste.

Cross-country conflicts in competition policies are increasing because concepts of fairness often differ. Some of these differences are endemic (cultural); some are generic. Examples of endemic differences are US insistence on due legal process and continental European and Asian preferences for administrative process (see chapters in this volume by Fox, Jenny, Kühn, Matsushita, and Nicolaïdis and Vernon). Examples of generic differences are the way fairness is seen by would-be entrants and by incumbents; by firms that are small and large; by single-product and diversified firms; and by privately owned, publicly owned, and state-owned firms. Differences in perceived fairness also arise because firm ownership differs from country to country. France and China, for example, have far more state-owned firms than do the United Kingdom, Germany, or the United States. French and Chinese entry barriers in sectors dominated by such firms are contentious to would-be rivals. The United States requires scrupulous financial reporting because most large firms' equities are widely held in public stock markets, but such reporting seems burdensome and unfair to firms that are partly family owned (as in Taiwan) or corporately owned through a tight network of cross-firm shareholdings (as in Japan).

Sometimes, efficiency issues also cause international conflict over competition policies. For example, some countries seek static efficiency and others seek dynamic efficiency. Countries that pursue the former may more strictly regulate cooperative high-technology activities than do those that pursue the latter.<sup>6</sup> Countries that pursue dynamic efficiency may subsidize innovation but force innovating companies to license imitators

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6. See, for example, Katz and Ordover (1990). Many chapters in Jorde and Teece (1992) argue that US competition policies are insufficiently future oriented for either long-run US welfare (i.e., future gains are inefficiently foregone) or for the ideal US position in the global economy. But competition among firms to arrive at the ideal type and timing of innovations is, on balance, favorable, and strong competition policies that insure entry by energetic new firms often best deliver dynamic efficiency. For a detailed review of the evidence on how market structure affects dynamic efficiency, see Scherer and Ross (1990, chapter 17).

at a regulated price ceiling. These differences cause conflict between firms that compete with each other on seemingly uneven playing fields; such conflict occurred between US and Japanese firms in the early 1980s prior to changes in US competition policy that loosened restrictions on research and development consortiums.

An even more important example is that what's efficient for one country isn't always efficient for the world. Export cartels and monopoly marketing boards are prime examples. Every country can by itself achieve national efficiency—the most output from its national resources—by ensuring perfect competition in the domestic market while charging foreign buyers a monopolistic price in export sales. The country's residents then earn monopoly rents from foreign buyers but do not pay any efficiency cost.<sup>7</sup> However, if every country followed this practice, collective inefficiencies in world export sales would loom large. Such differing effects on national efficiency were well illustrated in the treatment of the proposed merger of Boeing and McDonnell Douglas. European competition-policy authorities initially concluded that the merger might be anticompetitive for Europe, whereas US competition-policy authorities found that it was efficient for the United States. The conflict was resolved with a compromise that somewhat reduced potential efficiency in the United States (e.g., by undoing exclusive-selling agreements between Boeing and certain US airlines that might have led to cost reductions in aircraft maintenance) while reducing what was perceived in Europe as anticompetitive behavior (e.g., undoing the exclusive-selling agreements increased market access for Boeing's European rival, Airbus Industrie).

Finally, and fundamentally, conflict among nations exists for one simple, yet easy-to-forget reason: No firm prefers competition in its output market. However successfully competition may deliver efficiency and fairness to a market system as a whole (sellers, buyers, and final consumers), each firm would rather have less competition as a seller:<sup>8</sup> a monopoly would be most preferred. This is true of market-leading firms and for those hanging on for survival. It is also true for global competition. So skepticism is appropriate when one firm complains about the anticompetitive behavior of a rival (each would do the same if it could get away with it), and also when one country's firms complain collectively about the unfair, anticompetitive behavior of foreign rivals. But skeptics should not be surprised at the complaint nor, for that matter,

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7. Or, to be maximally efficient, a country by itself could offer foreign sellers a monopsonistic price on imports it buys. That is essentially what the economists' famous optimal tariff does. It beats down world supply prices of imports to the level that a sole national buyer would offer and collects rent (monopsonistic surplus) from the world's sellers of those imports. Alternatively, in a few cases, a government essentially makes itself the sole buyer of imports on behalf of its own constituents, as in certain import-licensing schemes.

8. As buyers of inputs, of course, firms prefer input-market competition, including that created by free opportunities to import and outsource inputs.

be unsympathetic. Global competition policy is an issue precisely because some of these complaints are well taken.

### *The Efficiency Objective*

In almost every country, competition policy aims to reduce inefficiencies. One of the most familiar inefficiencies is the wasteful underproduction and overpricing of a monopolist with market power. Almost as familiar are distortions in relative prices and costs that mislead investors and buyers. Less-familiar inefficiencies are excessive product standardization or its opposite: wasteful product differentiation, unduly sluggish innovation or unnecessary duplication of research effort, inadequate realization of scale economies, and underprovisioning of future generations.

### *The Fairness Objective*

There is also a distributional economics of competition policy, concerned with process and fairness in markets. Its most obvious expression is in policies that oppose coercion and various abuses of market power that imply involuntary action. When economists defend the market system, they require volunteerism. That is, they rule out coercion (no reputable economist recommends markets for slavery, contract murder, or mercenaries to fight wars of territorial aggression). Many competition policies are the legislative expression of the anticoercion principle.<sup>9</sup> Other policies prohibit abuses of market power, such as a horizontal cartel's boycott of distributors that deal with outsiders or new suppliers. Several years ago, Japanese producers of flat glass were found to practice such abuses, and similar issues are at the heart of the ongoing Japan-US dispute in the WTO over alleged abuses in the markets for film and other photographic supplies (see box 2).

Other process-oriented competition policies include those that outlaw fraud, criminalize the theft of intellectual property and industrial secrets, discipline predation, regulate price discrimination (charging different prices to different buyers), and ban foreclosure (contracts and other arrangements with suppliers or distributors that completely exclude new firms). For example, the European Union (EU) recently accused Boeing of negotiating 20-year exclusive-supplier contracts with American Airlines, Continental Airlines, and Delta Air Lines, though some reports suggest that Europe's Airbus had equal chances to compete for and win those and any other contracts.<sup>10</sup>

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9. From this point of view, for example, laws against employment of underage (child) workers is a species of competition policy.

10. See, for example, Laura D'Andrea Tyson, "'McBoeing' Should Be Cleared for Take-off," *Wall Street Journal*, 22 July 1997, A14.

The efficiency and fairness objectives of competition policy are discussed at several levels. The most familiar is in the context of a single market for one product. We start there in the next section, and then move to the less-familiar competition-policy concerns of an economy in which many products and services are sold. We conclude this discussion with a treatment of multiple economies in international contact.

## **Sectoral Concerns of Competition Policy**

Competition policy at the sectoral level aims for an efficient and fair market to ensure that short-term decisions, such as pricing, and long-term decisions, such as investments for innovation, are made efficiently and fairly by firms, whether acting alone or with other firms. It also weighs a sector's efficiency and fairness rules against other social objectives, such as the defense industry's role in national security. In subsections below, we describe the four concerns of competition policy as firm behavior, relational behavior, lifetime behavior, and social behavior.

However, competition policy cannot be so easily apportioned. Each subsection describes policy concerns that are linked organically to the other subsections. For example, predation is the premeditated goal of a single firm, but the concept obviously involves a victim firm and is perversely relational.<sup>11</sup>

### **Firm Behavior**

Competition policy is first of all concerned with a firm's behavior and market power. At any moment,<sup>12</sup> this concern involves inefficiencies in prices or marketing, inequities in the treatment of customers or potential rivals, and other abuses of market power. These concerns, sometimes called restrictive business practices, implicitly involve assessments of how close a firm's prices come to its costs; how closely a firm meets buyer demand for products of varying size, durability, reliability, and other characteristics; and how freely a firm will allow rival firms and products to emerge. Competition-policy authorities never try to comprehensively or continuously monitor corporate decision making on these details, much less direct it. But when anticompetitive behavior is

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11. The technical distinction between the sections called "Firm Behavior" and "Relational Behavior" is that the first involves a firm's noncooperative (i.e., independent) behavior, while the second involves its cooperative (i.e., joint) behavior with some other firm(s).

12. We consider the lifetime behavior of a firm below.

suspected, most authorities have the legal right to summon detailed information from firms in their jurisdiction.<sup>13</sup>

In brief, the first concern of competition policy is to discipline the market power of firms. But what exactly is market power? And what are its inefficiencies and abuses?

### *Price Setting*

Market power is first defined with reference to price and then with respect to attributes. Firms that have the capacity to choose their own price from a menu of options, ranging from high prices with low sales to low prices with high sales, are said to have price-setting power. Firms that can produce any mix of product varieties (e.g., high or low quality, durability, and flexibility) are said to have attribute-selection power.<sup>14</sup> In reality, most firms have some degree of price-setting and attribute-selection power. But both kinds of power are limited by the prices and attributes that rival firms choose. In the perfectly competitive extreme, power is perfectly limited to a single price ceiling and a single attribute floor (e.g., a wheat farmer sells nothing if the price he asks exceeds any rival's price that day or if the cleanliness and purity of the wheat falls short of the minimal acceptable standard of the least-discriminating buyer). In a market structure called monopolistic competition, a firm has price-setting power over the precise blend of attributes that makes its product unique. But other firms produce so many close substitutes to that attribute package that the firm's price choices range over a narrow band, and its power can be severely constrained.<sup>15</sup> At the other extreme, monopoly, both price-setting power and attribute-selection power are maximal, because such a firm is the sole producer of a product with no close

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13. The problem of gathering such detailed information is reduced in countries such as the United States, which allows firms, presumably well informed, to initiate competition-policy legal action against rivals that they accuse of anticompetitive behavior. The US rewards for successful legal action can be three times as large as the damages (treble damages).

14. Other descriptions refer to a firm's power to select optimal characteristics, differentiation, niche, quality, position, location, performance, and model. Competition over product attributes is sometimes called (blandly) nonprice competition. Besanko, Dranove, and Shanley (1996, part III) describe it as competition for "strategic positioning." Katz and Ordover (1990) and Jorde and Teece (1992) make much of the need for competition policy to ensure the efficiency of competition in innovation, in addition to the more familiar (static) price competition.

15. The technical condition is that every firm's cross-price elasticity of demand with respect to substitute products is very high and increases with the number of substitutes. In that event, its own price elasticity will necessarily be very high as well. When attributes involve many dimensions, however (e.g., quality, location, and durability), an increased number of rivals along any given dimension can sometimes work in the opposite direction, enhancing price-setting and other market power.

substitutes. The term oligopoly describes a market structure in which a small number of firms produce a product with no close substitutes; as the number of rivals and substitutes increases, oligopoly bleeds into monopolistic competition.

Price-setting market power usually leads a firm to boost profits by supplying less to buyers than would be socially ideal but also charging a higher price than is ideal (there is, however, one important exception—see “Price Discrimination” below).<sup>16</sup> That is, of course, fine with the firm’s shareholders, but the social ideal is for a firm to keep on selling as long as buyers are willing to pay enough for each successive unit to cover the extra cost of producing that unit.<sup>17</sup> If the firm stops short of this ideal, there is inefficiency (waste) and unwelcome frustration—some buyers are rationed (unfairly, they would claim) and fail to receive units of a product that cost less to produce than their own valuation of those units. That firms will behave this way is at the core of both microeconomic theory and the efficiency objective of competition policy.

### *Price Discrimination*

There is one important exception to these generalizations about price setting. When a firm’s price-setting power is enhanced by price-discriminating power, wasteful inefficiency (rationing) can be reduced, although fairness concerns become sharper. Price discrimination is the power of a firm to charge different prices to different groups of customers (who find it impossible or uneconomical to resell the firm’s goods among themselves).<sup>18</sup> Examples of price discrimination are time-of-day pricing for telephone calls and power use, loyalty discounts to recurrent customers, and differing fares for the same airline flight for leisure travelers and business travelers. In the extreme, a perfect price discriminator has the power to charge each customer a unique price, as much as each customer can bear to pay to own the product rather than to do without it. Thus, whatever its effect on efficiency, price discrimination accentuates overpricing and makes it discriminatory as well. Both effects raise fairness concerns.

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16. Microeconomic reasoning shows that, for modest sales reductions, starting at the ideal price and quantity, a firm’s overall revenues decline more slowly than its overall costs, generating extra profit, which can often be identified with excess (or supernormal or economic) profit.

17. The technical name for this is the socially optimal price and quantity.

18. Customers who would be charged high prices would otherwise stop buying directly from the firm and start buying indirectly from customers who could get the product at lower prices; these less-desperate customers would begin to buy not only for themselves, but also to resell (arbitrage) merchandise to the first group.

Price-setting power enhanced by this extreme form of price discrimination can restore the ideal volume of sales (and eliminate inefficiency). The firm keeps selling until it reaches the least-willing customer, who values the product so little that he or she bids barely enough to cover the extra cost of the last few units that the firm produces. That is, by definition, the social ideal. But with price-discriminating power, the firm is able to overprice by more, and its profits are higher, because it is able to extract every last dollar of customer benefit<sup>19</sup> above the minimum necessary<sup>20</sup> to keep its customers buying at all!

More common (and less extreme) price-discriminating power may create new inefficiency, rather than relieving it. Currency fluctuations within the European Union, for example, contribute to European firms' power to isolate national markets from each other and charge different prices to different national buyers despite the absence of trade barriers. One of the motives for European Monetary Union is to reduce this type of price discrimination, which inefficiently deters trade between arbitraging buyers in low-price/low-value countries—buyers who become secondary-market sellers to buyers in high-price/high-value countries.<sup>21</sup> Even under a currency union, however, national regulations on which and how many firms can be authorized sellers may continue to support this type of price discrimination. But such regulations are scrutinized strictly by the EU competition-policy authorities. Not only do such regulations support price discrimination, but they also may condemn the overall volume of European sales to be inefficiently lower than even a single-price monopoly would allow.

In any case, price-discriminating power almost always involves a significant and discriminatory transfer of purchasing power from buyers to extra profit for sellers,<sup>22</sup> and this may be considered unfair.<sup>23</sup> So price discrimination changes the nature of the competition-policy problem but not necessarily its intensity, probably putting more weight on unfairness than on inefficiency.<sup>24</sup>

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19. Technically, the customer's consumer surplus.

20. Technically, the customer's reservation price; such discrimination is called first degree.

21. See, for a discussion, "When the Walls Come Down," *The Economist*, 5 July 1997, 61-63.

22. The extra profit may attract new entrants to the industry, thus shifting the market outcome toward efficient (ideal) outcomes (see Varian 1989, 619-22). Our focus on single-firm behavior allows us to ignore that issue here.

23. It is controversial whether there is a fairness problem at all. Price discrimination in innovation, for example, is considered by many analysts to be part of the reward to those who have pioneered. See, for example, Katz and Ordovery (1990, 139).

24. It also changes the confidence economists have giving expert advice. They usually feel more secure discussing efficiency than the fairness of distributional outcomes between buyers and sellers.

The power to price discriminate is increasingly important. The technologies for identifying and isolating customer groups continue to advance (e.g., cash registers and web sites that keep track of what, when, and how much a credit-card customer buys and match such information to socioeconomic characteristics from the customer's credit records). And the cost of frequently varying prices has been greatly reduced by computerized real-time price lists (e.g., airfares in reservations systems) and discounts keyed to coupons and bar codes. For competition policy, the interesting implication of rising price discrimination is a justifiable shift in attention toward ensuring fairness and a competitive process and away from efficiency concerns (which often take care of themselves, especially when entry to price-discriminating activities is unencumbered). Partly for these reasons, we organize our policy recommendations with a priority on competitive process. Our recommendations are aimed at making markets more internationally contestable—that is, making them open to entry by as many new competitors, foreign or domestic, as choose to compete.

Price discrimination has increasing prominence in international conflict as well. Past international trade conventions allowed countries to protect against injurious imports priced lower in their country than in the source country. This form of price discrimination is labeled dumping, and the protective tariffs to combat it are called antidumping duties. To the extent that these duties reduce cross-border price discrimination, they may enhance fairness (indeed, dumping is one example of so-called unfair trade), but they almost surely inhibit efficiency. While all tariffs are price-distorting wedges between foreign and domestic suppliers, antidumping duties are aimed only at dumping suppliers and not all suppliers, making the distortion discriminatory (for a discussion of the trade-offs involved, see the chapter in this volume by Lipstein).

### *Attribute Competition*

Attribute-selection power can sometimes, but not always, have unwelcome effects similar to those of price-setting power, involving both inefficiency and inequity. Powerful incumbent firms may offer too few models or models that are too old—and it may overprice them.<sup>25</sup> For example, airline competition often underprovides desirable attributes.

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25. Again, the statement implies a social ideal. When buyers differ from each other, their varying tastes for proximity, quality, durability, convenience, and so on will usually make it ideal for a sector to produce many models. But how many models? How many models for each firm? These questions are similar to “How much should a firm produce?” The answers, though, are unfamiliar and not clear-cut. See Besanko, Dranove, and Shanley (1996, part III) for the firm's answers, but see the discussion of lifetime behavior (below) for the conclusion that markets may not always generate the socially ideal attribute selection.

Every airline route serves both business and leisure passengers, whose ideal service requirements differ. Sometimes incumbent airlines will strategically choose (and price) flight times, aircraft, and service to make it unprofitable for a rival firm to generate attribute diversity—that is, to produce substitute models around the ones already in existence.<sup>26</sup> For example, an established business-oriented airline may offer frequent flights to nearby cities and modest (but not rock-bottom) prices to deter a leisure-oriented rival airline from competing. The number and type of service attributes offered by the established incumbent may still be less than ideal;<sup>27</sup> that is, some (leisure) buyers are rationed and, thus, are unable to buy a type of service (e.g., flights on weekends) that would actually cost less to produce than the buyer’s valuation of that service. That is wasteful. It may also be an abuse of market power by the incumbent. Exclusionary behavior can undermine both efficiency (measured by the rationing cost) and fairness (because potential rivals are closed out).

This kind of strategic attribute selection may not always be anticompetitive: strategic entry deterrence is not always bad and not always unfair. The incumbent airline in the example does, after all, increase density and frequency and reduce price.<sup>28</sup> In doing so, it no doubt satisfies some leisure travelers. Thus, as is often the case, whether there is an abuse or inefficiency here is a judgment call.<sup>29</sup> That is one reason why competition policies worldwide appeal to a rule of reason in deciding whether practices such as entry deterrence involve exclusion or other distortions or inequities.

### ***Best-Practice Competition***

Market power can allow a firm to be nonchalant about maintaining the most efficient production techniques and, thereby, raise its costs. One way this happens is through sluggish innovation, discussed below. However, a firm with market power might also allow costs to rise wastefully unchecked by the discipline of having to keep them in line with costs of rival firms. Inadequate cost control often results in overstaffing and excessive salaries. Also, prices paid for buildings, machines, and intermediate products might be excessive (e.g., a headquarters building that is

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26. An analogous strategy in innovation is for the innovating firm to design a patent so that it blocks rivals from designing substitute patents around the innovator’s patent. For obvious reasons, this is called a blocking patent.

27. But not enough to grant an entrant any profit after it pays the fixed costs of set-up.

28. This is compared to what they would do if entry were not a concern (e.g., if the government had granted them a legal monopoly on the routes).

29. Price discrimination also illustrates the need for judgment calls.

more a monument than an efficient office). Such bloat in organizations is often termed x-inefficiency.

Yet another source of inefficient inputs is costly efforts to deter rivals and maintain market power. These efforts can include lobbying of government agencies that brings benefits to the firm but is wasteful from society's perspective. To deter rivals, the firm might overbuild capacity or commit to making products with attributes that the firm cannot produce as efficiently as can potential rival firms.

Enhanced contestability in a market often leads firms to improve cost control and performance (see Scherer and Ross 1990, 667-78, for evidence on these effects). Likewise, enhanced contestability can lead to favorable restructuring of industries, allowing those firms that are adaptable and effective to absorb the business of those that are not and, thus, improving performance of the industry (see Tybout and Westbrook 1995 for evidence that these effects were important for Mexican industry following liberalization in the late 1980s).

### *Predation*

In an extreme application of market power that is least favorable to efficiency and fairness, an established airline not only deters would-be rivals, but successfully preys upon new entrants. Such predation is the strategic, temporary deployment by the predator firm of attributes that are so attractive (and prices that are so low) that existing rivals leave a market, allowing the predator firm subsequently to enhance market power by reducing quality, raising price, and deterring reentry. Though such predation clearly would be anticompetitive, its real-life occurrence seems rare.<sup>30</sup> Ordinarily, it seems, a firm is only displaced by another firm that offers indefinitely lower prices, better quality, and higher performance. As a temporary tactic to gain market power and then abuse it, predation has proved unsuccessful.<sup>31</sup>

### *Contestability*

However, there is an extreme case of only apparent market power that is favorable to efficiency and equity. An airline resolved to deter rivals

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30. There are some cases of true price predation in the airline industry. For example, incumbent carriers on North Atlantic routes dropped their prices in response to new entry during the 1980s to drive the new entrants out of the market. However, such predation seems rare. In 95 percent of the US and EU antidumping cases they examined where predatory behavior could, in principle, have motivated the dumping, Shin (1992) and Bourgeois and Messerlin (1993) reject even the possibility of predation. The Organization for Economic Cooperation and Development (OECD) (1989) has a comprehensive treatment of general predatory pricing, whether linked to dumping or not; it covers economic reasoning and historical precedents in all OECD countries.

31. Over the lifetime of firms, discussed below, this more common and procompetitive type of displacement is called creative destruction; Schumpeter (1950) gives its classic description.

or displace an incumbent might be forced (by the ease with which rivals can come and go) to offer so many flights at such low prices for so long a time that the outcome comes close to what would have occurred with realized entry by those rivals. This type of market is called perfectly contestable. In such a market, the varieties offered and their prices come close to the social ideal even when there are only a few firms selling.<sup>32</sup> In general, markets can be made more contestable (hence more efficient) if potential entrants can enter and exit freely and if set-up and withdrawal (exit) costs are low.<sup>33</sup>

From this perspective, global liberalization can be an important force for contestability by multiplying the number of potential entrants and reducing set-up and withdrawal costs. There are usually more potential entrants after trade and investment liberalization. When entering a market, established firms from abroad may have lower set-up costs than would completely new domestic entrants. Thus, liberalization that makes the potential entry of those established firms more likely enhances contestability. Liberalization affects set-up costs in several ways:

- Foreign firms may no longer need to pay for licenses to ship their goods as imports (of the domestic country).
- Foreign firms may no longer need to pay (or bribe) various middlemen (e.g., mandated joint-venture partners) to establish their investors on a par with local firms. Liberalization may alter withdrawal costs as well.
- Suppliers of exports to the domestic market will obviously not have to meet the same withdrawal requirements as a domestic firm that employs local labor and pays local taxes.<sup>34</sup>

In these and many other ways, globalization makes markets more contestable.<sup>35</sup>

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32. Bresnahan and Reiss (1991) find, for example, in a study of regional markets for professional services, that markets come very close to the social ideal after the third, fourth, or fifth firm enters.

33. Technically, the set-up costs that matter are irrecoverably sunk. That means that they cannot be reclaimed in the event of withdrawal or transferred to some other use. Licensing and license fees are examples of set-up costs that policy has some influence over. Long-term contracts with municipal authorities (e.g., over taxes) and regulations covering the need to notify workers before layoffs are examples of withdrawal costs that policy has influence on.

34. For example, notification and severance requirements, fulfillment of long-term leases, etc.

35. See Graham and Lawrence (1996), Feketekuty and Rogowsky (1996), and Hoekman (1997a) for further development of the presumption that global liberalization makes markets more contestable.

## *Natural Monopoly*

So-called natural monopoly represents still another extreme in which technology dictates either scale economies or high natural set-up costs, with no natural limit on capacity resulting in the relevant market. In this extreme, the average cost per unit for a firm is far lower at high-volume production than at low-volume, because the fixed set-up costs can be spread over many units of production, and capacity constraints never appear.<sup>36</sup> Therefore, it becomes efficient (cost saving) for a firm to operate at high volume. A natural monopoly exists when there are still cost savings from higher-volume production even at the point where a single firm serves an entire market. In this case, price-setting and attribute-selection market power may be the inevitable companions of technological efficiency. Competition policy then traditionally aims to minimize the inefficiencies and inequities that could result under natural monopoly. It may set a ceiling on the price charged by the natural monopolist;<sup>37</sup> it may force firms to rebid periodically on the license to be the natural monopolist; or it may deny the natural monopolist's preference to exclude specialized rivals from using its infrastructure or networks<sup>38</sup> or regulate the price it charges rivals to use them.

Globalization of markets and technological change have clearly reduced the importance of some natural monopolies. Satellites and other forms of wireless communication, for example, have removed the necessity to pay up-front for wire-dependent telecommunications networks.<sup>39</sup> The need for competition policy to deal with natural monopolies has been correspondingly reduced, as has the need for international competition-policy conventions in these cases.

However, globalization and technological change have created a new class of natural monopoly—the global natural monopoly, which has falling average costs for its products and services even if it serves the whole world. Putative examples are hypersonic and large commercial aircraft; high-technology weapons; and some banking, insurance, and satellite

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36. To be a valid natural monopoly, the set-up costs must also be sunk (see note 36). This makes natural monopoly rare, because many machines or factories can be sold to another sector or to users abroad—as is true of many machine tools and even whole refineries, breweries, and factories (see Andrew Taylor, “Third World Goes Bargain Hunting,” *Financial Times*, reprinted in *National Times*, June 1996, 20). Set-up costs in these cases may be large, but they are not sunk.

37. For example, the US Federal Communications Commission sets a maximum price that local owners of wire-based telephone networks can charge long-distance companies for access to those networks.

38. Telecommunications rivals that provide value-added services beyond normal telephone service, such as access to data, are an example. See Graham and Lawrence (1996).

39. The difference between the cost of wire-dependent infrastructure and launch costs has allowed remote, previously unserved areas to have basic telecommunications.

transmission services.<sup>40</sup> For these products, the case for competition policy may have been accentuated, and because the efficient monopoly exists at the global level, the corresponding competition-policy regime is international.<sup>41</sup> The recent merger of Boeing and McDonnell Douglas illustrates the potential for severe competition-policy inconsistency and conflict among subglobal policy authorities.

### *Size Is Not Power*

Natural monopoly and perfect contestability have one trait in common, though they are different types of extreme market structure. They both show that big firms are not automatically bad for efficiency or fairness. “Small may be beautiful,” as some say, but it may also be inefficient; to have multiple suppliers may seem fairer than to have only one, but it is not necessarily fairer if one firm has an edge over the others and can serve the entire market best.

By implication, antitrust-mandated breakups of large firms may sometimes be neither efficient nor fair, and, as much as these firms plague populists, visceral concerns over the awesome power of megamultinational firms may be sadly misplaced.<sup>42</sup>

It is not that the market automatically makes all well or that anticompetitive abuses are minimal. On the contrary—that is why competition policy is an issue within and between countries. The point is that the size of a firm is rarely a good indicator of its power. Even small firms can have market power in specialty segments of markets, and even they can abuse that power. And large firms often find their power surprisingly constrained by competition from others.

Furthermore, when big firms and sole suppliers have little market power, they also have close-to-average (normal) profits. They are not making extraordinary amounts of money for their owners, management, or host countries. Competition and trade policies that aim to preserve extraordinary profit pools for one’s own domestic firms or to shift them away from foreign firms are less relevant to the extent that even big firms have small and fleeting market power. Many analysts feel that the growth of trade and the investment-based cross-penetration of national markets has produced the situation described above: global markets in

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40. For the banking and insurance sectors, the potential for global natural monopoly arises from the creation of electronic-payment clearing systems.

41. Yet the strength of the new case is controversial; each example faces close substitutes (e.g., subsonic aircraft, conventional weapons) that may so diminish the efficiency and fairness costs of the global natural monopoly that the problem is not worth worrying about.

42. Scherer (1994, 87-88) concludes that there is little theoretical or empirical support for the proposition that multinational firms (size notwithstanding) are different from “companies that have equivalent market positions but operate from only a single nation.”

which the typical structure is monopolistic competition, not oligopolistic. The competition policies that correspond to such a world have many fewer sectoral exemptions, and the trade policies that correspond make less sense from a strategic standpoint.

## Relational Behavior

### *Bad and Good*

Competition policy is concerned with interfirm behavior as well as the behavior of each firm alone. This explicitly involves scrutinizing mergers and cooperative joint ventures and challenging those that are anticompetitive.<sup>43</sup> Formal cartels that bind firms together in what is essentially a monopoly are usually banned (with some exceptions), and the authorities watch carefully for less-formal collusion that has the same effect.

Relational concerns aim to make sure that firms do compete with each other, rather than merely fake it. No firm welcomes competition as a seller, as discussed above, so there is always a danger of implicit live-and-let-live collusion. Thus, firms can appear to compete while colluding to avoid aggressive actions such as price competition or while secretly dividing up attribute niches among themselves so that each is a mini-monopolist in reserved models or submarkets or while ostracizing or punishing uncooperative rivals that refuse to join in the collusion such as by denying them access to some vital input (e.g., a pipeline or communications network).

Anticompetitive mergers and collusive practices, such as price-fixing and market-swapping quotas, involve the familiar inefficiencies and inequities. They waste resources, exclude a margin of buyers who would have been willing to pay the costs of more production or more variety, and suck purchasing power away from those buyers that remain.

But not all interfirm cooperation is anticompetitive collusion. A merger in which a strong firm takes over a weak one and restructures the weak one to preserve at least some of its business and employment may enhance overall market efficiency and be fairer than allowing the weak firm to fail and close down. That was an essential part of Boeing's defense of its takeover of McDonnell Douglas's commercial aircraft business. A research joint venture in which each firm takes responsibility for developing and patenting different aspects of a new process or parts of a new product, but then makes licenses available to all members, may efficiently value the spillovers from one firm's innovation to other firms—

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43. A merger legally blends the ownership and management of two companies. A joint venture (or strategic alliance) is a less-formal form of cooperation, occasionally involving the creation of equity in an entirely new, joint, and dedicated unit but more typically involving no equity exchange or issue. Neven, Nuttall, and Seabright (1993) provide a detailed reference on supranational issues in merger policies for open economies, focusing on the European Union.

spillovers that markets find notoriously hard to value.<sup>44</sup> A system in which a firm bans its retailers and distributors from selling any products except its own (e.g., if Fuji or Kodak insisted that developers and processors of film use only theirs) may enhance informational advertising and efficient quality maintenance—they give each distributor incentives and objectives similar to those of the manufacturer—though such practices may indeed appear otherwise to be anticompetitive barriers to entry. Finally, the incentive for and returns from innovation have been shown (e.g., Geroski 1992) to generally rise when firms are permitted to cooperate with suppliers of complementary inputs (e.g., Microsoft cooperating with both software developers and computer makers or Toyota cooperating with Nippondensu).

### *Horizontal and Vertical*

There are two broad types of interfirm cooperation, horizontal and vertical. Horizontal cooperation involves similar firms at similar stages in the production process (e.g., raw processor, assembler, or distributor); vertical cooperation involves complementary firms at different stages. Competition policy is more suspicious of horizontal cooperation than of vertical. Horizontal cooperation smells more like collusion, like cartels, and the burden of proof to the contrary is usually on the firms. Vertical cooperation, however, has a whiff of integration, the kind of cooperative, nonmarket activity firms do on their own, and the proof that it is anticompetitive usually falls to the authorities.

Horizontal cooperation is generally viewed with suspicion because it seems to reduce competition and, hence, block efficiency and other objectives that competition facilitates. In mergers, after all, the total number of rival firms in the market drops, shifting the market structure toward oligopoly. In joint ventures, the effect can be qualitatively the same, though it is limited to only some activities and is always a less-rigid arrangement than a full merger. However, empirical research shows that the efficiency losses from horizontal cooperation may be quite small as long as three to five rivals remain in a market.<sup>45</sup> And horizontal cooperation can be defended for the efficiencies it may deliver (e.g., a so-called efficiency defense may be based on cost reduction through

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44. Such spillovers, called externalities, are a classic case of problems that markets do not solve well.

45. See Bresnahan and Reiss (1991). The question regarding merger approval that occupies governments' procedural guidelines is how to define a market for purposes of counting rival firms and evaluating the competitive intensity of the rivalry. If markets are broadly defined (say, chemical products), there are many rivals. If more narrowly defined (say, pharmaceuticals), there are fewer; if still narrower (say, aspirin), even fewer. The narrower the definition, the more likely that governments will find market power and its various abuses.

information sharing and productivity improvement, avoidance of wasteful duplication of fixed costs of research and development, reduction of coordination problems in industrywide rationalization, and facilitation of exit of inefficient firms).<sup>46</sup>

Vertical cooperation is often considered acceptable if rival firms have equivalent opportunities to cooperate and integrate. In this view, equal opportunity vertical cooperation is just another example of free entry—in this case, entry to an organizational structure that spans several production stages. There are, nevertheless, grounds for concern if completely new firms face higher vertical-integration costs than do established incumbents, because the new firms' entry is then limited. This condition is fairly common and may occur, for example, when a new entrant needs to build an integrated distribution network from scratch, or when long-term, almost indefinite contracts and buyer loyalty leave a new entrant with no uncommitted suppliers or distributors. These concerns, of course, have animated Japan-US relations, especially in autos, auto parts, and semiconductors. In the anticompetitive extreme, vertical arrangements among firms may completely choke off comparable entry by rivals. This so-called vertical foreclosure is agreed to be anticompetitive and should be subject to intense competition-policy scrutiny. The classic example of such entry foreclosure is an exclusive contract between incumbent firms and suppliers of some vital input for which there is no substitute—for example, a deposit of ore or diamonds of the purest quality. A more recent, yet controversial, example may be the exclusive, 20-year contracts that Boeing negotiated with American Airlines, Continental Airlines, and Delta Air Lines to be their sole supplier. At least the competition-policy authorities of the European Union thought it was an example; Boeing responded that there was nothing that kept Airbus from competing for these or similar contracts (reports were that they did), and, hence, there was no foreclosure. As noted earlier in this introduction, to gain approval for its merger with McDonnell Douglas, Boeing agreed not to enforce the exclusivity of the contracts but at the same time changed none of their other terms.

Still more controversial gray-area practices include vertical arrangements that enhance price-setting and price-discrimination power, such as those of a manufacturer that prevents its distributors from either independently discounting its products (resale price maintenance) or from remarketing them outside the distributor's designated territory.<sup>47</sup> While

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46. Sometimes called the failing-firm defense. Dick (1997) finds evidence of efficiency gains even among US export cartels.

47. See Scherer (1994, 74-75) for a discussion of the EU competition authorities' case against Grundig. The authorities at one time prevented Grundig's distributors in one EU member country from shipping its electronics products into another (shipments called parallel imports). Less extremely, Canadian and US auto dealers face different tariffs than do the resident producers of the cars.

such restrictions are anticompetitive because they ban entry by distributors into the business of arbitrage, they also procompetitively support a manufacturer's ability to: ensure local maintenance and repair services, charge an appropriate price for services offered to distributors (avoiding free riding by unauthorized distributors), and charge different prices in different regions, at different times, or to different customers. These types of price discrimination can sometimes promote efficiency when they expand markets or open new ones (while admittedly sacrificing some fairness).

### *Open-Economy Considerations*

Horizontal and vertical cooperation both work differently in an open economy than in a closed one. One reason is that governments represent only their domestic constituents, whereas markets pull firms and customers together across national borders. Collusion may actually be attractive to a government if foreign customers or foreign rivals bear most of the efficiency and equity burdens. That is why many governments allow export cartels that fix prices, restrain attribute competition, divide up markets, and engage in other activities that are usually prohibited domestically. That is also why governments sensibly restrict the rights of foreign firms to join standard-setting or research consortiums (such as the US joint venture Sematech). And that is why many governments favor mergers of domestic firms that enhance their firms' global market power, even though the governments' constituents bear some of the costs. For example, that is one possible reason why US authorities might look more favorably on the merger of Boeing and McDonnell Douglas than do European authorities (though US authorities deny it). Or, for example, a vertical merger between two home firms that impedes the entry of foreign rivals can enhance not just a firm's market power, but also national market power and the national standard of living. (Entry to the US market by oligopolistic and integrated European suppliers was an understandable concern of the United States in recent WTO negotiations over basic telecommunications services.) Of course, in all these cases much of what one country gains is lost by others, engendering conflict and the opportunity for international conflict resolution to discipline these beggar-thy-neighbor competition policies. More ambitiously, international cooperation over trade and competition policies could provide the opportunity to come closer to global efficiency.

Avoiding opportunistic policies is not the only reason for government-to-government agreements concerning relational practices in an open economy. Mergers in one country can often cause inefficiencies or inequities in another, even through exports rather than on-site operations. Thus, a given merger must often clear several different competition-

policy reviews, as illustrated by the European Union review of the proposed merger between Boeing and McDonnell Douglas. Some governments have negotiated information-sharing agreements in their merger review procedures, yet one of the contentious issues raised by the Boeing-McDonnell Douglas case is whether an offshore review should defer to a primary review (in this case, by the United States) when the assessments differ. In this case, the European Union pressed on anyway, even in the face of US approval, and Boeing eventually made concessions. Within the European Union, large mergers, meeting other criteria, are evaluated at the community level, not by national authorities.

Although open economies may lead to some inefficiencies, they may also magnify the size of efficiency gains from interfirm cooperation when such gains are there and distribute those gains to all countries. Opportunism is then only an issue in the fair division of the gains. Examples are the on-again, off-again consideration of a joint venture by Boeing and Airbus to build a superjumbo aircraft and joint space research between Russian and US firms.

Some features of an open economy stand in the way of efficient and fair cooperation among firms. Antidumping conventions, implemented at the beginning of the twentieth century to discipline price discrimination in international trade, have metastasized into the weapon of choice against foreign rivals. They are as useful for harassment as for protection and are a facilitator of implicit collusion (see Lipstein's chapter in this volume). Successful antidumping cases are resolved either by erecting inefficient antidumping duties or by allowing firms to negotiate—that is, jointly fix—higher prices (this solution is called a price undertaking). Such sanctioned horizontal collusion raises costs to all users, rations some users, and can slow down innovation. Market-opening tools such as voluntary import expansions (VIEs) and US market-access (Section 301) cases are export analogs to antidumping measures. Whatever procompetitive merit these substitute weapons may have in forcing entry is usually more than offset by their implicit facilitation of cartelization in the target country and collusion at home (Greaney 1996).

Anticompetitive corporate and intercorporate behavior are the immediate concerns of competition policy. But both recur in a longer time frame and in a wider context. We describe the longer time frame as lifetime behavior and the broader context as social behavior.

## Lifetime Behavior

Competition policy is also concerned with a firm's long-term market behavior, both individually and in relation to rivals. The key lifetime objectives are efficiency and fairness but with a wider scope than described so far. Efficiency must now include ideal rates of investment, innovation, and attribute introduction that reflect the valuations and

varied needs of future buyers—some of whom are not yet discernible or even born. Fairness must now outline the circumstances under which an established firm should be allowed to die, either by absorption into another firm or by liquidation. Efficiency may sometimes dictate the extinction of an entire sector (e.g., television sets), raising especially troublesome fairness questions, especially if the same sector survives in other countries.<sup>48</sup>

So in addition to the classic competition-policy issues enumerated above, this lifetime concern involves extinction, succession, innovation, and change of ownership. These are influenced by policies toward exit and downsizing: bankruptcy and public bailout commitments, education and taxation of research and development, industrial secrets and intellectual property, and takeovers and corporate control. Long-term competition policy involves implicit assessments of questions such as the following:

- What (if any) recourse should shrinking firms in shrinking industries have for temporary relief from global market pressures, from normal competition policy, and from creditors' repayment schedules?
- How easily can the firm abandon weak product lines or sell them to others? How easily can it abandon inefficient production processes or look to outside suppliers for components?
- How actively does a firm work its intellectual property? Can its favorable market position in current technologies or product varieties allow it to slow down its own innovation or that of rivals? What is the optimal amount of protection to be given to intellectual property to encourage the right amount of innovation?
- How easily can outsiders purchase enough equities to gain control of the firm and alter its basic decisions (free entry in the market for corporate control)?

### *Schumpeterian Competition*

Neither research nor competition-policy precedents are well developed with respect to these questions. Nearly all specialists pay lip service to the conviction of the economist Joseph Schumpeter that innovation and corporate displacement and succession cycles (creative destruction) are the keys to dynamic efficiency. But no one has yet worked out the

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48. But is it really sensible to limit a sector to only television sets, rather than consumer electronics or electronics in general? The broader the characterization, the less compelling is the allegation of unfairness, especially when firms are diversified. The United States led the recent push for an Information Technology Agreement (ITA) despite near absence of US domestic production of consumer electronics.

formal properties of Schumpeterian dynamic efficiency as carefully or persuasively as they have been worked out for point-in-time efficiency (but see Dinopoulos 1994). Hence, competition-policy analysts have relatively little in the way of normative guidelines to design regimes for intellectual property, corporate takeovers, overseas investment, and similar issues.

Other important issues in the social ideal for lifetime behavior are still unresolved. One concerns attribute competition. There is no guarantee, even in theory, that the number of varieties generated by free-market entry of firms into attribute competition (say, the number of fast-food restaurants at a busy intersection) is socially ideal. Markets can in some circumstances create too many varieties (inefficient excessive competition—see Suzumura’s chapter in this volume) or, in other circumstances, too few (also inefficient). Thus, highly contestable markets in attribute competition are not necessarily to be pursued as strongly as highly contestable markets in price and quantity competition.<sup>49</sup>

### *Market Structure and Technological Innovation*

What is the effect of market structure on the rate of technological innovation? And what is the appropriate mix of competition policy and intellectual property protection to move that rate toward socially optimal values? The issue is of importance because technological advance is, in the long run, the most important determinant of productivity advances—that is, the rate at which society can increase output without necessarily increasing its tangible inputs.

Most research finds innovation lower at the extremes of perfect competition and perfect monopoly. More precisely, those sectors that are neither highly competitive nor monopolistic tend to create and utilize new technology at faster rates than do other sectors (see Scherer and Ross 1990).

The usual story is that firms in highly competitive industries are not good at creating new technologies because technology is a public good and, in particular, because of what is called nonrivalry. The basic idea is that technology at its fundamental level, is human knowledge; the quantity of one person’s knowledge is not depleted if that person passes on the knowledge to someone else. Hence, knowledge is said to be nonrivalrous.

However, the value of specific knowledge to a person might be reduced by passing it on. If only one person knows how to achieve cold fusion, for example, that person might be able to make a fortune from commercializing this knowledge; if everyone else knows what that person

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49. We are not persuaded of the practical importance of this, however, leaving us still willing to use contestability as a summary guide to our policy recommendations in the concluding chapter of this volume.

knows, any fortune to be made will be spread among millions of people. In the latter case, everyone benefits from this knowledge—we will have a new source of low-cost energy—but no one will become richer than anyone else.

The argument goes like this: If there is considerable competition in a market, no single seller is likely to benefit from developing a new product or new process if the knowledge associated with that development will quickly become known to all other sellers. Indeed, because technological innovation typically is the fruit of costly research and development, the innovating firm might actually be punished, because this firm alone bears the costs, whereas everyone shares the rewards.<sup>50</sup> This situation is generally known as the appropriability dilemma: the innovator cannot appropriate the full value of the knowledge he or she develops, and, indeed, the amount that is appropriated by the innovator might not warrant the irrecoverable (sunk) costs incurred to create the knowledge. The appropriability dilemma has a social dimension: the value of the new knowledge to society (including both sellers and buyers in the relevant market) might be much higher than the costs of developing the knowledge; however, if no one can appropriate enough of this total value to cover research and development costs, the knowledge will never be generated.

The appropriability dilemma is the major economic justification for intellectual property protection; that protection is a deviation from normal competition policy. It gives the innovator a limited monopoly right to work a new technology and, hence, to increase the total appropriable value of this technology.

Advocates of strong intellectual property protection argue that the stronger this protection is, the more that can be appropriated and the stronger the incentive to innovate. This argument cannot be easily dismissed. However, the stronger this protection is, the slower will be the diffusion of new technology from the innovator to other firms (which may then improve upon it). Thus, many economists argue that too much intellectual property protection can be a bad thing by lowering the overall rate of adoption of new technologies, which depends on both innovation and diffusion (and on the improvements that often accompany diffusion). Theory and empirical evidence support this position (Scherer and Ross 1990). Therefore, the socially correct amount of intellectual property protection is, at best, an uncertain matter.

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50. This assumes that the knowledge diffuses from the innovator to the other firms without cost, an assumption that will not generally hold. Indeed, some highly innovative firms proceed on the assumption that rivals will not be able to easily replicate knowledge generated within the innovative firm or that the time between innovation and imitation will be sufficiently large so that, by the time rivals have mastered the knowledge, the innovator will have moved on to still newer innovations.

The appropriability dilemma also is invoked to justify cooperation in research and development among sellers who otherwise must compete. If the costs of creating new technology are pooled among sellers, then the disincentive to the innovator from having to bear the full costs while sharing the rewards is reduced. This might result in higher rates of innovation. However, as with intellectual property protection, this conclusion is conditional, as shown below.

Both intellectual property protection and cooperative research and development can be seen as restricting competition. But, as we have stressed, competition policy has, as one of its ultimate objectives, long-term efficiency. Thus, even if competition is reduced, if efficiency-enhancing technological innovation is increased, then intellectual property protection and cooperative research and development would be consistent with the objectives of competition policy. However, the “ifs” must be carefully examined: Will higher rates of technological advance result? Again, there is no strong, normative guideline to help with this examination.

If the appropriability dilemma explains why highly competitive industries do not innovate as rapidly as less competitive ones do, then why do monopolies also tend to be noninnovative? After all, a monopolist does not have to worry about other sellers capturing the rewards of technological innovation. Rather, the monopolist gets all of the reward (or, to be more accurate, gets all of the reward that accrues to sellers, because in the absence of perfect price discrimination, some of the reward will be passed to users in the form of additional consumer surplus).<sup>51</sup> From the perspective of the monopolist, the problem is that sinking costs into research and development is to subject oneself to uncertainty: the expenditures might or might not achieve a satisfactory return. And why should the monopolist do this when it already earns monopoly profits? To be sure, if the research and development is successful, profits will increase. But if shareholders are content with current profits, why take the chance that profits will be reduced by unsuccessful efforts at innovation, when to do nothing would be perfectly satisfactory?

Thus, monopolies tend not to be innovative, because there is some risk to spending on research and development but no apparent risk to not spending. Indeed, this reason applies to intellectual property protection and joint research and development ventures: They reduce the appropriability problem but also can reduce the risk of not innovating. In the

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51. There is a third reward that might be generated by technological innovation, via the creation of so-called positive externalities. Suppose, for example, that the innovation is a better and cheaper device to clean automotive exhaust, which ultimately improves air quality significantly. Then anyone who can stop taking drugs to combat respiratory problems created by the now eliminated smog is a beneficiary of this innovation via this externality: they benefit, but they do not pay.

case of intellectual property, if the protection granted to existing technology is too great, there will be little or no risk that a rival firm will usurp market share by bringing to the market a still better version of this technology. In the case of joint ventures, the temptation might be for all firms to act more like monopolists than innovative risk takers.

It is often argued that in all of these cases the antidote is to make it risky not to perform research and development. This is best accomplished by introducing competition or, at least, contestability in the market. If there is significant risk that, in the event that an incumbent monopolist does not innovate, an innovative entrant will take away market share, then the incumbent will have to balance the risks of doing research and development against the risks of not doing it. And, if there is potential for product or process improvement (and in what sector is there not?), the likely decision will be to undertake the costs and risks of innovation.

The upshot is that an innovative industry is likely to be quite contestable, but innovative firms can still expect to capture significant rewards. This suggests a market structure that is monopolistically competitive, with only fleeting advantages held by the successful innovator. However, the structural determinants of whether an industry is innovative are not wholly understood.<sup>52</sup>

One result is that competition policy does not deal wholly with issues of innovation nor, indeed, with the panoply of lifetime issues facing a firm. Indeed, competition policy does no more than sanction three rather ad hoc institutions: exceptions (or, at minimum, looser regulation) for joint ventures for research and development; monopolistic intellectual property protection regimes; and forbearance for recession and rationalization cartels. The idea in the first two is to reduce the cost of entry for new products and processes and to improve conditions for appropriability; the idea in the third is to reduce the cost of exit for the old, thus encouraging Schumpeterian dynamic efficiency.

With respect to the third, there are few studies to indicate whether these cartels really do reduce the cost of exit. Nonetheless, we suggest experimentation with these and other competition-policy safeguards, because they are more efficient (and often more equitable) than trade remedies (antidumping and countervailing duties) in downsizing activities in which a country's producers have lost comparative advantage.

With respect to innovation, it is clear that markets alone tend to under-supply new technology, but it is not yet clear how competition policy

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52. For example, traditional 20-year protection of patentable inventions might seem long rather than fleeting. More generally, the issue of the ideal length of patent protection and of patent scope (does the patent cover major variations of a new technology or only minor ones?) is not well addressed by economic reasoning. One consequence is that patent life and scope has been determined by historic precedent rather than by reason and evidence.

can help the market overcome its shortcomings. The recent commitment by all WTO members to historically established systems of intellectual-property protection is an intriguing real-life institutional experiment in policies to encourage dynamic efficiency.<sup>53</sup> Whatever its outcome, in 20 or more years many questions will remain about the optimal design of such institutions, such as how long-lived such protection should be and how broad its coverage should be across varieties of similar innovations.

### *Globalization, Governance, and Cross-Border Investment*

Though competition policy is rarely defined so broadly as to include issues of corporate governance, cross-border investment and trade increasingly force the two together in evaluating the lifetime behavior of firms. Thus, cross-border investment can be a vehicle for both new entry of products and for innovation.<sup>54</sup> Japanese investment in North American steel, rubber, and auto assembly facilities, for example, reestablished US compact-car production and revolutionized US factory organization.<sup>55</sup> Thus, policies that encourage cross-border investment may facilitate the goal of contestability (Graham 1996a, chapter 4). Among other such policies are commitments to rights of establishment and national treatment for foreign firms and discipline of discriminatory performance requirements not covered by the Uruguay Round Trade-Related Investment Measures (TRIMs). But brokerage, forecasting, risk assessment, and risk management are among the important supports and complements to these investment policies. All of these support policies are informational infrastructures that make global investment markets work efficiently and fairly, just as competition policy is a national infrastructure with the same objectives.

### Social Behavior

Competition policies are almost always modulated and influenced by broader social objectives.

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53. This commitment is embodied in the TRIPs agreement. Proponents of this agreement believe that its implementation will encourage the diffusion of technology to nations that, in the past, international investors have been reluctant to transfer technology to because of weak intellectual property protection. Critics, however, worry that full implementation of TRIPs could lead to overzealous protection of intellectual property with the deleterious effects (already noted above).

54. See Noland (1997) for a negative assessment of the hypothesis that cross-border investment is restrained by anticompetitive entry-deterrence practices.

55. Most Japanese investments in steel and rubber involved taking over failing firms; most auto investments involved greenfield investment (building plants from the ground up). Entry was obviously higher than otherwise in the latter case but also higher in the former because exit of US firms, which would have happened without the investment, was allayed.

## *Sectoral and Corporate Differences*

Because it often clashes with other objectives, competition policy varies across sectors. Competition policy is usually tailored to sectoral public-interest regulation—especially in transportation, telecommunications, and utilities—and often tailored to industrial policies that favor agriculture or high-technology sectors over others. Competition policy is almost always made subservient to national-security considerations in defense contracting and defense-sector downsizing.<sup>56</sup> Competition policy has never been applied indiscriminately to financial markets nor to labor markets where labor unions compete with each other and with company representation to represent workers collectively (cooperatively and collusively). Occasionally, competition policy even differentiates among competing firms, with state-owned or state-chartered firms treated with more leniency (but this differential treatment is not sanctioned in either Europe or North America).

## *Functional Differences*

Competition policy is also altered to serve social goals without regard to sector. Examples are the promotion of small or minority-owned businesses, maintenance of indigenous culture, assurance of service to peripheral or declining subregions, and buttressing of government revenue. For example, small businesses in some countries (e.g., France and Japan) are protected by distribution laws that allow mom-and-pop retailers to block the arrival of a new (and often larger) entrant (see chapters in this volume by Jenny and Matsushita). Examples of the policies that maintain indigenous culture are special barriers to ownership of publishing enterprises and mass media by foreigners and, hence, barriers to mergers that involve them (see the chapter by Goldman, Bodrug, and Warner), and antitrust exemptions for local sports (e.g., North American baseball). Until recently, telecommunications and other utilities illustrated policies that support universal service. Firms in these sectors have been allowed to maintain privileged positions of market power in exchange for their pledge to serve the hinterlands, financing an otherwise unprofitable service with excess profits earned from their entry-protected positions.<sup>57</sup> An example of the policies that buttress government revenue is the willingness of governments to compromise competition-policy objectives when privatizing a state-owned monopolist—government revenues from the

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56. See, for example, "Linking Arms: A Survey of the Global Defense Industry," *The Economist*, 14 June 1997, 7-8.

57. The sanctioned financing is called cross-subsidization. But in the United States and elsewhere, deregulation and international market opening are allowing entry to undercut these cross-subsidies and forcing regulators to find less anticompetitive means to subsidize service in remote regions.

sale are kept higher when the government guarantees the same privileged market position to the private buyer.

When competition policy differs for these reasons across sectors, firms, regions, or activities, efficiency and fairness of the normal sort suffer, as described in the next section. That is the trade-off for or price of meeting other social objectives. However, some commentators argue that this price is rising all too rapidly because of the weakness of existing competition policies (see the chapters in this volume by Rosenthal and Nicolaïdis). And when countries differ in the sectors, firms, regions, or activities that they exempt for social reasons, efficiency and fairness suffer at the global level as well. Conflict over the fairness of differing exceptions becomes inevitable.<sup>58</sup>

## **Economywide and Worldwide Concerns of Competition Policy**

The efficiency and fairness concerns of competition policy are different when viewed from a distance rather than from a sector's vantage point. There are unique insights about the forest that do not characterize the trees.

### **Economywide and Worldwide Efficiency**

Efficiency is achieved by a somewhat different set of guidelines for the economy as a whole than for a single sector or firm. One of the things that matters most for single industries or firms is the relationship of output prices to input costs for given product attributes. But what matters for economywide efficiency are relative prices and costs from sector to sector. At any point, an economy is reasonably efficient if:

- the prices of goods and services from sector to sector have the same relative values as under perfect competition, whether or not this extreme form of competition really exists and whether or not the prices are close to costs, and
- input costs are the same from sector to sector and firm to firm, rather than, for example, being cheaper to incumbents or to favored firms or sectors.<sup>59</sup>

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58. Suzumura's chapter in this volume outlines the types of considerations that might go into deciding permissible exemptions policies.

59. Favored firms might include those with public ownership or ownership by ethnic minorities, firms with a license to unique resources, or firms with political connections. Favored sectors often include those with prominent places in a development plan, or those meeting social objectives. Price discrimination by input suppliers creates differences across buyer firms, which is presumptively inefficient (Varian 1989, 623-24), unlike price discrimination by final-goods suppliers.

That relative prices and costs are what really matter for economywide efficiency has some surprising implications. The fundamental implication is that, with one important exception, a single economy can still be reasonably efficient when each of its sectors faces comparable competitive imperfections (e.g., if each sector is populated by the same set of rival incumbent firms that block out newcomers and charge prices that are marked up comparably over costs, say, by 30 percent).<sup>60</sup> The economy is still reasonably efficient because excess profits and barriers to entry are roughly the same throughout the economy; there is no economywide incentive to underproduce in one sector relative to another, and the sector-by-sector mix of goods available to buyers is close to that which perfect competition would generate (because the product prices of each sector relative to others are also the same as under perfect competition).<sup>61</sup>

The important exception to this economywide efficiency would occur when relative prices of new products, processes, or technologies that would have often been produced by the blocked, nascent newcomers as their ticket to successful entry are wrong. Product innovation will, as a result, usually be too low, as will the number of product varieties. Process innovation may also be too low, because the costs of new processes are distorted, and entrants with new ideas for how to produce products are also blocked.<sup>62</sup>

This insight on economywide efficiency is less abstract than it may appear. Economies such as South Korea's, in which the same corporate conglomerates (called *chaebol*) compete across virtually all industries, may not have egregious inefficiencies and distortions in any particular sector (except innovation)—as long as South Korea remains reasonably insulated from the world economy. And economies such as Germany's, in which powerful labor unions bargain nationally and represent workers across many sectors, may not have egregious sectoral inefficiencies and distortions—except in innovation and except as the sharp market competition from the rest of the world impinges indirectly on German labor market power.<sup>63</sup> By contrast, economies with sectorally uneven market

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60. This outcome is sometimes described as the “equal degree of monopoly” environment. See Scherer and Ross (1980, appendix to chapter 2).

61. British competition law actually seeks a “balanced distribution of industry” (see the chapter by Hay in this volume).

62. A less-important exception is that the price of leisure may be distorted, because it cannot meaningfully be produced by the same monopolistic markup process. See Scherer and Ross (1980, appendix to chapter 2). Leisure may be slightly underproduced (excessive labor supply) or slightly overproduced (insufficient labor supply), with the latter slightly more likely, according to empirical estimates of the wage elasticity of the labor supply.

63. The same might be said to be the result of inefficient distribution systems across all sectors in Japan.

power (e.g., government-sanctioned monopolies in transport or telecommunications) often have more inefficiency—visibly bad quality, slow service, and high prices—in those sectors (but they are not so inefficient in other sectors).

Even in an economy with sectorally even market power, however, a lack of innovation might cause static inefficiency to grow over time. This is because innovation itself is uneven across sectors and, hence, causes relative prices to change. An economy that is insulated from such changes will become increasingly inefficient even in the static sense. Additionally, because new technologies will be adopted elsewhere and not at home, producers in the insulated economy will become increasingly technologically inefficient. Put in plain English, they will become backward by failing to adopt technological improvements. The economies of Eastern Europe and the Soviet Union during the 1970s and 1980s are examples. Dominance of these economies by state-owned monopolies led both to increasing static (allocational) inefficiency due to relative price distortions as well as to technological backwardness. One consequence was a high level of so-called x-inefficiency or, in other words, overstaffing (and featherbedding) in the state-owned enterprises.

However, technological backwardness and increasingly inefficient allocation of resources do not necessarily follow if the economy is at least open to imports of technology. South Korea again serves as an example. Although during the 1970s and 1980s it was relatively closed to imports of goods and (nonfactor) services, South Korea was not closed to imports of technology. In fact, Korean firms—including the *chaebol*—paid large fees to gain access to new technologies. One result was that relative prices in South Korea changed in response to technological improvement, and another was that South Korean firms technologically caught up with their rivals in the rest of the world. Also, these firms diversified into new activities, often those where technological advances were occurring most rapidly. Overall, South Korea's economic position in the world (as measured by per capita GDP) rose, at exactly the same time that the position of most of Eastern Europe fell.

For similar reasons, inefficiency is also high in economies in which the cost of the same resource differs dramatically from firm to firm or from sector to sector, say, because of government favoritism or ethnic or family connections. But inefficiency is not necessarily high in insulated economies where everyone faces the same input prices, even if input prices are altered by heavy regulation or taxation (e.g., payroll taxes).

This insight on economywide efficiency means, more precisely, that

- point-in-time (static) efficiency for an economy in isolation does not require perfect competition; it can be approached when there are competitive distortions that are pervasive yet comparable across activities.

Six more insights follow directly:

- The same economy is likely to be dynamically inefficient: it may not grow quickly if its structure discourages product and process innovation by new firms.
- Efficiency may be ensured, but fairness of opportunity may not; new entrants are uniformly shut out.
- The economy's apparent efficiency may fade as it opens to world markets; every sector in the economy and every input market will be pressured by global counterparts whose corresponding sectors are organized more competitively.
- The greatest pressure will come in the most dynamic sectors—that is, the sectors or input markets that are most innovation-intensive.
- Pressures from global rivals may appear unfair because their economies do not tolerate any modulation or cushioning of ruthless efficiency-enhancing competitive forces.
- Increasingly integrated global financial markets are catalysts for these competitive pressures, creating both opportunity and risk. Efficient corporate cooperation, labor relations, and regulation (e.g., prudential regulation of the financial markets) will actually be rewarded; it is not inevitable that conglomerates and social market economies are eclipsed.

These insights need further discussion by, for example, the working party of the WTO that is now studying them.

One important implication of these insights is that setting an efficient regulatory baseline is a crucial precondition for defining anticompetitive practices. In the long run, there will be no avoiding the need for governments to sit down to negotiate and then recognize efficient competition-policy rules for permissible interfirm cooperation and even for permissible organization of labor markets.<sup>64</sup> Such internationally recognized rules will define (and deliver) baseline efficiency for all countries that agree to them and for all sectors that are covered. The baseline

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64. These will inevitably involve worker rights to cooperate—that is, organize and collectively transact (bargain), which are rights that mirror the rights of firms to do the same. However, efficient foundational rules would almost surely make union representation more contestable than it is in most countries, reducing the market power of incumbent unions and easing the potential of new-entrant unions to displace inefficient incumbents. Cross-border trade in union organization and representation is a still more distant instrument for achieving efficient foundational labor-relations rules, but it has the same economic rationale as all cross-border competition. Free trade in union representation enhances the contestability of labor markets and has rewards in both efficiency and (arguably) fairness!

may look inefficient relative to some other norm or relative to some definition of efficiency that puts more weight on its dynamic character than its static character (efficiency for growth or for current generations), but arguing over such differences and experimenting with and monitoring alternative baselines will be a crucial part of the process.

## Economywide and Worldwide Fairness

Fairness, likewise, is also achieved somewhat differently for the economy as a whole than for each sector. One important reason is that many firms, large and small, are diversified across sectors (large firms that produce in many sectors are called conglomerates). Thus, sectoral differences in competition policy may not be unfair to any particular (diversified) firm. For example, a division of a conglomerate such as General Electric may decide to enter a new line of production such as broadcasting (General Electric owns the National Broadcasting Company [NBC]). Thus, General Electric is less vulnerable from an economywide perspective than from the perspective of the electrical-equipment industry alone—it is a diversified incumbent. And, correspondingly, if it were forced to leave one of its many lines of business, perhaps even by predation from another diversified conglomerate, the inequity seems less compelling if some of its workers, efforts, and rewards are simply reoriented to its other product lines.

This insight also has valuable implications for international conflict. Fairness-motivated competition-policy conventions may be less needful when the underlying constituents are sectorally diversified multinational companies like Daewoo, Mitsubishi, Phillip Morris, and Siemens. Reciprocated entry (cross-penetration) by such firms into each others' diverse domestic markets may make the prototypical global market monopolistically competitive rather than oligopolistic. There would be less need for competition policy of any kind to the extent that market power and its abuse are more tightly constrained by the former market structure than by the latter. Diversified multinational firms can take care of themselves. But market competition among them can take care of disciplining any abuses of market power they may contemplate. The apparent power of each is illusory, undermined by the strong competition of the others.<sup>65</sup>

Smaller firms, however, or those that produce only a single product or handful of products, may be less insulated. So competition policy is more needful to them, especially if small firms can be disproportionately large agents of entry and innovation. However, the large multinationals

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65. Global cartelization or implicit collusion among these multinationals, such as the cartelization that took place in the 1930s, is clearly to be avoided. This is another natural task of an international competition-policy regime.

often relate vertically to hundreds of small, specialized, domestic suppliers whose need for fair and efficient treatment in global markets is taken care of by the implicit representation of their large corporate customers, not by policy. The place for policy, however, may naturally remain to discipline abuses of market power among large and small firms, whatever their nationality.

Finally, fairness can often be achieved among a few large firms by negotiation alone. The transaction costs of negotiating are generally lower if fewer agents are represented. Thus, there is no need for an elaborate fairness policy if firms can work out their perceived inequities (and potential inefficiencies) through legal joint ventures and other cooperation.<sup>66</sup> This simply illustrates the kind of good interfirm relation described above.

The remainder of this volume is divided into three sections. The first is a series of studies indicating how several nations (and the European Union) have implemented competition policies. What emerges from these chapters is that there are substantial differences among nations in their specific approaches and that these differences can be difficult to reconcile at the international level. Two important sets of differences—those between the United States and the European Union and those between the United States and Japan—are explored in some detail. The following section consists of several studies of specific issues germane to competition policy. The final section contains our recommendations on action that should be taken at the international level.

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66. But there is still a need for competition policy to define the boundaries of cooperation legally and to enforce those boundaries clearly.

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