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Ivan K. Fong

John Kent Walker

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International High-Technology Joint Ventures: An Antitrust and Antidumping Analysis

by
Ivan K. Fong†
John Kent Walker*

INTRODUCTION

International high-technology joint ventures have become a popular topic of conversation in international business and trade circles. Foreign companies have entered into what have been called "strategic partnerships," "R&D consortia," "exchange agreements," and "second sourcing arrangements" with high-technology firms in the United States. Although cross-national commercial cooperation is hardly unusual, the innovative new forms assumed by these high-technology firms have raised significant concerns within the international trade community and have prompted some American business and political leaders to sound both economic and national security warnings.

Recent examples of such joint ventures include a design and technology sharing arrangement for computer development between AT&T and Olivetti; collaboration over semiconductor production between LSI Logic and Kawasaki; a joint manufacturing operation in Japan combining Motorola's microprocessor technology and Toshiba's memory chip expertise; joint automobile production between General Motors and Toyota; and joint biotechnology research and development agreements between Alza and Ciba-Geigy.¹ Moreover, similar cooperative efforts appear to be proliferating.²


The authors wish to thank Gillian Hadfield and Jonathan Massey for their helpful comments. All errors remain ours.


2. See generally D. Davis, Strategic Technological Alliances (1986) (unpublished manuscript); INTERNATIONAL COLLABORATIVE VENTURES IN U.S. MANUFACTURING (D. Mowery
Perhaps the most controversial of these initiatives was the October 1986 proposal by Fujitsu, Japan's largest maker of telecommunications equipment, to purchase eighty percent of U.S.-based Fairchild Semiconductor from Schlumberger, a French firm.\(^3\) The proposed arrangement, blending aspects of a joint venture and a straight merger, ruffled the feathers of the technology community.

Objections to the proposal came from both Washington and Silicon Valley. The Defense Department noted that Fairchild is one of only two U.S. producers of militarily vital semiconductors.\(^4\) Silicon Valley executives and industry analysts cautioned that this collaboration-cum-acquisition, in light of the continued weakness of the dollar vis-a-vis other currencies, marked the beginning of a string of foreign purchases of small, undercapitalized high-

\(^3\) Fujitsu's American and most of its European chip operations would have been combined with Fairchild to form a new company (of which Fujitsu would own eighty percent and Schlumberger twenty percent). In return, Fujitsu would have obtained control over the U.S. plant, its technology, and its marketing and distribution systems. Fairchild would have retained its name and its chief executive; its board of directors would have been drawn from Schlumberger, Fairchild, and other U.S. firms.

\(^4\) At the time of the proposed deal, Fairchild held an estimated two percent of the world market for semiconductors, whereas Fujitsu held about 4.2%. The new venture would thus have had a combined market share of about 6.2%. However, the new company would have possessed about 22% of the market for a line of semiconductors that are crucial to the supercomputers used in the operation of certain weapons. Defense Department officials were concerned that the United States would no longer be able to manufacture these chips on its own if both Fairchild and the other major U.S. chip maker, Motorola Inc., were taken over by Japanese firms.


An important trend in the changed world environment [since the 1950s and 1960s] is the formation of partnerships and new concepts in partnerships that can share marketing, research, and production across national borders. This is the wave of the future.

... [These] new alliances ... transcend the way multinationals operate in an integrated worldwide marketplace. Such alliances are going to be necessary in a world economy that's increasingly interdependent ...

Such alliances combine strengths, since each partner has unique contributions to make—whether research capability, technical strengths, or access to markets and materials.


technology firms. Adding insult to this perceived injury, Fairchild stood as one of the oldest and most respected of Silicon Valley’s offspring, with prominent alumni directing many other local high-technology firms.

But the crux of the Reagan Administration’s opposition, which ultimately led to Fujitsu’s withdrawal of its plan in March 1987,\(^5\) appears to have been criticism of the deal by then Commerce Secretary Malcolm Baldridge. The Commerce Department’s antagonism to the proposal, against a backdrop of increasing trade friction between the United States and Japan,\(^6\) was nominally grounded on two concerns. The Commerce Department argued that the Fairchild-Fujitsu deal sidestepped a recent agreement that imposed a price floor on Japanese semiconductors imported into the United States,\(^7\) and that it also raised antitrust concerns in an increasingly concentrated semiconductor chip industry. However, the Department of Justice took no public position on the antitrust issue, and some observers suspected that the Commerce Department was motivated instead by its frustration over trade negotiations with the Japanese and its resentment of their high-technology successes.\(^8\)

Were the Administration’s concerns about potential antitrust and trade law violations well-founded, or were they merely a smoke screen for nationalist or protectionist sentiments? As foreign firms increasingly join with U.S. firms to research, develop, or produce high-technology goods and services, the answer holds significance well beyond the Fairchild-Fujitsu proposal.

This article seeks to answer that question by examining the economic contours of these new joint ventures, discussing their treatment under current antitrust and antidumping laws, and exploring directions for the future. We conclude that existing antitrust and antidumping laws do not pose insurmountable barriers to international joint venture formation. We also suggest,

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7. The United States-Japan Semiconductor Trade Agreement was signed on July 31, 1986, requiring Japanese companies (but not those based in the United States) to sell their semiconductors at prices above a minimum level set by the U.S. government. The agreement also provided for a gradual opening of the Japanese market to U.S. producers. See Agreement on Semiconductor Trade, July 31, 1986, United States-Japan, — U.S.T. —, T.I.A.S. No. —, reprinted in 25 I.L.M. 1408 (1986).

8. For example, the United States-Japan Semiconductor Trade Agreement, hailed by President Reagan as a “landmark pact” when it was signed, has led to charges that the Japanese are cheating, to deep-seated Japanese animosity toward the United States, and to anger among chip users throughout the world. See Semiconductor Accord with Japan Fails To Aid U.S. Firms, As Intended, Wall St. J., Feb. 12, 1987, at 1, col. 6.
however, that these laws should be clarified and refined in order to accommodate and encourage such joint ventures.

I. INTERNATIONAL HIGH-TECHNOLOGY JOINT VENTURES

A. Definition

The imprecision of the phrase "joint venture" reflects the ambiguity surrounding theories of the firm and the often blurred boundaries between firms. The phrase typically covers a myriad of collaborative arrangements, including the licensing of technology, subsidiary manufacturing, or simply one firm's equity participation in another. They may also include, to varying degrees, common manufacturing or production plants, shared distribution or marketing plans, joint personnel or management responsibilities, and pooled proprietary rights of inventions or products. In our references to international high-technology joint ventures, we concentrate on those entities formed by private firms of different countries that share a core research and development [hereinafter R&D] effort.

The Fairchild-Fujitsu proposal illustrates the expansive nature of high-technology joint ventures, for that particular arrangement was as much a partial merger as a true joint venture. The two parent firms were horizontal competitors in some markets, particularly in semiconductor manufacturing, although each specialized in specific sectors of the overall semiconductor market as well. Fujitsu hoped to purchase a significant share of Fairchild from Schlumberger, while simultaneously furthering joint development and production efforts through a jointly controlled board of directors. Variations on this arrangement in other high-technology industries may involve different structures of equity ownership and management participation, vertical arrangements, or larger (or less balanced) market shares.


10. This article does not address the increasingly important area of cross-national research sponsored by governments rather than private industry. See, e.g., Americans Spurn Japan’s Research Offer, Wall St. J., Dec. 30, 1987, at 14, col. 4.

11. Fujitsu, with 1986 sales of $9.4 billion, was offering to purchase from Schlumberger 80% of Fairchild, whose 1986 sales were roughly $500 million, for approximately $225 million. Since 1979, Schlumberger had spent approximately $1.5 billion to support its subsidiary, seeking to establish a sophisticated niche market that would insulate it from low-cost mass-produced chips. Fujitsu was clearly relying on significant complementarities in both R&D and manufacturing/distribution to justify its purchase. See Cold Feet; Fujitsu Drops Its Fairchild Bid, TIME, Mar. 30, 1987, at 52; see also supra note 4.
Finally, we use the term "high-technology" to describe industries that are characterized by a relatively high proportion of aggregate sales or revenues devoted to scientific research and by product life cycles that are relatively short as a result of constant innovation. In such industries, competition in international markets is increasingly fueled by the introduction of new product and process technologies. Examples of research-intensive industries typically considered to be high-technology include telecommunications, computers, electronics, biotechnology, robotics, aerospace, and semiconductors. Advanced research efforts in the automobile, petrochemical, plastics, pharmaceutical, and steel industries also properly fall within a broad definition of high technology.

B. Economic Analysis

Why do these joint ventures form? The answer varies from case to case, depending on the complex costs and benefits of joint R&D and joint production, as perceived by individual firms as well as by society as a whole.

1. Private Incentives for Joint Production

As international competition in high-technology industries intensifies, firms logically look to joint manufacturing facilities to cut or contain their production costs. Thus, most foreign firms that initiate joint research ventures with domestic firms seek the traditional economic returns from joining complementary production lines and distribution systems. In particular, when firms join both production and research forces, any economies of scale that result tend to appear only in the production phase due to the intangible nature of joint research gains.

In addition to these traditional economies of scale, firms may also establish joint production facilities in order to lower average total production costs in other countries—for example, lower labor, raw material, transportation, or overhead costs. Although firms could form wholly-owned subsidiary manufacturing plants to reap these same savings, the technical expertise and intangible goodwill of an existing firm may steer them toward the use of joint venture forms.

International joint ventures help spread the risk of trade by using the knowledge and influence of local citizens to overcome formal regulations and informal prejudices against foreign traders. As these barriers rise, international business linkages become more appealing. For example, foreign firms may desire domestic production status in the United States to circumvent pricing agreements, such as the U.S.-Japan Semiconductor Agreement, or import limitations, such as the annual import quota on cars from Japan.

Finally, the globalization of high-technology industries is increasingly likely as firms in other countries attempt to share in the fruits of technology-driven industries such as computers, telecommunications, and biotechnology. Production joint ventures can provide a low-risk wedge for penetrating nascent foreign markets.

2. Private Incentives and Disincentives for Joint Research

Cutting-edge scientific and technological research is inherently risky, often requiring long-term, personnel-intensive investments with only speculative returns. A large percentage of R&D efforts ends in failure—a fact that discourages firms from investing large sums in research. However, by consolidating their research efforts, individual firms insure against these risks by spreading them throughout an industry. Moreover, the possibility that rival firms may free-ride on basic research breakthroughs obtained by a single investing firm gives firms incentive not only to protect their own research, but also to form research partnerships to widen the net for earlier recovery of potential returns from industry-wide research.

The rapid evolution of products in high-technology industries offers another spur to the creation of research joint ventures. Such ventures allow added flexibility in coping with demands for new products, changes in demand from commodity to systems products, or an industry-wide need for compatibility standards. For example, small high-tech firms may lack marketing and distribution systems that adequately maximize the revenues from their products during their often brief commercial lives. Joint ventures may help such firms to capture more of these ephemeral revenues.

Finally, cultural and linguistic differences can impede the spread of intangible research and technology more than they hamper the flow of goods and production techniques. International research joint ventures can create the scientific lingua franca needed to bridge these gaps.

13. For example, among the justifications for joint ventures:

They reduce duplication, promote the efficient use of scarce technical personnel, and help to achieve desirable economies of scale. Small firms are able to collaborate in joint research and development projects, which because of prohibitive costs, they could not do by themselves. Large firms are jointly able to tackle today's large and complex technological problems, which are often beyond the ability of single firms.

14. This is also known as the "spillover" effect of R&D investments. See infra note 20. In the context of computer software protection, see Menell, Tailoring Legal Protection for Computer Software, 39 STAN. L. REV. 1329, 1337-40, 1356 (1987), for a discussion of information as a "public good" and the use of research consortia to mitigate the free-rider problem.

15. See D. Davis, supra note 2, at 6-7.

Nevertheless, the riskiness of research remains a significant disincentive to joint research ventures. The precise economics of joint research are difficult to predict. The relationship, if any, between industry structure and innovative activity is uncertain. The debate comparing innovation resulting from an industry composed of a few large firms (with greater resources, diversification of risk, economies of scale, and less duplicative research) with one composed of many small firms (with lesser bureaucratic overhead and spurred by competition and entrepreneurial energy) may ultimately be an empirical inquiry and theoretically intractable. Some have argued that larger firms may wish to hedge their bets by forming smaller joint R&D efforts simply to reduce the bureaucratic inefficiencies of the parent firm and recreate an entrepreneurial environment in a jointly-owned satellite entity. On the other hand, others argue that pure R&D joint ventures are inherently rare because of the need to trust a competitor with proprietary information. Furthermore, the significant transaction costs involved, such as the need to draft agreements to protect not only existing trade secrets but also future discoveries, create additional deterrents to their formation.

3. Social Distortions of Joint Investment in R&D

The uncertain costs and benefits of joint research ventures suggest that the overall level of joint research might best be left to the market, with governments allowing firms, who are closest to the realities of their own research, to choose their own degree of research collaboration.

Will the "invisible hand of the market" sufficiently encourage the socially optimal level of joint research and production ventures? Not necessarily. At the outset, a truly laissez faire market for R&D is unrealistic, given that intellectual property rules inherently define the nature of "property rights" in the "product." Moreover, the realities of actual rules and markets compound the problem of capturing the externalities of scientific research and development.

17. The debate has its roots in Joseph Schumpeter's theory that, because of the risks and expense of conducting research, an industry structure consisting of a few large firms will best foster technological innovation. See J. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 81-106 (3d ed. 1950). See generally R. NELSON & S. WINTER, AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE (1982); F.M. SCHERER, INNOVATION AND GROWTH: SCHUMPEterIAN PERSPECTIVES (1984).

For overviews of attempts to test this hypothesis, see F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 15 (2d ed. 1982) (reviewing the literature); and M. KAMien & N. SCHWARTZ, MARKET STRUCTURE AND INNOVATION 49-104 (1982) (concluding that, as a matter of empirical evidence, an intermediate degree of industry concentration produces the highest level of R&D expenditures).


19. For an example of the laissez faire view, see Best R&D is Business-Driven, Wall St. J., Feb. 10, 1988, at 20, col. 3.
More importantly, because information is theoretically a "public good," the aggregate societal investment in scientific research will, absent government intervention, generally be less than the socially optimal level.\textsuperscript{20} Despite the existence of rules protecting various forms of intellectual property, limitations of these rules tend, on average, to cause firms to devote too few resources to research and development.\textsuperscript{21} Firms that are too small to reap the resulting benefits from the sale of a final product must instead license their innovation to be able to recover their R&D costs. Since perfect price discrimination is impossible, an inventor must charge a price that prevents some potential users from licensing the new technology, even though the positive social gains from its use are greater than the negligible social cost of reproducing the already-created technology. Joint ventures help correct this market failure by aggregating many or all of the potential users of the new technology, thereby allowing economically efficient use of the technology at its zero social cost and capturing greater consumer surplus from the licensing firm.

In addition, an inventing firm seeking to attract outside investment for product development faces a unique transaction cost problem. Innovating firms tend to have more and better information about the research problem to be solved than potential investors, who must accordingly be compensated for assuming higher uncertainty and risk.\textsuperscript{22} This risk contributes to underinvestment in commercial R&D by raising its cost without necessarily increasing its return.

National fiscal and monetary policies can also retard private investment in research and development. The high cost of capital resulting from the size of the federal deficit is a significant hindrance to the private financing of research in the United States. In addition, tax credits,\textsuperscript{23} deductions, and write-

\textsuperscript{20} This "spillover" effect, whereby third parties that have not absorbed the cost of R&D are able to take advantage of its fruits, benefits society but also leads to aggregate social underinvestment in R&D. See generally \textit{Arrow, Economic Welfare and the Allocation of Resources for Invention}, in \textit{The Rate and Direction of Inventive Activity} 609 (R. Nelson ed. 1962) (noting that firms have a disincentive to invest in R&D if the knowledge generated by the investment is involuntarily transmitted to competitors). For a recent empirical study highlighting this point, see Bernstein & Nadiri, \textit{Interindustry R&D Spillovers, Rates of Return, and Production in High-Tech Industries}, 78 \textit{Am. Econ. Rev.} 429 (1988) (finding that, in recent years, social rates of return significantly exceeded private rates of return in five high-tech industries).


\textsuperscript{22} \textit{Id.} at 82.

\textsuperscript{23} R&D tax credits encourage companies to spend greater sums on innovative efforts than they otherwise would. For example, the 1981 research tax credit, I.R.C. § 41(c) (West Supp. 1988), currently provides: (1) a twenty percent credit for the excess, if any, of "qualified research" expenses (defined as technological research aimed at uncovering information useful in the development of new or improved business output) over "base period" expenses (research expenditures in the three prior taxable years); and (2) a twenty percent credit for "basic research" expenditures (scientific research not having a specific commercial objective) made by a corporation. This tax credit expires this year and both the House and Senate versions of the new tax bill temporarily extend the credit in its existing form.
offs for R&D expenditures can affect the level of such investment. Inefficiencies in national capital markets or interest rates that respond to political rather than market forces may also decrease investment in R&D by high-technology firms, where the delayed and uncertain recapture of investment in R&D makes high-technology firms relatively more sensitive to these market fluctuations.

Finally, temporal lags and faulty information in national labor markets may lead to shortages of trained research personnel in new research fields. The delayed return on investment in R&D compounds these market lags and inefficiencies, thereby further reducing private investment in R&D.

Thus, to the extent that structural and other barriers discourage commercial investment in R&D, it seems plausible to conclude that, despite the recognized value of scientific research to high-technology firms, the total level of R&D in existing markets probably falls short of the socially optimal level.

Recognizing the significant impact of government policy on research investment, the federal government has long been an active supporter of basic and industrial R&D. In addition to funding virtually all of the basic scientific research done in this country, the federal government has used tax, antitrust, and patent laws and policies to promote commercial research and development. The President's Commission on Industrial Competitiveness recently concluded that commitment to and progress in research and development is vital to advancing our nation's "competitiveness," strengthening the domestic economy, and ensuring national security. Unfortunately, most of these governmental incentives are targeted at U.S. firms, without significant regard to promoting international efforts at joint research and development.

In short, international research joint ventures offer the benefits not only of costly commercial research that might otherwise not be undertaken, but also of mitigating possible negative consequences of government policies that inefficiently limit socially optimal levels of research. Accordingly, with the limited exception of research directly vital to national security interests, the United States (and the international community) would benefit from active government support for bilateral or multilateral international research efforts.

24. Obviously, the government must, and does, fund the major portions of basic research in this country (although much of it is defense-related). The research efforts that are discussed in this essay are those undertaken by private firms. For an interesting look at the increasingly important field of research collaboration carried out under government auspices, see Chip Consortium: Before Congress Antes Up, Wall St. J., Nov. 17, 1987, at 38, col. 3; and Big Guns Sign with Sematech, San Francisco Examiner, Jan. 26, 1988, at C-1, col. 6.

Notwithstanding any such support, the United States also maintains a long-standing commitment to laws and policies against anticompetitive business behavior and unfair international trade practices. International joint ventures have the potential to monopolize markets just as domestic firms do, and they may be used to circumvent antidumping laws intended to protect domestic producers from foreign goods sold at less than fair value. This balancing of the economic and social costs and benefits of international high-technology joint ventures drives our analysis of the antitrust and antidumping implications of these ventures.

II. ANTITRUST LAW AND INTERNATIONAL JOINT VENTURES

A. U.S. Antitrust Policy

Since the 1970s, federal antitrust enforcement and policy have been marked by increasing economic sophistication, utilizing concepts such as market power and economic efficiency derived from microeconomic and welfare economic theory. The policies of the Reagan Administration, with the help of "Chicago-school" legal academics, heralded a generally more permissive antitrust environment for mergers and other collaborative actions. In addition, federal judges in recent years have shown greater willingness to entertain economic arguments in antitrust disputes to remove per se prohibitions on some horizontal activities and to question whether vertical restrictions and integration are always to be disfavored.

I. Recent Laws Affecting Antitrust Analysis of Joint Ventures

This change in perspective directly affects the antitrust analysis of joint ventures, which are usually scrutinized as partial mergers of the parent firms.


27. The Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, 102 Stat. 1107 (1988), signed by President Reagan on August 23, 1988, introduces comprehensive changes to U.S. trade law, including the antidumping statute, but does not appear to address the problems raised in this article.

28. See, e.g., R. BORK, THE ANTITRUST PARADOX (1978) (arguing that judges should interpret the antitrust laws to promote only economic efficiency).


30. See United States v. Penn-Olin Chem. Co., 378 U.S. 158, 170-71 (1964). Under the "rule of reason" standard, a joint venture will be analyzed according to (1) its size; (2) the parent firms' market shares; (3) the parent firms' contribution to the joint venture and benefits received; (4) the likelihood of a similar undertaking in the absence of the joint effort; (5) any ancillary
Two firms that enter into a joint venture typically present less of an anticompetitive threat than they would by merging, because a joint venture does not involve a complete commitment of assets and the concomitant increase in market share. Antitrust concerns are also reduced when the joint venture primarily involves joint R&D, which typically represents a relatively small proportion of the inputs of a final product. Indeed, as a matter of dynamic efficiency, research joint ventures have the potential to promote innovation and enhance product market competition. Nevertheless, joint ventures raise antitrust concerns if they involve territorial market division or output restrictions between horizontal competitors, or if they foreclose independent entry by one or both parents into the new market.

In broad outline, collaborative conduct runs a spectrum of increasing welfare enhancement. Naked price fixing between horizontal competitors (the most socially inefficient form of collaboration) offers no efficiencies to counter the reduction in output and the transfer of monopoly rents from consumers to collaborators. Oligopolies, in the middle of the spectrum, allow some efficiencies in coordinating production, but these are usually outweighed by an increase in price and a reduction in output concomitant with satisfying all members of the oligopoly. Mergers that allow for more efficient use of existing assets and greater economies of scale lie at the most efficient end of the spectrum (so long as the merger does not result in an anticompetitive increase in market price). The Reagan Administration's Department of Justice, for example, allowed a number of mergers that did not pose a direct threat to horizontal competition.

The antitrust analysis of joint ventures, and particularly international joint ventures, has only recently assumed major importance. From 1968 to 1980, the Department of Justice was asked to give official preclearance to just twenty-one joint ventures, only three of which involved present or potential partnerships with foreign firms.


32. The more controversial question is whether mergers that do pose a direct threat to horizontal competition have been allowed. See, e.g., Adams & Brock, supra note 26, at 1540-46 (criticizing recent "merger mania").


Several recent policies and statutes have, however, directly affected the antitrust laws that apply to international joint ventures. In 1980, the Department of Justice promulgated its Research Joint Venture Guidelines, which expressed a generally favorable view toward joint ventures strictly confined to research and development. In 1982, reflecting the more relaxed antitrust environment, Congress passed the Export Trading Company Act which clarified some jurisdictional issues and effectively granted antitrust immunity to registered cartels formed solely for export purposes and having no "direct, substantial, and reasonably foreseeable" effect on American consumers.

Finally, in response to widespread industry statements that potential antitrust liability was chilling many procompetitive joint ventures, Congress passed the National Cooperative Research Act of 1984 [hereinafter NCRA], which codified the existing hands-off approach. In fact, business' alleged fears of potential antitrust liability may have been only a convenient excuse used by firms who were not truly interested in a joint venture, but who did not want to offend proposing firms. The risk of antitrust prosecution was especially low in light of the Justice Department's track record of never prosecuting a pure research venture that did not have ancillary restraints.

The NCRA defines operations that constitute joint ventures and excludes others, such as certain types of joint production or distribution arrangements. It provides for a rule of reason analysis (i.e., a weighing of procompetitive and anticompetitive effects) for R&D joint ventures, and further provides that R&D joint ventures registered in advance with the Department of Justice are liable only for actual, not treble, damages. This final provision brings the United States in line with the standard policies of

35. See id. In addition, the Antitrust Division is formulating new guidelines that will be based on the legislative history of the 1984 National Cooperative Research Act. See Rule, supra note 18, at 1129; see also S. REP. No. 427, 98th Cong., 2d Sess. 3, reprinted in 1984 U.S. CODE CONG. & ADMIN. NEWS 3105, 3107; H.R. REP. No. 1044, 98th Cong. 2d Sess. 14, reprinted in 1984 U.S. CODE CONG. & ADMIN. NEWS 3131, 3139.


40. See JOINT VENTURE GUIDELINES, supra note 34, at 2.


42. Id. § 4302.

43. Id. § 4305.
many foreign nations, which tend to regard American treble damage judgments to be unjustly punitive.\textsuperscript{44}

In sum, this series of statutes and regulations seems to have produced a comprehensive U.S. policy toward research and development joint ventures, whether domestic or international. However, the seemingly clear division between joint ventures dedicated to research and development and the more traditional sharing of production and distribution facilities has proven difficult to police. Many international high-technology joint ventures seek joint production as well as joint R&D, either from the outset or after the development of a joint product. Although joint production gives additional incentives for collaboration, it also raises the problem of increased horizontal concentration at the production level. Confusion over how to regulate these combinations, as illustrated by the Justice Department's early ambiguous position regarding the antitrust implications of the Fairchild-Fujitsu combination, has stemmed from a failure to closely analyze the anticompetitive threats posed by the varying features of joint ventures.

2. Current Theoretical Framework

Recent joint venture antitrust analysis in the United States can be attributed to an influential article written by Professor Robert Brodley in 1982.\textsuperscript{45} Brodley argues that any joint venture raises a risk of three distinct types of anticompetitive behavior:

a. Collusion.

Partners may collude by sharing information about costs of raw materials, labor, and transportation; volumes of orders and shipments; or wholesale and retail prices of current and future products. The sharing of this information can encourage oligopolistic pricing and output behavior that interferes with the efficient functioning of the market.\textsuperscript{46}

b. Loss of Potential Entry.

Even if only one partner would have entered a given market, had there not been a joint venture, the other partner would still have been "waiting in the wings," limiting prices by the perceived threat of its entry.\textsuperscript{47} This risk


\textsuperscript{46} Id. at 1530-31; see also P. AREEDA & L. KAPLOW, \textit{ANTITRUST ANALYSIS} 329-50 (4th ed. 1988) (discussing data dissemination).

also extends more tenuously to the actual loss of a future entry by one or both parent firms.  

48.

c. Restricted access.

The parent firms’ privileged access to the results of the research may become an insurmountable advantage over other competitors in the market, who are unable to pool sufficient resources in order to organize a comparable collective effort of their own.  

49.

The 1980 Department of Justice Guidelines operationalize these three categories of anticompetitive behavior by evaluating the overall level of market concentration to determine the potential anticompetitive effects of a proposed joint venture.  

50.

Although such an overview has its limitations, as discussed below, it yields clear and objective standards that are useful to businesses attempting to assess their potential antitrust liability from a proposed joint venture. Clarity and objectivity play an especially important role in the international context, enabling potential partners to better assess foreign antitrust climates.

B. Tailoring the Approach

Nonetheless, the rough-and-ready nature of the current guidelines makes them both over-inclusive and under-inclusive in determining whether a given joint venture poses an antitrust risk.

Although Brodley delineates the types of conduct that create antitrust risks, his approach can be carried a step further. In order to create a workable operational model for policymakers, we first analyze the negative outcomes of the types of conduct Brodley describes, and then formulate objective indicia for predicting when those negative outcomes are most likely to arise. These objective criteria will provide a more precise and certain trigger for government intervention.

48. The Supreme Court has noted but not accepted this “actual potential competition” doctrine, which is based on the loss of additional actual future competition in a market rather than the loss of presently effective pressure on a market to perform in a more competitive manner (which is the basis for the “perceived potential competition” doctrine). See United States v. Falstaff Brewing Corp., 410 U.S. 526 (1973); cf. Yamaha Motor Co. v. FTC, 657 F.2d 971 (8th Cir. 1981) (finding antitrust violation in a joint venture between Yamaha and Brunswick on grounds of actual potential entry), cert. denied, 456 U.S. 915 (1982). Note, however, that this risk is particularly difficult to assess in practice. And until one of the parents would have entered but for the joint venture, the joint venture has presumably been providing competitive benefits to society.

49. Brodley, supra note 45, at 1532-34.

50. The Justice Department is currently working on new guidelines in this area. Charles Rule, Acting Deputy Attorney General for Antitrust, notes that the new guidelines may focus more extensively on the sort of collateral restraints discussed in the Justice Department’s 1985 Vertical Restraint Guidelines. See Rule, supra note 18, at 1133 n.15.
1. Negative Outcomes of Brodley’s Three Types of Behavior

Each of the anticompetitive behaviors identified by Brodley may contribute to one (or more) of at least three negative outcomes:

(a) higher (supracompetitive) prices for today’s products;

(b) suboptimal investment in current R&D, which reduces the types and varieties of products available in the future; and

(c) higher (supracompetitive) prices for future products.

Brodley’s “collusion,” “loss of potential entry,” and “restricted access” elements can separately or jointly contribute to any one of these negative outcomes. However, each negative outcome has specific preconditions that can serve as objective indicia needed by policymakers.

The first negative outcome, immediate price increases and concomitant output reductions, largely depends on the current production concentration in the relevant market, as well as on collateral arrangements involving price and output.

The second negative outcome, limited product availability due to restricted research and development, depends on the concentration of R&D expenditures and on the nature of collateral agreements that govern the sharing and use of individual and collective information.

The third negative outcome, future price increases due to R&D inequalities, depends on the number of firms not presently in the market but which could reasonably be expected to enter in response to a price increase.

Even if a joint venture does not create a risk of any two of these negative outcomes, it may still contribute to a third, depending upon the relevant objective indicia. For example, if R&D expenditures in a given industry are considerably more concentrated than sales, a joint venture that merges R&D functions may cause more concern than one that merges distribution systems. Differing levels of concentration are particularly likely to arise in international joint venture analysis because of varying industrial structures and foreign business practices. The same industry in two different countries may devote very dissimilar percentages of sales to R&D, and may each have different types of near competitors who could potentially enter in response to higher future prices.

2. Application to Joint Ventures

It is therefore advisable to analyze a proposed joint venture against the objective indicia, relevant to each of the three negative outcomes it might create. This strategy is more tailored in its treatment of joint venture purposes, industry concentration, and collateral restraints than the current approach.
a. **Focus of the joint venture**

The current approach essentially ranks the various forms of joint ventures from those that involve purely basic research efforts, through those that involve applied research and development, to those that involve production and distribution. This spectrum implicitly focuses on the risk of supracompetitive prices for current products. The approach presumes that greater collaboration in production and distribution leads to a greater risk of anticompetitive collusion affecting current price and output.

Our approach reframes the issue by determining the effect of each phase of the joint venture on the other two potential negative outcomes: suboptimal R&D investment and supracompetitive future prices. For example, collaboration in basic research could lead the parent firms to underinvest in R&D under certain circumstances. In the case of a joint project to develop a technology required by government but not offering additional profits (e.g., airbags or certain environmental safeguards), the parent firms would have an incentive to delay development as long as possible. Thus, a firm with monopoly power over a superior technology may purchase its rivals' independent R&D by sharing its supracompetitive profits in exchange for a understimulated joint R&D effort.

b. **Industry concentration**

The Department of Justice's evaluation of potential mergers rests heavily on the merger's impact on horizontal concentration, as measured by the Herfindahl-Hirshman Index, in accord with the 1984 Merger Guidelines. The Guidelines make clear that the Department of Justice will not prosecute any arrangement unless there is substantial concentration within a given industry. This approach to merger analysis is a good starting point because the anticompetitive risks of joint ventures, as those of mergers, are closely related to competition within an industry or market. For example, the risk of losing a potential competitor becomes much more significant in an industry that is already highly concentrated.

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52. The Herfindahl-Hirshman Index [hereinafter HHI] is calculated by summing the squares of individual firm market shares. The increase in concentration resulting from the merger is the difference between the premerger HHI and the postmerger HHI. The 1984 Merger Guidelines describe the operation of the HHI in more detail. See U.S. DEP'T OF JUSTICE, MERGER GUIDELINES 2 (1984), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,103 (2); see also P. AREEDA & L. KAPLOW, *supra* note 46, at 871-77.

53. In *United States v. Penn-Olin Chemical Co.*, 378 U.S. 158 (1964), the Court discussed the theory underlying the potential competition doctrine in a joint venture context. See also *United States v. Pan American World Airways*, 193 F. Supp. 18 (S.D.N.Y. 1961), *rev'd on other grounds*, 371 U.S. 296 (1963). The courts have thus far considered the loss of potential competition only when the government has shown that other competitors actually feared such entry, the so-called "perceived potential competition" theory. For a discussion of an attempt to show an anticompetitive threat from an objective likelihood of entry (the so-called "actual potential competition" theory), see *United States v. Falstaff Brewing Corp.*, 410 U.S. 526 (1973). See also *supra* note 49.
However, not all "concentration" is the same. The relevant concentration may vary significantly depending on which negative outcome is at stake. Although present pricing and output will likely depend on current market power as measured by market share, effects on the level of R&D will depend on relative investments in R&D and on ability to escalate such efforts. Future prices and outputs may require a significantly longer time horizon for assessing the possibility of entry by firms not currently in the market.

The concentration issue also subsumes problems in correct market definition. Economists and courts seem to have accepted the current approach taken by the Merger Guidelines on this particular issue. The Guidelines define a product market by identifying the group of products for which a hypothetical monopolist could profitably impose a small but significant and nontransitory increase in price—usually posited to be five percent for one year. The geographic market is defined analogously as the area in which a hypothetical monopolist of the relevant product could profitably raise price significantly—again, posited to be five percent for one year.

Previously, the 1980 Joint Venture Guidelines had adopted this approach in analyzing cross-national joint efforts as if they were wholly domestic joint ventures. By adopting a more expansive approach in defining relevant markets to incorporate all international rivals that produce a given product, the Guidelines should adopt a more flexible time perspective, and take readjustments into account which should adequately address international joint ventures. Still, defining global markets and market shares will inevitably compound the difficulty of the economic analysis.

c. Collateral elements

Peripheral restraints.

Most joint ventures involve some degree of peripheral restraints on the parties that are designed to cope with the risks of sharing information when neither party is willing to disclose its hand in advance. Thus, joint venture parents can either commit themselves to share existing research, or they may agree not to use jointly created research independently. This flexibility avoids the risk that one firm will enter into the joint venture, obtain its competitor's research advances, and use those advances without disclosing its own lines of

54. See Adams & Brock, supra note 26, at 1538-39.
55. See U.S. DEPT OF JUSTICE, MERGER GUIDELINES 3-15 (1984), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,103 (June 14, 1984). In the international context, these tests would incorporate all relevant buyers and sellers (both domestic and foreign) affecting the price of the goods in question.
56. See JOINT VENTURE GUIDELINES, supra note 34, at 32-39 (Hypothetical Case B).
promising research. Some of these restraints appropriately limit the necessary risks of the agreement, but other restraints can have significant anticompetitive effects.

Consistent with Brodley's analysis, the current Joint Venture Guidelines consider collateral (or ancillary) restraints only after a threshold increase in concentration has been satisfied. The Guidelines sort potential restrictions into those currently struck down as per se illegal (such as resale price maintenance agreements and tying arrangements) and those analyzed under the rule of reason (such as the exchange of noncost data for procompetitive purposes).  

Again, this approach has the advantage of relative clarity, providing a safe harbor for smaller joint ventures. However, the rule can be overbroad where it fails to focus on the effect a given collateral restraint has on differing levels of industry concentration. For example, if current sales concentration is high, then exchanges of price or cost data could easily favor collusion. On the other hand, if only potential R&D concentration is high, then concern should focus on agreements to pool patents or share future research.

Troubling collateral restraints need not spell the end of a proposed joint venture. Potential partners may avoid antitrust scrutiny by limiting the scope and duration of their project. Supervision by independent consultants can ameliorate worries over a collusive slow-down in the pace of research. "Chinese walls" that limit the exchange of both competitive data and personnel who have significant access to specific manufacturing, distribution, and sales information can also safeguard against anticompetitive risks.

Access restrictions.

Restricting access to the research process and its fruits presents perhaps the most important type of collateral restraint. In fact, the Joint Venture Guidelines, isolating it from other ancillary restraints, view it as an independent concern. It dramatically affects future oligopolistic industry structure, and therefore affects prices and outputs of future goods.

The current Guidelines and some analysts urge that joint ventures license the results of their research to other firms in the industry "on reasonable terms." Yet, this approach misconstrues the underlying purpose of intellectual property law—the grant of static monopolies in exchange for dynamic incentives for creative advances. Attempts to require "reasonable" licensing inevitably turn courts into mini-public utility commissions that are

59. See, e.g., Note, United States Antitrust Law and Industrial Policy: International Joint Ventures and Global Competition After GM-Toyota, 9 Fordham Int'l L.J. 257, 289-93 (1986) (proposing restrictions, such as output and duration limitations, designed to maximize procompetitive benefits of international joint ventures).
60. See Joint Venture Guidelines, supra note 34, at 20-21.
61. See id. at 21.
ill-equipped to second-guess business judgments. Moreover, compulsory licensing systems (as currently used in the cable television industry)\textsuperscript{62} can be economically inefficient as well.

A better solution to avoid unfairness toward excluded firms would be to analyze the ability of these firms to independently finance rival joint ventures of equal size within the industry. Joint venture scrutiny would increase as the market share resulting from the venture became greater. For example, a joint venture that involved only fifteen percent of current sales and R&D capacity, when at least five other like-sized joint ventures could form from existing firms in the industry, would require only a minimal showing of a bona fide need for its scale of research given the absence of anticompetitive effects. The required showing would increase proportionately with market share, so that a joint venture formed by firms with more than a fifty percent industry share would face a presumption against its validity, rebuttable only by a strong showing that such size was necessary to solve the research problem involved.\textsuperscript{63}

Finally, in line with standard antitrust policy regarding the acquisition of leading new technology by dominant firms in an industry, the licenses granted to the joint venture parents should be nonexclusive. This would allow relicensing to other industry participants in accord with their evaluation of the worth of the advance.

The suggested approach offers concrete guideposts which enforcement authorities can publicize to aid businesses planning international joint ventures. Because of its greater specificity, our proposed analysis may be more complicated than the current approach, but this same specificity will help create clearer and more predictable antitrust rules.

Moreover, recent shifts to closer government-business cooperation ease the analysis problems of potential ventures. A number of recent statutes, including the Hart-Scott-Rodino Act,\textsuperscript{64} the Export Trading Company Act,\textsuperscript{65} and the National Cooperative Research Act,\textsuperscript{66} call for optional prior certification by or notification to relevant federal agencies. Potential joint venturers who question the legality of their proposal may also obtain formal business review letters from the Department of Justice or the Federal Trade Commission. Finally, increased judicial sophistication in economic analysis permits an approach that responds more flexibly and accurately to the various issues raised by these unique joint ventures.

\textsuperscript{63} See Baxter, supra note 21, at 87-88.
Many high-technology industries in the United States have enlisted the aid of unfair trade laws to remedy the adverse effects of increased foreign competition. Increased public and political attention to issues of international trade, as evidenced by the Reagan Administration's recent imposition of trade sanctions on Japan, has a double-edged effect on the formation and growth of international high-technology joint ventures. On the one hand, protectionist policies imposed in the name of promoting domestic "competitiveness" may deter beneficial international collaboration in the short-run and aggravate trade disputes in the long-run. On the other hand, a laissez faire policy risks allowing foreign firms to take advantage of joint ventures to price below cost and thereby gain control of U.S. markets at the expense of domestic industries.

A. Current Antidumping Policy

Dumping is price discrimination between national markets and occurs when an exporting firm sells a good at a lower price in one national market than in another. By promoting price discrimination on an international scale, a firm can maximize its profits by charging customers in different countries different prices for identical or nearly identical products. Since 1916, U.S. antidumping laws have responded to this problem by imposing antidumping duties on such goods.

As a matter of economic theory, price discrimination can result from rational profit-maximizing behavior and does not necessarily harm society by

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71. "A firm will maximize profits by charging a lower price to foreign buyers if it has greater monopoly power in its home market than abroad and if buyers in the home country cannot buy the good abroad and import it cheaply." P. Lindert & C. Kindleberger, supra note 12, at 164. See generally Fisher, The Antidumping Law of the United States: A Legal and Economic Analysis, 5 LAW & POL'y INT'L BUS. 85, 86-93 (1973) (discussing the economic motivation for dumping and the effects of dumping on national economies). As used in this article, price discrimination also occurs if the same or similar products are sold at prices that are in different ratios to marginal cost.
reducing consumer welfare. The economic evil of dumping is that it may signal a predatory pricing scheme, which is a more serious economic concern. When a firm engages in predatory pricing, it lowers a product's price below its marginal cost (usually approximated by average variable cost) until the target competitor or competitors are driven out of the market, at which point the firm raises its price back to the pre-predation levels to recoup its investment and reap monopoly rents. In an international context, dumping can be a form of predatory pricing when a firm that is protected in its home market lowers its prices in an overseas market below cost, thereby capturing a dominant market share in the foreign market by driving out the competition.

1. Current Administrative Procedure

Antidumping laws are only one of a series of legal weapons available to counteract these and other claims of "unfair trade." Under current antidumping law, the International Trade Commission [hereinafter ITC] must find either material injury, or threat thereof, to a U.S. industry, or material retardation of its establishment resulting from imports of the foreign merchandise. The Department of Commerce, through the International Trade Administration [hereinafter ITA], makes a separate determination as to whether the imports are being sold, or are likely to be sold, at "less than fair value" [hereinafter LTFV]. These determinations must be made under strict statutory deadlines. The margin of dumping, i.e., the difference between the "fair value" (typically, the foreign market value) and the U.S. price, is then assessed as a separate, nontariff antidumping duty.

This procedure for finding a dumping violation and for calculating the appropriate antidumping duty is, despite its conceptual simplicity in practice...
inherently politicized and technically complex. Much of the complexity involves definitional nuances for each of the terms used in the law and regulations. For example, if too few sales have been made in the home market to provide an adequate basis for calculation of a fair value, or under certain circumstances, if the sales in the home market are determined to have been below cost, then the law provides a hierarchy of alternate methods for approximating the fair market value.

An antidumping investigation is usually initiated by a producer, wholesaler, union, or trade association, which files a petition with the ITA and the ITC. The ITA may also commence an antidumping investigation on its own initiative if available information indicates that dumping may exist.

2. Predatory Pricing Claims

The most significant economic argument for a strict antidumping policy, as contrasted with the political arguments discussed below, is the possibility that a foreign firm will materially injure a domestic industry via a predatory pricing scheme designed to punish or eliminate competitors.

The Supreme Court has, however, imposed a heavy burden of proof on claims of predatory pricing. In Matsushita Electric Industrial Co. v. Zenith Radio Corp., the Court adopted the prevailing economic view that “predatory pricing schemes are rarely tried, and even more rarely succeed.” This conclusion is derived from an economic analysis that views predatory pricing as an unattractive investment decision by the potential predator. Because the potential predator must suffer significant current losses to earn speculative future gains, the time value of money and the possibility of future entry argue against the prospect that any firm would actually undertake a predatory pricing scheme.


84. See id. § 1673(a)(b), § 1677(9)(C)-(E) (defining “interested parties”).

85. See id. § 1673a(a) (“Initiation by administering authority”).

86. See supra text accompanying notes 73-74.

87. 475 U.S. 574 (1986). The case dealt with a complaint by American manufacturers of television sets that Japanese manufacturers had, for over twenty years, conspired to sell television sets at an artificially low price in the United States. See id. at 577-78.

88. Id. at 589 (citations omitted). As applied to the facts of the case, the Court found that evidence that the alleged conspiracy had not succeeded in over two decades of operation was a strong indication that the conspiracy did not in fact exist. See id. at 592.
The economic conditions necessary, under the Matsushita analysis, for a successful predatory pricing scheme are rarely satisfied.89 A high degree of horizontal concentration is required to enable the predator to support the initial losses. High entry barriers must preclude new competitors from entering the market and must continue after the target competitors have left, allowing the predator to recoup its losses. In particular, the existence of other foreign competitors, who may be able to adjust their volume of imports with relative ease (absent import quotas), will make international predatory pricing schemes difficult.

This non-interventionist answer to the problem of possible predatory pricing schemes by foreign firms or cartels is hardly satisfying to U.S. firms who suffer the very real pinch of high-volume, low-priced (and allegedly below-cost) imports that "steal" their market share. Industry trade associations and organized labor have been quick to lobby politicians and the public for stiff remedies against unfair trade practices and strict enforcement of existing trade agreements. They contend that if a foreign producer sells a particular good at a given price in its home market, then it ought not sell the same good for less than that price in the United States if such sales injure domestic producers of the same merchandise.90

Even if many or most predatory pricing claims are unfounded, the mere perception of unfair trade practices—the association of low-priced imports with shrinking markets, layoffs, and wage cuts—can be a potent force for political action. The semiconductor industry, for example, has built a strong case alleging Japanese dumping of commodity memory chips in the United States.91 Perceptions of unfair trade practices, whether right or wrong, may damage already sensitive relations with trading partners and exacerbate unfair trade practices. The rise of international high-technology joint ventures compounds this risk, because despite possible overall benefits to the partners and their national economies, these joint ventures can be used by foreign firms to circumvent U.S. antidumping law and policies.

B. A Question of Definition

The relatively narrow legal question raised by international joint ventures in the antidumping context is simply whether a joint venture’s product can ever be considered “dumped” in the domestic market. For example, suppose that a Japanese electronics firm combines with a U.S. semiconductor company to form a joint venture that will research, and subsequently produce and distribute, a particular type of semiconductor. This joint venture may


price its product low enough to drive other U.S. firms out of the market. Under what conditions will this joint venture be liable for dumping?

1. Statutory and Regulatory Language

The heart of the legal issue is that the antidumping laws and regulations presume the existence of separate foreign and domestic markets in which price levels can be independently determined. Therefore, the threshold question is whether to consider the joint venture as a part of the foreign market or as a part of the domestic market. The statutory language and regulations construing the language provide the natural starting point for answering this question.

a. "United States price" and "foreign market value"

The antidumping statute defines "United States price" as the price at which the imported merchandise of a particular manufacturer or exporter is sold in the United States.92 Two different benchmarks are used: the purchase price, if the sales transaction to the first independent party in the United States is consummated prior to importation;93 and the exporter's sale price, if the sales transaction is consummated after importation.94 The price is then adjusted by accounting for container and packaging costs, import duties, and taxes.95 For example, if a foreign manufacturer sends its product through a subsidiary that markets the merchandise in the United States, the relevant price is the one paid by the U.S. party.96

The law is silent, however, in cases where research, production, and distribution are performed jointly by a foreign firm and a domestic firm in the United States. If there technically has been no "import,"97 then such an international joint venture would arguably not be subject to antidumping liability.

A similar difficulty is demonstrated in the calculation of "foreign market value" or "home market price." In the Fairchild-Fujitsu case, for example, if the new joint venture sells a certain chip in the United States at a given price, can that price be compared with the price Fujitsu charges for the same chip in Japan?

The foreign market value of imported merchandise is normally determined by the price sold or offered for sale in the foreign market, adjusted for

93. See id. § 1677a(b); see also 19 C.F.R. § 353.10(b) (1986).
94. See 19 U.S.C. § 1677a(c) (1982); see also 19 C.F.R. § 353.10(c) (1986).
95. See 19 U.S.C. § 1677a(d)-(e) (1982); see also 19 C.F.R. § 353.10(d)-(e) (1986).
97. Cf. Schiavone-Chase Corp. v. United States, 553 F.2d 658, 663-64 (Ct. Cl. 1977) (to "import" generally refers to the bringing of items into a country from outside the geographical and political limits of the country).
the cost of containers and preparation for shipment to the United States. If the ITA cannot determine the foreign market value under this provision, then the law provides for a "constructed value," determined by the cost of materials and general expenses, and defined narrowly to exclude costs that are not directly connected with a particular sales transaction (such as R&D costs).

Moreover, in a special provision for multinational corporations, the law provides that the foreign market value be determined "by reference to the foreign market value at which such or similar merchandise is sold in substantial quantities by one or more facilities outside the country of exportation." This calculation involves adjustments for differences in the costs of production, including taxes, labor, materials, and overhead, where such differences are satisfactorily demonstrated, as well as the costs of packaging and shipping. However, all of these provisions contemplate "merchandise exported to the United States" and thus do not apply to the international joint venture operating in the United States.

b. "Exporter" and "industry"

Another approach used to determine whether an international joint venture may be liable for dumping in the United States looks to the definitions of "exporter" and "industry." Recall that antidumping duties are imposed when there has been material injury, or threat thereof, to a U.S. "industry" by reason of imports at LTFV from a foreign "exporter." If the international joint venture is deemed to be not an "exporter," or if it is found to be part of the domestic "industry," then presumably no dumping liability will attach.

The antidumping law defines "exporter" broadly to include even the actual importer of the goods if the two are related. Such a relationship would exist, for example, if one person had more than twenty percent control of both the exporter and importer. Thus, if Fujitsu manufactures a chip abroad, imports it to a joint venture of which it owns more than twenty percent, and sells that chip in the United States at LTFV to the injury of the U.S. industry, then it will be liable for antidumping duties.

Although this provides a relatively clear rule for determining when a foreign company is an "exporter," a question left open by the current law
concerns the possibility that a joint venture's product may become "value added" in the United States—that is, if all or most of the value to a product is added in the United States, then it may not make sense to call the foreign company an "exporter."

The indicia of "value added" production activity include: (1) the nature of the facility; (2) the quantity and type of U.S.-made parts included in the product; (3) employment in the United States; (4) whether the production involves merely assembly or actual fabrication or manufacturing; and (5) the extent and source of capital investment. Unfortunately for prospective international joint venturers, however, this formulation hardly provides the certainty needed for complex business dealings.

Another way for an international joint venture to escape dumping liability may be for it to be deemed part of the domestic industry. For example, suppose that the joint venture performs the research and design of the product (incurring fixed costs) in the United States, but manufactures the product (incurring variable costs) overseas. Will the parent firms be liable for dumping if the goods are then sold in the United States at LTFV?

The antidumping statute's definition of "industry" is not especially helpful in this context. However, the ITC has "been prepared to recognize an industry as domestic even if a significant part of its principal manufacturer's activities takes place abroad." The relevant factors in this determination include the degree of technical expertise and capital investment, the value added, and the number of employed workers in the United States. On the other hand, the ITA has been reluctant to allow mere assemblers to be included with manufacturers as part of the domestic "industry." Thus, under certain conditions an international joint venture could be considered part of the domestic industry and therefore not subject to antidumping duties.

c. "Foreign merchandise"

Finally, although the antidumping laws apply only to "foreign merchandise" sold in the United States at LTFV, the statutes and regulations do not define the term. With regard to the products of a joint venture, the answer

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105. "Industry" is defined generally as "the domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product." 19 U.S.C. § 1677(4)(A) (1982). Subsection (B) of the definition is slightly more helpful, but still question-begging: "When some producers are related to the exporters or importers, or are themselves importers of the allegedly subsidized or dumped merchandise, the term 'industry' may be applied in appropriate circumstances by excluding such producers from those included in that industry." Id. at § 1677(4)(B). What constitutes "appropriate circumstances" is presumably left to the discretion of the ITC.
107. See E. McGovern, supra note 81, § 12.133, at 374.
108. See id.
may be derived indirectly through definitions of "exporter" and "industry," as above, or by analogy to other provisions in the law. For example, for the purposes of countervailing duty law:

merchandise shall be treated as the product of the country in which it was manufactured or produced without regard to whether it is imported directly from that country and without regard to whether it is imported in the same condition as when exported from that country in a changed condition by reason of remanufacture or otherwise.109

If this rule were to apply to antidumping analyses, then a joint venture that manufactured abroad would still be subject to antidumping duties even if one of the parents was an American firm. But if the joint venture were to manufacture in the United States, there would be no "foreign merchandise" even if the research and design of the product were performed overseas.

Another approach would be to assume that "foreign merchandise" is merchandise imported from a "foreign person." Again, the antidumping laws and regulations do not define "foreign person." One would have to argue, by analogy, that its definition in other parts of the trade laws would apply.

More interestingly, the antidumping statute's limitation to "merchandise" suggests that services offered by international joint ventures might not be covered by the law. To the extent that research is a service, may a foreign firm offer research services at so low a cost that other research efforts are driven out of the market? The question may seem far-fetched, but as yet no one has seriously considered the general question of the dumping of services—a question relevant to the growth of high-technology joint ventures and to the increasingly blurred division of goods and services in the current world marketplace.

In sum, the antidumping laws implicitly incorporate the model of a distinct foreign entity that sells or exports goods in the United States at LTFV. This conception, however, does not square neatly with the international R&D joint ventures that have become increasingly prevalent. Under current antidumping law, treatment of international joint ventures largely depends on its specific form and structure. Even for some simple cases, there may be disagreement over the applicable rules.

2. Policy Arguments

According to the Department of Commerce, "[t]he purpose of the U.S. antidumping legislation is to prevent foreign firms or monopolies from dumping and injuring a U.S. industry by imposing antidumping duties to equalize prices in the two markets."110 This interpretation reflects pressure from the

logical constituency of unfair trade laws—domestic industries—with a resulting policy bias in favor of protecting actual domestic competitors against foreign producers or even consumers who may benefit from the increased competition, at least in the short-run. It also indicates, consistent with the statutory language, that a primary policy rationale for antidumping law is the protection of domestic industry market shares.

Extending this argument, a subsidiary goal of antidumping law is the protection of domestic employment from unfair foreign competition. As applied to international high-technology joint ventures, the fear is that a joint venture that manufactures in the United States but employs only a few U.S. workers at below domestic wage levels may cloak the sale of foreign products in the United States at less than their fair value. In such a situation, labor unions (although generally less politically influential in high-technology industries than in the so-called "mature" industries) may be counted on to point to unfair foreign competition as the reason for lost jobs at home.

Finally, a separate policy argument holds that antidumping law is a lever for encouraging other nations to liberalize their trade policies. The General Agreement on Tariffs and Trade [hereinafter GATT], for example, is aimed at the progressive reduction of barriers to trade and the diversion of trade flows according to the free trade principle. Trade liberalization policies attempt to remove barriers to economic trade by reducing tariff levels which limit the effect of nontariff measures. This argument, a broader variant of the economic arguments regarding predatory pricing, suggests that nations should encourage international joint ventures because they promote the international exchange of ideas and technologies.

3. A Sensible Middle Ground?
a. Problems with antidumping laws

Despite the appeal of increased efforts to combat "unfair trade," trade legislation in the area of international high-technology joint ventures can be problematic. First, antidumping duties, in theory at least, ultimately harm U.S. consumers by distorting the marketplace. As long as prices are not predatory, i.e., as long as they are above average variable cost (as a more readily calculable proxy for marginal cost), the lower prices help consumers

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was designed to protect the domestic industry from sales of imported merchandise at less than fair value which either caused or threatened to cause injury." (emphasis added) (citation omitted). 111. See, e.g., Victor, Antidumping and Antitrust: Can the Inconsistencies Be Resolved?, 15 N.Y.U. J. INT'L L. & POL. 339, 349-50 (1983) (dumping laws should distinguish between truly predatory pricing and arguably procompetitive forms of dumping).

112. See ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, supra note 76, at 11, 85-90, 105-17.

more than they harm the domestic industry and therefore should not be artificially raised. In contrast, current antidumping law permits the imposition of extra duties on imports sold at less than average total cost of production.

Second and more importantly, the antidumping remedy may be inappropriate in the context of high-technology industries. These industries are characterized by products with short shelf lives and by constant innovation. Competitors often need to sell high volumes of particular products to profit from them before they become obsolete. Thus, by the time an antidumping investigation can be completed, the relevant technology may have advanced to the next product generation.

Finally, antidumping laws have an especially strong and influential political constituency—existing domestic industries. To the extent political pressures bear on trade policy, as they clearly do, trade legislation tends to be piecemeal and protectionist. Given the importance of high-technology industries to the future economic growth of the United States, complaints of unfair trade practices in these industries are virtually assured a sympathetic ear.

b. Muddling through

Trade laws are politically sensitive and any prospect of pure free trade is unrealistic. As a result, proposals for wholesale legislative reform tend to be impractical. A more pragmatic and politically workable approach is to clarify and fine-tune the antidumping laws to accommodate international joint ventures, while pressing for reciprocal treatment in continuing bilateral and multilateral trade negotiations. The procompetitive possibilities offered by international joint ventures support the idea that they should be subject to a rebuttable presumption of nonliability for antidumping duties. Congress should make clear, however, that if evidence indicates that a joint venture is likely being used as a front for the LTFV importation of foreign-made goods, then antidumping duties should be imposed.

114. A complete discussion of this debate is beyond the scope of this article. For a good overview, see generally R. Dale, Anti-Dumping Law in a Liberal Trade Order (1980).

115. See 19 U.S.C. § 1677b(e)(1) (1982 & Supp. 1986) (defining the constructed value of imported merchandise as the sum of: (a) the cost of materials and of fabrication, (b) an amount for general expenses and profit, and (c) the cost of containers and packaging).


This determination could be made by using the amount of production performed in the United States as a benchmark for the imposition of antidumping duties. Such an amendment would be premised on the underlying policy of antidumping duties—protection of domestic industries and employment—and would comport with the definition of "foreign merchandise" under countervailing duty law.

Of two possible approaches—a multi-factored balancing standard versus a bright-line rule—the latter is probably slightly preferable due to its predictability, despite its over-inclusiveness or under-inclusiveness. Under such an approach, an international joint venture would not be subject to antidumping duties if, for example, more than fifty percent of its value was added—as possibly measured by employment—in the United States. However, if a joint venture manufactured abroad, then it would be subject to normal antidumping analysis. This would prevent foreign firms from circumventing U.S. antidumping laws by setting up research joint ventures here, producing abroad, and selling in the United States at LTFV. Note that if a wholly domestic firm produced abroad and sold in the United States at LTFV, it would not be subject to antidumping duties but could still face possible antitrust liability for predatory pricing.

c. Implementing the approach

The obvious difficulty with this suggestion is that allocating costs to production can be very complex, particularly those costs for a technologically sophisticated product. Yet, the regulations currently governing the determination of "foreign market price" are just as complicated. More importantly, the proper allocation of research costs in general poses a vexing issue for high-technology joint ventures. Given the high risk involved in research, its costs are not like other capital costs that can be amortized accurately over the expected number of years of production. Given the bias in antidumping law toward protecting domestic employment, some asymmetry may be unavoidable. For example, research costs may have to be excluded in the determination of whether antidumping laws apply.

118. Although a multifactored sliding-scale approach might have theoretical appeal, the inevitably complex valuation problems discussed below in the text would complicate its application.

119. This proposal is consistent with a report on science and technology prepared by the Trilateral Commission. Former Carter Aide Rips U.S. Policy on Fairchild, San Jose Mercury News, Mar. 20, 1987, at C-1, col. 6. Former Defense Secretary Harold Brown, criticizing the Reagan administration for causing the collapse of the Fairchild-Fujitsu deal, commented that "I think we should pay more attention to where the plants are, where the people are and what their nationality is who are doing the work than we should to who owns the stock." Id.

120. See Mattice & Cunningham, supra note 116, at 210-11 (discussing problems with calculating research and development costs as part of the costs of production).
Applying a value-added test\textsuperscript{121} would prevent a foreign firm from selling at LTFV in the United States and from preying on U.S. firms. The mechanics of the value-added test force a foreign firm to incur fixed costs in the United States and to incur variable costs abroad. The result: joint ventures that took advantage of research expertise in the United States and lower labor costs abroad would possibly encounter dumping actions unless they could show that they had added at least fifty percent of their product’s value in the United States. On the other hand, a joint venture that incurred research costs abroad but manufactured in the United States would survive antidumping scrutiny.

Allowing employment to serve as a proxy for value-added tests could greatly simplify the calculations. Research personnel would count equally with manufacturing personnel, thereby avoiding the asymmetry under a traditional cost basis of comparison. The use of employment to determine antidumping liability is consistent with the protection of domestic employment rationale discussed previously. The disadvantages of such an approach are that it might risk underutilizing automation, increasing compliance and recordkeeping costs (the current method for obtaining cost information is well-systematized, despite its complexity), and encouraging strategic behavior (a firm employing precisely fifty-one percent U.S. labor). A more subtle disadvantage is the possible political backlash from the prospect of “foreign” companies taking over once-domestic industries simply by hiring domestic employees.

d. Deeper problems

In addition, the larger problem with this legislative tinkering is that it may obscure a deeper trade problem: nontariff barriers to entry in foreign markets.\textsuperscript{122} Returning to the United States-Japan example, dumping stems in part from the inability of U.S. firms to enter Japanese markets, because in theory, a firm cannot dump abroad unless it has a protected home market.\textsuperscript{123} Without the protected Japanese market, U.S. firms would (in theory) be able to take advantage of higher prices in the Japanese market to reduce the Japanese firms’ domestic market power. But the inability of U.S. firms to do so,

\textsuperscript{121.} The use of “value-added” in this context may be analogized to its use in tax policy, which requires domestic corporations with foreign subsidiaries that do not file consolidated returns to allocate income within the corporate family. See generally B. BITTDER & J. EUSTICE, FEDERAL INCOME TAXATION OF CORPORATIONS AND SHAREHOLDERS § 15.03 (5th ed. 1987). Section 482 of the Internal Revenue Code provides a mechanism for assigning “value” to goods and services, so that the appropriate amount of income can be assigned to foreign and domestic operations. See, e.g., G.D. Searle & Co. v. Commissioner, 88 T.C. 252 (1987); Eli Lilly & Co. v. Commissioner, 84 T.C. 996 (1985); Hospital Corp. of America v. Commissioner, 81 T.C. 520 (1983).

\textsuperscript{122.} Examples of nontariff barriers include technical standards, import quotas, import licensing procedures, complex customs procedures and product distribution practices, and government subsidies. See generally J. BARTON & B. FISHER, INTERNATIONAL TRADE AND INVESTMENT 433-52 (1986).

\textsuperscript{123.} See supra note 71 and accompanying text.
coupled with their apparent success in other geographic markets, suggests the presence of nontariff barriers to entry into the Japanese market. In fact, the United States-Japan Semiconductor Trade Agreement was tailored to deal with this particular problem.\textsuperscript{124} In the future, the rise of international joint ventures may result in less attention being focused on traditional trade remedies and more attention being focused on new approaches that involve bilateral or multilateral agreements to achieve trade goals.

\textbf{C. GATT and the Future}

The growth of international high-technology joint ventures is only beginning. Because most international high-technology joint ventures have concentrated only on pooled R&D efforts rather than on the production and distribution of finished products, they presently raise few legal problems. As they continue to grow in numbers and importance, however, and as they move into manufacturing and marketing, they will likely spark new trade frictions and protectionist sentiments.

Moreover, the rise of international high-technology joint ventures portends a future of “triads”—high-technology linkages between Asia, Europe, and the United States. This vision of the future, as described by Warren Davis of the Semiconductor Industry Association,\textsuperscript{125} will rely increasingly on multilateral trade agreements and on free market access. Unified recognition of a global marketplace will be essential to coherent policymaking. National policies should not permit global markets for merger purposes while excluding foreign competition on protectionist antidumping grounds. To the extent that antidumping really is a “competitiveness” issue, the concern should be the removal of trade barriers combined with agreements ensuring that firms do not sell below average variable cost.

In the near future, major trading partners will likely work through the current round of GATT negotiations to reach such a goal. One area of possible trade reform is the GATT’s treatment of antidumping. The current Dumping Code was formulated in the mid-1970s during the Tokyo Round of Multilateral Trade Negotiations.\textsuperscript{126} The Code recognizes that antidumping practices should “not constitute an unjustifiable impediment to international trade” and that antidumping duties “may be applied only . . . [where] dumping causes or threatens material injury to an established industry or materially retards the establishment of an industry.”\textsuperscript{127} Thus, the agreement

\textsuperscript{124} See \textit{supra} note 7 and accompanying text.

\textsuperscript{125} See W. Davis, Trends in Information Technology and Their Possible Impact on Europe (1986) (unpublished manuscript). This scenario is increasingly likely in light of efforts to achieve an economically integrated European Community by 1992.

\textsuperscript{126} Agreement on Implementation of Article VI of the General Agreements on Tariffs and Trade, Apr. 12, 1979, 31 U.S.T. 4919, T.I.A.S. No. 9650.

\textsuperscript{127} \textit{Id.} at Preamble. In other words, a dumping violation may be found if the export price of a product is less than the price that would be charged for the same or similar product for domestic consumption in the exporting country.
requires finding that: (a) dumping has occurred; (b) material injury or retardation has occurred; and (c) a direct causal link between the dumped imports and the alleged injury can be established.

As international joint ventures proliferate, future rounds of negotiations should address the antidumping concerns raised above, as well as the underlying debate between protectionism and free trade. A test of the current round of GATT negotiations will be the problem of market access. With this issue set as a major agenda item, the negotiating parties have a broad mandate to roll back illegal barriers to trade, although some observers note the continuing risk that negotiators will again succumb to domestic protectionist pressures.

A variety of interest groups—including multinational corporations, high-technology industry trade associations, and organized labor—will be supporting these market access negotiations. In light of current protectionist sentiments and despite the current rhetoric about competitiveness and free trade, one possible avenue for international trade discussions is reciprocity. Although GATT negotiators have not been able to reach a consensus on reciprocity, recent success with the reciprocity provisions in the Semiconductor Chip Protection Act to discipline trading partners may serve as an example to facilitate progress. The use of reciprocity to prevent dumping by international joint ventures may eventually lead to uniform rules with global application.

The principle of reciprocity is easily applicable to international high-technology joint ventures. The policies outlined in this article allow for their formation and growth, and allow for circumscription by the antitrust and trade concerns described, in order to preserve the benefits of competition for consumers of high-technology goods and services. Reciprocity should also ensure that firm growth is restricted no more than necessary. More importantly, reciprocity will directly respond to protectionist concerns regarding dumping, thereby creating a politically viable avenue for constructive change.

128. Interview with Warren Davis, Vice President, Semiconductor Industry Association, in Stanford, Cal. (Oct. 9, 1986).
130. Interview with Warren Davis, see supra note 128.
131. See 17 U.S.C. §§ 901-914 (Supp. 1986). The Act, passed in 1984, provides ten-year copyright-style protection for semiconductor chip designs of U.S. companies that prevents the designs from being copied and reproduced by other companies, within the United States and abroad.

The Act also allows the Secretary of Commerce to give interim protection to chips made in countries making good-faith efforts toward enacting laws protecting American chips. See id. § 914. As a measure of its success, the Act was extended by Congress until 1991. See Pub. L. No. 100-159, §§ 2, 4, 101 Stat. 899, 900 (1987). The Act has also prompted the Japanese government to protect chips—including U.S. designs—from being copied.

132. For example, the recently enacted Omnibus Trade and Competitiveness Act, Pub. L. No. 100-418, 102 Stat. 117 (1988), is premised on the belief that the United States can use access to its vast domestic markets as a lever to open foreign markets to American firms, hoping that the world will follow its example.
CONCLUSION

There is little question that we are witnessing a more international and interdependent business environment. As firms seek to reduce costs in this new global marketplace, high-technology industries that depend heavily on constant research and development advances will increasingly turn toward innovative partnerships and alliances.

The legal system needs to respond to these new varieties of joint ventures by adapting current antitrust and antidumping laws to meet the needs and challenges of international high-technology joint ventures.

Traditional antitrust doctrines fail to tailor their criteria to the flexible combinations of R&D, production, and distribution that international high-technology joint ventures provide. Adopting a more problem-focused analysis would be in accord with both contemporary government and judicial emphases on economic efficiency assessment and would better reflect the antitrust policies of major U.S. trading partners.¹³³

Current antidumping law subjects international joint ventures to many complex statutory determinations that provide no clear-cut indication of dumping liability. Economic theory suggests that true predatory pricing schemes are rare. Yet, political reality suggests that injured domestic industries will increasingly resort to trade remedies to attack even potentially beneficial joint ventures. Because the language and history of the antidumping provisions evince an intent to protect domestic employment, an amendment to the antidumping law that defines the status of a joint venture in terms of the percentage of manufacturing and production performed in the United States would represent an initial step toward clarifying the law in this area.

This article began by asking whether the Reagan Administration's antitrust and trade objections to the Fairchild-Fujitsu deal are supported by legal analysis. We have concluded that they essentially are not, compelling a recognition that various interest groups, willing to manipulate antitrust and antidumping concerns, legitimized their opposition. As international linkages in high technology become more important in the coming decades, future proposals will likely encounter similar responses. A clearer sense of the real antitrust and antidumping issues will allow potential partners to steer clear of such concerns and promote appropriate and desirable integration of industry across national borders.

¹³³ In the Fairchild-Fujitsu case, the parent firms' low market share, even under narrow market definitions, would most likely have allowed the joint venture to proceed.