

ARTICLE***ANTITRUST AND INTERNATIONAL COMPETITIVENESS: is ENCOURAGING PRODUCTION JOINT VENTURES worth the cost?***

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I. INTRODUCTION

For more than a decade, slower productivity growth, persistently large trade deficits, and the apparent decline of the international competitiveness of U.S. firms have concerned policy-makers, business leaders and academicians.¹ In analyzing the causes of these ominous trends, many have questioned whether the U.S. antitrust laws have unduly disadvantaged domestic firms relative to their foreign competitors.

In the late 1970s, many commentators began suggesting that cooperative research and development (R&D) warranted special treatment under the antitrust laws.² Congress responded by passing the National Cooperative Research Act of 1984 (NCRA).³

Recently, however, a number of academicians and business leaders have suggested that the NCRA did not go far enough. They argue that in order to improve the international competitiveness of domestic firms, Congress should enact further legislation to encourage joint ventures in downstream activities, such as production and even distribution and marketing.⁴ Responding to such arguments, members of the 101st and 102d Congresses introduced bills which, in various ways, would relax the antitrust laws for production joint ventures (PJVs) and, in some cases, for distribution and marketing joint ventures.⁵

This Article argues that such proposals are misguided, and that, if implemented, they would likely undermine American competitiveness and impose significant costs on U.S. consumers. More specifically the Article contends that: (1) the potential social benefits are lower and costs higher for PJVs, in comparison with research joint ventures (RJVs); (2) the antitrust laws currently permit procompetitive PJVs, and, in fact, the wide employment of these joint ventures renders further relaxation unnecessary; (3) further relaxing the antitrust laws for downstream joint ventures may encourage the formation of production consortia having substantial market power; and (4) even if antitrust relief were warranted for production consortia in certain strategically important high-technology industries, none of the current legislative proposals is specifically tailored to that goal.

The Article is organized as follows. Part II describes the specific legislation proposed. Part III compares the potential social costs of RJVs and downstream JVs and suggests that for PJVs the potential benefits are more limited, while the potential costs are much higher. This Part further argues that production consortia in particular tend to impose significant social costs. Part IV examines existing antitrust precedents and antitrust enforcement policy and contends that, with the possible exception of joint ventures possessing substantial market power, current law does not pose an obstacle to joint venture activity. Part V addresses and criticizes certain specific arguments that have been raised in favor of relaxing the antitrust laws for joint ventures in high-technology industries. Part VI evaluates the specific legislative proposals that have been introduced and suggests that they are unlikely to achieve their purported goals.

II. CURRENT PROPOSALS TO CHANGE THE ANTITRUST LAWS

During the 102d Congress,⁶ the Judiciary Committees of the House and the Senate approved and sent to their respective floors bills that would extend the NCRA to cover production joint ventures.⁷ Although the Senate passed a slightly modified version of the bill, the House adjourned without acting. Nevertheless, the provisions of the bills remain significant because the next Congress will likely introduce similar legislation.

Under both bills, the NCRA's definition of joint venture would expand to include "the production of a product, process or service" in addition to covering research and development activities.⁸ Thus, PJVs that qualify under the bills would receive rule of reason analysis if challenged under the antitrust laws. In addition, qualified production ventures that file a notification⁹ with the antitrust authorities would be liable only for actual, not treble, damages in actions filed by private plaintiffs. Finally, regardless of whether the venture files a notification, it would be able to recover attorneys' fees and costs if it were named a defendant in an antitrust suit and the court finds the claim was "frivolous, unreasonable, without foundation, or in bad faith."¹⁰

Both bills specifically prohibit the joint marketing of any products jointly produced by the venture.¹¹ At the same time, however, neither bill requires that a production joint venture engage in any joint R&D activities to qualify for protection.

Both bills would also add a new section directed specifically at PJVs. The new section in the House bill would exclude a PJV from protection of the Act "if at any time more than 30 percent, in the aggregate, of the beneficial ownership of the voting securities and

equity of such joint venture is controlled by foreign entities." The section would also require that any facilities operated by the venture be located in the United States or its territories.¹² The Senate bill establishes two different conditions for a PJV to qualify under the Act: first, the venture must provide "substantial benefits" to the U.S. economy (such as "increased skilled job opportunities," "investments in long-term production facilities," or "participation by United States entities in the venture"); second, the production facilities of the venture must be located in the United States or in a country that accords "national treatment" to American participants in PJVs.¹³

The Senate bill contains two additional provisions not found in the House version. First, the Senate bill requires that, if a joint venture uses existing facilities, those facilities must produce a "new product or technology."¹⁴ Second, the Senate bill imposes new reporting requirements on the Federal Trade Commission and the Department of Commerce.¹⁵

III. THE POTENTIAL BENEFITS AND COSTS OF RESEARCH JOINT VENTURES AND PRODUCTION JOINT VENTURES

The rationale for giving special treatment to cooperative research stems principally from certain market failures associated with market generated R&D. These market failures can create inefficiencies in the level of R&D investment, the allocation of R&D expenditures, and the dissemination of the R&D results.¹⁶ Before comparing the potential benefits and costs of RJVs relative to downstream joint ventures, it is useful to review these market failures associated with R&D.

A. The Inefficiencies in Market Generated R&D

The special problems connected with R&D activities result principally because the product of R&D activities is *information* or *knowledge*. Information resembles a public good, in that (1) the acquisition of the information by one party need not reduce its availability to others, and (2) the cost of transferring the information to others is often, though not always, low. The public good nature of information creates problems both for private firms engaging in R&D and for society as a whole.

The most widely recognized inefficiency of privately funded R&D is the generation of positive externalities: that is, the benefits of the R&D frequently spill over from the researching firm to others. Because firms cannot appropriate the full rewards or benefits of their investment in R&D, they will tend to invest less than the socially optimal amount.¹⁷ The severity of the inappropriability and underinvestment problems increases with more basic research.¹⁸ In addition, the lumpiness of R&D inputs and economies of scale and scope in R&D may exacerbate this underinvestment.¹⁹

The patent system and trade secrecy laws are intended to alleviate this appropriability problem by assigning and enforcing property rights in the information produced by R&D.²⁰ Unfortunately, these mechanisms for increasing appropriability create other problems.

First, these mechanisms result in an inefficient *ex post* dissemination of the knowledge produced by R&D. That knowledge or information can be used simultaneously by others at little or no extra cost suggests that society should encourage its widest possible dissemination. By utilizing exclusion to increase the appropriability of knowledge, society creates inefficiencies in its *ex post* dissemination.²¹

In addition, to the extent that the patent laws enable an innovator to capture a significant proportion of the social benefits in the form of profits, a race to be first may result in too many firms engaging in duplicative R&D. As a result, the patent laws may create inefficient and possibly excessive investments in R&D.²²

B. The Social Benefits and Costs of RJVs

The three above-mentioned inefficient aspects of market generated R&D in turn suggest the three most significant potential benefits of cooperative research. First, RJVs can help internalize the externality caused by the inappropriability of R&D and can thus increase R&D investment incentives. This internalization occurs because the RJV compels the participants to commit to sharing costs before the research is conducted and hence before any spillovers can occur. This benefit is likely to be greatest when the RJV is directed at basic research²³ or at research involving areas of limited commercial importance, such as that directed to environmental, health and safety problems, because the results of such research are the least appropriable.²⁴ In addition, benefits increase when a high percentage of firms in an industry participate in basic or externalities research.²⁵

Second, by providing access to all participants, an RJV may improve the *ex post* dissemination of the information produced by the RJV.²⁶

Third, by replacing a number of independent and competing research centers with a joint facility, an RJV may reduce excessive R&D expenditures associated with a race to be first. More importantly, the RJV may eliminate wasteful duplication in research and hence use research expenditures more efficiently.²⁷

In addition to the benefits that arise from the special characteristics of R&D, RJVs also encompass the more traditional benefits of joint ventures. Like other joint ventures, RJVs permit the participants to share risks and costs, combine complementary skills and resources, and take advantage of economies of scale and scope.²⁸ These advantages are likely to prove especially appealing for smaller firms that lack the skills or resources to conduct R&D on their own.

RJVs may also impose social costs, however, by adversely affecting R&D activity and by reducing other forms of competition. These potential costs may be grouped into three types.

First, if the RJV participants are competitors in the downstream product market, the RJV may reduce the expected return to each participant and, hence, total investment in R&D. Because all cooperating firms have equal and simultaneous access to the results of the R&D, no firm will enjoy a temporary monopoly return resulting from the innovation; rather, price competition among the participants will dissipate any excess profits from the innovation, with the surplus going to consumers. Accordingly, the RJV participants may cut back on R&D investment.²⁹ This reduction is less likely to occur, however, if: (1) the research has no immediate commercial objective (such as basic research), (2) the participants operate in separate downstream product markets,³⁰ (3) there are strong nonparticipants performing competing research, or (4) the RJV agreement permits participants to continue their independent R&D efforts.³¹ Finally, besides possibly reducing investment in R&D, an RJV may also reduce the productivity of the R&D performed by limiting the diversity of approaches to a research problem. This would tend to offset the gains described above.³²

Second, an RJV may reduce competition in the downstream product market(s), which will generate social costs when firms limit output and raise prices to consumers. Participants have a clear incentive to maximize joint returns to any innovation generated by the joint venture, either by cooperating in production³³ or by employing ancillary restraints, such as field of use or geographic restrictions, to restrain product market competition.³⁴ Participants may use the RJV as a forum for exchanging price and cost data in order to collude in the downstream product markets.³⁵ In addition, the RJV may serve as a means for extending cooperation or collusion into other product areas.³⁶

Third, by denying access to the RJV or to its research results, participants may disadvantage, and possibly drive from the market, actual and potential competitors. Although this is most likely to occur where horizontal competitors make up the RJV, it may also occur where dominant firms in different markets cooperate to produce a new product or process.³⁷ This exclusionary behavior will only create significant social costs when both upstream and downstream markets are concentrated with high barriers to entry and reentry,³⁸ and when the participants can successfully collude with respect to price, R&D, and other dimensions of competition. This is frequently difficult to achieve.³⁹

Thus, RJVs may be used for anticompetitive purposes and may impose net social costs under certain circumstances. These anticompetitive effects are most likely to occur where: (1) the cooperation extends downstream to areas of competitive concern, (2) the relevant markets are concentrated and exhibit barriers to entry, (3) the combined market power of the participants is significant, and (4) collateral restraints in the agreement restrict competition among the participants.

Therefore, RJVs may have a positive or negative effect on social welfare; assessing the net welfare effect of a particular RJV requires an examination of the particular facts. Nevertheless, certain types of RJVs most likely to yield a net benefit to society are identifiable.

For example, an RJV directed at basic or precommercial research is likely to generate significant benefits without imposing substantial social costs. Such an RJV will likely increase industry expenditures on basic research by permitting the sharing of costs and risks and by internalizing the externalities associated with such research.⁴⁰ It may also increase the efficiency of the R&D by reducing duplication.⁴¹ Moreover, because basic research and precommercial R&D are distanced from the competitive concerns of the market, the RJV will not likely spur collusion. Finally, a research-directed JV will unlikely injure nonparticipants because of the significant research spillovers and because the generally long lag between generation of the idea and its commercial application gives nonparticipants time to catch up.⁴²

Likewise, if the relevant research and product markets are unconcentrated with relatively free entry, it appears improbable that an RJV made up of a nonmajority of firms in those markets or of noncompetitors can impose significant social costs, since the participants would still face stiff competition from nonparticipants in both upstream and downstream markets. Such a venture could yield

substantial benefits in the form of increased R&D expenditures and increased efficiency in the performance of R&D, however.⁴³ Moreover, in evaluating the conditions of the research market, it is generally accepted that the relevant geographic market is global in scope.⁴⁴ Accordingly, even if the RJV consists of a majority of U.S. competitors, this may not result in anticompetitive effects if there are foreign competitors with sufficient research capabilities.

In summary, the NCRA justly encourages the above-described RJVs in general because the social benefits outweigh the social costs.

C. The Lesser Benefits and Greater Costs of PJVs

In contrast to RJVs, joint ventures in production and distribution offer fewer social benefits and pose greater social costs. Although the market failures associated with R&D suggest that it often makes sense to include as many participants as possible in an industry-wide research consortia, no similar arguments justify industry-wide production consortia. To illustrate these differences, this Section will focus on production and distribution joint ventures that do not involve cooperation in research.⁴⁵

Because the production and distribution of goods and services do not suffer from the same market failures affecting R&D, the major justifications for research cooperation-internalizing the externalities associated with R&D, improving the *ex post* dissemination of research results, and eliminating wasteful duplication of research efforts-do not apply to PJVs. Rather the potential advantages of domestic PJVs⁴⁶ are considerably more narrow.

First, a PJV may permit the realization of economies of scale or scope, where the minimum efficient scale of a plant is beyond the capacity of individual companies or is large relative to total demand.⁴⁷ Empirical studies generally agree, however, that the minimum efficient scale of plant is small relative to market size in the vast majority of industries, and this ratio of scale to market size has been declining over time in many industries.⁴⁸ Furthermore, even in the most scale-intensive industries, numerous competing production facilities can coexist.⁴⁹ This suggests that, although economies of scale may justify production joint ventures between two or three smaller firms,⁵⁰ they do not justify production consortia involving many or most of the firms in an industry.⁵¹

Second, PJVs permit the sharing of costs and risks, especially in cases involving uncertain demand or a new technology.⁵² The risks involved in producing a new product are generally significantly less, however, than the risk that basic or fundamental applied research will yield a reasonable return.⁵³

Third, PJVs may generate synergies resulting from the sharing of complementary assets and skills of the participants.⁵⁴ Again, however, the synergies resulting from joint production should not exceed those from joint research. Nor does it appear, in general, that a joint venture requires large numbers of cooperating firms to achieve such synergies.⁵⁵

Finally, RJV participants may benefit by extending cooperation from research into production. As previously noted, firms cooperating in R&D may dissipate any returns from the R&D by competing among themselves in the downstream product market.⁵⁶ To avoid such dissipation, firms may agree to cooperate in producing and/or marketing the results of the R&D or to limit downstream competition through the use of collateral restraints, such as geographic or field-of-use restrictions. Although such strategies are facially anticompetitive, they may be necessary to secure cooperation among the participants. Moreover, they are unlikely to impose significant social costs if the participants are few in number and collectively lack market power.⁵⁷

While the potential benefits of PJVs appear less than those of RJVs, the potential anticompetitive effects are far greater. Most importantly, the PJV may have anticompetitive effects in the relevant product market. Where the participants are horizontal competitors and the joint venture controls a major portion of the production assets in the market, the participants will have a clear incentive to maximize their joint profits by reducing output and increasing price.⁵⁸

The PJV also increases the likelihood of either tacit or explicit collusion among the participants in other downstream product markets⁵⁹ and in upstream research markets.⁶⁰ Discussions concerning the appropriate prices for the joint venture's products may lead to discussions and collusion concerning the prices charged for products the participants manufacture independently.⁶¹ Further, the joint venture will reduce the likelihood that individual participants would attempt to cheat on any collusive agreement because the ongoing relationship creates disincentives.⁶² The likelihood of collusion, moreover, is generally recognized as significantly greater in the case of production and distribution joint ventures involving direct competitors than with RJVs involving direct competitors, especially RJVs directed to basic or precompetitive research.⁶³ Such collusion will also be more likely when the combined market power of the participants is greater and the barriers to entry in the affected markets are higher.

Finally, the PJV may injure competition by excluding nonparticipants from an essential input. This "essential facilities" problem will

most likely occur where competitors possessing market power organize a vertical joint venture to supply a particular, relatively unavailable, input. It may also occur, however, in the case of a horizontal joint venture, where participants deny competitors access to new technology or to a more efficient marketing facility.⁶⁴

As in the case of RJVs, it is difficult to accurately predict whether a particular PJV is socially beneficial or socially costly without examining the specific characteristics of the participants, the markets involved, and the joint venture agreement itself. Nevertheless, certain generalizations can be made.

For example, it is generally recognized that anticompetitive effects are more probable where the participants are horizontal competitors,⁶⁵ although such effects are not limited to such ventures. Anticompetitive effects are also more likely where the relevant market is concentrated and exhibits entry barriers and where the participants collectively account for a significant portion of the market.⁶⁶ This suggests that production consortia involving a majority of the firms in an industry pose a special antitrust risk.

Therefore, the nature and structure of the joint venture and possible collateral restraints in the joint venture agreement can affect the likelihood that it will impose a net social cost. For example, a distribution or marketing JV is more likely to have anticompetitive effects than a production JV, since it prevents the participants from competing in marketing their products.⁶⁷ In addition, collateral restraints in the joint venture agreement may limit competition among the participants. For example, the joint venture agreement may contain field of use or geographic restrictions in intellectual property licenses.⁶⁸ Alternatively, the agreement may simultaneously prohibit the participants from independently manufacturing products that compete with those produced by the venture while limiting the amount of the venture's product that is distributed to each participant.⁶⁹ Also, collateral restraints that restrict distribution of the venture's product to the participants may disadvantage nonparticipants.⁷⁰ Thus, while PJVs offer smaller potential social benefits than RJVs, they pose significantly higher social costs. This especially holds for production consortia consisting of a significant number of horizontal competitors.

D. Organizational Difficulties Associated with All Joint Ventures

In evaluating public policies that may encourage joint ventures, one must also consider the organizational difficulties and transaction costs associated with this form of business organization. These organizational difficulties will influence not only the types of joint ventures formed, but also the likely balance of social benefits and costs that will result. In addition, these difficulties will likely limit both the number of PJVs formed and their likely success.

In attempting to overcome these organizational difficulties, joint venture participants will frequently attempt to limit competition among themselves. While this should not impose social costs for ventures involving small numbers of firms that collectively lack market power, it can pose dangers for joint ventures involving a large number of firms, especially where the firms are cooperating in production. In such cases, the major purpose of the venture may be to eliminate competition rather than to achieve efficiencies.

It is widely recognized that the presence of multiple participants makes management of joint ventures extremely difficult,⁷¹ and these difficulties tend to increase as the number of participants increases.⁷² As a result, decisionmaking tends to become slower and more cumbersome than in other forms of organization.⁷³

That the venture itself can pose a competitive threat to its parents further complicates the management of the venture. The venture may itself become a competitor to one or more of the parents or may increase the competitive strength of one parent relative to the others.⁷⁴ More importantly, although the joint venture may depend on technological transfer, the participants are frequently reluctant to share strategic technological information.⁷⁵ In addition, firms often attempt to free-ride by contributing their less able personnel or by withholding their most advanced technology.⁷⁶ In other cases, participants will vigorously attempt to prevent the disclosure of proprietary information to their partners.⁷⁷

These problems in turn influence the structure of joint ventures. For example, in order to minimize competitive threats to participants, research consortia have tended to focus on basic research, pre-competitive research or non-competitive research and have eschewed applied research and development activities.⁷⁸ Firms appear to view applied RJVs as a second or third best alternative and participate only when they cannot accomplish a task on their own.⁷⁹ Even then, they will seek to limit the number of partners to those absolutely necessary to accomplish the objective-usually two or three.⁸⁰ The predominance of two- and three-firm joint ventures appears to reflect both an attempt to minimize coordination problems and to reduce the likelihood that a partner would lose any competitive advantage to other partners.

As previously indicated, where two or three firms participate in a joint venture, they frequently will seek to protect their strategic

technological knowledge and capabilities from their partners.⁸¹ In addition, participants often will try to minimize internal competition that can dissipate joint profits. Thus, they may extend cooperation from R&D through production and even distribution and marketing.⁸² Participants also frequently choose as partners firms that are not direct competitors, such as firms that operate in related industries, that focus on different market niches, or that are located in different geographic markets.⁸³ Finally, as noted above, participants, in order to limit competition, may include collateral restraints in the joint venture agreement, such as field of use or geographic restrictions.⁸⁴

Such attempts to limit dissipation of profits should not pose significant anticompetitive risks where the market is competitive and the participants collectively lack market power. Significant antitrust concerns can arise, however, where the participants individually possess market power or where, as in the case of production consortia, a significant proportion of firms in the industry cooperate. These concerns are heightened by the significant possibility that, in such cases, one of the main purposes of the joint venture may be to facilitate or enforce collusion.

Thus, the organizational difficulties associated with joint ventures not only reduce their potential for achieving significant economies, but also frequently induce the participants to limit competition among themselves. This, in turn, raises the possibility of significant anticompetitive effects when the joint venture participants individually or collectively possess market power.

In summary, while PJVs offer much more limited benefits than RJVs, they also create significantly greater dangers to competition. Therefore, serious doubt exists as to whether PJVs should receive the same favorable treatment accorded RJVs.

IV. CURRENT LAW AND ENFORCEMENT POLICY CONCERNING PRODUCTION JOINT VENTURES AND THEIR EFFECT ON SUCH VENTURES

Proponents of the proposed PJV legislation contend that uncertainty over the legality of PJVs and the possibility that courts will condemn a JV as per se illegal deters potential PJV formation.⁸⁵ This concern appears exaggerated.⁸⁶ Current antitrust law and enforcement policy clearly indicate that legitimate PJVs will be judged under the rule of reason and that procompetitive PJVs will not be condemned. In addition, substantive and procedural changes in the law have reduced the threat of private antitrust challenges. Finally, the large numbers of PJVs that have been formed in recent years belies the need for any special treatment.⁸⁷

A. Courts Judge PJVs Under the Rule of Reason

Recent Supreme Court decisions clearly indicate that bona fide joint ventures-*i.e.*, joint ventures that are not merely shams to cover anticompetitive collusion-will be evaluated under the rule of reason.⁸⁸ In *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc. (BMI)*,⁸⁹ the Supreme Court reviewed a court of appeals decision holding that the blanket licenses issued by defendants BMI and the American Society of Composers, Authors and Publishers (ASCAP) to the television networks constituted a form of price fixing that was illegal per se under the Sherman Act. Rejecting the Court of Appeals' "literal" approach to price fixing, the Court stated:

Literalness is overly simplistic and often overbroad. When two partners set the price of their goods or services they are literally "price fixing," but they are not per se in violation of the Sherman Act.⁹⁰

Emphasizing that agreements that may increase economic efficiency or competition should not be held per se illegal, the Court held that the blanket license should be evaluated under the rule of reason, because the license "is not a 'naked restrain[t] of trade with no purpose except stifling of competition,' . . . but rather accompanies the integration of sales, monitoring, and enforcement against unauthorized copyright use."⁹¹ The Court further noted that, absent a blanket license, copyright holders might find it too expensive to enter into individual sales contracts or individually to monitor and enforce their copyrights.⁹²

The Supreme Court's decision in *National Collegiate Athletic Association v. Board of Regents of University of Oklahoma (NCAA)*⁹³ reaffirmed the analytical approach adopted in *BMI*. In *NCAA*, certain colleges challenged the NCAA's policy which limited the total number, and number-per-college, of televised intercollegiate football games and which prohibited any member college from selling television rights independently. Although it found that the plan was a horizontal restraint involving both prices and output,⁹⁴ the Supreme Court nevertheless rejected the per se approach adopted by the court of appeals. Instead, it applied a rule of reason analysis, because the "case involve[d] an industry in which horizontal restraints on competition are essential if the product is to be available at all."⁹⁵ The Court also recognized that intercollegiate sports required a "myriad of rules" to function and that the NCAA played a vital role in enforcing the rules and preserving the character of the game.⁹⁶

Finally, in *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*⁹⁷, the Supreme Court refused to apply a per se

rule to a concerted refusal to deal by a wholesale purchasing cooperative. Although it stated that a per se rule was appropriate where a concerted refusal to deal involved a "joint effort . . . to disadvantage competitors" and was unlikely to "enhance overall efficiency and make markets more competitive,"⁹⁸ the Court, following *BMI* and *NCAA*, nevertheless held that a rule of reason approach was warranted in the case of wholesale purchasing cooperatives, because such cooperatives "must establish and enforce reasonable rules in order to function effectively."⁹⁹

As expected, subsequent lower court decisions have followed the Supreme Court's rule of reason approach to joint ventures. For example, in *Rothery Storage Van Co. v. Atlas Van Lines, Inc.*,¹⁰⁰ the D.C. Circuit, in a decision by Judge Bork, refused to apply a per se rule to an alleged "group boycott" of the plaintiff by the defendants, Atlas Van Lines and several affiliated carrier agents. Instead, the court, applying the rule of reason, found that the challenged restraints were ancillary to the joint venture, that they "preserved the efficiencies of the nationwide van line by eliminating the problem of the free ride, and accordingly, that Atlas' decision to terminate plaintiff's agency contract did not violate the Sherman Act."¹⁰¹ Similarly, in *Polk Brothers, Inc. v. Forest City Enterprises, Inc.*,¹⁰² the Court of Appeals for the Seventh Circuit reviewed a district court's decision that a noncompetition agreement was per se illegal. Finding that the covenant played an essential role in inducing the firms to cooperate, the Court held that the restraint was ancillary and that it therefore should be evaluated under the rule of reason.¹⁰³

These cases clearly indicate that joint ventures, and collateral restraints in joint venture agreements, will be evaluated under the rule of reason if they have the potential for creating new products, increasing efficiency or promoting competition in the market. Only where a joint venture is a sham "with no purpose except stifling competition,"¹⁰⁴ will it be subject to a per se rule.

B. Current Antitrust Enforcement Policy Is Hospitable Towards Legitimate PJVs

In their published guidelines and enforcement actions, the Antitrust Division of the Department of Justice and Federal Trade Commission have likewise adopted hospitable joint venture policies based on the rule of reason.

For Example, in its *Antitrust Enforcement Guidelines for International Operations*,¹⁰⁵ the Antitrust Division emphasizes that it will apply a rule of reason analysis in evaluating joint ventures that involve "some form of economic integration that goes beyond the mere coordination of the parties' decisions on price or output and that in general may generate procompetitive efficiencies."¹⁰⁶ The Guidelines state that the Division will first consider whether the joint venture is likely to have any anticompetitive effects in the market in which it operates¹⁰⁷ or in any "spillover markets."¹⁰⁸ The Division performs a similar rule-of-reason analysis for any vertical non-price restraints associated with the joint venture to determine if the restraints could facilitate collusion or exclude competitors.¹⁰⁹ If the Antitrust Division concludes that anticompetitive effects are unlikely, it will not challenge the venture regardless of whether it generates any efficiencies. If, however, the Division concludes that significant anticompetitive effects are likely, it then considers whether "those anticompetitive effects are outweighed by the procompetitive efficiency benefits" generated by the joint venture.¹¹⁰

The enforcement actions of the Antitrust Division and Federal Trade Commission have been consistent with the 1988 Guidelines. In recent years, for example, the enforcement agencies have allowed firms with significant market shares to enter into PJVs where those ventures involved genuine economic integration.¹¹¹ More importantly, between 1984 and 1990, the Antitrust Division challenged only three PJVs, none of which involved joint R&D,¹¹² while the Federal Trade Commission challenged only four PJVs.¹¹³ In those cases, moreover, the challenged joint ventures involved marketing collaboration along with severe market concentration.¹¹⁴

Thus, existing policies of the antitrust enforcement agencies impose no unreasonable obstacle to the formation of PJVs involving genuine economic integration.

C. The Threat of Private Antitrust Suits Is Exaggerated

Proponents of the proposed legislation also argue that the threat of private suits may deter procompetitive PJVs. This concern appears exaggerated for two reasons.

First, the economic incentives for private plaintiffs to bring an antitrust challenge have decreased. The courts' use of the rule of reason in evaluating joint ventures and willingness to consider the potential benefits as well as possible costs of the venture have raised the expected costs of bringing an antitrust challenge against a joint venture and reduced the likelihood that a plaintiff will prevail in challenging a joint venture. This should reduce the number of plaintiffs willing to sue, especially where the suit is primarily intended to harass or extort a settlement from the defendants.¹¹⁵

Second, in recent years, the Supreme Court and lower federal courts have developed various procedural barriers which make it more difficult for plaintiffs to maintain private antitrust actions. For example, elaboration of the concepts of antitrust standing and antitrust injury has limited the number and types of parties permitted to bring antitrust challenges.¹¹⁶ Similarly, the Supreme Court's decision in *Illinois Brick Co. v. Illinois*¹¹⁷ made it much more difficult for indirect purchasers to bring a private antitrust action. Finally, the Georgetown antitrust project¹¹⁸ found that antitrust defendants frequently succeeded in bringing pretrial motions for summary judgment and motions to dismiss against private antitrust plaintiffs.¹¹⁹

At least in part as a result of these legal developments, the number of private antitrust actions filed in federal court has declined over the past 15 years. According to the Administrative Office of the United States Courts, the number of private antitrust suits filed per year in the federal courts peaked at 1611 in 1977. This represented 1.2% of all civil cases filed that year. By 1980 the number of private actions filed had dropped to 1457, or 0.8%, of all civil cases filed. In 1990, only 452 private antitrust actions were filed, which represented only 0.2% of all civil actions filed in federal courts.¹²⁰ The Georgetown antitrust study further indicates that of the 2357 private antitrust suits studied, only 5.8% were challenges to mergers or joint ventures.¹²¹

The changes in the law and the sharp decrease in the number of private actions together strongly suggest that: (1) joint venture participants are unlikely to be sued by private antitrust plaintiffs, and (2) if these participants are sued, they will have considerably greater protection against frivolous or harassment-motivated claims than they had in the past through the use of pre-trial motions.

D. Current Antitrust Law Has Not Deterred the Formation of an Increasing Number of PJVs

The increasing number of domestic and international joint ventures that have been formed in recent years further suggests that the antitrust laws pose no obstacle to legitimate joint ventures. Although data on recent joint venture activity in the United States is inadequate for a comprehensive conclusion, the empirical studies that have been conducted all agree that the number of PJVs formed each year since the middle to late 1970s has been both significant and growing. For example, an informal survey of joint venture announcements in the *Wall Street Journal* by the Antitrust Division's Office of Economic Policy found 130 joint venture announcements during a two and one-half year period in the late 1980s.¹²² Another, more in-depth, survey of domestic joint ventures formed between 1960 and 1984 found that joint venture activity had "blossomed" since 1978, and that in some industries, the number of joint ventures formed in 1983 alone exceeded all previously announced joint ventures in that industry.¹²³ Moreover, the growth in joint venture activity has been especially rapid in certain high-technology industries, such as semiconductors.¹²⁴

During this same period, the number of international joint ventures involving U.S. firms also increased significantly. According to a study by Hladik of international joint ventures formed between 1974 and 1982 involving at least one American firm, the number of such ventures formed during the latter half of the period roughly doubled that of the first half.¹²⁵ This increased rate of growth appears to have continued beyond 1984, the termination date of the study.¹²⁶

Moreover, many of the joint ventures have involved large companies with substantial market shares and which are direct competitors. For example, joint ventures have been formed between General Motors and Toyota, General Motors and Chrysler, Merck and Johnson & Johnson, Dow and Eli Lilly, IBM and Microsoft, and IBM and Apple.¹²⁷

This evidence of widespread joint venture activity clearly suggests that the antitrust laws do not pose a significant obstacle to the formation of PJVs. Further support for this view lies in the lack of hard evidence that antitrust concerns deterred any planned joint ventures. For example, the Antitrust Section of the American Bar Association reported that it found only one instance in which domestic firms declined to pursue an integrative PJV for reasons that would be remedied by the proposed legislation.¹²⁸

V. ARGUMENTS FAVORING THE PROPOSED SPECIAL TREATMENT OF DOWNSTREAM CONSORTIA ARE FLAWED

Proponents of antitrust reform for PJVs have advanced several supporting arguments, most of which relate to special needs of high-technology industries. This Part reviews these arguments and shows that they either do not justify the broad proposed antitrust relief or that they are of questionable empirical importance or validity.

A. The High Costs and Risks of Commercializing and Producing Innovative Products Do Not Exceed the Capacity of Most Individual Firms

A frequently cited justification for encouraging PJVs is that the costs and risks of developing and manufacturing a new product have increased beyond the resources of many individual firms.¹²⁹ Citing such examples as dynamic random access memory chips

(DRAMs), high-definition television (HDTV), and high-temperature superconductors,¹³⁰ proponents argue that not only have costs of R&D risen, but so too have the costs of plants for manufacturing any products of R&D.

Accepting the validity of these cost increases in certain high-technology industries, it does not follow that we should encourage industry-wide production consortia. First, to the extent that high basic or fundamental applied research costs deter firms from developing new products, such research could be conducted in a research consortia, such as Sematech or Microelectronics and Computer Technology Corporation, with the results then transmitted to the member companies. Extending cooperation into development and production is not a necessary requirement.

Second, with respect to the cost of plants and equipment necessary to produce new products, empirical studies suggest that, in the vast majority of industries, the minimum efficient scale of a plant is small relative to market demand.¹³¹ This suggests that production consortia are seldom necessary to achieve efficient-scale plants, and that PJVs involving two or three firms would solve the problem. This appears true even in the industries cited as requiring industry-wide production consortia. For example, thirteen Japanese companies manufacturing semiconductor memory chips in thirty separate plants¹³² rebuts the argument that a single industry-wide DRAM PJV is necessary. Similarly, with HDTV, three joint ventures involving U.S. firms currently are developing competing HDTV systems.¹³³

Thus, neither research costs nor plant economies justify further relaxation of the antitrust laws.

B. The Cyclical Nature of the Development Process and Shorter Product Lives Does Not Necessitate Cooperation in Both R&D and Production

Professors Jorde and Teece find support for cooperative production in what they call a "cyclical" view of the innovation process.¹³⁴ Rejecting the traditional view of innovation as a sequential process proceeding from basic research through applied research, product development, and finally to production, Jorde and Teece argue instead that product development involves "tight linkages and feedback mechanisms" between the various levels of activity and frequent "mid-course corrections to design, and redesign." This "cyclical" innovation process together with shorter product lives, Professors Jorde and Teece contend, necessitate close linkages between those performing the research and those actually developing the product.¹³⁵ Furthermore, since smaller firms may have to go outside to obtain necessary complementary assets, Professors Jorde and Teece conclude that, in order to achieve rapid commercialization of innovation, joint ventures must operate from the research level through at least the production level.¹³⁶

Although this argument may have some validity in the case of applied research joint ventures involving two or three firms, there is reason to doubt its validity as applied to industry-wide research consortia. First, in stressing the need for communication between manufacturing and research groups, Professors Jorde and Teece fail to distinguish among basic research, applied research, and developmental activities. While those developing a new product will have to, and do, talk to those who will manufacture the product in order to ensure that the product can be manufactured efficiently and inexpensively, there appears to be no similar need for those involved in basic or fundamental applied research to be in frequent communication with the plant floor. Thus, the need for communication with and "feedbacks" from those in production clearly varies with the kind of research or development activity.

Consortia, however, have generally shunned applied or "competitive" research or developmental activities where "feed backs" might be important,¹³⁷ because of the participants' fears that they may be forced to share strategic proprietary technology. To the extent that this competitive threat deters cooperation in "competitive" research, this casts doubt on the likelihood that firms in a consortium would agree to cooperate from basic research through production, at least in the absence of collateral restraints that would effectively limit competition among the participants. On the other hand, companies may be willing to cooperate in consortia if their primary purpose is to facilitate collusion.

Finally, even if the participants could be persuaded to cooperate in a research and production consortia, it is doubtful that this would speed the commercialization of any resulting innovations, because decision-making in joint ventures is slow and cumbersome, and becomes more so as the number of participating firms increases.¹³⁸ This suggests that any gains from combining the complementary skills and resources of the participants would be far outweighed by the more inefficient decision-making processes involved in consortia. Thus, participants interested in production consortia should be viewed with suspicion.

In summary, the cyclical nature argument lends little support to the argument for further relaxing the antitrust laws.

C. International Competition Will Not Eliminate the Danger of Collusion Among the Joint Venture Participants

Proponents of PJVs argue that such ventures will likely not have anticompetitive effects because of the presence of international competition.¹³⁹ However, a number of factors may limit the effectiveness of foreign competition in restraining domestic collusion.

In assessing *research* joint ventures, it is recognized that the relevant geographic market for research should usually be worldwide.¹⁴⁰ This results because information, the product of the research, is easily communicated. Thus, a competing foreign firm with commercially valuable technology can either incorporate it in products which it exports to the United States or license the technology to U.S. firms that are not participants in the RJV.¹⁴¹ In either case, the foreign technology will place downward pressure on prices and thus act to prevent collusive behavior on the part of RJV participants. In addition, because of appropriability problems, research results may spill over to nonparticipants, further limiting the ability of participants to collude. Thus, the presence of foreign competition reduces the need for strict antitrust enforcement of RJVs.

Foreign competition will not necessarily play such an effective policing role in the case of PJVs, however. First, exchange rate fluctuations could raise the price of imported goods, rendering them less competitive. If foreign firms attempt to remain competitive on price, they make themselves vulnerable to charges of dumping. Fear of sanctions restricts the ability of foreign firms to compete effectively and prevent monopoly profits by a U.S. consortia.

More importantly, foreign competitors may be subject to trade restraints, such as tariffs, quotas, or other quantitative restrictions. Such restraints can significantly limit the ability of foreign competitors to respond to and take advantage of anticompetitive behavior by domestic firms. Quotas and other quantitative restrictions, such as voluntary restraint agreements (VRAs) or orderly marketing agreements (OMAs) are especially pernicious because they prevent the foreign firms from increasing exports to meet demand should the joint venture participants attempt to restrict output and raise price.¹⁴² Further, the foreign importers have no incentive to oppose such restrictions, since the restrictions generate scarcity rents for them as well.¹⁴³ A final reason that these trade restraints present a competitive danger is that the participants in a PJV may seek such trade protection at any time after notification to the antitrust authorities.¹⁴⁴ Thus, even if there exists strong competition from foreign firms at the time of the PJV's formation, there is no assurance that such competition will remain effective.

D. Use of Joint Ventures in Japan and Europe Does Not Require that the U.S. Encourage Domestic Joint Ventures

Joint venture proponents also rely upon the alleged widespread use of joint ventures in Europe and, especially, in Japan to support their arguments.¹⁴⁵ They argue that, in order to remain competitive, the United States must follow the examples of Japan and Europe and encourage more PJVs. But these proponents fail to understand the nature of the joint ventures that have been created in those jurisdictions.

1. Japan

There is little, if any, cooperation in production or marketing among Japanese companies.¹⁴⁶ Rather, cooperation is generally limited to R&D.

Even in the area of cooperative research, cooperation is more limited than generally thought. For example, although the Japanese Fair Trade Commission found that fifty-five percent of 250 major Japanese firms surveyed participated in cooperative research, ninety percent of such cooperative agreements were private contractual arrangements between two companies, most of which were already affiliated.¹⁴⁷

In addition, a widespread misunderstanding exists concerning the industry-wide research consortia, sponsored by Japan's Ministry of Trade and Industry (MITI). In the 1970s, MITI began to use existing engineering research associations¹⁴⁸ to launch a few large cooperative projects in the electronics, computer and aircraft industries.¹⁴⁹ The primary purpose of these projects was to close the technological gap between Japanese firms and more advanced foreign firms by adapting, disseminating and using existing technological knowledge.¹⁵⁰ Given this goal, the projects focused on generic or pre-competitive research and avoided applied research and product development.¹⁵¹ Despite this focus, participants frequently attempted to free-ride by contributing second-rate personnel or equipment or by withholding proprietary technological know-how,¹⁵² and they continued to spend far greater sums on independent research efforts.¹⁵³ Evidence also exists that as Japanese firms have caught up technologically to advanced firms of other countries, they have become increasingly reluctant to participate in cooperative research projects.¹⁵⁴ Consequently, cooperative research will probably play a less significant role in the future.¹⁵⁵

In summary, the Japanese experience in cooperative research suggests that it can be an effective mechanism for diffusing technological knowledge among firms that lag in technological sophistication. However, it hardly provides a justification for industry-

wide consortia in production.

2. Europe

Like Japan, the European Community (EC) has attempted to strengthen the international competitiveness of its high-technology industries by encouraging and subsidizing cooperative research. The majority of these subsidized cooperative research programs, however, have been limited to *precompetitive research*¹⁵⁶ and have not extended to joint production or marketing. Furthermore, with respect to private unsubsidized PJVs, EC competition policy appears to present a greater obstacle to cooperation than do the U.S. antitrust laws.

The European Strategic Programme for Research and Development in Information Technology (ESPRIT), created in 1984, was the first major EC-subsidized collaborative research project. It focused on precompetitive research in information technology and was intended to revitalize the EC's information technology and electronics industries.¹⁵⁷ Several other major, and minor, subsidized collaborative research projects followed, including RACE (Research in Advanced Communications for Europe), BRITE (Basic Research in Industrial Technologies for Europe), EURAM (European Research in Advanced Materials), and several biotechnology projects.¹⁵⁸ These various programs, which were brought together under the FRAMEWORK Programme, all focus on precompetitive research and share the same goals: raising the research capabilities of European firms in certain high-technology industries and encouraging transnational research cooperation among EC firms and between those firms and universities.¹⁵⁹

In 1985, another collaborative project, EUREKA (the European Research Cooperation Agency), was launched.¹⁶⁰ Like the FRAMEWORK Programme, EUREKA seeks to improve the competitiveness of members' high-technology firms and to foster intercompany cooperation across borders. Although EUREKA projects are not restricted to precompetitive research, and can extend to more commercial research,¹⁶¹ they receive significantly less public funding.¹⁶²

Although the EC and its member states have contributed significant funds to these programs,¹⁶³ the programs have received some criticism.¹⁶⁴ More importantly, both subsidized programs are limited to cooperative research, and in the case of the FRAMEWORK Programme, limited to solely precompetitive research. Neither program permits cooperation to extend to coproduction or to joint distribution.

If EC firms wish to enter into private R&D ventures or to extend cooperation beyond R&D to production or marketing, they must deal with the EC competition laws. Complying with these laws often proves more burdensome and uncertain than complying with U.S. antitrust law.

In the EC, joint ventures must be primarily concerned with article 85 of the Treaty of Rome (the "Treaty"),¹⁶⁵ which basically prohibits agreements that restrict competition.¹⁶⁶ Under article 85(2), any agreement that falls within article 85(1) is automatically deemed null and void. In addition, the Commission may impose substantial fines on parties to an agreement that violates article 85 (1).¹⁶⁷

The possibility that the agreement will be nullified or fined creates a significant incentive for joint venture participants to notify the agreement to the Commission and to request a negative clearance¹⁶⁸ or a special exemption under article 85(3).¹⁶⁹ Because the Commission has found the majority of joint ventures to fall within article 85(1), at least where the participants are actual or potential competitors,¹⁷⁰ the joint venture participants must usually prove that the venture qualifies for a special exemption under article 85(3).

This notification procedure can impose significant burdens and create substantial uncertainty for joint venture participants, however. First, the Commission is not required to render a decision within any specified time limit and, in practice, frequently waits years after the notification is filed before granting or refusing an exemption request.¹⁷¹ Second, in conducting its investigation of a notification, the Commission will frequently demand significant amounts of highly sensitive information about the participants and the venture.¹⁷² Third, the Commission is required to grant an exemption for a specified period of time, and, in many cases, this period is shorter than the proposed duration of the venture.¹⁷³ Fourth, the Commission frequently conditions the grant of an exemption upon the parties' agreeing to modify or eliminate provisions deemed unnecessarily restrictive¹⁷⁴ or to comply with certain continuing reporting and operating obligations.¹⁷⁵ Finally, all notices applying for an exemption are published in the Official Journal of the European Communities with an invitation for third parties to make comments.¹⁷⁶

A quicker and easier approval process is available for joint ventures that qualify under various block exemptions or the recent merger control regulation. However, many PJVs will not qualify.

Under a 1984 block exemption for certain R&D joint ventures,¹⁷⁷ any RJV agreement that satisfies the conditions of the block exemption is deemed to fall outside of article 85(1). Unlike the NCRA, the block exemption permits joint exploitation of the results of the cooperative R&D through joint production or joint licensing. Nevertheless, it contains a number of restrictions that disqualify many joint ventures. For example, where the agreement provides only for joint R&D, the parties must be free to license or otherwise exploit the results of the joint R&D independently.¹⁷⁸ Second, where the agreement provides for joint exploitation, the exploitation must relate only to research results which are protected by intellectual property rights or constitute know-how which contributes substantially to technical or economic progress, and the results must be decisive for the manufacture of the contract products.¹⁷⁹ Third, where the agreement provides for joint production, the venture may only supply the products to the participants; it cannot also engage in joint distribution or marketing.¹⁸⁰ Finally, and most importantly, the Regulation imposes strict twenty percent market share limitations on R&D joint ventures that involve joint exploitation.¹⁸¹

The EC's 1989 Merger Control Regulation (MCR),¹⁸² on the other hand, requires that "concentrations"¹⁸³ that have a "Community dimension," including certain "concentrative" joint ventures, be notified to the Commission and cleared by it before they can be implemented. Although the MCR offers certain advantages to "concentrative" joint ventures,¹⁸⁴ it also creates some problems for these ventures. First, although the Commission has issued guidelines to assist in distinguishing "cooperative" joint ventures (still subject to article 85) from "concentrative" joint ventures (subject to the MCR),¹⁸⁵ there may remain considerable uncertainty as to whether a particular joint venture qualifies as a "concentrative" joint venture.¹⁸⁶ In addition, even where a joint venture qualifies as a "concentration" subject to the MCR, complying with the notification is likely to prove burdensome.¹⁸⁷

In summary, the EC, like Japan, has subsidized and encouraged cooperative research of a precompetitive nature as a means of helping European firms catch up with more advanced American and Japanese rivals. This subsidized collaboration, however, does not extend to joint production. As shown above, private PJVs in the EC face more burdensome and time-consuming clearance procedures than their U.S. counterparts. Therefore, neither the Japanese nor European policies concerning antitrust and cooperative research provide a precedent for the proposed joint venture legislation.

VI. WEAKNESSES IN THE PROPOSED LEGISLATION

The most obvious weakness with the current bills is that proponents have failed to demonstrate any compelling need for the legislation. Although they claim that fear of antitrust liability deters procompetitive joint ventures, they have produced no clear and convincing evidence that this results. On the contrary, the available evidence suggests that the antitrust laws do not constitute a significant deterrent to the formation of joint ventures.¹⁸⁸ The current law quite clearly indicates that bona fide PJVs will be evaluated under the rule of reason and that efficiencies resulting from economic integration will be weighed against any restrictions on competition. In addition, there is no evidence of any alarming pattern of public or private antitrust litigation brought against joint ventures; rather, the available evidence suggests that the total number of public and private antitrust suits of all kinds has declined dramatically within the last ten years.

The best argument made by proponents of the legislation is that businessmen may be under a "misperception" that the legality of PJVs remains uncertain under antitrust laws. Not only is this an unusual justification—that the law should be changed because the business community misunderstands it¹⁸⁹—but there also appears little evidence to support it. As previously noted, the American Bar Association's Section of Antitrust Law was unable to confirm the existence of such a widespread misperception.¹⁹⁰ Moreover, the large and increasing number of U.S. firms that are participating in joint ventures, despite the difficulties in collective management, suggests that the antitrust laws hardly constitute a significant deterrent.¹⁹¹

A second major weakness of the legislation is that the pending bills do not appear targeted to achieve their ostensible goals. Legislative proponents claim that the bills, by encouraging cooperation in production, will help U.S. firms become more innovative and competitive. Unfortunately, neither the House nor Senate bills requires a PJV to engage in cooperative R&D as well as joint production. Nor do the bills require qualified joint ventures to produce new or innovative products.¹⁹² Finally, neither bill contains any requirement that the joint venture be involved in a high technology sector. Accordingly, there is little reason to expect the legislation will achieve its apparent purpose of encouraging the formation of innovative joint ventures in high-technology industries.

More importantly, the proposed legislation may well have significant adverse effects on the U.S. economy and on U.S. competitiveness. First, the proposed legislation may encourage greater collusion and cartellization by U.S. firms. As indicated above, cooperation at the production or marketing levels results in significantly more collusion than cooperation at the R&D level.¹⁹³ But the proposed legislation contains no provisions that effectively reduce this risk. For example, there are no limits on the allowed market shares, either individual or combined, of the participants. However, the anticompetitive risks of such joint ventures rise substantially as the combined market shares and market power of the participants increase. At the same time, it appears unlikely that economies of

scale or other justifications for collaborative production warrant participation by firms holding a majority share of the relevant market. Accordingly, the bills should include some requirement that participants collectively holding market power demonstrate some need for such broad participation.

In addition, although the bills prohibit participants from engaging in joint marketing and from exchanging information concerning "costs, sales, profitability, prices . . . that is not reasonably required to carry out the purposes of the venture,"¹⁹⁴ they do not prevent participants from combining their competing production facilities. Thus, theoretically, an entire domestic industry could cooperate in production, jointly determine total output, and hence, indirectly agree on price.¹⁹⁵ Moreover, despite the statutory prohibition, it is not unlikely that production cooperation may lead to cooperation or collusion in pricing or other dimensions of competition.

Finally, even if production cooperation does not lead to explicit collusion, it may reduce rivalry among the participants. Again, this danger increases as the proportion of industry firms participating increases. The reduction in rivalry in turn could lead to higher prices and reduced innovation, making the participants less able to respond to foreign competition.¹⁹⁶

The danger of collusion and reduced rivalry suggests that increasing the number of PJVs will heighten the need for vigilant antitrust enforcement. Unfortunately, the bills weaken, if not eviscerate, antitrust enforcement for PJVs. First, although the bills require joint venture participants to file notifications with the antitrust authorities if they wish immunity from treble damages, the information required under the notification is not sufficiently detailed¹⁹⁷ to enable the antitrust authorities to perform an accurate evaluation of the competitive effects of the venture.¹⁹⁸ In addition, since the proposed legislation would provide no new resources to the relevant regulators, there is a significant risk that they will be overwhelmed if the legislation results in a flood of filings.¹⁹⁹ Finally, the proposed legislation contains no provision for periodic monitoring by the antitrust enforcement agencies. Accordingly, the authorities may receive no notice should the joint venture subsequently engage in anticompetitive practices or seek trade protection to eliminate foreign competition.

The effect of the bill on private antitrust enforcement will be even greater. Although the issue of the appropriate measure of antitrust damages is beyond the scope of this article,²⁰⁰ it appears reasonable to infer that a reduction in the damage multiplier from three to one will reduce the incentive for private plaintiffs to bring suit.²⁰¹ Similarly, the possibility that a plaintiff will be ordered to pay the defendants' attorneys' fees may deter even meritorious suits by plaintiffs with less resources.²⁰² At the same time, by reducing the likelihood of private suits, these changes will increase the incentives for joint venture participants to engage in collusion or other anticompetitive behavior.²⁰³

The relevant question then becomes whether a reasonable justification exists for singling out PJVs for special treatment as opposed to other antitrust concerns.²⁰⁴ In the case of RJVs, the justification for the 1984 NCRA was that R&D activities suffered from certain unique market failures and that RJVs could help correct those market failures without imposing any significant anticompetitive costs.²⁰⁵ No similar market failures afflict production activities, however. Moreover, the potential benefits offered by PJVs appear considerably smaller, while the potential anticompetitive costs appear significantly larger. The reasoning underlying the special treatment of R&D joint ventures thus does not appear to extend to PJVs.

A final weakness of the House bill involves the attempt to benefit U.S. companies and workers by requiring that plant facilities be located in the United States and by limiting the companies eligible to qualify for protection.²⁰⁶ These provisions appear both protectionist and misguided. Foreign firms clearly offer access to foreign markets and, to an increasing extent, possess technological information that would be valuable to U.S. companies.²⁰⁷ These protectionist provisions could pose a barrier to cooperation with technologically advanced foreign firms and thereby substantially undermine the legislative purpose.²⁰⁸ In addition, such restrictions may well result in other countries retaliating by restricting participation by U.S. companies in foreign joint ventures.²⁰⁹

VII. CONCLUSION

One of the great virtues of the U.S. antitrust laws is that they are sufficiently broad and general so that the courts have been able to adapt their language to changing market and technological conditions so as to ensure that U.S. markets remain competitive and efficient. Congress has generally recognized this virtue and has accordingly shown considerable reluctance to make special exceptions and exclusions.²¹⁰ Before creating a special exemption or immunity, Congress has generally required a "convincing prior showing of public interest or compelling economic need."²¹¹ Congress should demonstrate similar restraint here. It should also demand substantial and convincing empirical evidence that justifies the extension of the NCRA's special protection to PJVs before it enacts any of the proposed legislation. Such evidence has not yet been produced.

There is obviously considerable political appeal to passing legislation intended to spur U.S. competitiveness, especially where the

legislation will not require substantial federal expenditures. In the case of the proposed PJV legislation, however, this political allure should be resisted. If passed, the legislation at best will have little effect on the economy; at worst, it will foster collusion, undermine U.S. competitiveness, and impose significant costs on U.S. consumers.

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1. See, e.g., *Competitiveness and Antitrust: Hearings Before the Senate Comm. on the Judiciary*, 100th Cong., 1st Sess. (1987) [hereinafter *1987 Senate Hearings*]; MARTIN N. BAILEY & ALOK K. CHAKRABARTI, *INNOVATION AND THE PRODUCTIVITY CRISIS* (1988); WILLIAM J. BAUMOL ET AL., *PRODUCTIVITY AND AMERICAN LEADERSHIP: THE LONG VIEW* (1989); MICHAEL L. DERTOUZOS ET AL., *MADE IN AMERICA: REGAINING THE PRODUCTIVE EDGE* (1989); INTERNATIONAL TRADE ADMIN., U.S. DEP'T OF COMMERCE, *AN ASSESSMENT OF U.S. COMPETITIVENESS IN HIGH TECHNOLOGY INDUSTRIES* (1983); NATIONAL RESEARCH COUNCIL, *TECHNOLOGY, TRADE, AND THE U.S. ECONOMY* (1978); PRESIDENT'S COMM'N ON INDUS. COMPETITIVENESS, *GLOBAL COMPETITION: THE NEW REALITY* (1985).

2. See, e.g., *Japanese Technological Advances and Possible U.S. Responses Using Research Joint Ventures: Hearings Before the Subcomm. on Investigations and Oversight and the Subcomm. on Science, Research and Technology of the House Comm. on Science and Technology*, 98th Cong., 1st Sess. (1983); *The National Productivity and Innovation Act and Related Legislation: Hearings Before the Senate Comm. on the Judiciary*, 98th Cong., 1st & 2d Sess. (1983 & 1984); INDUSTRIAL RESEARCH INST., *INSTITUTIONAL AND LEGAL CONSTRAINTS TO COOPERATIVE ENERGY R&D* (Technical Advisory Bd., U.S. Commerce Dep't, No. PB-240-929, 1975); NATIONAL RESEARCH COUNCIL, *ANTITRUST, UNCERTAINTY, AND TECHNOLOGICAL INNOVATION* (1980).

3. The NCRA mandated that research joint ventures (RJVs), as defined in the Act, should not be deemed illegal per se, but rather should be evaluated under the rule of reason. It further provided that RJV participants would be liable in private actions for only single, rather than treble, damages if they filed a notification with the Antitrust Division and the Federal Trade Commission. Finally, it enabled RJV participants which had been sued by private plaintiffs to recover attorneys' fees and costs under certain conditions, regardless of whether the RJV had filed a notification. 15 U.S.C. §§ 4301-4305 (1988).

4. See, e.g., *Legislation Concerning Production Joint Ventures: Hearing Before the Subcomm. on Antitrust, Monopolies and Business Rights of the Senate Comm. on the Judiciary*, 101st Cong., 2d Sess. (1990) [hereinafter *1990 Senate Hearing*]; *The Government Role in Joint Production Ventures: Hearing Before the Subcomm. on Science, Research and Technology of the House Comm. on Science, Space, and Technology*, 101st Cong., 1st Sess. (1989) [hereinafter *1989a House Hearing*]; *Production Joint Ventures Antitrust Legislation: Hearings Before the Subcomm. on Economic and Commercial Law of the House Comm. on the Judiciary*, 101st Cong., 1st Sess. (1989) [hereinafter *1989b House Hearing*]; *High Definition Television: Hearing Before the House Comm. on Science, Space, and Technology*, 101st Cong., 1st Sess. (1989) [hereinafter *1989c House Hearing*]; Thomas M. Jorde & David J. Teece, *Innovation, Cooperation and Antitrust*, 4 HIGH TECH. L.J. 1 (1989) [hereinafter Jorde & Teece (1989a)]; Thomas M. Jorde & David J. Teece, *Competition and Cooperation: Striking the Right Balance*, 31 CAL. MGMT. REV. 25 (1989) [hereinafter Jorde & Teece (1989b)]; Thomas M. Jorde & David J. Teece, *Innovation and Cooperation: Implications for Competition and Antitrust*, 4 J. ECON. PERSP. 75 (1990) [hereinafter Jorde & Teece (1990)].

5. In the 101st Congress the following bills were introduced: S. 952, 101st Cong., 1st Sess. (1989); S. 1006, 101st Cong., 1st Sess. (1989); H.R. 423, 101st Cong., 1st Sess. (1989); H.R. 1024, 101st Cong., 1st Sess. (1989); H.R. 1025, 101st Cong., 1st Sess. (1989); H.R. 2264, 101st Cong., 1st Sess. (1989). The House of Representatives eventually passed H.R. 4611, 101st Cong., 2d Sess. (1990). See also H.R. REP. NO. 516, 101st Cong., 2d Sess. (1990). No bill was passed in the Senate, however.

In the 102d Congress, new bills were introduced that would provide similar relief. See S. 479, 102d Cong., 1st Sess. (1991); H.R. 1604, 102d Cong., 1st Sess. (1991). See also S. REP. NO. 146, 102d Cong., 1st Sess. (1991), reprinted in 61 *Antitrust & Trade Reg. Rep.* (BNA) 347 (1991); H.R. REP. NO. 972, 102d Cong., 2d Sess. (1992).

6. In the 101st Congress, members introduced several bills that would have amended the antitrust laws to provide various protection for production joint ventures. Basically, the bills adopted one or more of the following four approaches: (1) extending the notification

procedures and protections of the NCRA to joint ventures involving production (and in some cases marketing), *see* H.R. 1025, 101st Cong., 1st Sess. (1989); H.R. 2262, 101st Cong., 1st Sess. (1989); S. 1006, 101st Cong., 1st Sess. (1989); (2) codifying in detail the substantive law applicable to innovative joint ventures, *see* H.R. 1024, 101st Cong., 1st Sess. (1989); S. 2322, 101st Cong., 1st Sess. (1989); (3) establishing a safe harbor for PJVs whose participants lack market power, *see* H.R. 423, 101st Cong., 1st Sess. (1989); and (4) establishing a certification procedure under which joint ventures, reviewed and approved by the relevant antitrust authorities, would be exempt from any antitrust penalty or damage liability, *see* H.R. 1024, 101st Cong., 1st Sess. (1989); S. 2322, 101st Cong., 1st Sess. (1989). *See generally* H.R. REP. NO. 516, *supra* note 5; Joseph F. Brodley, *Antitrust Law and Innovation Cooperation*, 4 J. ECON. PERSP. 97, 104 (1990). The House ultimately passed H.R. 4611, which adopted the first approach, but no bill reached the floor of the Senate during that Congress.

The bills introduced in the 102d Congress adopted only the first approach.

7. *See* H.R. 1604, 102d Cong., 1st Sess. (1991); S. 479, 102d Cong., 1st Sess. (1991).

8. H.R. 1604, *supra* note 7, § 2(b)(4); S. 479, *supra* note 7, § 2(2)(c).

9. The information required to be provided in a notification is limited. For example, the House bill only requires that the joint venture provide the identities of the participants and a brief description of the nature and objectives of the venture. *See, e.g.*, H.R. REP. NO. 516, *supra* note , at 19.

10. *See* S. REP. NO. 146, *supra* note 5, at 23.

11. H.R. 1604, *supra* note 7, § 2(c)(3)(B); S. 479, *supra* note 7, § 2(2)(G).

12. H.R. 1604, *supra* note 7, § 2(f). According to the Committee Report, the section is intended to "stimulate more collaborative activity by American-owned firms." H.R. REP. NO. 516, *supra* note 5, at 15.

13. S. 479, *supra* note 5, § 2(10). According to the Senate Report, the requirements are intended to ensure that the act benefits American workers. S. REP. NO. 146, *supra* note 5, at 7.

14. S. 479, *supra* note 5, § 2(2)(G).

15. Specifically, the bill requires the FTC to prepare an annual report listing the joint ventures that had filed under the Act and any enforcement actions that had been brought by the Department of Justice against ventures filing under the Act. The bill requires the Department of Commerce to prepare triennial reports which describe the "technologies most commonly pursued by joint ventures" (and assess the competitiveness of U.S. industry in those technologies), describe the areas of production most commonly engaged in by PJVs, and review foreign laws concerning joint R&D and production. *See* S. 479, *supra* note 5, § 2(10).

16. *See generally* Gene M. Grossman & Carl Shapiro, *Research Joint Ventures: An Antitrust Analysis*, 2 J.L. ECON. & ORGANIZATION 315 (1986); Michael L. Katz, *An Analysis of Cooperative Research and Development*, 17 RAND J. ECON. 527 (1986); Michael L. Katz & Janusz A. Ordover, *R&D Cooperation and Competition*, 1990 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 139; Janusz Ordover & William Baumol, *Antitrust Policy and High-Technology Industries*, 4 OXFORD REV. ECON. POL'Y 13 (1988); Janusz A. Ordover & Robert D. Willig, *Antitrust for High-Technology Industries: Assessing Research Joint Ventures and Mergers*, 28 J.L. & ECON. 311 (1985).

17. In other words, the private return on investment in R&D will be less than the social return. *See* Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609, 619-622 (R. Nelson ed., 1962); Richard R. Nelson, *The Simple Economics of Basic Scientific Research*, 67 J. POL. ECON. 297, 302 (1959). In addition, because a firm can gain from the R&D of others, it reduces the competitive risk of failing to conduct independent R&D. Katz & Ordover, *supra* note 16, at 39.

18. *See* Partha Dasgupta, *The Welfare Economics of Knowledge Production*, 4 OXFORD REV. ECON. POL'Y 1, 4 (1988); Katz, *supra* note 16, at 537; Nelson, *supra* note 17, at 302-04.

19. R&D inputs are said to be lumpy because large minimum expenditures are often required before any R&D can be performed or

before such R&D can yield any useful results. See WILLIAM D. NORDHAUS, *INVENTION, GROWTH, AND WELFARE* 36 (1969); JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 414 (1988); see also Partha Dasgupta, *The Economic Theory of Technology Policy: An Introduction*, in *ECONOMIC POLICY AND TECHNOLOGICAL PERFORMANCE* 9 (Partha Dasgupta & Paul Stoneman eds., 1987). In addition, there is evidence that R&D frequently exhibits significant economies of scale and scope. See NORDHAUS, *supra*, at 414; Grossman & Shapiro, *supra* note 16. Finally, imperfections in the capital markets may limit the availability of firms to obtain outside funding for R&D investment. See Paul Stoneman & John Vickers, *The Assessment: The Economics of Technology Policy*, 4 *OXFORD REV. ECON. POL'Y* i, viii (1988). These facts suggest that the market may not yield an efficient investment in R&D, and more particularly, that the level of investment necessary for the efficient performance of certain types of R&D may exceed the financial resources of smaller firms.

20. As many have shown, however, the patent system and trade secrecy laws in general fail to eliminate all spillovers. See, e.g., Richard C. Levin et al., *Appropriating the Returns from Industrial Research and Development*, 1987 *BROOKINGS PAPERS ON ECON. ACTIVITY* 783 (1987); Edwin Mansfield et al., *Social and Private Rates of Return from Industrial Innovation*, 91 *Q.J. ECON.* 221 (1977).

21. If the information generated is valuable enough, it may confer market power on the innovating firm, which can lead to higher prices and reduced output. This will generate the static, deadweight loss associated with monopoly. See Arnold C. Harberger, *Monopoly and Resource Allocation*, 44 *AMER. ECON. REV.* 77, 78 (1954); Richard R. Nelson & Sidney Winter, *The Schumpeterian Tradeoff Revisited*, 72 *AMER. ECON. REV.* 114, 116 (1982). In addition, restricting dissemination of information concerning the most efficient technology can raise the average production cost in the industry over that which would result with widespread use of the new technology. *Id.* Finally, denying competitors the right to use new technological information can induce them to spend research funds on inventing around the patent or on developing new technologies that are less efficient than the current best, but inaccessible technology. See Donald K. Stockdale, Jr., *Three Essays on Antitrust and Innovation* 66 (1989) (unpublished Ph.D. dissertation, Yale University). See generally Katz & Ordovery, *supra* note 16, at 145.

22. This excessive investment in a particular area of research has been termed the "common pool" problem. See Partha Dasgupta & Joseph Stiglitz, *Industrial Structure and the Nature of Innovative Activity*, 90 *ECON. J.* 266, 279 (1980); Partha Dasgupta & Joseph Stiglitz, *Uncertainty, Industrial Structure, and the Speed of R&D*, 11 *BELL J. ECON.* 1, 3 (1980); J. Hirshleifer & John G. Riley, *The Analytics of Uncertainty and Information*, 17 *J. ECON. LIT.* 1375, 1404 (1979); Pankaj Tandon, *Rivalry and the Excessive Allocation of Resources to Research*, 14 *BELL J. ECON.* 152 (1983); see also Partha Dasgupta & Eric Maskin, *The Simple Economics of Research Portfolios*, 97 *ECON. J.* 581 (1987).

23. The National Science Foundation has defined the various categories of research and development as follows:

Basic Research-Original investigations for the advancement of scientific knowledge not having specific immediate commercial objectives, although such investigations may be in fields of present or potential interest to the . . . company.

Applied Research-Investigations directed to the discovery of new scientific knowledge having specific commercial objectives with respect to products or processes

Development-Technical activities of a nonroutine nature concerned with translating research findings or other scientific knowledge into products or processes

NATIONAL SCIENCE FOUND., *RESEARCH AND DEVELOPMENT IN INDUSTRY*: 1987, at 2 (1989).

24. See Grossman & Shapiro, *supra* note 16, at 332-33; Katz, *supra* note 16, at 537; Nelson, *supra* note 17, at 302-04; see also P.S. JOHNSON, *CO-OPERATIVE RESEARCH IN INDUSTRY* (1973).

25. Increasing the percentage of firms participating in the RJV will reduce the externality by reducing the number of free-riders and by committing the beneficiaries of the research-generated information to share its costs *ex ante*. See Grossman & Shapiro, *supra* note 16, at 321; Stockdale, *supra* note 21, at 67. But this result will not necessarily hold for RJVs directed to applied research and development. See *infra* text accompanying notes 29-32.

26. See, e.g., Grossman & Shapiro, *supra* note 16, at 323.

27. See *id.* at 322; Katz, *supra* note 16, at 528; Ordovery & Baumol, *supra* note 16, at 27.

28. 1989a *House Hearing*, *supra* note 4, at 68-69 (statement of Claude E. Barfield, American Enterprise Institute); DAVID C. MOWERY & NATHAN ROSENBERG, *TECHNOLOGY AND THE PURSUIT OF ECONOMIC GROWTH* 239 (1989); Grossman & Shapiro, *supra* note 16, at 321-22; Katz, *supra* note 16, at 528-29.
29. *See* Katz & Ordovery, *supra* note 16, at 152, 156; Katz, *supra* note 16. The RJV may also be used to suppress innovation, where implementation of the innovation would impose significant costs on the participants or destabilize the industry, *see* JOHNSON, *supra* note 24, at 84, or where the RJV is used to delay meeting government environmental or safety regulations. *See* United States v. Automobile Mfrs. Ass'n, 1969 Trade Cas. (CCH) ¶ 72,907 (C.D. Cal. 1969) (consent decree), *modified*, 1982-1983 Trade Cas. (CCH) ¶ 65,088 (C.D. Cal. 1982); LAWRENCE A. SULLIVAN, *HANDBOOK OF THE LAW OF ANTITRUST* 301-03 (1977).
30. *See* Katz, *supra* note 16, at 529.
31. *See id.* at 542; Grossman & Shapiro, *supra* note 16, at 324.
32. CARMELA S. HAKLISCH ET AL., *TRENDS IN COLLECTIVE INDUSTRIAL RESEARCH* 153 (2d ed. 1986); MOWERY & ROSENBERG, *supra* note 28, at 240; Ordovery & Baumol, *supra* note 16, at 27; *see also* John T. Scott, *Diversification Versus Cooperation in R&D Investment*, 9 *MANAGERIAL & DECISION ECON.* 173 (1988) (suggesting that NCRA may have reduced diversity and productivity of R&D effort); *cf.* JOHN JEWKES ET AL., *THE SOURCES OF INVENTION* 221 (1960); RICHARD R. NELSON & SIDNEY G. WINTER, *AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE* 366 (1982) (discussing possible insufficient diversification of research efforts under monopoly).
33. *See infra* text accompanying note 58.
34. *See* Grossman & Shapiro, *supra* note 16, at 325; Katz & Ordovery, *supra* note 16, at 156; *cf.* F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 625 (3d ed. 1990) (discussing use of cross-licensing agreements and patent pools to facilitate collusion and exclude competitors); George L. Priest, *Cartels and Patent License Agreements*, 20 *J.L. & ECON.* 309, 356-77 (1978).
35. *See* Katz & Ordovery, *supra* note 16, at 156. The NCRA attempts to alleviate this danger by specifically excluding the exchange of cost and price data from the protection of the Act. 15 U.S.C. § 4302(b) (1988); *see also* S. REP. NO. 427, 98th Cong., 2d Sess. 15-16 (1984) (explaining reasons for exclusions from protection).
36. *See* Katz & Ordovery, *supra* note 16, at 156; Stockdale, *supra* note 21, at 71.
37. *See, e.g.*, *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 299-304 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980) (Kodak's joint development with flash manufacturer of new camera flash held to violate section 1 of the Sherman Act); *cf.* Janusz A. Ordovery & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 *YALE L.J.* 8 (1981) (analyzing introduction by single firm of new, but incompatible product system, as a form of predation).
38. *See* Grossman & Shapiro, *supra* note 16, at 317; Stockdale, *supra* note 21, at 71-72; *cf.* Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 *YALE L.J.* 213, 227-33 (1979) (private incentives for, and social costs resulting from, predatory conduct will be significant only in the presence of substantial market power and barriers to entry).
39. The following factors, among others, have been identified as limiting the effectiveness of or possibilities for oligopolistic collusion: (1) a large number of competitors, (2) a large variance in the size of competitors, (3) relatively free entry conditions, (4) differentiated products, (5) differential cost structures among competitors, (6) relatively elastic demand, (7) growing demand, and (8) significant non-price competition. *See* SCHERER & ROSS, *supra* note 34, at 277-315; Peter Asch & Joseph J. Seneca, *Characteristics of Collusive Firms*, 23 *J. INDUS. ECON.* 223 (1975); George J. Stigler, *A Theory of Oligopoly*, 72 *J. POL. ECON.* 55 (1964), *reprinted in* GEORGE J. STIGLER, *THE ORGANIZATION OF INDUSTRY* 39-63 (1968). *See generally* Alexis Jacquemin & Margaret E. Slade, *Cartels, Collusion, and Horizontal Merger*, in 1 *HANDBOOK OF INDUSTRIAL ORGANIZATION* 415 (Richard Schmalensee & Robert D. Willig eds., 1989). In addition, it is recognized that successful collusion is especially difficult in industries subject to rapid technological change. *Id.* at 420.
40. Based on survey and interview data, Wolek found that U.S. research consortia "are significantly more committed to basic research than are competitive, industrial programs." He further found that, on average, consortia devoted 23.4% of their budget to basic

research in 1974. FRANCIS W. WOLEK, *THE ROLE OF CONSORTIA IN THE NATIONAL R&D EFFORT* (National Science Found., NTIS No. PB-277-366, 1977). Similarly Haklisch, Fusfeld, and Levenson found that 89% of the RJVs that they surveyed performed fundamental research, and that fundamental research represented 32% of the RJVs overall activities. HAKLISCH ET AL., *supra* note 32, at 18.

41. Grossman & Shapiro, *supra* note 16, at 333.

42. *Id.*; Katz, *supra* note 16, at 537.

43. *See* Grossman & Shapiro, *supra* note 16, at 326; Katz, *supra* note 16, at 540.

44. *See, e.g.*, Antitrust Div., U.S. Dep't of Justice, *Antitrust Guidelines for International Operations-1988*, 4 Trade Reg. Rep. (CCH) ¶ 13,109.10, at 20589-3 (1989) [hereinafter *International Guidelines*]; William F. Baxter, *Antitrust Law and Technological Innovation*, 1 ISSUES SCI. & TECH. 80, 85 (1985); Ordover & Baumol, *supra* note 16, at 30.

45. This limitation is chosen not only for expositional simplicity, but also because most of the bills currently being considered by Congress would not require PJVs to perform cooperative research to qualify for protection.

46. Joint ventures involving United States and foreign firms may be based on additional motivations, most importantly, the desire to gain access to foreign markets. *See* MICHAEL E. PORTER, *THE COMPETITIVE ADVANTAGE OF NATIONS* 66 (1990); David C. Mowery, *Collaborative Ventures Between U.S. and Foreign Manufacturing Firms: An Overview*, in *INTERNATIONAL COLLABORATIVE VENTURES IN U.S. MANUFACTURING* 12-15 (David C. Mowery ed., 1988); MOWERY & ROSENBERG, *supra* note 28, at 248-50.

47. *See, e.g.*, J. PETER KILLING, *STRATEGIES FOR JOINT VENTURE SUCCESS* 7-8 (1983); PORTER, *supra* note 46, at 66; Robert Pitofsky, *Joint Ventures under the Antitrust Laws: Some Reflections on the Significance of Penn-Olin*, 82 HARV. L. REV. 1007, 1015 (1969); Carl Shapiro & Robert D. Willig, *On the Antitrust Treatment of Production Joint Ventures*, 4 J. ECON. PERSP. 113, 114 (1990).

48. *See, e.g.*, C.F. PRATTEN, *ECONOMIES OF SCALE IN MANUFACTURING INDUSTRY* (1971) (compilation of studies for 25 industries); Leonard W. Weiss, *Optimal Plant Size and the Extent of Suboptimal Capacity*, in *ESSAYS ON INDUSTRIAL ORGANIZATION IN HONOR OF JOE S. BAIN* (Robert T. Masson & P. David Qualls eds., 1975). *See generally* SCHERER & ROSS, *supra* note 34, at 111-20 (reviewing empirical studies of minimum efficient scale relative to market size).

49. For example, in Japan there are nine competing automobile producers, six competing manufacturers of mainframe computers, and 34 competing producers of semiconductor chips. PORTER, *supra* note 46, at 412; *cf. 1989b House Hearing, supra* note 4, at 379 (statement of George Gilder) (in industries in which the Japanese surpassed the United States, "they had at least four times as many competitors in the marketplace").

50. Even for joint ventures among small numbers of firms there is reason to question the importance of scale economies as a motivating factor. For example, Mariti and Smiley found that only 11 of 70 cooperative agreements studied indicated that achieving economies of scale in production was a major motivating factor, and of those 11, six were in the automobile industry. P. Mariti & R.H. Smiley, *Cooperative Agreements and the Organization of Industry*, 31 J. INDUS. ECON. 437, 445 (1983); *cf. Jeffrey Pfeffer & Phillip Nowak, Patterns of Joint Venture Activity: Implications for Antitrust Policy*, 21 ANTITRUST BULL. 315, 328 (1976) (in a survey of 163 joint ventures, the median level of assets and sales of participants exceeded \$500 million, suggesting that firms of this size did not require joint ventures to achieve economies of scale).

51. *See 1987 Senate Hearings, supra* note 1, at 128 (statement of Richard C. Levin).

52. *See 1990 Senate Hearing, supra* note 4, at 23 (statement of Assistant Attorney General James F. Rill); Shapiro & Willig, *supra* note 47, at 114.

53. In the former case, the risks concern whether the product will prove commercially successful. In the latter case, however, additional uncertainties exist concerning whether the research will yield any information that could lead to a new product or process, in addition to generally longer lag times before these uncertainties are resolved. *See* EDWIN MANSFIELD ET AL., *THE PRODUCTION*

AND APPLICATION OF NEW INDUSTRIAL TECHNOLOGY 22-32 (1977); MOWERY & ROSENBERG, *supra* note 28, at 214; Dasgupta, *supra* note 18, at 6; *see also* Arrow, *supra* note 17, at 616 (discussing uncertainty connected with basic research); Nelson, *supra* note 17, at 298-300.

54. 1990 Senate Hearing, *supra* note 4, at 24 (statement of Assistant Attorney General James F. Rill); Shapiro & Willig, *supra* note 47, at 114.

55. Empirical studies of PJVs suggest that most involve a small number of firms. *See, e.g.*, SANFORD V. BERG ET AL., JOINT VENTURE STRATEGIES AND CORPORATE INNOVATION 35 (1982) (in survey of chemical joint ventures, 90% had only two parents); Albert N. Link & Gregory Tasse, *Editors' Introduction to COOPERATIVE RESEARCH AND DEVELOPMENT: THE INDUSTRY-UNIVERSITY-GOVERNMENT RELATIONSHIP* vii-viii (Albert N. Link & Gregory Tasse eds., 1989) (two-firm joint ventures are most common for applied R&D).

56. *See supra* text accompanying notes 29-32.

57. *See* Baxter, *supra* note 44, at 89-91; Grossman & Shapiro, *supra* note 16, at 332; Ordover & Baumol, *supra* note 16, at 30.

58. *See, e.g.*, Katz & Ordover, *supra* note 16, at 156; Katz, *supra* note 16, at 541; Shapiro & Willig, *supra* note 47, at 114-15; *cf.* Joseph F. Brodley, *Joint Ventures and Antitrust Policy*, 95 HARV. L. REV. 1521, 1552 (1982) ("Of all joint ventures, the horizontal is inherently the most anticompetitive . . . [T]he parents, through their representatives in the joint venture, will necessarily agree on prices and output in the very market in which they themselves operate.").

Even if the participants distribute the joint venture's product independently, they can accomplish the same socially costly goal by raising the price at which the joint venture transfers its product to the participants.

Moreover, even if the participants did not control the pricing of the joint venture's product and do not coordinate their actions, their common ownership interests result in the internalization of a competitive externality which can lead to an increase in price-cost margins. Robert J. Reynolds & Bruce R. Snapp, *The Competitive Effects of Partial Equity Interests and Joint Ventures*, 4 INT'L J. INDUS. ORGANIZATION 141, 142 (1986). *See generally* Timothy F. Bresnahan & Steven C. Salop, *Quantifying the Competitive Effects of Production Joint Ventures*, 4 INT'L J. INDUS. ORGANIZATION 155 (1986) (examining effect on competitive incentives of non-cooperating oligopolists participating in joint ventures under alternative control arrangements).

59. *See, e.g.*, Daniel R. Fusfeld, *Joint Subsidiaries in the Iron and Steel Industry*, 48 AMER. ECON. REV. 578, 585 (1958) (hypothesizing that joint ventures could be a mechanism through which emerging industries could be dominated by existing large firms in related industries); Walter J. Mead, *The Competitive Significance of Joint Ventures*, 12 ANTITRUST BULL. 819, 820-21 (1967) (finding that joint ventures formed to bid on government-owned property resulted in restrained bidding on subsequent bids).

60. If participants in a PJV collectively account for a large percentage of the competitors in the relevant product market, and if the participants do not independently manufacture goods that compete with the joint venture's products, then this may result in a significant reduction in research effort, since the participants need not worry that they will be preempted by new products resulting from other participants' research. *See* PORTER, *supra* note 46, at 621; *cf.* MOWERY & ROSENBERG, *supra* note 28, at 99 (weak British antitrust policy between the wars led to price and market-sharing agreements and "undercut the incentives for the pursuit of competitive advantage through innovation").

61. Brodley, *supra* note 58, at 1530-31; Jacquemin & Slade, *supra* note 39, at 438-39; Pitofsky, *supra* note 47, at 1030. Econometric analyses of a large sample of U.S. joint ventures in a number of industries further suggest that where the participants are horizontal competitors, a potential for market-power augmentation exists. Sanford V. Berg & Philip Friedman, *Impacts of Domestic Joint Ventures on Industrial Rates of Return: A Pooled Cross-Section Analysis, 1964-1975*, 63 REV. ECON. & STAT. 293, 295 (1981); Jerome L. Duncan, Jr., *Impacts of New Entry and Horizontal Joint Ventures on Industrial Rates of Return*, 64 REV. ECON. & STAT. 339 (1982).

62. Brodley, *supra* note 58, at 1530-31; Reynolds & Snapp, *supra* note 58, at 148-49; *see also* Richard N. Clarke, *Collusion and the Incentives for Information Sharing*, 14 BELL J. ECON. 383, 384 (1983) (pooling of information "makes cheating more difficult and collusive quantity restriction more effective by improving the accuracy of every firm's market estimates"); *cf.* Walter Adams & James W. Brock, *The "New Learning" and the Euthanasia of Antitrust*, 74 CAL. L. REV. 1515, 1527-37 (1986) (discussing use of transnational joint ventures to solidify cartels and enforce oligopolistic collusion).

63. *See, e.g.*, KATHRYN R. HARRIGAN, STRATEGIES FOR JOINT VENTURES 380 (1985); Grossman & Shapiro, *supra* note 16, at 334; David C. Mowery, *Collaborative Research and High-Temperature Superconductivity*, in COOPERATIVE RESEARCH AND DEVELOPMENT, *supra* note 55, at 151; MOWERY & ROSENBERG, *supra* note 28, at 241; Ordover & Baumol, *supra* note 16, at 30; Section of Antitrust Law, A.B.A., Recommendations and Report on Production Joint Venture Legislation 6 (Sept. 1, 1989) (unpublished manuscript, on file with the author) [hereinafter ABA Production Joint Venture Report].

64. *See* Brodley, *supra* note 58, at 1532; Jacquemin & Slade, *supra* note 39, at 439; Lawrence A. Sullivan, *The Viability of the Current Law on Horizontal Restraints*, 75 CAL. L. REV. 835, 868 (1987); *see also* 1989b House Hearing, *supra* note 4, at 199, 359, 374 (statements of Dr. T.J. Rogers, President and Chief Executive Officer of Cypress Semiconductor Corporation; Mr. D.R. Coelho, Chairman of Vantage Analysis Systems, Inc.; and Dr. L.R. Tomasetta, President and Chief Executive Officer of Vitesse Semiconductor Corporation) (detailing disadvantages of entrepreneurial firms when research consortia begin performing competing research). *See generally* PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: 1990 SUPPLEMENT ¶¶ 736.1-.2 (1990) (discussing case law and applications of essential facilities doctrine).

65. *See* Brodley, *supra* note 58, at 1552; Pitofsky, *supra* note 47, at 1031; *cf.* Fusfeld, *supra* note 59; Mead, *supra* note 59 (discussing possible anticompetitive effects of horizontal joint ventures in the iron and steel industry and in the bidding for oil and gas leases).

66. *See* International Guidelines, *supra* note 44, at 20,600; Brodley, *supra* note 58, at 1541-42.

67. *See, e.g.*, 1990 Senate Hearing, *supra* note 4, at 63 (letter from James F. Rill, Assistant Attorney General, Antitrust Div., to Sen. Metzenbaum); 1989b House Hearing, *supra* note 4, at 129 (statement of Edward Rock); Brodley, *supra* note 58, at 1555-56; ABA Production Joint Venture Report, *supra* note 63, at 34. *But see supra* note 58.

68. *See* Grossman & Shapiro, *supra* note 16, at 329; Stockdale, *supra* note 21, at 80.

69. *Cf.* Brodley, *supra* note 58, at 1560-61.

If the parent must procure the input from the joint venture, regulation of the joint venture's output effectively controls the output of the parents. Moreover, in establishing the production level of the joint venture, the parents necessarily reveal their own output plans and thus diminish the uncertainty necessary for effective competition

Id.

70. *See id.* at 1563-65; ABA Production Joint Venture Report, *supra* note 63, at 14.

71. Joint venture participants often disagree on such fundamental matters as the goals of the venture, likely developments in technology or the market, and the relative contributions of the parents. *See, e.g.*, KILLING, *supra* note 47, at 8; PORTER, *supra* note 46, at 66; MOWERY & ROSENBERG, *supra* note 28, at 247; Michael E. Porter & Mark B. Fuller, *Coalitions and Global Strategy in COMPETITION IN GLOBAL INDUSTRIES* 326 (Michael E. Porter ed., 1986).

72. In the case of research consortia involving large numbers of participating firms, the Department of Commerce has estimated that one year is "the minimum time required to reach agreement on the research agenda and other management issues." Link & Tasse, *supra* note 55, at xix; *see also* 1989a House Hearing, *supra* note 4, at 74 (statement of Claude E. Barfield, American Enterprise Institute) ("Organizational difficulties will be [sic] tend to vary inversely with the number of firms involve [sic]: the more firms involved, the more illusive [sic] a consensus on agenda, increased potential for conflict in business cultures, and increased likelihood that the purpose of [the] venture will be defeated."); George R. Heaton, Jr., *The Truth About Japan's Cooperative R&D*, 5 ISSUES SCI. & TECH. 32, 37 (1988) (among Japanese RJVs, "[a]s the membership increases, the difficulties in agreeing on a technical agenda rise proportionately; the larger the group, the less ambitious and more basic the research aims tend to be").

73. Based on a study of 37 joint ventures, J. Peter Killing found that management problems occurred not only at the board level of the parent firms but also at the management level of the joint venture itself. This latter problem occurred because the management staff of the joint venture tended to be drawn from the various parent organizations, and the working relationship among managers from different parents tended to be strained and inefficient. KILLING, *supra* note 47, at 9-10. A subsequent study of over 400 joint ventures found that decisionmaking was more cumbersome in joint ventures compared with a wholly-owned subsidiary and that it was "more difficult to get something done quickly." HARRIGAN, *supra* note 63, at 373. It further found that joint ventures having a 50-50

ownership split were disfavored by some parent managers, because this further slowed and complicated decisionmaking. *Id.* at 368.

74. See PORTER, *supra* note 46, at 66; Porter & Fuller, *supra* note 71, at 326. In some cases, a product developed independently by one of the participants may compete with jointly developed products, leading to the demise of the venture. See MOWERY & ROSENBERG, *supra* note 28, at 247; see also Mariti & Smiley, *supra* note 50, at 446 (giving examples of joint venture participants that were injured by the joint venture itself or by their partners).

75. See, e.g., HARRIGAN, *supra* note 63, at 344-47; Stockdale, *supra* note 21, at 252-53.

76. See, e.g., MOWERY & ROSENBERG, *supra* note 28, at 225; Shapiro & Willig, *supra* note 47, at 114; Stockdale, *supra* note 21, at 252. Microelectronics and Computer Technology Corporation (MCC) presents a clear example of this problem. Initially, MCC was designed to be operated with a staff drawn from its member companies. The members, however, sent their less able researchers. After MCC rejected 90% of the researchers sent by the member firms, it staffed its laboratories primarily with outside personnel. See HARRIGAN, *supra* note 63, at 231; MOWERY & ROSENBERG, *supra* note 28, at 270; cf. ALBERT N. LINK & LAURA L. BAUER, COOPERATIVE RESEARCH IN U.S. MANUFACTURING: ASSESSING INITIATIVES AND CORPORATE STRATEGIES 95 (1989) (discussing complaints of chemical firm researchers participating in RJVs, who believed that none of the participants were sending their best scientists). Moreover, these same problems appear to have plagued the much-touted Japanese research joint ventures. See *id.* at 225; PORTER, *supra* note 46, at 635.

77. Frequently, participants will insist on confidentiality agreements that prevent a joint venture from disclosing information concerning one participant to another. See HARRIGAN, *supra* note 63, at 344-45; Stockdale, *supra* note 21, at 251. In other cases, such as the joint development of the International Aero Engines V2500 jet engine, the partners will each be assigned separate development of particular components in order to minimize technology transfer, even if this causes inefficiency. See DAVID C. MOWERY, ALLIANCE POLITICS AND ECONOMICS: MULTINATIONAL JOINT VENTURES IN COMMERCIAL AIRCRAFT 94-95 (1987).

78. See HAKLISCH ET AL., *supra* note 32, at 2; Link & Tassej, *supra* note 55, at viii, xii. Despite this focus, many firms have refused to participate, either because they believe they will be able to gain access to the research results without participating or because they fear disclosing sensitive proprietary information. WOLEK, *supra* note 40, at 130-33, 151-59; Johnson, *supra* note 24, at 80-81. And those who do join appear willing to contribute only modest amounts to the cooperative effort. See Stockdale, *supra* note 21, at 252; cf. HAKLISCH ET AL., *supra* note 32, at 16 (cooperative research at research consortia accounted for only 1.2% of total national R&D expenditures by industry in 1982).

79. Based on a questionnaire survey and interviews of firms participating in joint ventures, Professor Berg and colleagues concluded:

The ranking of alternatives to JVs was similar across firms. A wholly controlled internal project was deemed most preferable, everything else being equal. Where feasible, a merger ran second as a way to enter new markets. Since joint ventures provide an equity position, they were preferred to licensing by some firms; others asserted that the coordination problems of a joint venture render that interfirm linkage undesirable.

BERG ET AL., *supra* note 55, at 45 (1982); cf. HARRIGAN, *supra* note 63, at 56-57 (based on a study of over 400 joint ventures, the author concluded that the "most likely candidates for joint ventures are firms that lack the capabilities, strengths, or resources needed to exploit business opportunities alone," and that joint ventures "will not occur unless firms need to diversify, acquire new skills and resources, consolidate their positions, or attain objectives that they cannot reach alone"); PORTER, *supra* note 46, at 67 ("Alliances [of which joint ventures are a type] appear to be most common among second-tier competitors or companies trying to catch up.").

80. See *supra* note 55; cf. LINK & BAUER, *supra* note 76, at 28 (survey of early filings under NCRA found that degree of appropriability and average number of joint venture participants are inversely related).

There are three major exceptions to this generalization: Bell Communications Research, Inc. (Bellcore), the Electric Power Research Institute, and the Gas Research Institute. These RJVs conduct not only significant basic research but also considerable applied research. It is plausible that the participants agreed to cooperate in applied research in these cases, because they are all subject to regulation and hence do not view themselves as competitors. See HAKLISCH ET AL., *supra* note 32, at 200.

81. See *supra* note 77.

82. Katz & Ordoover, *supra* note 16, at 156; Stockdale, *supra* note 21, at 80.

83. *Id.* at 253; cf. William G. Ouchi & Michele K. Bolton, *The Logic of Joint Research and Development*, 30 CAL. MGMT. REV. 9, 27 (1988) ("Most of the inter-corporate R&D which has occurred consists of contractual joint development of a new, applied technology by two companies at different stages in the vertical stream of an industry.").

84. See *supra* text accompanying notes 56-57.

85. See, e.g., 1990 Senate Hearing, *supra* note 4, at 35 (statement of Robert A. Mosbacher, Secretary of Commerce); 1989b House Hearing, *supra* note 4, at 57, 185-87 (statements of Rep. Thomas Campbell & Gordon E. Moore); Jorde & Teece (1989a), *supra* note 4, at 38-41.

86. In contrast to PJVs today, evidence exists that, in the early 1980s, uncertainty concerning the legality of *research* joint ventures may have deterred their formation and justified the special treatment accorded them under the NCRA. There were several factors that contributed to this uncertainty on the part of potential RJV participants. First, in one of the few decided cases involving RJVs, the Government had successfully challenged a RJV, made up of the three major automobile manufacturers, which had sought to develop automobile pollution reduction technology. See *United States v. Automobile Mfrs. Ass'n*, 1969 Trade Cas. (CCH) ¶ 72,907 (C.D. Cal. 1969); see also SULLIVAN, *supra* note 29, at 301-03. Second, in several business review proceedings, the Antitrust Division either indicated an intention to challenge proposed RJVs should the participants pursue their plans, see ANTITRUST DIV., U.S. DEPT OF JUSTICE, ANTITRUST GUIDE CONCERNING RESEARCH JOINT VENTURES app. B., at 5, 9 (1980) [hereinafter ANTITRUST RJV GUIDE], made burdensome requests for information and unreasonably delayed in giving consent, see Stockdale, *supra* note 21, at 201-02, 228, 254; ABA Production Joint Venture Report, *supra* note 67, at 22 n.4, or refused to provide a definite answer, ANTITRUST RJV GUIDE, *supra*, app. B, at 13-15. Third, the Antitrust Division's 1980 *Antitrust Guide Concerning Research Joint Ventures*, while ostensibly intended to reduce legal uncertainty and encourage cooperative research, may have had the opposite effect. For example, the *Antitrust Guide's* general opposition to industry-wide research consortia, *id.* at 11, its statement that certain collateral restraints are per se illegal, *id.* at 14-15, and its suggestion that denying competitors access to a RJV, either *ex ante* or *ex post*, might constitute a per se violation of section 1 of the Sherman Act, *id.* at 22, could easily have discouraged firms from participating in RJVs. See Stockdale, *supra* note 21, at 114-22; see also 1990 Senate Hearing, *supra* note 4, at 93 (statement of Joseph Brodley). Finally, the courts had yet to issue certain decisions clarifying the appropriate method for analyzing joint ventures. See *infra* Section IV.B.

Further support for this view is found in the fact that 145 RJVs were notified in the first five years after passage of the NCRA, while only 21 RJVs were formed in the three years prior to the NCRA. See Brodley, *supra* note 6, at 100.

87. See *infra* Section IV.D.

88. See *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*, 472 U.S. 284 (1985); *National Collegiate Athletic Ass'n v. Board of Regents of Univ. of Okla.*, 468 U.S. 85 (1984); *Broadcast Music, Inc. v. Columbia Broadcasting Sys.*, 441 U.S. 1 (1979).

Even before these decisions were rendered, the Supreme Court had generally applied the rule of reason in evaluating joint ventures. See, e.g., *United States v. Penn-Olin Chem. Co.*, 378 U.S. 158 (1964); see also E. THOMAS SULLIVAN & JEFFREY L. HARRIS, UNDERSTANDING ANTITRUST AND ITS ECONOMIC IMPLICATIONS 102 (1988) (Supreme Court sanctioned "broad rule of reason . . . for joint ventures" in *Chicago Bd. of Trade v. United States*, 246 U.S. 231 (1918)); Brodley, *supra* note 58, at 1534-35 ("Although joint ventures may be challenged under each of the three major antitrust statutes . . . [t]he guiding legal principle is the Rule of Reason, except in cases of flagrant cartel practices . . .").

Nevertheless, in some earlier cases, the Supreme Court held ancillary restraints to joint marketing efforts to be per se illegal. See *United States v. Topco Assoc., Inc.*, 405 U.S. 596 (1972); *United States v. Sealy, Inc.*, 388 U.S. 350 (1967); *Timken Roller Bearing Co. v. United States*, 341 U.S. 593 (1951). Although no decision has explicitly overruled these cases, a number of scholars have suggested that subsequent Supreme Court decisions have implicitly overruled them. See, e.g., *Rothery Storage & Van Co. v. Atlas Van Lines*, 792 F.2d 210, 226-27 (D.C. Cir. 1986) (Bork, J.), *cert. denied*, 479 U.S. 1033 (1987); Martin B. Louis, *Restraints Ancillary to Joint Venture and Licensing Agreements: Do Sealy and Topco Logically Survive Sylvania and Broadcast Music?*, 66 VA. L. REV. 879, 880 (1980).

89. 441 U.S. 1 (1979).

90. *Id.* at 9.

91. 441 U.S. at 20 (quoting *White Motor Co. v. United States*, 372 U.S. 253, 263 (1963)).

92. *Id.* at 10.

93. 468 U.S. 85 (1984).

94. *Id.* at 97.

95. *Id.* at 101.

96. *Id.* at 101-02.

97. 472 U.S. 284 (1985).

98. *Id.* at 294.

99. *Id.* at 296.

100. 792 F.2d 210 (D.C. Cir. 1986), *cert. denied*, 479 U.S. 1033 (1987).

101. *Id.* at 229.

102. 776 F.2d 185 (7th Cir. 1985).

103. *Id.* at 188-91; *see also* *National Bancard Corp. v. VISA U.S.A.*, 779 F.2d 592 (11th Cir. 1986) (interchange fee charged by VISA not a naked restraint of competition and therefore not per se price fixing), *cert. denied*, 479 U.S. 923 (1986); *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 299-302 (2d Cir. 1979) (joint R&D between monopolist in one market and major firm in complementary market not a per se violation of section 1), *cert. denied*, 444 U.S. 1093 (1980).

104. *Broadcast Music, Inc. v. Columbia Broadcasting Sys.*, 441 U.S. 1, 20 (1979) (quoting *White Motor Co. v. United States*, 372 U.S. 253, 263 (1963)).

105. *International Guidelines*, *supra* note 44, at 20,600.

106. *Id.* In a footnote, the Antitrust Division explains that, in determining whether to apply the rule of reason, it does not consider whether the "economic integration involved in the particular transaction actually would generate efficiencies. It is enough if the form of integration involved in general generates efficiencies." *Id.* at 20,594 n.47. However, if a purported joint venture involves no economic integration, but rather is "simply a device to restrict output or raise price," then it will not hesitate to challenge it. *Id.* at 20,600.

107. If, under its Merger Guidelines, the Division would not challenge the merger of the joint venture participants, then it will conclude that the joint venture and any associated restraints are unlikely to have any anticompetitive effects in the joint venture market. *Id.* Moreover, even if a merger of the participants would raise concern, the Division recognizes that a joint venture "may have a less restrictive effect on the independent decision-making of the joint venture participants with respect to output and price than would an outright merger," and accordingly may treat the joint venture more leniently. *Id.* at 20,601.

108. The Antitrust Division acknowledges that a "joint venture may . . . include operational or procedural safeguards that substantially eliminate any risk of anticompetitive spill-over effects," *id.*, and states that the presence of such safeguards may render an elaborate structural analysis of the spill-over market(s) unnecessary, *id.* at 20,602. In the absence of such safeguards, the Division will perform a market-power analysis using the same factors it uses in merger analysis. *Id.*

109. *Id.* The Division emphasizes that selectivity in choosing partners may be important to the success of a joint venture and that, accordingly, it will be concerned with the exclusion of rivals only if "(i) an excluded firm cannot compete in a related market or markets . . . without having access to the joint venture and (ii) there is no reasonable basis related to the efficient operation of the joint

venture for excluding other firms." *Id.* (footnote omitted).

110. *Id.* The Division notes, however, that it "will not recognize claimed efficiencies if it is clear that equivalent efficiencies can be achieved by means that involve no anticompetitive effect." *Id.*

111. *See, e.g.,* General Motors Corp., 103 F.T.C. 374 (1984) (General Motors and Toyota, the world's first and third largest automobile manufacturers, allowed to enter into PJV, partially because it would permit the diffusion of existing production techniques and know-how from Toyota to G.M., despite producing an existing Toyota model rather than a new product).

112. 1990 Senate Hearing, *supra* note 4, at 39 (letter from Bruce C. Navarro, Acting Assistant Attorney General).

113. *Id.* at 229-30 (letter from Janet D. Steiger, Chairman, FTC).

114. *See, e.g.,* United States v. Ivaco, 704 F. Supp. 1409 (W.D. Mich. 1989) (enjoined joint venture which would combine operations of two of three remaining producers of automatic tampers to create firm holding 70% of the relevant market). *See generally* H.R. REP. NO. 516, *supra* note 5, at 8; Brodley, *supra* note 6, at 101.

115. *See, e.g.,* HOUSE COMM. ON THE JUDICIARY, 98TH CONG., 2D SESS., STUDY OF ANTITRUST TREBLE DAMAGE REMEDY 31 (Comm. Print 1984) (prepared by G. Garvey) (reduction in number of private suits filed in recent years may be due to new judicial commitment to rule of reason); Steven C. Salop & Lawrence J. White, *Economic Analysis of Private Antitrust Litigation*, 74 GEO. L.J. 1001, 1019 (1986) ("A plaintiff is more likely to sue when his perceived probability of success is greater, [and] when his litigation costs are lower . . .").

116. *See, e.g.,* Cargill, Inc. v. Monfort of Colo., Inc., 479 U.S. 104 (1986); Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477 (1977), *cert. denied*, 429 U.S. 1090 (1977).

117. 431 U.S. 720 (1977) (holding that, in general, indirect purchasers are barred from recovering for overcharges allegedly passed down to the plaintiff purchaser through a chain of distribution).

118. The Georgetown antitrust project collected data on all private antitrust actions filed between 1973 and 1983 in five federal districts. Of those, usable data was obtained on 2357 cases. *See* Steven C. Salop & Lawrence J. White, *Private Antitrust Litigation: An Introduction and Framework*, in PRIVATE ANTITRUST LITIGATION: NEW EVIDENCE, NEW LEARNING 3-4 (Lawrence J. White ed., 1988).

119. *See* Stephen Calkins, *Equilibrating Tendencies in the Antitrust System, with Special Attention to Summary Judgment and to Motions to Dismiss*, in PRIVATE ANTITRUST LITIGATION, *supra* note 118, at 185, 200, 207; Stephen Calkins, *Summary Judgment, Motions to Dismiss, and Other Examples of Equilibrating Tendencies in the Antitrust System*, 74 GEO. L.J. 1065, 1127 (1986) [hereinafter Calkins (1986)].

In addition, the success of such motions may well increase following the Supreme Court's decision in Matsushita Electric Industrial Co. v. Zenith Radio Corp., 475 U.S. 574 (1986). *See, e.g.,* International Distrib. Ctrs., Inc. v. Walsh Trucking Co., 812 F.2d 786 (2d Cir.), *cert. denied*, 482 U.S. 915 (1987) (summary judgment for defendants in section 2 monopolization case); *In re* Apollo Air Passenger Computer Reservation Sys., 720 F. Supp. 1068 (S.D.N.Y. 1989) (summary judgment for defendant in antitrust challenge to computer reservation system); Florida Fuels v. Belcher Oil, 717 F. Supp. 1528 (S.D. Fla. 1989) (summary judgment for defendants in section 2 essential facilities claim). *See generally* Calkins (1986), *supra*, at 1127; John T. Soma & Andrew P. McCallin, *Summary Judgment and Discovery Strategies in Antitrust and RICO Actions after Matsushita v. Zenith*, 36 ANTITRUST BULL. 325 (1991); ABA Production Joint Venture Report, *supra* note 63, at 34.

120. ANNUAL REPORT OF THE DIRECTOR OF THE ADMINISTRATIVE OFFICE OF THE UNITED STATES COURTS Table C-2 (1977), (1980), & (1990).

121. Salop & White, *supra* note 118, at 6.

122. 1989a House Hearing, *supra* note 4, at 45 (statement of James Rill, Assistant Attorney General, Antitrust Division).

123. HARRIGAN, *supra* note 63, at 7. *See also* Link & Tassej, *supra* note 55, at vii (joint ventures involving two or three firms increased from less than 200 per year in the 1970s to more than 400 per year by the mid-1980s); Mowery, *supra* note 46, at 3 (in recent years, the number of domestic and international collaborations involving U.S. firms has increased considerably).

124. *See, e.g.*, Katz & Ordover, *supra* note 16, at 170 (between January 1985 and July 1989, U.S. firms formed over 140 joint ventures in the semiconductor industry); Shapiro & Willig, *supra* note 47, at 117 (there has been a "decade-long trend in the distribution of joint venture formations" from energy, chemical, and metals industries "towards computer, electronic components, communications systems, pharmaceuticals, medical equipment, and financial services industries").

125. KAREN J. HLADIK, INTERNATIONAL JOINT VENTURES: AN ECONOMIC ANALYSIS OF U.S.-FOREIGN BUSINESS PARTNERSHIPS 39 (1985).

126. MOWERY & ROSENBERG, *supra* note 28, at 243 n.5.

127. *See* Brodley, *supra* note 6, at 101; Shapiro & Willig, *supra* note 47, at 117; Richard Brandt et al., *IBM and Microsoft: They're Still Talking, But . . .*, BUS. WK., Oct. 1, 1990, at 164; Deidre A. Depke & Kathy Rebello, *IBM-Apple Could Be Fearsome*, BUS. WK., Oct. 7, 1991, at 28.

128. ABA Production Joint Venture Report, *supra* note 63, at 20; *cf.* MOWERY & ROSENBERG, *supra* note 28, at 253 ("There is little evidence to support the argument that U.S. antitrust policy is a central factor in the decisions of American firms to collaborate with foreign [rather than with domestic] enterprises.").

129. *See, e.g.*, 1990 Senate Hearing, *supra* note 4, at 23 (statement of James F. Rill, Assistant Attorney General, Antitrust Division); 1989b House Hearing, *supra* note 4, at 55-56 (statement of Rep. Tom Campbell); H. R. REP. NO. 516, *supra* note 5, at 1; Jorde & Teece (1990), *supra* note 4, at 81.

130. *See, e.g.*, 1989a House Hearing, *supra* note 4, at 12-13 (statement of Rep. Thomas Campbell); 1989b House Hearing, *supra* note 4, at 182-84 (statement of G. Moore, Chairman, Intel Corp.).

131. *See supra* text accompanying note 48.

132. 1990 Senate Hearing, *supra* note 4, at 78 (statement of Michael Porter).

133. *See* Andrew Kupfer, *The U.S. Wins One in High-Tech TV*, FORTUNE, Apr. 8, 1993, at 60, 63; Lucy Reilly, *Making HDTV All-Digital Delays FCC Selection*, WASH. TECH., Apr. 9, 1992, at 6.

134. Jorde & Teece (1989a), *supra* note 4, at 14-15; *see also* MOWERY & ROSENBERG, *supra* note 28, at 8 (arguing that many primary sources of innovation are located downstream and operate independently of frontier scientific research); Jorde & Teece (1990), *supra* note 4, at 77 (referring to the "simultaneous model of innovation").

135. Jorde & Teece (1989a), *supra* note 4, at 15.

136. Jorde & Teece (1990), *supra* note 4, at 82-84.

137. *See supra* text accompanying note 78.

138. *See supra* text accompanying note 73.

139. *See, e.g.*, Jorde & Teece (1989a), *supra* note 4, at 4; Jorde & Teece (1990), *supra* note 4, at 91; *see also* 1989a House Hearing, *supra* note 4, at 32 (statement of James F. Rill, Assistant Attorney General, Antitrust Division) ("[I]ncreasing globalization of markets, particularly those incorporating advanced technologies, has dramatically reduced the risk that cooperative production efforts among some competitors would result in higher prices to American consumers.").

140. *See* H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10 (1984); International Guidelines, *supra* note 44, at 20,625; Ordover & Baumol,

supra note 16, at 30.

141. Baxter, *supra* note 44, at 89.

142. See Diane P. Wood, *Commentary: Antitrust and International Competitiveness in the 1990s*, 58 ANTITRUST L.J. 591, 600-01 (1989); see also ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, COMPETITION AND TRADE POLICIES: THEIR INTERACTION 49 (1984) ("VERs . . . ultimately involve actions by exporting firms to limit their volume of exports, and in some instances, to raise prices. This, in turn, can promote collusive behavior among firms and weaken competitive forces in both markets.").

143. See, e.g., GARY C. HUFBAUER & HOWARD F. ROSEN, TRADE POLICY FOR TROUBLED INDUSTRIES 15 (1986); PAUL R. KRUGMAN & MAURICE OBSFELD, INTERNATIONAL ECONOMICS: THEORY AND POLICY 191 (1988).

144. The Antitrust Division recognizes that trade restrictions can limit the competitive significance of foreign competitors and considers the existence of such restrictions in performing market analysis. See, e.g., Merger Guidelines § 3.23, 49 Fed. Reg. 26,823 (Antitrust Div., Dep't of Justice 1984), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,103 at 20,551, 20,561 (1984); International Guidelines, *supra* note 44, at 20,598. It can not, however, anticipate the effect of trade restraints that have yet to be imposed.

145. See, e.g., 1990 Senate Hearing, *supra* note 4, at 131-32 (statement of David J. Teece); 1989b House Hearings, *supra* note 4, at 278-79 (statement of J.D. Kuehler, President, IBM Corporation); Jorde & Teece (1989a), *supra* note 4, at 27-33, 55-61.

146. 1990 Senate Hearing, *supra* note 4, at 79 (statement of Michael Porter). However, Japanese companies are increasingly entering into PJVs with non-Japanese firms. Shapiro & Willig, *supra* note 47, at 122.

147. Heaton, *supra* note 72, at 34. Moreover, only six percent of these 250 companies belonged to technology research associations, and those that belonged performed only a small fraction of their research in the associations. *Id.* at 34-35.

148. The engineering research associations (ERAs), were created by MITI in the 1960s and copied after the British Research Associations. See David B. Audretsch, *Joint R&D and Industrial Policy in Japan*, in COOPERATIVE RESEARCH AND DEVELOPMENT, *supra* note 55, at 106-07 (discussing differences between Japanese and British research associations); see also JOHNSON, *supra* note 24 (discussing development and operation of British Research Associations). The ERAs' principal function was to coordinate various member research projects and facilitate the exchange and diffusion of technological information. Audretsch, *supra*, at 107; Heaton, *supra* note 72, at 33. Most of the ERAs were quite modest in scope, and, because they lacked physical premises, research was performed in the laboratories of the member companies. See MOWERY & ROSENBERG, *supra* note 28, at 223; Heaton, *supra* note 72, at 33.

149. MOWERY & ROSENBERG, *supra* note 28, at 223; Audretsch, *supra* note 148, at 110-11. Among the more famous of these projects were the Very Large Scale Integration (VLSI) project of 1976-1979, the project that attempted to develop a fourth-generation computer, see, e.g., Audretsch, *supra* note 148, at 112; Merton J. Peck, *Joint R&D: The Case of Microelectronics and Computer Technology Corporation*, 15 RES. POL'Y 219, 222 (1986), the 3.75 Computer project of 1972-76, see Daniel I. Okimoto, *Regime Characteristics of Japanese Industrial Policy*, in JAPAN'S HIGH-TECHNOLOGY INDUSTRIES: LESSONS AND LIMITATIONS OF INDUSTRIAL POLICY 35, 54 (Hugh Patrick ed., 1987), and the Fifth Generation Computer project, *id.* at 52.

150. *Id.* at 54; MOWERY & ROSENBERG, *supra* note 28, at 223, 225; Heaton, *supra* note 72, at 33, 37. Professor Porter sees an additional purpose for these consortia. He views them as a "signaling device to indicate important areas for long-term research attention, and as a stimulus to proprietary company research." PORTER, *supra* note 46, at 398; see also Okimoto, *supra* note 149, at 52.

151. George C. Eads & Richard R. Nelson, *Japanese High Technology Policy: What Lessons for the United States?*, in JAPAN'S HIGH-TECHNOLOGY INDUSTRIES, *supra* note 149, at 254; Heaton, *supra* note 72, at 35-37; see also Okimoto, *supra* note 149, at 52 (Japanese consortia tend to focus on the "development of precommercial prototype models").

152. MOWERY & ROSENBERG, *supra* note 28, at 225; PORTER, *supra* note 46, at 398; see also Okimoto, *supra* note 149, at 54 ("for the first several years, mutual suspicion and concerns about the leakage of proprietary information impeded the free exchange of information" in the VLSI project).

153. *Id.* at 53.

154. *See* MOWERY & ROSENBERG, *supra* note 28, at 226.

155. *See* Heaton, *supra* note 72, at 37, 39.

156. *See* NATIONAL SCIENCE BD., SCIENCE AND TECHNOLOGY INTEGRATION IN EUROPE AND INFLUENCES ON U.S.-EUROPEAN COOPERATION 1 (1990) [hereinafter NSB REPORT]; OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, COMPETING ECONOMIES: AMERICA, EUROPE, AND THE PACIFIC RIM 29 (1991) [hereinafter OTA REPORT]; MARGARET SHARP & CLAIRE SHEARMAN, EUROPEAN TECHNOLOGICAL COLLABORATION 42-74 (1987); Roy Rothwell, *Public Innovation Policies: Some International Trends and Comparisons*, 12 PAPERS IN SCI. TECH. & PUB. POL'Y 13-14 (1986).

157. OTA REPORT, *supra* note 156, at 29; SHARP & SHEARMAN, *supra* note 156, at 47-53.

158. NSB REPORT, *supra* note 156, at 1; OTA REPORT, *supra* note 156, at 29; SHARP & SHEARMAN, *supra* note 156, at 56-62.

159. NSB REPORT, *supra* note 156, at 2; OTA REPORT, *supra* note 156, at 29; SHARP & SHEARMAN, *supra* note 156, at 63-65.

160. OTA REPORT, *supra* note 156, at 29. EUREKA is not an EC program, though all the EC member countries and the EC Commission itself are members. *Id.*

161. OTA REPORT, *supra* note 156, at 29; SHARP & SHEARMAN, *supra* note 156, at 71.

162. The U.S. International Trade Commission estimated that less than 10% of EUREKA's funding comes from public sources. U.S. INT'L TRADE COMM'N, 1992: THE EFFECTS OF GREATER ECONOMIC INTEGRATION WITHIN THE EUROPEAN COMMUNITY ON THE UNITED STATES: SECOND FOLLOWUP REPORT 16-10 (1990) [hereinafter ITC REPORT].

163. According to a 1990 estimate by the U.S. International Trade Commission, public funding of the FRAMEWORK program will amount to about ECU 5.7 billion (\$6.7 billion) from 1990-94. *Id.* at 16-6.

164. Numerous and varied criticisms have been leveled against these programs. First, some have criticized the way project participants are selected, suggesting both that small- and medium-sized firms do not have sufficient access, *see, e.g.*, Leigh Bruce, *EUREKA Has Found It*, INT'L MGMT., Dec. 1987, at 38, 41, and that projects are being forced to accept firms that merely seek a free ride. *See* OTA REPORT, *supra* note 156, at 29. A number of projects involving a large number of participants have also been criticized for experiencing management problems. DIRECTORATE GEN. XIII, TELECOMMUNICATIONS, INFO. INDUS. & INNOVATION, THE REVIEW OF ESPRIT, 1984-1988: THE REPORT OF THE ESPRIT REVIEW BOARD 9 (1989) [hereinafter ERB REPORT]. Others have criticized the procedures for selecting research projects. *See, e.g.*, SHARP & SHEARMAN, *supra* note 156, at 74. The research projects selected have also been criticized for being on the periphery of firms' true concerns, ERB REPORT, *supra*, at 8, and for producing little commercially useful technology. Guy de Jonquieres, *ESPRIT, JESSI Come Under Attack*, NEW TECH. WK., Nov. 5, 1990; *see also* ERB REPORT, *supra*, at 8. Finally, and most importantly, questions have been repeatedly raised whether the programs are improving the competitiveness of EC firms or making them more dependent on government subsidies. *See, e.g.*, OTA REPORT, *supra* note 156, at 29; Bruce, *supra*, at 41; Jonquieres, *supra*.

165. Article 86 of the Treaty may also prove applicable if the parties individually or collectively enjoy a dominant position before the formation of the venture. *See* 2 BARRY E. HAWK, UNITED STATES, COMMON MARKET AND INTERNATIONAL ANTITRUST: A COMPARATIVE GUIDE 308 & n.65 (2d ed. 1990); Frank L. Fine, *EEC Antitrust Aspects of Production Joint Ventures*, 26 INT'L LAW. 89, 90 (1992).

166. Article 85(1) provides:

1. The following shall be prohibited as incompatible with the common market: all agreements between undertakings; decisions by associations of undertakings; and concerted practices which may affect trade between Member States and which have as their objective or effect the prevention, restriction, or distortion of competition within the common market, and in particular those which:

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;
- (b) limit or control production, markets, technical development, or investment;
- (c) share markets or sources of supply;
- (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
- (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

TREATY ESTABLISHING THE EUROPEAN ECONOMIC COMMUNITY [EEC TREATY] art. 85(1).

167. Under Regulation 17, the Commission may fine the parties up to 1 million ECU or 10% of the parties' preceding year's turnover, whichever is greater. Council Regulation 17/62 of 21 February 1962, Premier règlement d'application des articles 85 et 86 du traité, art. 15(2), 1962 J.O. (13) 204. *See generally* 2 HAWK, *supra* note 165, at 20; Sara G. Zwart, *Innovate, Integrate, and Cooperate: Antitrust Changes and Challenges in the United States and the European Economic Community*, 1989 UTAH L. REV. 63, 80 & n.74.

168. *See* Council Regulation 17/62, *supra* note 167, art. 2. A negative clearance basically is a Commission determination that an agreement does not violate article 85(1). *See* Zwart, *supra* note 167, at 80 n.75.

169. Article 85(3) provides:

The provisions of paragraph 1 may, however, be declared inapplicable in the case of:

- any agreement or category of agreements between undertakings;
- any decision or category of decisions by associations of undertakings;
- any concerted practice or category of concerted practices;

which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

- (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
- (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

See Commission Notice Concerning Assessment of Cooperative Joint Ventures Pursuant to Article 85 of the EEC Treaty, 1993 O.J. (C 43) 2 (describing Commission's procedures for evaluating cooperative joint ventures under article 85) [hereinafter Notice Concerning Cooperative Joint Ventures].

170. *See* 2 HAWK, *supra* note 165, at 310, 314; Fine, *supra* note 165, at 93-94, 98-101.

171. Fine, *supra* note 165, at 105; Zwart, *supra* note 167, at 85-86.

172. In this regard, the Commission holds broader discovery powers than do the U.S. antitrust authorities, including the power to make on-site inspections without prior notice to those involved. *See* 2 HAWK, *supra* note 165, at 26-28; Fine, *supra* note 165, at 105.

173. Fine, *supra* note 165, at 105-06.

174. HAWK, *supra* note 165, at 138-39.

175. The Commission may require the parties to make periodic reports on marketing and pricing policy, licensing information, or market share data. In some cases, the Commission also has required the parties to give the Commission advance notice of planned changes in the agreement. *Id.* at 325-26.

176. Fine, *supra* note 165, at 106.

177. Commission Regulation 418/85 of 19 December 1984 on the Application of Article 85(3) of the Treaty to Categories of Research and Development Agreements, 1985 O.J. (L 53) 5 [hereinafter R&D Regulation]. The block exemption was intended to encourage the formation of such ventures by reducing any antitrust uncertainty concerning their legality under article 85(1). Even before the issuance of the 1984 block exemption, however, the EC had adopted a favorable stance towards cooperative research. For example, Regulation 17, issued in 1962, provided that agreements that had as their sole objective joint research to improve techniques did not have to file a notification requesting an individual exemption. Council Regulation 17/62, *supra* note 167. Similarly, in its 1968 Notice on Cooperation, the Commission stated that agreements, whose sole purpose is the joint implementation of R&D projects, the placing of R&D contracts, or the sharing of R&D projects among participants, were not restrictions of competition within the meaning of Article 85(1), and hence did not need to be notified. Commission Notice, O.C. 75/3 (July 19, 1968). *See generally* Notice Concerning Cooperative Joint Ventures, *supra* note 169, at 9-10; 2 HAWK, *supra* note 165, at 341.

178. R&D Regulation, *supra* note 177, art. 2(c). This means, however, that the parties may compete away, through licensing or otherwise, any short-term rents resulting from the R&D.

179. *Id.* art. 2(d). Although this provision is clearly intended to exclude joint ventures that are primarily joint production and/or marketing ventures, it may create uncertainty for joint ventures for which joint R&D is only a component. HAWK, *supra* note 165, at 348.

180. R&D Regulation, *supra* note 177, art. 2(e).

181. Specifically, where the participants are competing manufacturers, the exemption will only apply if, at the time in which the agreement is entered, the combined market shares of the participants with respect to products "capable of being improved or replaced by the contract products" does not exceed 20% of the market for such products in the Common Market or a substantial part thereof. *Id.* art. 3(2). In addition, the 20% market share limitation must be satisfied for the duration of agreements involving joint exploitation. *Id.* art. 3(3). Finally, where the joint production involves components used by the participants in the manufacture of other products, the 20% limitation applies to the latter products for which the components represent a significant part. *Id.*

182. Corrigendum to Council Regulation 4064/89 of 21 December 1989 on the Control of Concentrations Between Undertakings, 1990 O.J. (L 257) 13 [hereinafter MCR]. The MCR became effective in September 1990.

183. Concentrations are deemed to exist where:

(a) two or more previously independent undertakings merge, or

(b) one or more persons controlling at least one undertaking, or one or more undertakings, acquire, whether by purchase of securities or assets, by contract or by any other means, direct or indirect control of the whole or parts of one or more other undertakings.

Id. art. 3(1).

184. The major advantages of the MCR are that: first, agreements notified under the MCR do not have to be separately notified under article 85, *see, e.g.*, Fine, *supra* note 165, at 101; Barry E. Hawk, *The EEC Merger Regulation: The First Step Toward One-Stop Merger Control*, 59 ANTITRUST L.J. 195, 202 (1990) [hereinafter Hawk (1990)] and second, the Commission is required to render a decision within strict time limits, basically one month to four months. MCR, *supra* note 182, art. 10; *see also* Barry E. Hawk, *European Economic Community Merger Regulation*, 59 ANTITRUST L.J. 457, 459 (1991) [hereinafter Hawk (1991)]; Patrick Thieffry et al., *The Notification of Mergers Under the New EEC Merger Control Regulation*, 25 INT'L LAW. 615, 618-19 (1991).

185. Commission Notice Regarding the Concentrative and Cooperative Operations under Council Regulation (EEC) 4064/89 of 21 December 1989 on the Control of Concentrations between Undertakings, 1990 O.J. (C 203) 10.

186. See Fine, *supra* note 165, at 101-02; Hawk (1990), *supra* note 184, at 202-06; Hawk (1991), *supra* note 184, at 460-61; Thiefry et al., *supra* note 184, at 621-24.

187. Professor Hawk has described the MCR notification form as requiring "something like a Hart-Scott second request combined with a white paper." Hawk (1991), *supra* note 184, at 462; see also Thiefry et al., *supra* note 184, at 628-34.

188. See *supra* Section IV.D.

189. See 1989b House Hearings, *supra* note 4, at 126-27 (statement of Edward Rock).

190. See *supra* note 128.

191. See *supra* Section IV.D.

192. The Senate bill apparently attempts to deal with this problem by requiring joint ventures that use existing facilities produce or process a "new process or technology." Unfortunately, the language is insufficient to solve the problem. First, there is no explanation of what constitutes a "new product or technology." Accordingly, it appears that simply introducing a slightly modified version of an existing product where no new technology is involved—such as a sterling silver garlic press—would satisfy the requirement. Second, where the joint venture builds a new facility, there is no extra requirement that the venture produce a new product or use a new technology.

193. See *supra* text accompanying notes 59-62.

194. See, e.g., S. REP. NO. 146, *supra* note 5, at 21, reprinted in 61 Antitrust & Trade Reg. Rep. at 353.

195. See *supra* note 58.

196. See, e.g., 1989b House Hearing, *supra* note 4, at 142 (written response of Edward Rock); PORTER, *supra* note 46, at 117, 169-70, 530.

197. See *supra* note 174.

198. The limited information required and the ministerial review provided under the 1984 NCRA was arguably sufficient for RJVs, given their limited possible anticompetitive effects. This does not mean, however, that such information and review are sufficient where the competitive dangers are much more significant.

199. See 1989b House Hearing, *supra* note 4, at 131-32 (statement of Edward Rock); *id.* at 433 (statement of Arthur Kaplan).

200. The literature on antitrust damages stems largely from the writings of Gary Becker on the economic theory of deterrence. See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968). Breit and Elzinga were among the first to apply Becker's approach to antitrust damages. See KENNETH G. ELZINGA & WILLIAM BREIT, *THE ANTITRUST PENALTIES: A STUDY IN LAW AND ECONOMICS* (1976). For more recent analyses, see, e.g., SECTION OF ANTITRUST LAW, A.B. A., *MONOGRAPH NO. 13, TREBLE-DAMAGES REMEDY* (1986); WARREN F. SCHWARTZ, *PRIVATE ENFORCEMENT OF THE ANTITRUST LAWS: AN ECONOMIC CRITIQUE* (1981); William Breit & Kenneth G. Elzinga, *Private Antitrust Enforcement: The New Learning*, 28 J.L. & ECON. 405 (1985); Frank H. Easterbrook, *Detrebling Antitrust Damages*, 28 J.L. & ECON. 445 (1985); William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 U. CHI. L. REV. 652 (1983); A. Mitchell Polinsky, *Detrebling versus Decoupling Antitrust Damages: Lessons from the Theory of Enforcement*, in *PRIVATE ANTITRUST LITIGATION*, *supra* note 118, at 7.

201. See, e.g., 1989b House Hearing, *supra* note 4, at 257 (statement of Joseph Alioto); *id.* at 457 (written response of Arthur Kaplan); Peter W. Rodino, *Let's Fix Only What's Broken: Some Thoughts on Proposed Reform of Private Antitrust Litigation*, in *PRIVATE ANTITRUST LITIGATION*, *supra* note 118, at 421.

202. See Shapiro & Willig, *supra* note 47, at 128.

203. See 1989b House Hearing, *supra* note 4, at 457 (written response of Arthur Kaplan). See generally Edward D. Cavanagh, *Detrebling Antitrust Damages: An Idea Whose Time Has Come?*, 61 TUL. L. REV. 777, 786-87 (discussing incentive effects of treble damages on potential violators); Salop & White, *supra* note 115, at 1017-21.

204. One such justification is suggested by Shapiro and Willig. They note that the economic theory of deterrence suggests that multiple damages are more appropriate for violations that are less likely to be detected. Given this, they argue that the reduction in damages under the Act may be a suitable quid pro quo for notification. Shapiro & Willig, *supra* note 47, at 126; see also Easterbrook, *supra* note 200, at 456-57.

This argument appears unpersuasive. The examples usually cited of antitrust violations that are likely to go undetected include such acts as price fixing or market division, where the actions are intentionally concealed. *Id.* at 456. In the case of the formation of a PJV, however, the fact of the agreement is not generally hidden, but rather publicized in the press or at least generally known by competitors in the industry. Considering the limited information required by the notification, it would appear to provide no information that is not publicly available or available to those acquainted with the industry.

205. See *supra* Section III.B. But see Easterbrook, *supra* note 200, at 456 (arguing that single damages for violations by RJVs is too low).

206. The Senate Bill, as it emerged from the Senate Judiciary Committee, contained provisions similar to those in the House version. Prior to passage, however, the Senate amended these provisions to reduce their protectionist tone. Unfortunately, the substitute language is vague and ambiguous.

207. Empirical studies of joint ventures indicate that technological transfer and market access are the two main reasons a firm may enter into a joint venture with a foreign partner. See, e.g., MOWERY & ROSENBERG, *supra* note 28, at 248; Mowery, *supra* note 46, at 13-15.

208. Mowery and Rosenberg come to a similar conclusion:

Restrictions or controls on international collaborative ventures involving U.S. firms do not appear to be an effective means to improve U.S. international competitiveness and in fact might impair competitiveness. The complexity of international collaborative ventures, the fact that the pattern and impact of these ventures vary considerably across industries, and the historical evidence that restrictions on technology transfer are either ineffective or perverse in their impacts . . . all argue against controls on collaborations involving non-defense technologies.

MOWERY & ROSENBERG, *supra* note 28, at 252; see also 1990 Senate Hearing, *supra* note 4, at 102 (statement of Joseph Brodley); 1989b House Hearing, *supra* note 4, at 140 (statement of George Heaton); *id.* at 261 (statement of Thomas Jorde).

209. See, e.g., 1990 Senate Hearing, *supra* note 4, at 102 (statement of Joseph Brodley); 1989 House Hearing, *supra* note 4, at 140 (written response of George Heaton); *id.* at 328 (statement of J.D. Huehler, President, IBM Corporation).

210. See 1989b House Hearing, *supra* note 4, at 95 (statement of George Heaton); Hamilton Fish, Jr., *Antitrust Relief and the House Judiciary Committee*, 35 ANTITRUST BULL. 219 (1990); Rodino, *supra* note 201, at 421-23.

211. Fish, *supra* note 210, at 222; see also NATIONAL COMM'N FOR THE REVIEW OF ANTITRUST LAWS & PROCEDURES, REPORT TO THE PRESIDENT AND THE ATTORNEY GENERAL 186 (1979) ("Each existing or proposed exemption should be justified in terms of empirically demonstrated characteristics of the specific industry that make competition unworkable. The defects in the market place necessary to justify an antitrust exemption must be substantial and clear.").