

EDITED BY

ROGER D.

**BLAIR**

D. DANIEL

**SOKOL**

≡ The Oxford Handbook of  
**INTERNATIONAL  
ANTITRUST ECONOMICS**  
VOLUME 1

THE OXFORD HANDBOOK OF

**INTERNATIONAL  
ANTITRUST  
ECONOMICS**

**VOLUME 1**

## CONSULTING EDITORS

*Michael Szenberg*

Lubin School of Business, Pace University

*Lall Ramrattan*

University of California, Berkeley Extension

THE OXFORD HANDBOOK OF

---

INTERNATIONAL  
ANTITRUST  
ECONOMICS

---

VOLUME 1

*Edited by*  
ROGER D. BLAIR  
*and*  
D. DANIEL SOKOL

OXFORD  
UNIVERSITY PRESS

# OXFORD

UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide.

Oxford New York

Auckland Cape Town Dar es Salaam Hong Kong Karachi  
Kuala Lumpur Madrid Melbourne Mexico City Nairobi  
New Delhi Shanghai Taipei Toronto

With offices in

Argentina Austria Brazil Chile Czech Republic France Greece  
Guatemala Hungary Italy Japan Poland Portugal Singapore  
South Korea Switzerland Thailand Turkey Ukraine Vietnam

Oxford is a registered trademark of Oxford University Press  
in the UK and certain other countries.

Published in the United States of America by  
Oxford University Press  
198 Madison Avenue, New York, NY 10016

© Oxford University Press 2015

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing of Oxford University Press, or as expressly permitted by law, by license, or under terms agreed with the appropriate reproduction rights organization. Inquiries concerning reproduction outside the scope of the above should be sent to the Rights Department, Oxford University Press, at the address above.

You must not circulate this work in any other form  
and you must impose this same condition on any acquirer.

CIP data is on file at the Library of Congress  
ISBN 978-0-19-985919-1

1 3 5 7 9 8 6 4 2  
Printed in the United States of America  
on acid-free paper

# CONTENTS

---

<i>List of Contributors</i>	ix
<i>Introduction</i>	xiii

## PART I INTRODUCTION AND INSTITUTIONAL ISSUES

1. Rationales for Antitrust: Economics and Other Bases DANIEL A. CRANE	3
2. Antitrust Enforcement Regimes: Fundamental Differences KEITH N. HYLTON	17
3. Economic Analysis of Antitrust Exemptions PETER CARSTENSEN	33
4. Healthcare Provider and Payer Markets CORY S. CAPPS AND DAVID DRANOVE	63
5. International Antitrust Institutions OLIVER BUDZINSKI	119
6. Competition Policy in Public Choice Perspective FRED S. MCCESNEY, MICHAEL REKSULAK, AND WILLIAM F. SHUGHART II	147
7. Antitrust Settlements DANIEL L. RUBINFELD	172
8. The Economics of Antitrust Class Actions ROGER D. BLAIR AND CHRISTINE PIETTE DURRANCE	187
9. Behavioral Economics and Antitrust MARK ARMSTRONG AND STEFFEN HUCK	205

10. Experimental Economics in Antitrust 229  
WIELAND MÜLLER AND HANS-THÉO NORMANN
11. Optimal Antitrust Remedies: A Synthesis 254  
WILLIAM H. PAGE
12. Private Antitrust Enforcement in the United States and the European Union: Standing and Antitrust Injury 281  
JEFFREY L. HARRISON
13. Freedom to Trade and the Competitive Process 298  
AARON EDLIN AND JOSEPH FARRELL

## PART II MONOPOLY: STRUCTURAL CONSIDERATIONS

14. Monopoly and Dominant Firms: Antitrust Economics and Policy Approaches 313  
LAWRENCE J. WHITE
15. Market Definition 345  
LOUIS KAPLOW
16. Bilateral Monopoly: Economic Analysis and Antitrust Policy 364  
ROGER D. BLAIR AND CHRISTINA DEPASQUALE
17. Antitrust, the Internet, and the Economics of Networks 380  
DANIEL F. SPULBER AND CHRISTOPHER S. YOO
18. The Antitrust Analysis of Multisided Platform Businesses 404  
DAVID S. EVANS AND RICHARD SCHMALENSEE

## PART III MERGERS

19. Efficiency Claims and Antitrust Enforcement 451  
HOWARD SHELANSKI
20. Unilateral Effects 466  
BRYAN KEATING AND ROBERT D. WILLIG
21. Coordinated Effects: Evolution of Practice and Theory 509  
JITH JAYARATNE AND JANUSZ ORDOVER

22. Buyer Power in Merger Review	529
DENNIS W. CARLTON, MARY COLEMAN, AND MARK ISRAEL	
23. Vertical Mergers	551
MICHAEL A. SALINGER	
<i>Index</i>	587





## LIST OF CONTRIBUTORS

---

**Mark Armstrong**, Professor of Economics and Director of Graduate Studies, University of Oxford

**Roger D. Blair**, Walter J. Matherly Professor and Chair, Department of Economics, Warrington College of Business, University of Florida

**Oliver Budzinski**, Professor of Economic Theory, Institute of Economics, Ilmenau University of Technology

**Cory S. Capps**, Partner, Bates White Economic Consulting; formerly Staff Economist, Antitrust Division, Department of Justice

**Dennis W. Carlton**, David McDaniel Keller Professor of Economics, University of Chicago Booth School of Business

**Peter Carstensen**, Professor of Law, University of Wisconsin

**Mary Coleman**, Executive Vice President, Compass Lexecon

**Daniel A. Crane**, Associate Dean for Faculty and Research and Frederick Paul Furth, Sr. Professor of Law, University of Michigan

**Christina DePasquale**, Assistant Professor, Department of Economics at Emory University

**David Dranove**, Walter McNerney Professor of Health Industry Management, Professor of Management and Strategy, Kellogg School of Management, Northwestern University

**Christine Piette Durrance**, Assistant Professor, Department of Public Policy, University of North Carolina at Chapel Hill

**Aaron Edlin**, Richard Jennings Endowed Chair, Professor of Economics, Professor of Law, University of California, Berkeley

**David S. Evans**, Lecturer, University of Chicago Law School; Executive Director and Visiting Professor, Jevons Institute for Competition Law and Economics, University College London Faculty of Laws; Chairman, Global Economics Group

**Joseph Farrell**, Professor of Economics, University of California, Berkeley

**Jeffrey L. Harrison**, Stephen C. O'Connell Professor of Law, Levin College of Law, University of Florida

**Steffen Huck**, Professor of Economics, University College London

**Keith N. Hylton**, William Fairfield Warren Distinguished Professor and Professor of Law, Boston University.

**Mark Israel**, Executive Vice President, Compass Lexecon

**Jith Jayaratne**, Executive Vice President, Compass Lexecon

**Louis Kaplow**, Finn M.W. Caspersen & Household International Professor of Law and Economics, Harvard Law School; Associate Director, John M. Olin Center for Law, Economics, and Business, Harvard Law School; Research Associate, National Bureau of Economic Research

**Bryan Keating**, Senior Vice President, Compass Lexecon

**Fred S. McChesney**, de la Cruz–Mentschikoff Endowed Chair in Law and Economics, University of Miami School of Law

**Wieland Müller**, Professor of Economics, Department of Economics, University of Vienna

**Hans-Theo Normann**, Professor of Economics, Dean of the Graduate School, Düsseldorf Institute for Competition Economics (DICE), Heinrich-Heine-Universität Düsseldorf

**Janusz Ordovery**, Professor of Economics, New York University and Senior Consultant, Compass Lexecon

**William H. Page**, Professor of Law and Marshall M. Criser Eminent Scholar, Levin College of Law, University of Florida

**Michael Reksulak**, Director, Social Sciences, Arts and Humanities, Qatar Foundation, Qatar National Research Fund

**Daniel L. Rubinfeld**, Robert L. Bridges Professor of Law and Professor of Economics, Emeritus, University of California, Berkeley and Professor of Law, New York University

**Michael A. Salinger**, Jacqueline J. and Arthur S. Bahr Professorship in Management Markets, Public Policy and Law, School of Management, Boston University

**Richard Schmalensee**, Howard W. Johnson Professor of Management Emeritus and Professor of Economics Emeritus, Sloan School of Management, Massachusetts Institute of Technology

**Howard Shelanski**, Professor of Law, Georgetown University

**William F. Shughart II**, J. Fish Smith Professor in Public Choice, Jon M. Huntsman School of Business, Utah State University

**D. Daniel Sokol**, Professor, Levin College of Law, University of Florida and Senior Research Fellow, George Washington University Law School Competition Law Center

**Daniel F. Spulber**, Elinor Hobbs Distinguished Professor of International Business and Professor of Management Strategy, Kellogg School of Management, Northwestern University

**Lawrence J. White**, Robert Kavesh Professor of Economics, Department of Economics, Stern School of Business, New York University

**Robert D. Willig**, Professor of Economics and Public Affairs, Woodrow Wilson School of Public and International Affairs, Princeton University

**Christopher S. Yoo**, John H. Chestnut Professor of Law, Communication, and Computer & Information Science; Director, Center for Technology, Innovation & Competition; University of Pennsylvania Law School



# INTRODUCTION

---

ROGER D. BLAIR AND D. DANIEL SOKOL

ANTITRUST economics is a subset of industrial organization economics. What makes antitrust economics rather unique is the centrality of economic analysis to the development of antitrust law and policy. In the United States antitrust economics guides all antitrust analysis by government enforcers (at the federal level the Department of Justice Antitrust Division and the Federal Trade Commission) and courts. In other systems, the centrality of antitrust economics to antitrust law (typically called competition law) and policy has not been established. Instead, cutting-edge antitrust economic analysis competes with non-antitrust economics goals. Nevertheless, across the major non-US jurisdictions, antitrust economics is far more utilized now than previously. With global mergers and various types of conduct, increased coordination across agencies, practitioner lawyers and economists around the world trained in the latest theories of antitrust economics, and a rise of economic analysis in decision-making by adjudicators, the increasing role of international antitrust economics seems somewhat inevitable.

The desire to provide scholars and policymakers across jurisdictions a reference tool to understand the most important developments in antitrust economics motivates this handbook. We have assembled many of the most important scholars in the field to provide overviews and analysis of the core issuers in antitrust economics. Although no handbook can be exhaustive, we have attempted to cover all of what we believe to be the major topics in the field. The developments in economic analysis across these areas that the handbook covers will shape policy and legal issues in the field for some time. We hope that the handbook will provide inspiration for new avenues of theoretical and empirical research in the field.

Many people deserve thanks for this book. The project took a number of years to complete. Our editors at Oxford University Press deserve our gratitude for their patience and excellent editing. Coordinating production across so many chapters was not always easy. We particularly thank those authors who turned in their work in a timely manner.



THE OXFORD HANDBOOK OF

**INTERNATIONAL  
ANTITRUST  
ECONOMICS**

**VOLUME 1**





PART I

---

INTRODUCTION AND  
INSTITUTIONAL  
ISSUES

---



## CHAPTER 1

---

# RATIONALES FOR ANTITRUST

## *Economics and Other Bases*

---

DANIEL A. CRANE

WHAT are the purposes or objectives of the antitrust laws? There are several ways to answer this question. To answer it descriptively, one could look at the history of antitrust enforcement and ask who the antitrust laws have actually benefited or what they have achieved over time as they have been enforced. As the economist George Stigler wrote, “The announced goals of a policy are sometimes unrelated or perversely related to its actual effect and the *truly intended effects should be deduced from the actual effects*” (Stigler 1975, 140). The actual beneficiaries of antitrust enforcement may be quite different from those intended by the legislative framers of the antitrust statutes or the ones proposed by normative theorists.

The answer to the descriptive question is contested. Public choice scholars have claimed that the history of US antitrust enforcers shows that small, inefficient businesses are the primary beneficiaries of antitrust enforcement, often at the expense of consumers and economic efficiency (McChesney and Shughart 1995). Many antitrust advocates would contest this claim and argue that consumers have been the primary beneficiaries of antitrust enforcement. In this chapter, I will not attempt to answer the empirical question.

One could also attempt to answer the rationale question as a matter of legislative intent by looking to the intentions of the framers of the Sherman Act (1890) in the United States, the Treaty of Rome (1957), reborn in 2009 as the Treaty on the Functioning of the European Union (“TFEU”), or the foundational antitrust statute of any of the more than 100 nations that currently have antitrust laws. Such an approach is highly contestable too. Claims about the intentions of the framers of the Sherman Act, for example, have been controversial. The Chicago School theorist Robert Bork claimed to locate an economic efficiency objective in the congressional minds of 1890 (Bork 1978). Subsequent scholarship refuted Bork’s claim, finding the avoidance of wealth transfers from consumers to producers or protection of small, inefficient businesses to be the predominant legislative purposes (Lande 1982, DiLorenzo 1985, Hovenkamp 1988, Hazlett 1992).

A third approach to determining antitrust rationales is to engage in a free-form normative debate about the role of monopoly, competition, law, and regulation in modern society. Should we have antitrust laws and, if so, why? This is where most of the action is today. Most scholars and antitrust practitioners—at least in the established antitrust regimes, particularly the United States and Europe—tend to assume that the foundational legal instruments creating antitrust law are sufficiently open-textured and subject to interpretation to accommodate a variety of different and sometimes conflicting normative objectives. Hence, the existential purposes of antitrust law are open for continued creation and recreation by litigants, scholars, judges, and government officials. Further, whoever have been the actual beneficiaries of antitrust law in the past, most antitrust practitioners assume that the proper beneficiaries can be reached if the right substantive norms, procedural rules, and institutional constraints are enacted. Thus, objections based on the past record of antitrust enforcement have largely fallen on deaf ears.

For purposes of this introductory chapter, I will approach the rationales question from a largely normative perspective. What are the leading contemporary views on what *should be* the purposes of antitrust law? To begin this discussion, let us consider the foundational question of intended beneficiaries: for whose benefit should antitrust law exist?

## 1.1. WHO ARE THE INTENDED BENEFICIARIES?

---

Antitrust differs from most fields of law in one important respect: it is not instantly clear for whose benefit the antitrust laws exist. It is readily apparent that securities laws are intended to protect investors, antidiscrimination laws are intended to protect unpopular minorities, and labor laws are intended to balance the interests of employers and employees. But who are the intended beneficiaries of antitrust law?

When one poses this question to a group of students, a multiplicity of answers usually flies back toward the chalkboard: consumers, employees, competitors, independent businesspeople, shareholders, taxpayers, voters, society at large. The list goes on and on. However long the list ultimately grows, it is subject to the challenge that many of the names on the list have clearly conflicting interests with those of other names on the list. Some of these conflicts are fairly obvious. In the founding era of US antitrust law, many people assumed that controlling the monopolistic power of the corporate trusts would benefit both shareholders and consumers. But shareholders and consumers generally have opposite interests in monopoly in competition. Even if the shareholders of “victim” companies are sometimes harmed by anticompetitive conduct, as a class, shareholders are often benefited by cartelization and many other antitrust violations, whereas consumers are harmed.

Some of the conflicts are less obvious. Are working-class employees generally benefited or harmed if their employers obtain market power? Some empirical work

suggests that employees tend to earn higher wages in more concentrated markets (Oi and Idson 1999), whereas consumers pay higher prices in those markets, thus creating a clash between the interests of employees and consumers on the intensity of antitrust enforcement.

In most modern antitrust systems, the interests of consumers are placed at or near the top of the beneficiaries list. Thus, the US Supreme Court has described the Sherman Act as a “consumer welfare prescription,”<sup>1</sup> and the European Commission has adopted consumer welfare as at least a primary purpose of competition law enforcement.<sup>2</sup> Countries that have recently added or updated antitrust laws generally list consumer welfare high on their list of objectives. Article 1 of China’s 2007 Anti-Monopoly Law lists a number of objectives but identifies only one category of beneficiary—“safeguarding the interests of consumers.” India’s 2002 Competition Law speaks in its preamble of “protect[ing] the interests of consumers,” although it also lists the “freedom of other market participants” as another class of intended beneficiary.

Although most antitrust systems recognize consumer welfare as either paramount or at least coequal with any other objectives, relatively little attention is paid in foundational antitrust statutes or other instruments to how to resolve a clash between intended beneficiaries should one arise. Even where some balancing of interests is suggested, it is hard to find applications in practice. For example, Article 101 of the TFEU, which generally prohibits agreements that unduly restrict competition, allows some such restrictive agreements that “contribute[] to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit.” However, the European Commission has interpreted this to mean that the effect of the restraint on consumers must be at least neutral—meaning that a restriction may be allowed if, although impairing competition somewhat, it advances efficiency and makes consumers no worse off. This is not really a balancing of competing interests approach so much as “first do no harm” principle.

## 1.2. EFFICIENCY AND FAIRNESS

Although the normative justification for antitrust law may appear controversial to lawyers, it is relatively straightforward to economists. Economists generally begin their account with an assumption that in a competitive market, competition forces firms to price at marginal cost—the cost of creating the marginal unit of production. Marginal

<sup>1</sup> *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979).

<sup>2</sup> See, e.g., Philip Lowe, Director General, European Commission Directorate General for Competition, *Consumer Welfare and Efficiency—New Guidelines and Principles of Competition Policy* (Mar. 27, 2007), available at [http://ec.europa.eu/competition/speeches/text/sp2007\\_02\\_en.pdf](http://ec.europa.eu/competition/speeches/text/sp2007_02_en.pdf); Neelie Kroes, European Commission for Competition Policy, *Consumer Welfare: More than a Slogan* (Oct. 21, 2009), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/09/486&format=pdf>.

cost pricing (putting aside the tremendous complexities of defining and identifying it) thus becomes the benchmark against which competitive effects are judged.

When firms engage in anticompetitive conduct—such as collusion, monopolization, or merger—that disrupts the market’s competitiveness, the producer firms are able to raise prices above competitive levels. Depending on the elasticity of demand, price increases can produce one or both of two price effects. First, customers with elastic demand forgo purchasing the relevant goods at the higher prices. Second, customers with inelastic demand continue to purchase the higher-priced goods, thus transferring some of their wealth to the producers. These two effects correspond with the two primarily economic theories of why anticompetitive conduct may be normatively undesirable.

The first effect—that some customers cease buying at the higher price—creates an output reduction and deadweight loss. Producers have to cut production in order to sustain the price increase. Economists generally agree that this effect from anticompetitive conduct is allocatively inefficient. Allocative efficiency is that state of affairs where scarce social resources are put to their most valued uses. When the price of goods increases due to anticompetitive conduct and consumers with elastic demand buy less, allocations of scarce social resources that would have occurred in a competitive market no longer occur. Consumers and producers reallocate resources to second-best preferences, which diminishes net social utility. If antitrust law can prevent these anticompetitive effects, it can increase social utility by ensuring that output remains at the higher level determined by first-order consumer preferences.

That normative account of antitrust law is relatively uncontroversial in the economics profession. The second effect—wealth transfers—is trickier to map normatively. Suppose that a horizontal merger between two luxury perfume companies creates market power that permits the merging firms to increase the price of luxury perfume 10 percent. Further assume that the consumers who buy luxury perfumes are demand inelastic and therefore continue to buy in roughly the same quantity at the higher prices. In this scenario, the merger produces no deadweight losses, but it does produce wealth transfers from consumers to producers. Is that problematic?

The economics profession has no comparative advantage in answering this question. On the one hand, the reallocation of wealth from consumers to producers is not obviously inefficient in the way that the deadweight losses are. The relevant deployment of scarce social resources to the production and consumption of expensive perfumes continues to occur in equal measure. True, producers are somewhat richer and consumer somewhat poorer, but so what? The economics profession has relatively little to say about which interests groups in society deserve more or less wealth. It is true that very wealthy people obtain less utility out of the marginal dollar of wealth than do the comparatively poorer, but it is far from clear that antitrust systematically redistributes income from the wealthy to the poor. In the perfume example, the consumers could be quite rich and the producers benefited by the price increase could be the shareholders of the perfume companies who turn out to be widows and orphans who have invested their life savings in mutual funds. It is very difficult to generalize from the diminishing marginal utility of money to a normative theory of antitrust law.

Although economic theory does not support the claim that wealth transfers from consumers to producers are allocatively inefficient, the avoidance of such wealth transfers plays a dominant role in the public conception of antitrust. The general public often perceives the appropriation of consumer wealth by producers as unfair and immoral. Government enforcers who bring criminal or civil proceedings against price-fixing cartels often make public statements to the effect that the cartelists are guilty of “stealing” from the consuming public. In this vision, antitrust law creates a normative baseline in which consumers are presumptively entitled to all of the gains of trade in consumer/producer transactions, which is what occurs when competition forces producers to price at marginal cost. Producers may only lawfully appropriate any surplus of trade if they obtain market power in a “fair” way, such as by building the proverbial better mousetrap.

This moral conception of antitrust is controversial within the antitrust profession. Many practitioners and scholars view antitrust as a purely utilitarian endeavor geared at maximizing social value. Professor Herbert Hovenkamp, perhaps the leading contemporary antitrust scholar in the United States, has repeatedly argued that “antitrust has no moral content” (Hovenkamp 2005, 10, 54). Others accept that antitrust must be justified in fairness terms to make it politically palatable, but largely disregard wealth transfers and fairness considerations in their own work in the field. Still others believe that wealth transfers are legitimately a concern of antitrust law, that economics is useful in demonstrating the existence and incidence of these transfers, and that moral, political, or social theory then supplies the normative account for why wealth transfers produced by anti-competitive conduct should be avoided.

An additional category of inefficiency identified by the highly influential Chicago School scholar and judge Richard Posner is that the allure of monopoly rents induces firms to invest resources in chasing down a monopoly position. As Posner explains, “an opportunity to obtain a lucrative transfer payment in the form of monopoly profits will attract real resources into the effects by sellers to monopolize and by consumers to avoid being charged monopoly prices” (Posner 2001, 13–14). If antitrust law can induce firms not to engage in this rent-seeking behavior, it can reduce a wasteful expenditure and hence make society more efficient.

A final efficiency that may result from antitrust enforcement is producer efficiency. As a general matter, we might expect that firms will not deliberately engage in behavior that harms their own productive efficiency (unless in the rare case in which a self-inflicted wound raises the costs of rivals by an even greater amount than it harms the firm’s own efficiency). Yet there may be cases in which monopoly or highly concentrated oligopoly lulls firms into inefficiency and a more competitive market spurs them into greater productive efficiency. Two well-known quotes come to mind on this score. First, consider Nobel laureate John Hicks’s aphorism that “the best of all monopoly profits is a quiet life” (Hicks 1935, 8). Second, consider Judge Learned Hand’s statement in the landmark *Alcoa* case that “[m]any people believe that possession of unchallenged economic power deadens initiative, discourages thrift and depresses energy; that immunity from competition is a narcotic, and rivalry is a stimulant, to industrial progress; that the spur of constant stress is necessary to counteract an inevitable disposition to let well enough



alone.”<sup>3</sup> Antitrust-induced competition may spur slothful firms to become leaner and meaner, to the benefit of the firms themselves and society as a whole.

### 1.3. TWO OCCASIONAL CLASHES

---

Much of the time, it does not matter whether one views all of these potential evils—deadweight losses, wealth transfers, rent-seeking behavior, and industrial sloth—as within the scope of antitrust’s purposes. An anticompetitive act will often produce all of these effects simultaneously and thus should be enjoined or sanctioned (or else the act isn’t anticompetitive at all and thus produces none of the effects and should be permitted). However, in at least two common patterns, the effects cut in different directions. In those cases, the choice between competing existential visions of antitrust may become important.

The first instance involves conduct that generates wealth transfers from consumers to producers even while lessening deadweight losses by expanding output. The classic example of conduct arguably producing such an effect is price discrimination. Under at least some conditions, charging different prices to different customers based on the customers’ different willingness to pay may increase total output as compared to charging all customers the same price. At the same time, however, price discrimination results in wealth transfers from consumers to producers. Assuming that both effects were present in a particular case, how should antitrust law proceed? If one believes that antitrust law should only be concerned with allocative efficiency and that price discrimination is generally output increasing (a controversial or at least overgeneralized assumption), then conduct enabling price discrimination should be permitted. However, if one believes that antitrust law should be normatively committed to preventing wealth transfers from consumers to producers, then conduct facilitating price discrimination should be prevented even if it increases allocative efficiency. Or, at least, the interest in avoiding wealth transfers should be balanced against the interest in increasing allocative efficiency.

The second type of clash arises in cases where an act—typically a merger or joint venture—simultaneously increases productive efficiency and reduces consumer welfare. Nobel laureate Oliver Williamson famously described this tension in 1968 (Williamson 1968). Suppose that a merger between two competitive petroleum firms allows the firms to build a superefficient new refinery that lowers their production costs by 20 percent. Far from deadening industrial zest as hypothesized above, this merger will dramatically increase productive efficiency. Yet suppose that because of the merger the two firms also obtain some incremental market power and are able to raise prices 5 percent. This entails both deadweight losses and wealth transfers. Should the merger be allowed? Under a total social welfare standard, the merger should probably be allowed since the producer efficiency gains far exceed the consumer welfare and allocative efficiency losses (Blair

<sup>3</sup> *U.S. v. Aluminum Co. of America*, 148 F.2d 416, 427 (2d Cir. 1945).

and Sokol 2012, Carlton 2007, Elzinga 1977, Farrell and Katz 2006, Meese 2010, Motta 2004, Posner 1979, Turner 1969). However, if only consumer welfare counts, then the merger should be enjoined (Brodley 1987, Kirkwood and Lande 2008, Pittman 2007, Salop 2010, Pitofsky 1979).

Under the current views of the US and EU antitrust enforcement authorities, such a merger should be blocked because producer gains that are not passed onto consumers cannot justify an anticompetitive merger that harms consumer welfare. Not all jurisdictions share this view. Canada, for example, has explicitly built a total welfare standard into its merger law, reflecting the need to consider all efficiency effects in considering the legality of a merger. Whether a jurisdiction adopts a consumer welfare or total welfare standard may depend in substantial part on the country's economic developmental stage and geographic advantages and constraints. Many developing countries may find it expedient to allow conduct that improves productive efficiency even if harms short-run consumer welfare, on the theory that the country's long-run welfare requires some short-run reductions in competition that enhance the productive strength of infrastructure or otherwise important industries.

## 1.4. COMPETITORS AND COMPETITION

"Competition, not competitors" is a maxim frequently used to express core values in antitrust discourse. The US cases, at least, are replete with dicta to the following effect: "It is axiomatic that the antitrust laws were passed for 'the protection of competition, not competitors.'"<sup>4</sup> US commentators and sometimes even antitrust enforcers have been known rudely to accuse the European Commission or the European Court of Justice or General Court of violating this axiom by protecting competitors without regard to the implications for consumer welfare. The Europeans often rejoin (and not always less rudely) that the Americans misunderstand—that competitors are instruments of consumer welfare and that without competitors, there is no competition. In the midst of this sometimes heated discourse emerges an implicit consensus that the welfare of consumers should be the primary motivation of antitrust policy and that the disagreements are primarily over implementation.

But some in the antitrust community take a different view—that economic rivalry is inherently good for society and that forcing antitrust regimes to justify their own existence with reference to narrow objectives like allocative efficiency or even consumer welfare impoverishes and indeed endangers the antitrust enterprise. In this view, competition should be encouraged on the belief that it produces a number of benefits to society, even though the relationship between competition and those benefits cannot always be demonstrated immediately or to the standards of scientific scrutiny. When courts or

<sup>4</sup> *Brooke Group, Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993).

antitrust authorities demand proof of actual harm to consumer welfare or other relevant interests, they will systematically dismiss meritorious cases simply because empirical proof of anticompetitive effects is lacking. In this view, antitrust law should encourage economic rivalry almost for rivalry's own sake, taking it on faith or informed belief that, systemically observed, rivalry will produce desirable outcomes.

This view was perhaps more popular in the past than it is today. Modern antitrust authorities tend to be populated by economists or lawyers trained in economic traditions, who tend to demand greater theoretical precision and empirical proof of relationships between allegedly anticompetitive acts or market concentration and specific harms in order to sustain an interventionist regulatory decision. Also, many in the antitrust community suspect that an unverified conviction in the unspecified benefits of economic rivalry may become a pretext for an antitrust policy that protects rent-seeking businesses, inefficient competitors, or greedy lawyers rather than any more winsome constituency. Hence, contemporary antitrust law generally seeks to explain economic rivalry as desirable because of its beneficial effects on the welfare of consumers or others, and does not rest on the claim that rivalry is inherently desirable.

## 1.5. DYNAMIC AND STATIC EFFICIENCY

---

Even keeping with a relatively narrow economic view that only efficiency should count in antitrust, clashes often arise over the relative importance of static and dynamic efficiency. Static efficiency refers to the efficiency consequences of price effects—particularly deadweight losses that occur when firms have to reduce output in order to raise prices. Dynamic efficiency refers to the gains that result from innovation and the introduction of new technologies over time.

Obviously, both static and dynamic efficiency are desirable. Further, the types of antitrust interventions that simulate static efficiency sometimes also stimulate dynamic efficiency. But the opposite may also be true. In some instances, antitrust interventions may improve economic efficiency in the short run by stimulating competition and bringing down prices, but stymie innovation in the long run because firms have insufficient margins or are otherwise disincentivized to invest in research and development.

This brings us to one of the most important conceptual controversies in antitrust policy: Is there inherently a clash between dynamic and static efficiency and, if so, which one should antitrust prioritize? To introduce this debate briefly, the two poles in the controversy are often stylized around two personalities—the Austrian economist and public intellectual Joseph Schumpeter and the US economist and Nobel laureate Kenneth Arrow.

The Schumpeterian view, ascribed to passages in Schumpeter's 1942 classic *Capitalism, Socialism and Democracy*, is that capitalism is inherently characterized by transformative industrial innovations and that antitrust law foolishly tries to stand in the way of these "perennial gales of creative destruction" (Schumpeter 1942, 84). In this stylized Schumpeterian narrative, dynamic efficiency brings far more welfare to society than

short-run static efficiency. Innovator firms typically wrest control of markets from incumbent monopolists and reign until another innovator displaces them. In this vision, there is little need for antitrust enforcement.

The Arrowian perspective, ascribed to Arrow's 1962 article "Economic Welfare and the Allocation of Resources for Invention," claims just the opposite—that competitive markets generate innovation while monopoly markets stifle it (Arrow 1962). Arrow's central observation was that a monopolist has a reduced incentive to innovate since the innovation will simply cannibalize sales of the monopolist's existing products. By contrast, in a competitive market, many firms have incentives to innovate. The upshot of Arrow's perspective is that what's good for static efficiency is good for dynamic efficiency. Both sorts of efficiency are maximized by an antitrust policy that keeps markets competitive.

There is a cottage industry of "Schumpeter versus Arrow" literature, some of it theoretical, some of it empirical; some taking one side or the other, some attempting to reconcile the two camps. Surveying that literature is beyond the scope of this chapter. For present purposes, note that one's view of the rationales of antitrust may be importantly affected by one's view of the relative importance of static and dynamic efficiency and of the industrial conditions that produce or retard them.

A related point concerns the time horizon considered by antitrust enforcement agencies when making decisions about the lawfulness of competitive behavior. Sometimes conduct may produce short-run welfare increases but long-run welfare decreases. An example of this is predatory pricing, which involves drastic price reductions for a period of time followed by drastic price elevations once competitors are driven from the market. In the short run, consumers may be benefited, while in the long run they are harmed. A converse example is a joint venture that gives the joint venturers market power for the two years while they are developing a new product and not aggressively competing against each other. However, when the new product is finally introduced, consumers benefit greatly from the innovation and the firms revert to full competition. Both of these circumstances require antitrust decision-makers to balance short-run versus long-run considerations. Some decision-makers are willing to give significant weight to long-run effects, appropriately discounted based on time value and probability considerations. Other decision-makers believe that antitrust law should be largely contained to short-run considerations, on the view that long-run effects are inherently speculative.

## 1.6. MONOPSONY AND BUYER POWER

Existential questions sometimes arise in antitrust cases when the usual positions of buyers and sellers are inverted and the buyers, not the sellers, acquire or possess market power (Blair and Harrison 2010). In such cases of monopsonization or oligopsonization, the question may arise whether antitrust policy should be solely concerned with the welfare of consumers or other buyers, or whether it should be independently concerned with the welfare of sellers.

Take, for example, the classic example of a buyer's cartel. Buyer cartels, like seller cartels, are per se illegal under most antitrust laws.<sup>5</sup> This might not be obvious at first blush. If one assumes that the purposes of the antitrust laws are to promote consumer welfare, then how does an agreement by buyers to *lower* the price of goods sold fit within the purposes of the antitrust laws? This is question is not limited to the cartel context. Similar questions arise about monopsonization as an offense and about mergers that create overly dominant buyers.

One way to address this issue is to push back on the assumption that the antitrust laws normatively protect only consumer interests. Indeed, those who want to argue for a broader view of antitrust's purposes often point to buyer-side cases as evidence that antitrust law in fact cares independently about seller welfare, which proves that the "consumer welfare prescription" language is overly narrow.

On the other hand, even if one is concerned solely about consumer welfare, it should be noted that anticompetitive acts by buyers can sometimes harm consumer welfare. Assume, for example, that two firms compete in the sale of widgets. An essential component of a widget is a gidget. The two firms buy gidgets in competition with one another. The firms then secretly agree to depress the prices of gidgets by bidding less aggressively against each other. Suppose that the price of gidgets goes down 10 percent as a result. Assume, as in most markets, that the supply of gidgets is somewhat elastic—meaning that as the price of gidgets goes down, gidget sellers produce and sell fewer of them. As a result of colluding on input prices, the widget makers will have to decrease the amount of gidgets they purchase. And since gidgets are an essential component of widgets, this means they will have to decrease the number of widgets they sell too. Thus, the effect of the buyer collusion will be to reduce output and hence likely raise prices of widgets, to the detriment of consumers.

The foregoing example assumed some factors—elastic supply, invariant ratio between input and output—that may not be true in many cases. The question of antitrust policy is whether a plaintiff complaining about buyer-side market power should have to prove harm to consumer welfare, or whether merely proving anticompetitive harm to sellers is sufficient. Although some recent US Supreme Court cases could be read as requiring a showing of threats to consumer welfare even in monopsonization cases,<sup>6</sup> this issue remains largely unresolved as a matter of positive law.

## 1.7. "NONECONOMIC" OBJECTIVES

---

A final question is to what degree antitrust has, or should have, "noneconomic" objectives. "Noneconomic" is pointedly in quotation marks for a reason. In current discourse,

<sup>5</sup> *Mandeville Island Farms, Inc. v. Am. Crystal Sugar Co.*, 334 U.S. 219 (1948).

<sup>6</sup> *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312 (2007).

commentators often assume that an “economic” approach to antitrust law began with the Harvard School structuralists in the 1950s or the Chicago School free enterprisers in the 1960s and 1970s. They further assume that the schools of thought that preceded the post–World War II era were largely focused on ideological, political, or social values and not economic objectives. But this view is misguided. As Herbert Hovenkamp has observed, “Antitrust in the United States has seldom suffered from a shortage of economic theories suggesting why certain behavior should be unlawful” (Hovenkamp 2001, 259). Although neoclassical microeconomic theory did not dominate antitrust practice in the early years, economic theories of many varieties have always been part of antitrust discourse (Crane and Hovenkamp 2012).

Even the intellectual traditions in competition policy most closely identified with a “noneconomic” orientation rely heavily on economic ideas and arguments to advance their normative claims. For example, the “Brandeisian” tradition, associated with US Supreme Court justice Louis Brandeis, is often described as a social or political theory supporting atomistic competition because of its beneficial effects on personal liberty and autonomy. However, in defending his vision for an aggressive antitrust policy, Brandeis engaged in explicit economic reasoning, challenging the theory of natural monopoly in high fixed cost industries and contrasting the short-term efficiencies of monopoly with its long-run waste (Brandeis 1934).

On the other side of the Atlantic, the German ordoliberals of the Freiburg School advocated a similar policy of atomistic competition as a fundamental requirement of social justice and a well-functioning society. Free economic participation by all citizens was the primary channel for achieving liberal and humane values. Market power by individuals or firms stood in the way of this goal. Accordingly, the state had an affirmative obligation to promote market competition in order to secure liberal goals. The ordoliberals admitted that implementation of their vision might reduce economic efficiency, but thought this necessary to achieve a just society. Even so, the ordoliberals, like Brandeis, engaged in argumentation about the formation of economic knowledge and the place of efficiency in the hierarchy of social values, which makes it difficult to sustain the belief that theirs was a “noneconomic” view of antitrust law.

To be sure, antitrust law has often received support because of its value in advancing objectives more accurately labeled political than economic. Many of the developments in antitrust law in the wake of World War II were reactions to prewar economic failures that contributed to catastrophic political failures. The 1950 Celler-Kefauver Act in the United States, which strengthened the US merger statute, was in large part a reaction to a congressional concern that undue aggregations of economic power during the 1930s in Nazi Germany, and to some extent in imperial Japan as well, facilitated the rise of fascist states (Pitofsky 1979). The United States pushed an antitrust law on Japan during the Occupation period, in large part to dismantle the power of the *zai-batsu* (First 2000). The treaties containing the foundational notions of European competition law—the European Coal and Steel Community of 1952, which morphed into the Treaty of Rome in 1957—were motivated as much by achieving European economic integration and a common market in order to lay the conditions for peace and stability

as by securing economic efficiency. More recently, South Africa's postapartheid antitrust regime has been motivated in substantial part by the need to break down the vestiges of the apartheid-era power structures and establish a more just social order.

Beyond these obvious examples of macro political objectives, antitrust authorities sometimes justify specific antitrust interventions because of the social costs of the exercise of market power in the relevant industry. For example, the concentration of media outlets in a few hands might raise concerns that the surviving media empires will eschew the publication of diverse social and political viewpoints. Even if the case did not fit a traditional output reduction model, it might be appropriate for the antitrust authorities to stop a media merger in order to foster a more pluralistic infrastructure for the dissemination of competing viewpoints.

Many in the antitrust community worry that considering these sorts of noneconomic factors will confuse and dilute antitrust enforcement. There are many examples of social harms that antitrust authorities could seek to control but might lack the expertise and political legitimacy to tackle. For example, consider antitrust enforcement in the tobacco industry. The governments of most industrialized countries today take the view that tobacco consumption is, on balance, socially harmful and should be reduced as much as possible. Many governments employ Pigouvian taxes on cigarettes, regulations, and other legal interventions to reduce smoking. Yet the very same governments will challenge mergers or other anticompetitive conduct by tobacco companies. If demand for tobacco products is somewhat elastic and the challenged acts have the effect of increasing tobacco prices, then antitrust interventions that preserve competitive markets and bring lower tobacco prices actually harm social welfare by increasing tobacco consumption (Crane 2005). Still, most antitrust practitioners and academics probably believe that it would be inadvisable for government enforcers or courts to begin making such trade-off evaluations in the antitrust domain. Antitrust law does not contain the analytical instruments to decide when a product is harmful or beneficial or what the optimal level of consumption should be. The prevailing view is that antitrust must rely on exogenously formed consumer preferences to dictate values and that the control of externalities (other than those caused by the exercise of market power) should be left to other regulatory instruments and governmental policy decisions.

In the mainstream, then, antitrust law is a relatively specialized regulatory instrument. It is intended to preserve competitive markets, largely for the benefit of consumers, whose preferences are held sovereign. To the extent that antitrust law is designed to protect interests apart from those of consumers, any further classes of beneficiary must be able to explain how market competition advances their legitimate interests. Thus, even if antitrust law is normatively founded on both economic and noneconomic objectives, the practice and implementation of antitrust law generally requires justification of interventions using the vernacular of modern economic theory.



## REFERENCES

- Arrow, Kenneth J. 1962. *Economic Welfare and the Allocation of Resources for Invention*. The Rate and Direction of Inventive Activity 609. Cambridge, MA: National Bureau of Economic Research.
- Blair, Roger D., and Jefferey L. Harrison. 2010. *Monopsony in Law and Economics*. New York: Cambridge University Press.
- Blair, Roger D., and Daniel Sokol. 2012. *The Rule of Reason and the Goals of Antitrust: An Economic Approach*. Antitrust Law Journal 78: 471.
- Brandeis, Louis D. 1934. *Shall We Abandon the Policy of Competition?* Osmond K. Fraenkel, ed., *The Curse of Bigness: Miscellaneous Papers of Louis D. Brandeis*. New York: Viking Press.
- Brodley, Joseph F. 1987. *The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress*. New York University Law Review 62: 1020.
- Bork, Robert H. 1978. *The Antitrust Paradox: A Policy at War with Itself*. New York: Basic Books.
- Carlton, Dennis W. 2007. *Does Antitrust Need to Be Modernized?* Journal of Economic Perspectives 21: 155.
- Crane, Daniel A. 2005. *Harmful Output in the Antitrust Domain: Lessons from the Tobacco Industry*. Georgia Law Review 39: 321.
- Crane, Daniel A. and Herbert Hovenkamp. 2012. *The Making of Competition Policy: Selected Sources*. New York: Oxford University Press.
- DiLorenzo, Thomas J. 1985. *The Origins of Antitrust: An Interest-Group Perspective*. International Review of Law and Economics 5: 73.
- Elzinga, Kenneth G. 1977. *The Goals of Antitrust: Other Than Competition and Efficiency, What Else Counts?* University of Pennsylvania Law Review 125: 1191.
- Farrell, Joseph, and Michael L. Katz. 2006. *The Economics of Welfare Standards in Antitrust*. Competition Policy International 2: 3.
- First, Harry. 2000. *Antitrust in Japan: The Original Intent*. Pacific Rim Law and Policy Journal 9: 1.
- Hazlett, Thomas W. 1992. *The Legislative History of the Sherman Act Re-examined*. Economic Inquiry 30: 263.
- Hicks, John R. 1935. *Annual Survey of Economic Theory: The Theory of Monopoly*. Econometrica 3.
- Hovenkamp, Herbert. 1988. *Antitrust's Protected Classes*. Michigan Law Review 88: 1.
- Hovenkamp, Herbert. 2001. *Post-Chicago Antitrust: A Review and Critique*. Columbia Business Law Review 2001: 257.
- Hovenkamp, Herbert. 2005. *The Antitrust Enterprise: Principle and Execution*. Cambridge, MA: Harvard University Press.
- Kirkwood, John B., and Robert H. Lande. 2008. *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*. Notre Dame Law Review 84: 191.
- Lande, Robert H. 1982. *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*. Hastings Law Journal 34: 65.
- McChesney, Fred S., and William E. Shughart II. 1995. *The Causes and Consequences of Antitrust: The Public-Choice Perspective*. Chicago: University of Chicago Press.
- Meese, Alan J. 2010. *Debunking the Purchaser Welfare Account of Section 2 of the Sherman Act: How Harvard Brought Us a Total Welfare Standard and Why We Should Keep It*. New York University Law Review 85: 659.



- Motta, Massimo. 2004. *Competition Policy, Theory and Practice*. New York: Cambridge University Press.
- Oi, Walter Y., and Todd L. Idson. 1999. *Firm Size and Wages*. Orly Ashenfelter and David E. Card, eds., *Handbook of Labor Economics* 3: 2165–214. New York: North-Holland.
- Pitofsky, Robert. 1979. *The Political Content of Antitrust*. University of Pennsylvania Law Review 127: 1051.
- Pittman, Russell. 2007. *Consumer Surplus as the Appropriate Standard for Antitrust Enforcement*. Competition Policy International 3: 205.
- Posner, Richard A. 1979. *The Chicago School of Antitrust*. University of Pennsylvania Law Review 127: 925.
- Posner, Richard A. 2001. *Antitrust Law*. 2nd ed. Chicago: University of Chicago Press.
- Salop, Steven C. 2010. *Question: What Is the Real and Proper Antitrust Welfare Standard? Answer: The True Consumer Welfare Standard*. Loyola Consumer Law Review 22: 336.
- Schumpeter, Joseph. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper Bros.
- Stigler, George S. 1975. *The Citizen and the State: Essays of Regulation*. Chicago: University of Chicago Press.
- Turner, Donald F. 1969. *The Scope of Antitrust and Other Economic Regulatory Policies*. Harvard Law Review 82: 1207.
- Williamson, Oliver E. 1968. *Economies as an Antitrust Defense: The Welfare Tradeoffs*. American Economic Review 58: 18.

## CHAPTER 2

---

# ANTITRUST ENFORCEMENT REGIMES

## *Fundamental Differences*

---

KEITH N. HYLTON

THERE are more than 100 antitrust enforcement regimes around the world (see, e.g., Hylton n.d.). Because of this, it is difficult to say much about antitrust statutes globally without running into the difficulty that such large numbers immediately imply for comparative projects. Comparisons are possible on a global scale, but they are necessarily limited to statistical summaries of the major features of the enforcement regimes.<sup>1</sup>

In spite of the large number of antitrust enforcement regimes, there are three that are recognized as extremely important in global commerce: the United States, the EU, and China.<sup>2</sup> Moreover, China has modeled its antitrust law regime on that of the EU (Farmer 2010, 35–36). Given this, there are essentially two antitrust regime types that dominate global commerce: the United States and the EU.

This chapter is a brief comparative study of the two major antitrust regimes. Even limiting my study to two competition regime types, there are many details in which the two types diverge. I will not compare the regimes in terms of all of the details. Instead, I will focus on three major areas in which fundamental differences are observed: *enforcement*, *legal standards*, and *procedure*.

Within each of the three categories, I narrow the focus to a specific illustrative feature. In the enforcement category, I discuss penalty provisions. In the legal standards category, I examine predatory pricing law as a central feature illustrating fundamental

<sup>1</sup> For an empirical study of competition law enforcement regimes around the world, see Hylton and Deng 2007. For comparative analysis, Hylton and Deng group countries into regions (Europe, North America, etc.) to compare the general stance of antitrust enforcement across regions.

<sup>2</sup> The primacy of the US, EU, and Chinese antitrust regimes is evidenced by the fact that news stories discussing major mergers often focus on the approval processes in these three regimes. The coverage of the Google and Motorola Mobility merger exemplifies this trend (Bartz and Chee 2012; Whitney 2012).

differences between the two regimes. Finally, I summarize broad differences in procedure under the regimes.

With respect to enforcement, the EU and US regimes differ in that the EU imposes fines that are based on the violator's gain, while the United States imposes harm-based penalties. In predation law, the United States has adopted a marginal cost standard and the EU has adopted an average cost standard. With respect to procedure, the United States is a thoroughly common-law system, while the EU's procedure is closer to the civil-law system in its allocation of power between the courts and the enforcement agency. These differences have profound implications for the welfare consequences of global antitrust law enforcement.

## 2.1. ENFORCEMENT

---

The economic theory of enforcement prescribes punishment schemes that maximize society's welfare, by reducing the sum of the costs of offensive conduct and the costs of enforcement. In this part, I briefly review the theory, and use it to address core differences in the antitrust enforcement policies of the United States and the EU.

## 2.2. OPTIMAL ENFORCEMENT POLICY

---

The theory of optimal antitrust enforcement is traceable to Gary Becker's article on the economics of punishment (Becker 1968). Becker argued that an efficient system of punishment would seek to internalize the social costs associated with offensive conduct. Internalization is accomplished by shifting the costs suffered by victims to the offender in the form of a penalty. Becker considered the implications of his argument for antitrust, arguing that the social costs arising from antitrust violations should be internalized by those engaging in anticompetitive conduct (Becker 1968, 198–99). Later, Landes (1983) provided a more detailed application of Becker's analysis to antitrust. In the antitrust context, internalization requires the punishment authority to shift the costs suffered by consumers, in terms of monopolistic overcharges or restrictions in supply, to the monopolizing firm in the form of a penalty.

Consider the case of a firm that takes some action that enables it to gain monopoly pricing power, and at the same time generates efficiencies in production or sale. For example, the action could be a merger that creates or enhances monopoly power and at the same generates efficiencies—say, by cutting redundant worksites. Alternatively, the action could be an exclusive dealing arrangement that forecloses a rival firm and at the same time reduces costs in the supply chain.

The economic effects of the firm's conduct can be examined in figure 2.1. Before the firm takes the action, the market is competitive, with price equal to marginal cost

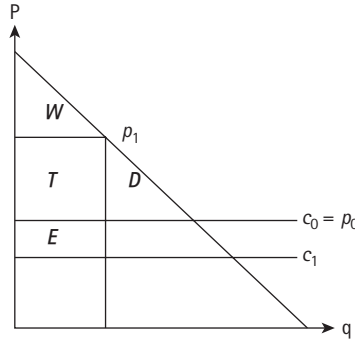


FIGURE 2.1 Monopolization with Cost Reduction

( $p_0 = c_0$ ). After the firm takes the action, it gains the power to raise its price to the monopoly level  $p_1$ . However, costs fall, as a result of the firm's action, from  $c_0$  to  $c_1$ .

The optimal enforcement policy in this case is to impose a penalty on the firm equal to the sum of the wealth transfer from consumers and the forgone consumer surplus, which is represented by the sum of areas  $T$  and  $D$  in figure 2.1 (Landes 1983; Hylton and Lin 2010).

Why would setting the penalty equal to the sum of the consumer wealth transfer and the forgone consumer surplus ( $T + D$ ) be optimal? The reason is that it aligns the firm's incentives with society's incentives. If the penalty is equal to the sum of the consumer wealth transfer and the forgone consumer surplus, then the firm will choose to take the monopolizing action when and only when it enhances society's wealth.

Suppose the monopolizing action generates an efficiency gain, shown by the area  $E$  in figure 2.1. The firm's action is welfare enhancing for society as long as the efficiency gain is greater than the forgone consumer surplus, that is,  $E > D$ . The firm will choose the monopolizing action if the gain the firm gets from monopolizing is greater than the expected penalty for monopolization. The firm's gain is the sum of the transfer from consumers and the efficiency gain,  $T + E$ . Thus, if the penalty is equal to the sum of the transfer and the forgone consumer surplus ( $T + D$ ), the firm will take the monopolizing action only when it is welfare enhancing ( $E > D$ ).<sup>3</sup>

Although I have used the terms "monopolization" and "monopolizing firm," this analysis applies equally to cartels. If a cartel has an efficiency basis, then it will lead to an increase in price, generating a wealth transfer from consumers, and a reduction in supply costs, generating an efficiency gain. For simplicity, I will use the term "monopolizing firm" for the remainder of this chapter, even in instances in which the monopolizing act is the decision by a group of firms to create a cartel.

<sup>3</sup> To see this, note that the firm will take the monopolizing action when  $T + E > \text{penalty}$ . If the penalty is equal to  $T + D$ , then the firm will monopolize when  $T + E > T + D$ , or when  $E > D$ .

This analysis implies that the optimal antitrust enforcement policy internalizes, to the monopolizing firm, the harm suffered by consumers. To be sure, this is the optimal policy because there is an efficiency gain resulting from the firm's monopolizing action. If there were no efficiency gain ( $E = 0$ ), then the optimal policy would set the penalty in order to completely deter the violator's conduct (Becker 1968, 180; Hylton 1998, 197–98). Such a complete-deterrence penalty would have to be at least as large as the wealth transfer from consumers (Becker 1968, 198–99; Landes 1983, 656). In other words, when the firm's monopolizing action does not generate an efficiency gain, the optimal punishment policy is complete deterrence, which is accomplished by ensuring that the firm cannot profit from monopolization.<sup>4</sup> Any penalty greater than the wealth transfer ( $T$ ) satisfies the complete deterrence—or, equivalently, gain elimination—objective.

Thus, there are two general approaches a punishment authority can take under an optimal punishment regime. One is to *internalize consumer harm*. The other is to *deter completely by eliminating the expected profits* from anticompetitive conduct. The internalization approach is appropriate for conduct that is either efficient or has a significant chance of being efficient. The complete deterrence approach is appropriate for conduct that is unambiguously inefficient.

I have already provided examples of monopolizing conduct that may be efficient: mergers and exclusive dealing. As for conduct that is unambiguously inefficient, the obvious example is the price-fixing agreement (Posner 2001, 39). The standard price-fixing agreement involves no efficiency motivation; it is simply an arrangement to transfer wealth from consumers to producers (see, e.g., Leslie 1993).<sup>5</sup> Under these conditions, the optimal punishment policy is to set a fine sufficient to eliminate the prospect of gain from the price-fixing cartel's actions.

In the case of a price-fixing cartel, the internalization policy still satisfies the optimal punishment goal, because the consumer harm is the same as the producers' gain from price-fixing. For this reason, Becker concluded that the optimal punishment policy for antitrust is one that internalizes the consumer harm (Becker 1968, 199).

While it is true that the two policies suggested by enforcement theory, harm internalization and complete deterrence, can be satisfied in the antitrust setting by a penalty that internalizes consumer harm, the different policy goals of the internalization and deterrence approaches should be kept in view. The reason is that there may be instances in which the internalization approach is administratively infeasible. For example, the internalization approach requires the punishment authority to produce a precise estimate of the consumer wealth transfer and the forgone consumer surplus. The data

<sup>4</sup> On the distinction between internalization and complete deterrence policies, see Hylton 1998, 425–33.

<sup>5</sup> It is possible for a price-fixing agreement to be efficient. If the agreement is efficient, and the efficiency gains are enjoyed by the cartel, the cartel may have an incentive to continue the agreement even when faced with a damages remedy. See Becker 1968, 199 (“If . . . certain constraints of trade raise the level of economic welfare, fines could fully compensate society for the harm done, and yet some constraints would not cease, because the gain to participants would exceed the harm to others”).

necessary to generate such an estimate may be unavailable. In such a case, where the risk of error is substantial, it is important to identify the precise policy basis for punishment.

### 2.3. ACTUAL PUNISHMENT POLICIES

---

The actual punishment policies of the US and EU systems do not closely follow the prescriptions of optimal punishment theory. However, their key elements are distinctive and can be associated with the goals of harm internalization and complete deterrence.

Consider US enforcement policy. The Sherman Act sets out a fixed maximum penalty of \$100 million (Federal Trade Commission n.d., 1). In addition, US law permits courts to deviate from the fixed maximum penalty in the statute by imposing a penalty equal to twice the loss imposed by the violator on consumers (18 U.S.C. §3571; Hylton 2003, 49). In addition, private lawsuits enable plaintiffs to sue for treble damages (see, e.g., Hylton 2003, 48–49). Private lawsuits outnumber government lawsuits by a 10 to 1 ratio (Salop and White 1986, 1003).

An optimal consumer harm-based penalty would divide the consumer harm, which is the sum of the wealth transfer and the forgone consumer surplus, by the probability that the monopolizing firm will be punished. Thus, going back to figure 2.1, the optimal penalty is equal to  $T + D$ , divided by the probability of punishment. The reciprocal of the probability of punishment is therefore the “optimal multiplier” that should be applied to the consumer harm penalty.

American law, in contrast, imposes the transfer,  $T$ , as a penalty on the monopolizing firm, and employs either a multiplier of two under the fines enforcement law, or a multiplier of three for private lawsuits. These multipliers may or may not be optimal, depending on the relationship between the probability of punishment and the statutory multipliers of two and three. For example, if the probability of punishment—say because detection is difficult—is  $1/10$ , then the multipliers on fines and damages would be too low to efficiently internalize the consumer harm.

Although the statutory multipliers may not be optimal, the American approach is broadly consistent with the harm internalization approach to punishment. The penalty for an antitrust violation varies directly with the magnitude of the consumer harm. Thus, the American antitrust punishment system is one in which violators pay a penalty that is proportional to consumer harm, where the proportionality factor is greater than one.

Now consider EU antitrust enforcement policy. The European Community Treaty (“EC Treaty”) provides that the penalty for an infringement will be based on the total sales of the violator, with a maximum penalty equal to 10 percent of the total revenue of the violator (Kaczorowska 2008, 873). Article 83(2) of the EC Treaty instructs that penalties should “ensure compliance with the prohibitions laid down in Article 81(1) and Article 82” (European Community Treaty 2002, art. 83). The relevant treaty provisions have been interpreted by enforcement officials and commentators to support the

deterrence rather than the internalization objective (*Showa Denko v. Commission*, para. 58, cited in Wils 2007, 205 n. 57; *Archer Daniels Midland v. Commission*, para. 49).<sup>6</sup>

The lesson suggested is that the EU penalties are designed to deter prohibited conduct completely by eliminating the prospect of earning profits through conduct that violates the antitrust laws. The EU penalties are *not* designed to vary directly with the amount of consumer harm; they are structured to vary directly with the amount of profit that a firm gains from conduct deemed to violate EU competition law.

Thus, the penalty provisions under US and under EU antitrust law reflect the major economic theories of punishment, complete deterrence and internalization. The EU has embraced complete deterrence as the objective of enforcement. The United States has adopted the harm internalization approach.

One might be inclined to conclude that the EU has the relatively inefficient enforcement system. Penalties, such as those under the EU system, that run proportional to revenues punish efficient as well as inefficient monopolizing conduct with equal severity. The US system enables firms that intend to engage in efficient monopolizing acts to go forward and reap the rewards, as long as those rewards are sufficiently greater than the harm to consumers.

On closer inspection, the comparison, on efficiency grounds, of enforcement provisions in the United States and EU requires consideration of more minute features. First, consider the distinction between *cartelization* (anticompetitive agreements among firms, such as price-fixing) and *monopolization* (anticompetitive single-firm conduct).

Linking monetary fines to revenues, as the EU system does, may be efficient overall when applied to cartelization. If the cartels do not have an efficiency basis, as the enforcement structures in the United States and in the EU assume, then the complete deterrence objective is optimal. It happens that a policy of imposing penalties that are a multiple of consumer harm will achieve the complete deterrence objective just as effectively as a policy that aims to eliminate gains. But the policy of complete deterrence, rather than harm internalization, remains the correct policy on social welfare grounds.

If a cartel does have an efficiency basis, then the EU system would impose inefficiently large penalties—assessing a penalty based on the sum of the wealth transfer and the efficiency gain ( $T + E$ ) instead of limiting the penalty to the wealth transfer ( $T$ ). However, both punishment systems are based on the assumption that the vast majority of cartelization cases are inefficient wealth transfers. If this assumption is correct, then the EU system's average degree of inefficiency in cartel punishment cases may be less than that of the United States. The reason is that the EU would impose the correct level of the fine in the vast majority of cases, and an inefficiently large fine in a minority of cases. Under the same assumptions, the US fine, limited to the transfer, might fall short of providing optimal deterrence because it fails to fully internalize consumer harm.

<sup>6</sup> EU competition policy's emphasis on deterrence was also apparent when the EU Commission imposed double the basic fine against Microsoft in the EU-Microsoft cases (see Economides and Lianos 2010, 372).

To clarify this argument, consider the following hypothetical. Suppose a firm that is (correctly) found guilty of participating in an inefficient price-fixing conspiracy has a total annual revenue of \$20 billion. Suppose the firm's gross gain from the conspiracy ( $T$ ) is \$150 million, and the forgone consumer surplus ( $D$ ) is \$75 million. The penalty under US law could be as high as \$300 million—since the rules permit courts to deviate from the \$100 million Sherman Act limit up to twice the gross gain from the conspiracy. The penalty under EU law could be as high as \$2 billion (10 percent of revenue). If the likelihood of being punished for the conspiracy is  $1/10$ , the amount necessary to internalize consumer harm is \$2.25 billion, and the amount necessary to eliminate the prospect of gain is \$1.5 billion. The Sherman Act penalty of \$300 million would be too low, from either the internalization or the complete deterrence perspective. The EU rules, however, could result in an optimal penalty for deterrence purposes. If the EU penalty were set at a level between \$1.5 and \$2 billion, it would eliminate the gain prospectively, which is sufficient to meet the optimal punishment goal in this scenario. If the EU penalty were set at its maximum of \$2 billion, it would come close to internalizing the consumer harm (the wealth transfer and the foregone consumer surplus).

Moreover, the US enforcement system imposes imprisonment as a punishment on relevant officials in price-fixing cases, while the EU system limits punishment to the imposition of monetary fines (Connor 2001, 89). The imprisonment of firm officials may offset the tendency toward underdeterrence suggested in the numerical example just offered, but it depends on many factors that are shrouded in uncertainty. Imprisonment concentrates the risk of punishment on the minority of actors who are responsible for the price-fixing agreement. If those actors are not aware of the risk of imprisonment, they will not be deterred. If they are aware of the risk, they are likely to be deterred, but even this conclusion is uncertain because it depends on the actors' risk preferences and psychological attachments. For the relevant actors, the expected cost of imprisonment, given the low probability, may appear to be small in comparison to the rewards.

In addition, imprisonment generates excessive litigation, as firms and targeted officials spend huge sums to avoid the punishment. Some of the executives imprisoned have long productive records as employees in their industries; they are not common criminals. Society forfeits the value of their services by locking them up.

These points of comparison suggest that the broad-brush, gain-based penalties under the EU system may be superior on social welfare grounds to the penalty system enacted under the US antitrust laws for cartelization cases. At the least, it is unclear a priori whether the United States or the EU has the socially preferable system for punishing cartel activity.

With respect to monopolization, a different assessment seems appropriate. In the monopolization context, the EU fine system appears to be inferior on welfare grounds to the US punishment system. The EU system aims to strip the gains from monopolizing conduct, which deters both efficient as well as inefficient conduct. The US punishment system, in contrast, discriminates between efficient and inefficient monopolizing conduct. The discrimination process is not perfectly optimal, but it is probably superior on social welfare grounds to the EU punishment system.



To clarify this argument, return to figure 2.1. Under the US system, the monopolizing firm would be required to pay a penalty that is likely to be a multiple of the consumer harm—a multiple of two under public enforcement, and three under private enforcement. If the efficiency gain from its conduct is sufficiently large, the US punishment system will not deter a firm from engaging in efficient monopolizing conduct.

For example, suppose, in a particular instance of monopolization, the wealth transfer is \$150 million, the forgone consumer surplus is \$75 million, and the efficiency gain is \$200 million. Assume also that the likelihood of being punished is 50 percent—which reflects the greater likelihood of detection and enforcement in monopolization cases. Thus, the firm's gain from monopolization, which is equal to the sum of the wealth transfer and the efficiency gain, is \$350 million. Moreover, since the efficiency gain exceeds the forgone consumer surplus, this is a case of efficient monopolization. The penalty imposed under the US system would be either \$300 million (twice the transfer) under public enforcement or \$450 million (three times the transfer) under private enforcement. In either case (public or private enforcement), the monopolizing firm would not be deterred under the US punishment system. The reason is that the expected penalty, whether under public or under private enforcement, would be less than the gain from monopolization: under public enforcement, the expected penalty would be \$150 million, which is less than the \$350 million gain from monopolization; and under private enforcement the expected penalty would be \$225 million, which is also less than the \$350 million gain from monopolization. The monopolizing firm would not be deterred by the threat of penalization under the US system, and this is the efficient result.

Under the EU system, the monopolizing firm would be required to pay a penalty that is likely to be a multiple of the sum of the transfer and the efficiency gain ( $T + E$ ). Thus, in a case of efficient monopolizing conduct, the firm definitely would lose rather than gain after taking the penalty into account. For example, suppose a firm with annual revenue of \$20 billion engages in a monopolizing act in some part of its business. The transfer from consumers is \$150 million, the forgone consumer surplus is \$75 million, and the efficiency gain is \$200 million. The firm's total gain from monopolization is therefore \$350 million. As in the previous example, this is a case of efficient monopolization. The EU could impose a fine on the firm as high as \$2 billion.<sup>7</sup> If it chooses a fine greater than \$700 million, though still well below the penalty ceiling, it would completely deter the monopolizing act, an inefficient outcome.

The general picture that emerges from this comparison is that the US antitrust law enforcement system is compatible with the efficiency goal while EU law is not. EU law has followed Bentham by setting fines sufficiently large to wipe out the gains from conduct deemed unlawful. US law has followed Becker by keeping damages closely tied to the harms suffered by consumers.

<sup>7</sup> I have assumed that the firm is large (revenue \$20 billion). Obviously, if the firm's revenue is not much more than the amount it receives from the monopolizing activity, the EU fine may be far less than the amount required to deter.

The inefficiency of the EU enforcement system is not limited to the EU. China's competition law enforcement system is modeled on the EU's provisions (Wei 2011, 812–15), as are the enforcement rules of several other competition enforcement authorities, including Pakistan and Singapore (Wilson 2011, 111; Ong 2007, 109–10). The prevalence of the EU enforcement model indicates a strong preference for enforcement provisions that threaten fines tied to gain, as a form of trade tariff, rather than fines tied to consumer harm.

## 2.4. SUBSTANTIVE STANDARDS: PREDATION

---

The second important area in which to examine the differences between the major competition regimes is substantive law. There are many parts of substantive law to examine. At the most general level, however, the antitrust laws fall into one of two categories: prohibitions on cartelization, or prohibitions on monopolization. Since the substantive policies with respect to cartelization are virtually the same in all competition regimes, I will focus on monopolization law; specifically, predatory pricing.

A predatory pricing claim is an assertion by one firm, the predation target or victim, that it has been injured by the low prices of another, the incumbent dominant firm. The victim typically argues that the dominant firm cut its price during a predatory campaign, in order to force the victim to sustain losses that would compel it to leave the market. After the victim leaves the market, the dominant firm, if all goes according to the theory, raises its price to the monopoly level. During the period in which the dominant firm prices at the monopoly level, it recoups the losses that it suffered during the predatory pricing campaign.

Predatory pricing claims in the United States fall under Section 2 of the Sherman Act. The law under Section 2 puts high hurdles in the way of predation plaintiffs. In order to avoid a summary judgment in a predation lawsuit, the plaintiff must present evidence that the defendant set its price below some reasonable proxy for marginal cost, and that the market structure is such that it would permit the defendant to recoup its losses from the predation campaign, after the victim has been forced out of the market (*Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 222–24). Both requirements are difficult to meet.

The EU law on predatory pricing imposes a lighter burden on the plaintiff. Under EU law, unlawful predation is established if the evidence shows that the defendant sets its price below average variable cost (see, e.g., *AKZO Chemie BV v. Commission*, para. 71). If the defendant set its price below average cost but above average variable cost, then predation can be established if the evidence suggests that it was accompanied by an intention to exclude the plaintiff (*AKZO Chemie BV v. Commission*, para. 72). The evidence required to prove predatory intent includes objective factors, such as the duration of the predatory period and the number of units sold at the allegedly predatory price. The evidentiary requirements suggest that, in practice, a significant burden falls on the

defendant to disprove predatory intent when price is below average cost and above average variable cost.

The difference between the US and EU standards on price predation reduces to this: the United States uses a marginal cost test and the EU uses an average cost test. Figure 2.2 illustrates the fundamental differences between the United States and EU with respect to predation. Price cuts below the marginal cost curve (MC) are predatory in the United States, provided market structure evidence shows the plausibility of recoupment (*Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 210). In the EU, price cuts below the average cost curve (AC) are predatory. Since marginal cost is nearly impossible to measure precisely, the US law encourages courts to examine reasonable proxies to marginal cost (*Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 223). However, the goal is to use a measure that approximates marginal cost (*United States v. AMR Corp.*, 1115–16).

The US marginal cost test, as Areeda and Turner (1975, 701–2) argued, is the efficient standard. When price is above marginal cost, a cut in price moving it in the direction of marginal cost, along with an associated increase in consumption, enhances social welfare. Conversely, when price is below marginal cost, a cut in price moving it away from marginal cost reduces social welfare. The reason is that price, under ideal conditions, reflects the marginal benefit to society from producing an extra unit of a good. Marginal cost, under ideal conditions, reflects the resource cost to society of supplying an additional unit of a good to the market. As long as price exceeds marginal costs, society's welfare can be enhanced by expanding consumption. Hence, a marginal cost test for predation is consistent with a policy of enhancing society's welfare.

The average cost test of the EU disregards the efficiency principle and creates a price umbrella based on the dominant firm's average total cost. As long as a rival firm can match the average total cost of the dominant firm, it is shielded from additional price pressure under the EU law. In addition, given the uncertainties in measuring cost, and the amount and duration of losses a predatory target firm must experience before it is financially compelled to leave the market, the EU's average-cost standard effectively shields relatively inefficient firms from vigorous price competition.

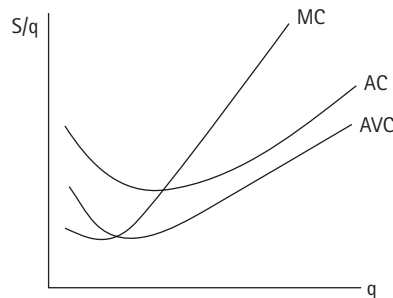


FIGURE 2.2 Marginal Cost, Average Cost, and Average Variable Cost

The precise function or objective of the EU predation standard has never been set out clearly. One possible justification is that an average cost pricing standard enhances the set of options to consumers, by preventing efficient price predation. If this is indeed the purpose of the standard, it is unlikely that it enhances consumer welfare. It preserves relatively inefficient rivals and forces consumers to pay higher prices. The consumers themselves probably would have chosen to pay lower prices for fewer retail options, as they often do when price-cutting firms displace higher-priced rivals.

Another possible justification for the EU average-cost standard is that it preserves employment, by reducing the frequency with which price competition leads to the exit of firms that are the victims of predatory pricing campaigns. Less efficient firms are more likely to survive under the EU standard. Perhaps in a state with a generous welfare system, the policy of preserving less efficient firms is less expensive for taxpayers than a policy that allows them to be driven out of business by efficient price predation. In other words, the average-cost standard may be, in essence, a public welfare policy. The efficiency of such a policy cannot be determined without taking into account the relative inefficiencies of the administrative state.

## 2.5. PROCEDURE

---

The third important difference between U.S. and EU antitrust law is procedure. I refer to procedure in the broadest sense; from the processes by which the legal standards evolve to the methods used to determine the validity of evidence.

## 2.6. DEVELOPMENT OF LAW

---

The United States is unique among competition law regimes in that its law is developed through the common-law process. The Sherman Act says relatively little (Sherman Act 2004, §§ 1 & 2). It can be accurately summarized by saying that it prohibits price-fixing and monopolization. The detailed rules that have developed in American antitrust law have almost all come out of the courts.

The EU law has been set out in a relatively sparse treaty. The EC Treaty, however, is more detailed in its statement of prohibitions than is the Sherman Act (European Community Treaty 2002, art. 81). Moreover, the precise meanings of the key competition provisions of the EC Treaty, Article 81 (now Article 101 of the Treaty on the Functioning of the European Union (“TFEU”)) and Article 82 (now Article 102 of the TFEU), have been developed for the most part by the European Commission. For example, the EU Commission has been instrumental in clarifying “Market Definition” under EU Competition Law, which has ramifications for both Article 81 and 82 enforcement (see Report Prepared for the Competition Directorate-General of the European

Commission 2005, 5). The EU courts defer to the European Commission on issues concerning the interpretation of the competition rules (Marsden 2009, 27).<sup>8</sup> As a result, the system of EU courts is not the primary body that interprets the meaning of the competition provisions of the EC Treaty.

These differences in the processes under which competition law develops have important implications. The American process essentially grafts onto the common law an additional branch called antitrust law without changing the process by which cases are litigated or decided in any substantial manner. Under the common-law process, courts independently develop a framework for applying legal rules and modifying them in light of facts or policy arguments.

The common-law process permits both sides in litigation, plaintiff and defendant, to present their positions on the meaning of the law and the state of the evidence to an impartial observer, the court. The court inevitably has some degree of discretion in both matters. Cases that are easily decided on the basis of the statutory text, or on the basis of earlier decisions, do not continue for a long time in court. Judges dismiss them, or decide them quickly, or the parties settle. The vast majority of legal disputes that spend enough time in court to come before judges have sufficient uncertainty surrounding them that the judge inevitably has discretion to decide what the law requires as between the litigating parties. The discretion that judges have had under the US antitrust laws is equivalent to the discretion they have had under the common law for centuries.

The discretion given to judges under the American process has permitted courts to consider the social consequences of their decisions, and to issue judgments that effectively reduce the social costs of the rules they administer. Common-law judges, in the course of examining the consequences and implications of their decisions, trade off the social costs of false convictions and false acquittals. Judges do not have to discover the relevant social costs on their own; the litigating parties have strong incentives to bring this information directly to the judges' attention. Most likely because of this constant process of weighing cost trade-offs, American antitrust law has tended toward adopting efficiency-based legal standards, such as the marginal-cost-based test in predatory pricing law.

The dominant role of the enforcement agent imparts a different tendency to the law's evolution in EU. The enforcement agent will tend to interpret the law not in a manner that impartially weighs or trades off social costs from false convictions and false acquittals, but in a manner that minimizes its own enforcement costs. The dominance of *per se* standards based on relatively simple and abstract rules in the EU can be explained by their utility to the enforcement agent (Evans and Ahlborn 2009, 29).

<sup>8</sup> The European Court of First Instance reviews Commission decisions by a "manifest error of assessment" standard that considers "whether the facts on which the Commission's assessment was based were correct, whether the conclusions drawn from those facts were not clearly mistaken or inconsistent and whether all the relevant factors had been taken into account." This limited standard of review is deferential to the Commission.

The importance of administrative facility and the relative detachment of courts from the law-generation process put the EU system closer to a civil-law model rather than the common-law model of the United States. Given that EU courts are staffed largely with judges drawn from civil-law countries the tendency for a civil-law system to develop is natural (Eurofound 2011; Apple and Deyling 1995, 1).

The EU rule on predatory pricing, for example, is an administratively simple rule. It does not require the complainant to generate a reasonable proxy of the defendant's marginal cost, which is a difficult undertaking, both for the enforcement agent and for the court. It is not efficient as a rule governing competition. However, it is efficient on administrative grounds in comparison to the American rule.

Although I have referred to American and EU law, the EU pattern has been replicated in China and other countries. Thus, one could say that competition law outside of the United States is largely shaped by demands of the enforcement agent. Competition law in the United States is shaped by the traditions of common-law courts.

## 2.7. EVIDENCE AND PROCEDURE

---

The deference policy that EU courts have adopted with respect to the EC's competition enforcement decisions implies important differences in the assessment of evidence and findings of fact. In the United States, antitrust enforcement agencies and private plaintiffs have to present evidence to a court and attempt to persuade the court that a conspiracy has occurred, or that a defendant should be deemed a monopolist. In the EU, the complainants face the same requirements but in the presence of the enforcement agent, rather than a court. If the enforcement agency has made a decision or is inclined to pursue a case, all evidence and policy arguments will be examined under the influence of that decision.

The distinction between the US and EU systems is one between a court-centered process and an agency-centered process. In a court-centered process, as in the United States, the plaintiff, whether a private plaintiff or an enforcement agency, knows that it will have to persuade a skeptical court of the validity of its arguments, and must prepare its case with this in mind. Under an agency-centered process, the agency has a relatively small likelihood of ending up in a court in a particular case. A complainant approaching the enforcement agency will have to persuade the agency that it has a colorable claim, which is less than the burden, to prove that a violation of the law has occurred, borne by a private complainant in a court.

Moreover, there is an important difference between the agency enforcement processes in the United States and in the EU with respect to the degree of separation between prosecutorial and adjudicative functions. The agency enforcement process in the United States is observed in practice when the FTC brings an enforcement action against an entity. Firms often approach the FTC with antitrust complaints against market-dominating competitors. If the FTC chooses to proceed with a complaint, it will

either go to a federal court or to an administrative law judge, depending on the statute it seeks to enforce. While the FTC must bring enforcement actions for Clayton Act violations in federal court, the FTC may enforce Section 5 of the FTC Act through internal administrative litigation before an administrative law judge, a process known as Part III proceedings (Antitrust Modernization Commission 2007, 129). In either case, the FTC must prepare its arguments and evidence to withstand questioning by an independent official. Moreover, the FTC General Counsel's office is independent of the FTC commissioners, the final decision-making body within the agency process (Coate and Kleit 1995, 1–2). There are substantial walls of separation between the prosecutorial and adjudicative arms of the FTC's enforcement process.

The agency process in the EU is distinguishable in the sense that the European Commission considers complaints and conducts investigations, but there is no separation between the prosecutorial arm and the adjudicative arm within the EC agency process. Evidence and arguments are not subjected to an independent assessment until they are appealed to the EU courts, which have adopted a deference policy with respect to such matters. And since the EU courts have adopted a deference policy, there really is no point at which the EC's evidence and arguments are subjected to a rigorous and independent evaluation of merit.

The enforcement system in China is based on the EU model. Moreover, the absence of democracy and of basic "rule of law" norms prevent the court system in China from becoming reliably independent of the interests of the government.

The upshot is that outside of the United States, competition law procedure effectively combines prosecutorial and adjudicative functions. This is a very substantial chasm between the enforcement regimes. The procedures adopted under the EU model are inconsistent with fundamental requirements of due process in American law.

The differences in substantive law probably pale in importance when compared to the differences in procedure. If the EU adopted efficiency-based legal standards, or an efficiency-based approach to punishment, the potential improvements in welfare could easily be vacated through the absence of reasonable due process safeguards in the enforcement process.

## 2.8. CONCLUSION

---

With more than 100 competition law regimes, there are countless ways in which anti-trust law regimes can vary around the world. However, two models are dominant in terms of their effects on global commerce: the United States and the EU. This chapter has compared those models in terms of enforcement, substantive law, and procedure. With respect to enforcement and substantive law, the United States has evolved toward an efficiency-based system while the EU has not. The procedural differences are perhaps more important than the differences in substantive law. The EU process of law development is closer to the civil-law model, while the American process is safely within the



common-law tradition. Retail-level procedural issues, such as the treatment of evidence, reveal stark differences, the most significant of which being the relatively weak separation of prosecutorial and judicial functions within the EU enforcement process.

## ACKNOWLEDGMENTS

---

I thank Danny Sokol for helpful comments. Adam Mayle provided excellent research assistance.

## REFERENCES

---

- Antitrust Modernization Commission. 2007. *Report and Recommendations*. Retrieved from [http://govinfo.library.unt.edu/amc/report\\_recommendation/amc\\_final\\_report.pdf](http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf).
- Apple, James G. and Robert P. Deyling. 1995. *A Primer on the Civil-Law System*. Federal Judicial Center. Retrieved from [http://www.fjc.gov/public/pdf.nsf/lookup/civillaw.pdf/\\$file/civil\\_law.pdf](http://www.fjc.gov/public/pdf.nsf/lookup/civillaw.pdf/$file/civil_law.pdf).
- Areeda, Phillip, and Donald F. Turner. 1975. *Predatory Pricing and Related Acts under Section 2 of the Sherman Act*. Harvard Law Review 88: 697–733.
- Bartz, Diane, and Foo Yun Chee. 2012. *Google Gets U.S., EU Nod to Buy Motorola Mobility*. Reuters. Retrieved from <http://www.reuters.com/article/2012/02/14/us-google-motorola-eu-idUSTRE81C1HE20120214>.
- Becker, Gary S. 1968. *Crime and Punishment: An Economic Approach*. Journal of Political Economy 76: 169–217.
- Coate, Malcolm B., and Andrew N. Kleit. 1995. *The Political Economy of Federal Trade Commission Administrative Decision Making in Merger Enforcement*. Federal Trade Commission Working Paper 210. Retrieved from <http://www.ftc.gov/be/workpapers/wp210.pdf>.
- Connor, John. 2001. *Global Price Fixing: Our Customers Are the Enemy*. Boston, MA: Kluwer Academic Publishers.
- Economides, Nicholas, and Ioannis Lianos. 2010. *A Critical Appraisal of Remedies in the E.U. Microsoft Cases*. Columbia Business Law Review 2: 346–420.
- Eurofound. 2011. European Court of Justice. Retrieved from <http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/EUROPEANCOURTOFJUSTICE.htm>.
- European Community Treaty. 2002. Official Journal of the European Communities C 325/39. Retrieved from [http://eur-lex.europa.eu/en/treaties/dat/12002E/pdf/12002E\\_EN.pdf](http://eur-lex.europa.eu/en/treaties/dat/12002E/pdf/12002E_EN.pdf).
- Evans, David, and Christian Ahlborn. 2009. *The Microsoft Judgment and Its Implications for Competition Policy towards Dominant Firms in Europe*. Antitrust Law Journal 75: 887–932.
- Farmer, Susan B. 2010. *The Impact of China's Antitrust Law and Other Competition Policies on U.S. Companies*. Loyola Consumer Law Review 23: 34–53.
- Federal Sentencing Guidelines. 198c. U.S. Code. Title 18.
- Federal Trade Commission. N.d. *An FTC Guide to the Antitrust Laws*. Retrieved from <http://ftc.gov/bc/antitrust/factsheets/antitrustlawsguide.pdf>.
- Hylton, Keith N. N.d. *Antitrust World Reports*. Retrieved from <http://antitrustworldwiki.com>.



- Hylton, Keith N. 1998. *Punitive Damages and the Economic Theory of Penalties*. Georgetown Law Journal 87: 421–471.
- Hylton, Keith N. 2003. *Antitrust Law: Economic Theory and Common Law Evolution*. New York: Cambridge University Press.
- Hylton, Keith N., and Fei Deng. 2007. *Antitrust around the World: An Empirical Analysis of the Scope of Competition Laws and Their Effects*. Antitrust Law Journal 74: 271–341.
- Hylton, Keith N., and Haizhen Lin. 2010. *Optimal Antitrust Enforcement, Dynamic Competition, and Changing Economic Conditions*. Antitrust Law Journal 77: 247–276.
- Kaczorowska, Alina. 2008. *European Union Law*. New York: Routledge-Cavendish.
- Landes, William M. 1983. *Optimal Sanctions for Antitrust Violations*. University of Chicago Law Review 50: 652–78.
- Leslie, Christopher R. 1993. *Achieving Efficiency through Collusion: A Market Failure Defense to Horizontal Price-Fixing*. California Law Review 81: 243–292.
- Marsden, Phillip. 2009. *Checks and Balances: EU Competition Law and the Rule of Law*. Competition Law International 5: 24–29.
- Ong, Burton. 2007. *Competition Law Takes Off in Singapore: An Analysis of Two Recent Decisions*. Competition Policy International 3: 101–31.
- Posner, Richard A. 2001. *Antitrust Law*. Chicago: University of Chicago Press.
- Report Prepared for the Competition Directorate-General of the European Commission. 2005. *Market Definitions in the Media Sector: Comparative Legal Analysis*. Retrieved from [http://ec.europa.eu/competition/sectors/media/documents/chapter\\_1\\_ec.pdf](http://ec.europa.eu/competition/sectors/media/documents/chapter_1_ec.pdf).
- Salop, Steven C., and Lawrence J. White. 1986. *Economic Analysis of Private Antitrust Litigation*. Georgetown Law Journal 74: 1001–64.
- Sherman Act. 2004. 15 U.S.C. § 1 et seq.
- Wei, Dan. 2011. *China's Anti-Monopoly Law and Its Merger Enforcement: Convergence and Flexibility*. Journal of International Economic Law 14: 807–44.
- Whitney, Lance. 2012. *Chinese Regulators Drag Heels on Google-Motorola Deal*. CNET. Retrieved from [http://news.cnet.com/8301-13578\\_3-57400661-38/chinese-regulators-drag-heels-on-google-motorola-deal/](http://news.cnet.com/8301-13578_3-57400661-38/chinese-regulators-drag-heels-on-google-motorola-deal/).
- Wils, Wouter P. J. 2007. *The European Commission's 2006 Guidelines on Antitrust Fines: A Legal and Economic Analysis*. World Competition 30: 197–231.
- Wilson, Joseph. 2011. *Crossing the Crossroads: Making Competition Law Effective in Pakistan*. Loyola University Chicago International Law Review 8: 105–25.

---

## CASES CITED

---

- Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).
- Case 62/86, *AKZO Chemie BV v. Commission* [1991] ECR 3359.
- Case 289/04, *Showa Denko v. Commission* [2006], Opinion of Advocate General Geelhoed, ECR 05859.
- Judgment of the Court of First Instance, Case 329/01, *Archer Daniels Midland v. Commission* [2006] ECR 03255).
- United States v. AMR Corp.*, 335 F.3d 1109 (10th Cir. 2003).

## CHAPTER 3

---

# ECONOMIC ANALYSIS OF ANTITRUST EXEMPTIONS

---

PETER CARSTENSEN

### 3.1. INTRODUCTION

---

THIS chapter surveys potential economic theories for conferring statutory exemptions from the competition laws.<sup>12</sup> Its goal is to provide a reasonably comprehensive survey of the economic theories for modifying or exempting classes of enterprises from competition law. The analysis does not extensively evaluate the theoretical limits or empirical validity of these arguments, but it does identify points that raise questions about the applicability of specific theories to specific exemptions. Most theories require very special facts to justify an exemption and those facts are unlikely to occur in a large and dynamic economy such as that of the United States. Thus, objective economic analyses would appear likely to suggest that only in very limited circumstances would an exemption or modification of competition law be an economically or socially optimal strategy to achieve a legitimate policy goal. In smaller economies or in situations where public policy is self-consciously seeking to transform an industry from state ownership or direct command and control regulation, there may be stronger economic arguments for temporary exemptions from or modifications of competition law. Finally, there is an emerging economic argument against judicial enforcement of

<sup>1</sup> This chapter draws extensively on the economic analysis in chapter 3 of the ABA 2007. This work is used with the permission of its authors, Peter Carstensen, Christopher Sagers, and Ramsey Shehadeh.

<sup>2</sup> Neither the advocates for particular exemptions nor the legislators who adopted them have paid close attention to economic analyses of their effects. Commentators have made similar observations about economic regulation legislation generally. See, e.g., Breyer, 1982, 189–314. In general, economic analysis does not appear to have guided or informed Congress's crafting of specific exemption legislation.

competition policy in some industries even though the fundamental policy goal is a fully competitive market.

The economic justifications for statutory exemptions fall into five main types.

1. If an industry has a natural monopoly that prevents durable competition, then competition rules may be preempted in favor of some other method of overseeing the market.
2. A number of specific market and institutional failures can create a tension between the conventional model of robust competition that is the fundamental goal of competition law and the needs of market participants and stakeholders to have efficient market operations.
3. A preference for a specific socially desired activity or an intent to transfer wealth to a socially desirable group in society can be advanced to justify limiting the application of competition law in order to create exploitable market power for that group.
4. When public policy toward an industry or an overall economy shifts from either state ownership or direct regulation of price and output, even though market competition is the ultimate goal, a market-facilitating regulatory regime governing some or even all aspects of the industry distinct from competition law may be the more efficient transition policy.
5. In industries subject to extensive market regulation enforced through agency rules that are intended to facilitate a workably competitive market, the ad hoc intervention of courts in that process may impose serious inefficiencies in the market-facilitating regulatory process necessitating an exemption from competition law.

The second category, as the following discussion will demonstrate, incorporates a number of quite distinct economic theories that in turn call for specific kinds of market or institutional failures to be relevant. They share, however, the common characteristic of a generalized acceptance of having as competitive a market as is feasible and in theory, at least, using the exemption or modification of competition law as a means to achieve enhanced market performance.

The third category reflects the positive framing of rent seeking by special interests. Because the goal of this chapter is to identify the various economic analyses that might justify, in the public interest, restricting or exempting business from the commands of competition law, the negative economic explanation for such exemptions and modifications will not receive any analysis here. Others have examined rent seeking in detail (see, e.g., Buchanan and Tullock, 1962; Tullock, 2005).

As will also be evident from the following discussion, the first three categories have called forth the most explicit economic theories and models to explain when and why exemptions from competition law could be appropriate, but the final two categories may well reflect areas where the economic theories when developed will be even more compelling.

In addition, a number of observed exemptions can find support in two or more economic theories. The theories themselves are not necessarily mutually exclusive, and because they address different aspects of market failure, they can be combined to provide a more elaborate economic justification for some exemptions.

### 3.2. NATURAL MONOPOLY

---

The theory of natural monopoly has provided a number of justifications for exemptions from competition law. In the abstract, a natural monopoly exists when only a single firm can serve the market efficiently.<sup>3</sup> A natural monopoly arises when demand for a particular good is not large enough for a single firm to produce at minimum efficient scale (MES), the point at which it is minimizing its per-unit costs in both the short and long term. In such markets, if there are competing firms, the gains that any one firm can realize from increasing its volume of sales, enabling it to lower its per unit costs, are so significant that only one firm can survive in competitive equilibrium. (In figure 3.1 MES is the lowest point in the U-shaped average showing the relationship between price and demand.)

A “natural monopoly,” therefore, is a consequence of the interaction of technology, supply, and demand under the prevailing economic conditions. Technology plays a central role in defining both the cost of production over increasing volumes and the extent of scale economies. Other supply factors also directly influence the costs of production and whether they will decline with increased volume. Changes in taste (demand) for goods affect the other side of the supply-demand interaction. As the volume demanded increases, the potential for multiple producers also increases even if there are substantial scale economies. Thus, the economic model of “natural monopoly” is highly contingent on the specific characteristics of the market in a particular time and place.

When, at some time and place, such a monopoly exists, it provides a rationale for intervention in the market and regulation of the price and output of the monopolistic industry. Not all natural monopolies, for example, one barber, gas station, or banking office in a small town, trigger the adoption of regulation or a preemption of competition law. A genuine natural monopoly thus presents a policy issue of whether the government should regulate the market directly or should instead adopt a *laissez-faire* response.

A regulatory regime that imposes conduct rules (e.g., prohibiting price discrimination lacking cost justification) or excludes willing entrants may rest on the perceived natural monopoly characteristics of the market (Kahn, 1970–71; Spulber, 1989; Posner,

<sup>3</sup> Grossman, 2003, contends that no monopoly is inherently natural but rather regulation confers monopoly status.

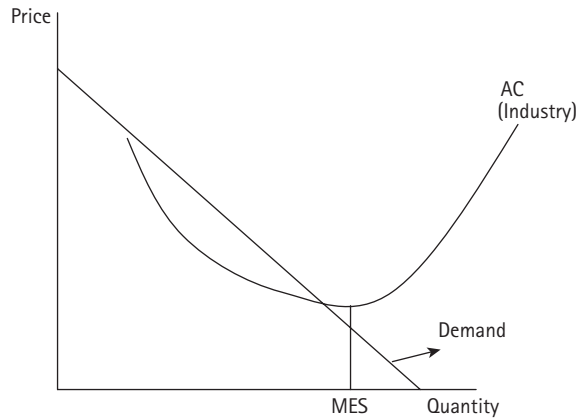


FIGURE 3.1 Natural Monopoly: Minimum Efficient Scale Given Demand Requires Only One Firm

1969). Historically, Congress adopted regulatory schemes for a number of industries considered to be “affected with a public interest” that made their services “essential” and limited or precluded the application of competition law to them (Rossi, 2006, 31–50). The resulting legislation usually erected legal barriers to entry into and exit from these industries, which foreclosed competition with the licensed firms (cf. Sidak and Spulber, 1997). However, this rationale for regulation does not necessarily warrant limitations on competition law. Competition law can play a role in policing how the monopolist uses its market power in related markets and in its dealings with its customers (see *Otter Tail*, 1973).

It is important to be very cautious about the conclusion that an activity is naturally monopolistic. The claim necessarily rests on both the current state of technology (supply) and demand, so the durability of such a situation is vulnerable to change. Identifying a firm as a natural monopoly often leads to restrictions on entry and exit that may stifle technological change or prevent recognition of changes in demand. Technological developments (e.g., alternative ways to provide telecommunications or increased efficiency in electric generation capacity) have led to critical examinations of many industries presumed to be naturally monopolistic. These examinations generally have resulted in reversal of that conclusion (Spence, 2005). However, elements of some industries may retain monopolistic characteristics, as has been experienced in electric transmission and distribution (Pierce, 1994).

The status of being a lawful monopoly can create expectations of protection even after the underlying technological rational for any monopoly has disappeared (Sidak and Spulber, 1997). Moreover, once an industry has evolved in a regulated monopoly mode, there are extremely difficult challenges in transforming it into a workably competitive one. The ongoing difficulties in telecommunications and electricity highlight the impact of past legislative decisions on the contemporary evolution of the market (Bush and Mayne, 2004, 208).

### 3.3. MARKET OR INSTITUTIONAL FAILURE

---

The majority of theories justifying exemption from or modification of competition law proceed from a hypothesis about market or institutional failure that makes standard competition policy inapplicable to the industrial context at issue. Because there are a variety of potential market and institutional failures there are also a number of failure specific theories to explain why a specific type of exemption or modification is necessary and appropriate to move the market to a more efficient outcome.

These theories all involve a specific market characteristic or competition policy rule that implies that competition, though it exists, will not lead to efficiency. The claim is that unconstrained competition under those circumstances, the norm of competition law, would frustrate the efficiency ends that competition law should seek. Thus, these arguments all rest on a preference for some measure of economic efficiency over competition. Usually, the preference rests on some static measure of efficiency and so tends to ignore the potential for dynamic change in competitive markets that may well resolve the market or institutional failure. Indeed, adopting an exemption or modification can entrench a characteristic that would otherwise have disappeared through the process of dynamic change. Removing legislatively created exemptions is usually very difficult because of the vested economic interests that such rules usually create.

There are six relatively distinct economic theories that advocates of exemptions and modifications have advanced. Each theory has a specific set of predicate factual conditions. There can be some overlap among these claims, but generally, each addresses a unique market or regulatory context.

The first theory set forth is that of destructive competition based on the “empty core” hypothesis. This is one of most durable if least credible economic arguments for an exemption from antitrust law. The second theory rests on a claimed inconsistency between the scale of demand and the scale of supply that leads to inefficiency. Those who advance this view interpret competition law to condemn all horizontal arrangements even if they serve legitimate productive ends. They also question the utility of judicial oversight of such joint enterprises. Modern competition law principles would not recognize these as convincing substantive arguments for exemption.<sup>4</sup>

The third theory involves coordination among competitors that cannot be distinguished from the behavior of cartels that limit the scope, range, or character of their products. This theory in turn has three variations. First, by standardizing, competitors can create the necessary scale to induce efficient supply. Second, collective action among producers where their joint activities produce consumer value to capture more of that

<sup>4</sup> FTC and Department of Justice, Antitrust Division, Antitrust Guidelines for Collaborations among Competitors (Apr. 7, 2000). The transaction costs arising from reliance on antitrust litigation might still provide a rationale for such exemptions. See Carstensen, 2011 (many transportation industry exemptions may primarily protect legitimate joint ventures but serve to avoid the risks of costly antitrust litigation).

value can address potential disabling supply-side externalities. The third variant of this theory concerns the exchange of information among competitors. Such exchanges can also easily fit into the cartel model especially when related to forward-looking data, but the exchange may also have important efficiency-enhancing characteristics that serve the public interest in competition even as they may also standardize some elements of that competition. To avoid expecting courts to “set sail on a sea of doubt, and ... assume[ ] the power to say, in respect to contracts which have no other purpose and no other consideration on either side than the mutual restraint of the parties, how much restraint of competition is in the public interest, and how much is not” (*Addyston Pipe*, 284, 1898), legislation can define the exceptional cases that should be exempt from the general per se rule against naked restraints of competition as well as prescribe an appropriate alternative oversight process.

The fourth market failure theory is a more generalized claim that some aspect of market relationships needs private regulation in ways that foreclose open competition in order to avoid market chaos. Hence, an exemption from the relevant mediates of competition law is warranted. The fifth theory involves the creation of private “countervailing power” to move markets toward a more overall competitive model. The sixth and final market failure theory applies a basic efficiency argument and involves the least economics because it only identifies prior failures either in competition law itself or in some regulatory regime where the best remedy from an efficiency standpoint is to move the market toward a fundamentally more competitive situation but which requires that one or more of competition law’s commands be modified.

### 3.3.1. Destructive Competition and the Empty Core

Historically, a number of justifications for competition law exemptions have invoked claims of “ruinous competition” or “destructive competition” in various forms. The central theme is that while the market has a number of competitors, absent control over their prices or output, they will compete in such a way as to bankrupt the industry. The historical record suggests that rapid market changes often lead to price wars, but that in time industry participants learn how to price in ways that provide reasonably stable long-run viability (see, generally, Lamoreaux, 1985). Nevertheless, claims of destructive competition recur in industries that have some unusual market characteristics.

Various efforts have been made to develop economic models that might explain and justify the claim of destructive competition. The most developed of these justifications is the “null core” hypothesis. The theory is that an empty (null) core leads to destructive entry and market instability. If a market has a core, then no group of individuals can obtain an alternative outcome that all members of the group would prefer (Osborne and Rubinstein, 1994). If the core is “empty,” then no stable outcome is possible. Transportation industries are among the more prevalent applications of the



theory, particularly ocean shipping conferences.<sup>5</sup> A substantial body of analytical work has developed the theory of the core (or, in the current focus, its absence under competition) as it may apply to this industry (Telser, 1978).

The following example provides the main insight of the theory. Assume an industry has three identical firms that provide shipping services, and a large number of identical customers who demand one unit of service. Entrants can enter the shipping industry by building a ship at cost  $F$ . Suppose each of the three firms has one ship of capacity 100, for a total industry capacity of 300. Market demand is 250 units, consisting of 250 customers each demanding one unit of shipping. If two ships operate, each earns economic rents because excess demand is 50 units and prices are elevated above the competitive level, the level at which economic profits are zero. As a result of fixed costs, each firm's average cost declines the more it fills its ship to capacity. Thus, a ship using all 100 units operates most efficiently and has lower costs than any competitor operating at a lower capacity. Indeed, the third ship withdraws from the market because it cannot obtain sufficient revenue to cover its operating costs once its competitors have filled their ships. Given only two ships in the market and excess demand at the marginal cost of service, the two ships can now raise their prices to the monopoly level. Market instability occurs because the third, idle, ship can now undercut the price of the two other ships. This competition drives down price and displaces one of the incumbent firms, but as soon as the two survivors raise price back to the monopoly level, the excluded ship can undercut the price of the new set of dominant firms. This displacement continues indefinitely, making a stable outcome impossible.<sup>6</sup>

The model assumes that the idle firm can re-enter costlessly. This repeated re-entry leads to "ruinous" competition. A stable, competitive market price based on marginal cost is impossible; at least one market participant can disrupt any possible equilibrium. Because there is always a firm that can block any current allocation, leading to a sequence of market disruptions, the market has no competitive equilibrium. Moreover, because during each competitive price war, revenue falls to marginal cost, which is assumed to be substantially below average total cost (the level necessary for long-term survival), the results are both the bankruptcy of some of the firms and serious price volatility.

Whether a null core might provide a basis for a competition law exemption depends initially on whether the theory is an accurate depiction of real markets. Under the economic theory of the null core, no level of output exists at which demand and supply are in equilibrium at prevailing prices, principally due to lumpiness in output capacity.

<sup>5</sup> See Sjostrom, 1989. Telser, 1996, points out that a superadditive production function and nondecreasing returns to scale are necessary conditions for a nonempty core but that these alone are not sufficient to guarantee a nonempty core.

<sup>6</sup> A key assumption is that the price that the remaining shippers will pay to have the 50 units of cargo transported is less than the marginal cost of providing such service. In a monopoly or duopoly situation, the shippers having the highest value for their shipments will take the service. Hence, the remaining shippers are assumed to place a lower value on having their goods moved. As discussed further in the text, when total demand increases relative to the capacity of the individual units, the chance that an empty core will occur declines rapidly because the marginal operator can still find sufficient business to stay in the market.



With excess capacity (i.e., if  $N + 1$  firms are present in a market that can only profitably support  $N$  firms) no market mechanism will induce any particular seller to shut down as efficiency would require. Rather, any nonactive firm has an incentive to undercut the active firms. While entry is profitable at pre-entry prevailing prices, entry will leave some firms with negative economic profits. The negative economic profits will induce exit, which will return the industry to its prior unstable state, inducing entry once again. The empty core is a direct result of this “lumpiness” in costs.<sup>7</sup> Hence, the main barrier to the existence of a core stems from a question of scale; if demand were sufficiently large, then the null core is unlikely to be a binding constraint in practice because the lumpiness becomes small relative to the scope of the industry.<sup>8</sup> Periods of low demand or industry decline appear most likely to result in a null core problem, because demand may be small relative to the minimum efficient scale of supply and excess capacity may encourage “price wars.”

If a firm or firms were willing to produce only a portion of the lumpy level of output, this would produce a competitive equilibrium; however, the avoidable fixed costs imply that no firm would choose unilaterally to do so. One way to achieve equilibrium might be through cartelization. An industry would coordinate to determine which firms will operate in the market and how much each will produce. A cartel can restrict output to  $Nq^*$ , allowing excess demand to remain unmet. This could be achieved using measures such as deferred rebates,<sup>9</sup> dual-rate contracts,<sup>10</sup> or direct monitoring of customers to ensure they deal only with members of the cartel. Alternatively, the cartel could set production quotas above minimum efficient scale so that each firm equally shares responsibility for meeting the unmet demand. This could be accomplished by adopting technologies with higher unit costs but smaller capacity increments. Such measures

<sup>7</sup> This occurs when, for example, investment in productive capacity involves fixed costs and variable costs are increasing. The resulting average cost curve of a “Viner firm” is U-shaped, which guarantees a unique cost-minimizing level of output,  $q^*$ . The cost structure of these industries, and regularity conditions required for satisfying them, are described in Viner ([1931] 1952). Under general conditions, demand is continuous so that the supply curve and demand curve will intersect. In a Viner firm, the firm’s inverse supply curve is discontinuous at the price  $p^*$ , equal to the minimum of its average cost curve. No production will occur at any price below  $p^*$  as profits would be negative and firms could do better by exiting. At  $p^*$ , a firm will produce  $q^*$ . At any higher price, a firm would be willing to increase production, but would be undercut by potential entrants offering  $(q^*, p^*)$  to the market. This discontinuity introduces the lumpiness in supply, as production can only be efficient at some integer multiple of  $q^*$ . If supply and demand intersect at some level of output between  $Nq^*$  and  $(N + 1)q^*$ , then  $N$  is the number of firms that can profitably operate in the market, but there is unfilled demand that allows rent-seeking pricing and the resulting instability of the market.

<sup>8</sup> As the size of the industry,  $N$ , grows large relative to the most efficient-sized firm,  $q^*$ , the extent of the “integer problem” grows arbitrarily small. More formally,  $Nq^*$  approximates market demand  $Q^*$  arbitrarily well as  $N$  grows large. Since  $(Nq^*) / (N + 1) < Q^* / (N + 1) < (N + 1)(q^*) / (N + 1)$ , a firm’s required production level to meet market demand converges to its minimum efficient scale as  $N$  grows large. For practical purposes, even when  $N$  is not large, excess demand is bounded above by  $q^*$ .

<sup>9</sup> Deferred rebates reward customers for exclusivity ex post.

<sup>10</sup> Dual rate contracts are formal agreements to provide service at a discount in exchange for exclusivity enforced by imposing fines.

require coordination among competitors and therefore provide justification for a statutory exemption from competition law.

Cartelization is not the only way to overcome an empty core problem. One solution would be to manufacture for inventory, producing at the efficient scale but for only part of the time. However, in the transportation industries to which the concept of the null core principally has been applied, producing for inventory is not an option; excess capacity literally is lost when the ship sails, or the plane takes flight. Nevertheless, market institutions have emerged in transportation industries that mimic storage. Carriers can differentiate their service so that excess capacity serves a different market, such as transporting goods that are not time sensitive. The result is a slightly higher unit cost that stems from the inventory carrying costs, but this cost allows greater smoothness in supply that may solve the problem of the core. These strategies are well known from competition between airlines in the United States (Whinston and Collins, 1992). Similarly, natural gas pipelines have devised different levels of service: firm supply, interruptible supply, and so on. Each of these service types imposes different costs and risks, and contracting and secondary markets for capacity on natural gas pipelines has led to efficient allocations of capacity without cartelization (*United Distribution Companies*, 1996).

The empty core model may also be too stylized for its predictions to be taken as a literal description of the behavior of any real-world firms. One reason is that the model rests on knife-edge results, and small changes in the parameters and market institutions may lead to substantially different predictions. For example, the probability that a market is in a competitive equilibrium depends on whether costs are heterogeneous. If all firms have identical costs, the probability of competitive equilibrium is zero, but even a modest variation in minimum average costs can increase the probability of equilibrium substantially (Sjostrom, 1989, 1164–65). Alternatively, if the increase in average variable costs just offsets the decrease in average fixed costs for production levels slightly above minimum efficient scale, the average cost curve will have a flat region instead of being *U*-shaped. Consequently, there would be a range of cost-minimizing output levels; and if demand is in that range, there is no indivisibility or integer problem.

A more fundamental objection is that real market participants are more sophisticated and forward-looking than core theory supposes them to be. The core is a static concept and cannot capture concern for the effects of current behavior on future returns. Lumpiness and excess capacity are costly for market participants, but market turnover may be more costly. Any potential entrant knows it may be gaining only in the short run; it may in turn be forced out by the prices of others, and will not act myopically. Firms are not likely to base entry and exit decisions on market conditions in an instant of time. In addition, real-world negotiations are costly.<sup>11</sup>

The lessons from these examples are that market institutions are flexible, and adaptation often can resolve null core problems more efficiently than other means, such as competition

<sup>11</sup> Sjostrom, 1989, presents evidence that if coalition formation is costly and the size of an industry is large, a competitive equilibrium is likely to occur.

law exemptions that encourage cartelization.<sup>12</sup> More generally, the strict requirements of the empty core model show that destructive competition is unlikely in most real-world industries. Even if there is a risk of an empty core, authorized cartelization is only one possible response. In addition, it creates significant risks of anticompetitive outcomes.

### 3.3.2. Achieving Efficient Scale for Component Production

If some component in the production process has a high fixed cost, and the quantity of the finished product demanded is relatively low, production costs will create a bottleneck such that a firm dominating that segment can exercise significant market power over the end product market. If the downstream users of the component can collaborate to produce it jointly, they can avoid the bottleneck.<sup>13</sup> Such customers or sellers may have an incentive to overinvest in that stage to ensure that there will be no shortage.<sup>14</sup> These are legitimate joint ventures, so the need for an “exemption” or even “modification” of competition law may seem hard to explain on the basis of contemporary doctrine. Because joint production projects involve horizontal collaboration and in some circumstances may have to limit output, necessitating some kind of allocation process, they are vulnerable to competition law challenges.<sup>15</sup> But in the event of a challenge, the relevant competition law doctrines including “essential facilities” are not well developed.<sup>16</sup> As a result, challenges, even if not meritorious, will involve extensive and costly litigation expenses in order to resolve the merits of the claimed violation.

In addition, the courts are not well adapted to the ongoing administration of the rights and obligations for such bottleneck facilities, especially when disputes on access or allocation arise.<sup>17</sup> These factors in combination could provide a justification for an competition law exemption for the operation and management of such productive

<sup>12</sup> ABA, 2007, 161–92, examines the application of Core Theory to the shipping conferences under the Shipping Act. See also Sagers, 2006.

<sup>13</sup> The same analysis applies when the actors are upstream sellers into a similar monopsonistic market.

<sup>14</sup> By hypothesis, variable cost is low, so the investors largely confront one-time investments. See Carstensen, 1992, 25–26 (farmer-owned grain elevators are an example of building facilities at the largest scale).

<sup>15</sup> Two institutional considerations may provide a link. First, some cases, e.g., *Topco* (1972), have been read very broadly to condemn all agreements having any restrictive characteristics among competitors. While most antitrust lawyers recognize that such a reading is inaccurate, risk-averse investors and executives may still be deterred from rational conduct. Second, defending an antitrust case has a significant potential transaction cost even when the defendant prevails. Hence, for firms with limited resources, the risk of litigation may itself deter rational collaboration. See Carstensen, 2011.

<sup>16</sup> The *Trinko* decision has questioned the viability of the essential facilities doctrine. *Trinko*, 2004, 410–11.

<sup>17</sup> The *Trinko*, 2004, decision rests in part on the Court’s belief that the FCC and state regulators are better positioned to manage the issues of access to shared capacity than an antitrust court. *Id.* 412–14.

facilities based on the simultaneous adoption of an alternative regulatory system that would oversee the operation of such a collective enterprise.

For example, high fixed costs in research and development (R & D) may preclude significant R & D activity by even large firms if the sunk R & D investments are significant, as they are for integrated chip technology and some other high-technology areas. Hence, smaller firms may find R & D costs daunting. However, minimum efficient scale in production may be small enough to enable the same small firms to compete for sales of products once the products are developed. Allowing these smaller firms to coordinate R & D to achieve economies of scale, while maintaining product market competition, may be preferable to exit by a large number of producers unable to survive due to high individual R & D costs.<sup>18</sup> Such a collective, productive enterprise will not in itself violate competition law although its specific conduct might. The obstacle to more collaboration might reside in a risk-averse view on the part of potential participants who require greater assurance that they will not face significant litigation costs as a price of joining the venture.

In other areas such as airline code sharing or railroad rate bureaus dealing with rail car exchanges and lease rates, the parties face similar concerns. This may explain why firms engaged in apparently legitimate joint productive activities seek an exemption that appears to imply that the goals of the arrangement are anticompetitive.<sup>19</sup> But other routes exist to achieve some or all of the insulation provided by statutory exemption or modification.<sup>20</sup> But where an industry has a history of exemption, the “path dependency” of the legal and social institutions may lead parties to want to retain vestigial exemptions to avoid some litigation risks.

In a slightly different case, an exemption can permit collaboration in one market while maintaining competition in another. Competing internationally may involve a greater minimum efficient scale than competing domestically. For example, an individual company may not be able to maintain sales offices and distribution facilities throughout the world profitably. However, a group of firms may be able to achieve minimum efficient scale in international marketing and trade operations. Such collaboration may involve both market allocation among competitors and price agreements on the joint sales. Such agreements could therefore raise competition law concerns under traditional case law, although current law and policy on such legitimate collaborations makes this unlikely.<sup>21</sup> As a result, an exemption from competition law with respect to international trade could enable a group of firms in an industry to compete

<sup>18</sup> The National Cooperative Research and Production Act may illustrate this concern. See ABA, 2007, 263–77.

<sup>19</sup> For an analysis of the transportation exemptions supporting this thesis, see Carstensen, 2011.

<sup>20</sup> The business review process of the Antitrust Division is a prime example. 26 C.F.R. § 50.6.

<sup>21</sup> See, e.g., *Topco* (1972), which many read as a prohibition on any territorial allocation among competitors; see, e.g., Meese (2004). In fact, the Supreme Court sustained a less restrictive allocation of territories after remand (*Topco*, 1973). Moreover, *Topco* never in fact used those restraints and has continued to prosper as a joint venture. See First and Carstensen (2007).

internationally by creating a joint international marketing effort, while maintaining interfirm competition domestically. But if the primary function is only to create an efficient scale for global marketing, an exemption is unnecessary as a matter of substantive competition law.<sup>22</sup>

This justification rests primarily on the institutional limits of competition law as practiced and the failure to develop a more active program of business review clearances. As a result, the real-world process of avoiding competition law challenges to legitimate joint productive activities involves a perception and perhaps a reality of significant costs. An exemption or modification of competition law to limit those costs therefore provides only a very weak economic rationale for the creation or retention of an exemption.

### 3.3.3. Coordination among Competitors to Create an Efficient Market

The production of a good for consumption may require, or be more efficient with, coordination among competing suppliers in some dimensions. In contrast to the preceding justification, competitors are not engaged in collaboration in the actual production or distribution of the good or service. Instead, the problem is that the most efficient market context requires some express regulation of the ways in which the firms compete. Often government provides such regulation; indeed, this is a basic function of government. However, in other market contexts, no specific rule-maker exists with the authority and skills necessary to provide the standards or criteria under which the market is to operate. Moreover, collective action by competitors to define the terms of competition is fraught with competition law risks. Naked restraints on competition often involve the use of such standards to limit or suppress competition (*Trenton Potteries*, 1927, 393; *Fashion Originators Guild*, 1941; see generally Lande and Marvel, 2000). Modern competition law in fact has sought to accommodate such regulation when it is legitimate, although the articulation of the criteria for these determinations remains illusive.<sup>23</sup>

<sup>22</sup> The Department of Commerce has defended the Export Trade Certificate program as lowering expected litigation and transaction costs even though the joint ventures it approves may not violate antitrust law. Testimony of John J. Sullivan, General Counsel, U.S. Dep't. of Commerce Before the Antitrust Modernization Commission, Dec. 1, 2005 available at [http://govinfo.library.unt.edu/amc/commission\\_hearings/pdf/Sullivan\\_Statement.pdf](http://govinfo.library.unt.edu/amc/commission_hearings/pdf/Sullivan_Statement.pdf)

<sup>23</sup> See, e.g., *Oklahoma*, 1984 (upholding some regulation of competition in college football, but holding regulation of television rights to be outside the scope of authorization), *Allied Tube & Conduit*, 1988 (rejecting a safety standard based on bad process); see generally, Carstensen and Roth, 2000 (contending that regulatory agreements among competitors are lawful if public policy, i.e., legislation or other indicia of public acceptance, has authorized such regulation of competition, the restraint is within the scope of that authorization, and the process used was appropriate to the situation).

Once again, the limits of competition law doctrine and potential high costs of resolving such issues in a competition law case provide a justification for seeking either exemption or modification of competition law. The contexts can be further divided into demand externalities, supply externalities, and information pooling.

### 3.3.3.1. *Network (Demand) Externalities*

A network or demand externality exists if the utility that consumer A receives from consuming a product depends on whether others consume that same type of product (and, potentially, who else consumes it). If significant demand externalities exist, competitors may want or need to coordinate on standards with each other. Creating compatibility among rival networks increases the value of the product to consumers by increasing the total size of the network. This increases the set of consumers and so has a positive effect on the utility of each consumer who purchases this product.<sup>24</sup>

Standard setting in telecommunications is a prime example. Consumers ultimately demand phone conversations, not phones or network interchange. The demands for phones and related service equipment derive from the demand for phone conversations. As a result, while telecommunications companies compete to provide cell phones and cell phone service, they must coordinate with their competitors to ensure interoperability to provide the good consumers ultimately consume, the resulting calls, including calls with consumers on competing networks.<sup>25</sup>

Coordination among competitors is an alternative to achieving a network through a single, monopoly firm. If a single firm offered the complete product of a phone conversation under all circumstances, such a firm likely would be a monopolist over a relatively large area, in the nature of the original AT&T network. It is evident that it is more efficient to have competition in supply of the component products used to make the conversation while enabling the supply of the ultimate product, the communication, through standards setting. However, the collective action of setting standards and their subsequent enforcement raises competition law concerns if not done by a government agency. The case law shows that in fact competition law courts will allow legitimate standards setting. But the courts are not adapted to engage in finely tuned review of the merits of regulation. Hence, shared jurisdiction between competition law and an activity-oriented regulator is likely to be the more efficient response (Hovenkamp, 2004). In such contexts, a statutory exemption may be useful to specify more precisely the scope of authority of the two legal regimes.

The central point is that classification and other rules can define and facilitate markets where strategic conduct by either buyer or seller can occur. This is a particular issue in the context of networks where the potential for strategic conduct is very great. As

<sup>24</sup> There is an extensive literature on network effects. See, e.g., Shapiro and Varian, 1994; Katz and Shapiro, 1985.

<sup>25</sup> Interoperability through network standardization does not preclude individual providers from seeking through various means to create barriers to keep their customers from switching to other competing suppliers.

discussed below, market-facilitating regulations are important to economic efficiency in other areas as well.

### 3.3.3.2. *Supply Externalities*

Consumer demand for professional football provides an example of this problem. Consumers want games and seasons, not individual teams, even if they root for the home one. Thus, a football team as a firm cannot supply the product unilaterally; one team in isolation is not entertaining. The product, the football game, which is generated as a result of coordination between two teams, creates the entertainment for the spectator, and the need for multiple teams to interact on games, seasons, and playoffs creates a supply externality. A supply externality means that an increase in the supply by a competitor increases a firm's own supply, in this example by lowering the overall costs of producing the final product.<sup>26</sup> In particular, a joint venture can coordinate a "season" and joint sales of the resulting product while competition for inputs such as players and coaches continues. Moreover, the collective enterprise produces value for spectators that its participants may not be able to capture. The potential problem is that the rights of the individual teams to charge for the programs they create may not provide sufficient revenue to cover the costs of producing the overall program of games. This might be particularly true where teams have differently sized markets and so have divergent revenue streams directly available to them. In such a situation, the league might fail and the overall supply of games would be lost.

One solution to this problem is to facilitate the capture of more of the value created by the collective enterprise. But to capture additional revenue may require collective action both to limit supply (thus creating and collecting monopoly profits) and to allocate the resulting revenue so as to subsidize the teams facing the greatest economic challenges. Manifestly, such conduct might be questionable under competition law and so rational teams would ask for an exemption from that law.

The central issues here are the scope of lawful collaboration in marketing the collective product. To the extent courts have interpreted competition law to ban any collaboration in sales, the firms may have a justification to seek some relief from such a prohibition. Thus, it may be justifiable on economic grounds to permit professional football teams to restrict through collective action the sale of their supply of football games if a popular but individually insufficiently remunerative sport otherwise would cease to operate.

Supply externalities exist because multiple entities need to coordinate certain economic activities but also continue to compete in other aspects of the market. The externalities can also be internalized if the group combines into a single firm. Indeed, it is possible that a single firm might be more efficient than a collective of firms because it could better control all aspects of production. A number of recently formed sports

---

<sup>26</sup> Although only a few examples exist, it is possible to have professional team sports without leagues or other joint structures. The Harlem Globetrotters are one of the best-known examples.



leagues, such as Major League Soccer in the United States, have been organized as single-firm entities, presumably to achieve this kind of internalization.

As in the case of network effects, the claim of supply externality sufficient to cause a serious reduction in or loss of valuable goods or services requires a number of very specific facts. The football example is illustrative because in that case, the central economic consideration to achieving survival of professional football was sharing of revenue and not the enhancement of revenue. In addition, the authorization of such collective market control beyond that permitted by competition law itself creates significant risks of excessive exploitation and other strategic conduct. Only direct regulation of prices, locations, or terms of access can address such issues. Thus, creating special market power without a balancing regulatory oversight of its use is likely to result in suboptimal performance.

### 3.3.3.3. *Information Pooling*

Sharing information that includes forward-looking projections can be essential to efficient pricing in some service industries, notably property and casualty insurance, where the cost of the service is primarily a function of estimated future expenses. Efficiency gains can be substantial if the pool of information is large. When the information comes from multiple firms the participants must both coordinate their data classification and share their projections. The ability to monitor the overall risk stems from access to information about the types of insured parties (their risk factors) and their historical risk performance. The coordination among competitors to gather and maintain information on the risk profiles of insured parties can reduce the total costs of insurance and mitigate market failure, in the form of a disintegrating risk pool, which can result from adverse selection and moral hazard. The existence of such an information pool also reduces the barriers to entry into the business of insurance since the new entrant does not have to develop its own database. Because the cost of information related to risk in an insurance pool may decline over reasonable ranges of output, an insurer acting unilaterally may not be able to organize such information efficiently. Moreover, more limited databases are likely to result in less well-informed individual pricing decisions.

Information sharing is not necessarily illegal under competition law; however, when the information includes projections of future expenses (e.g., insurance claims) that are the primary element in the cost of the product being sold, the concerns grow. Information sharing of this sort could expose those engaged in the sharing to continued risks of competition law litigation. Those risks might, therefore, deter the most efficient and comprehensive data collection and analysis. The McCarran-Ferguson Act exempts insurance from federal competition law oversight and assigns oversight to the states, thereby permitting insurance companies to share information with less risk of competition law intervention (ABA, 2007, 133–60).

As a general matter, this economic analysis supports only a narrow and carefully crafted exception to competition law that formulates a safe harbor for essential information exchange. Many markets have developed other ways of pooling information