

COMMENTS

THE NATIONAL COOPERATIVE RESEARCH ACT OF 1984: A NEW ANTITRUST REGIME FOR JOINT RESEARCH AND DEVELOPMENT VENTURES

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THE NATIONAL COOPERATIVE RESEARCH ACT OF 1984: A NEW ANTITRUST REGIME FOR JOINT RESEARCH AND DEVELOPMENT VENTURES

BY CHRISTOPHER O.B. WRIGHT[†]

INTRODUCTION

The National Cooperative Research Act of 1984¹ (the "Act") grants special treatment under the antitrust laws to joint research and development ("R&D") ventures which are conducting basic research, theoretical analysis, experimentation or testing of a scientific or technical nature.² The National Cooperative Research Act is the first Congressional statement of the status of joint ventures formed for research and development purposes under the federal antitrust laws.³ The Act declares that joint research and development ventures are not per se illegal, and instructs courts that any anticompetitive conduct of joint R&D ventures should be judged under a "reasonableness" test which balances procompetitive and anticompetitive effects to determine antitrust legality.⁴ The Act does not provide antitrust immunity for joint R&D ventures, but instead provides that if a joint R&D venture registers with the Justice

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1. 15 U.S.C. §§ 4301-4305 (Supp. II 1984).

2. "Joint research and development ventures" and "joint R&D ventures" are used in this Comment to denote joint ventures that conform with the Act's definitions. See 15 U.S.C. § 4301(a)(6) and 15 U.S.C. § 4301(b). The term "research joint venture" will be used to denote research ventures without regard to the definitions or requirements of the Act.

3. The Act also controls state law in this area by prescribing the proper test for evaluating joint R&D ventures "under any State law similar to the antitrust laws." 15 U.S.C. § 4302. States may however be able to grant antitrust immunity to certain research joint ventures under some variation of the state action doctrine. Cf. *Southern Motor Carriers Rate Conference, Inc. v. United States*, 105 S. Ct. 1721 (1985) (immunizing collective rate-making for motor common carriers); *Parker v. Brown*, 317 U.S. 341 (1943) (finding state action immunity for raisin price stabilization program).

4. 15 U.S.C. § 4302.

Department and the Federal Trade Commission and is subsequently found to have engaged in illegal conduct, it is shielded from potential treble damage awards. The Act limits recovery by private plaintiffs for injuries due to the anticompetitive actions of a joint R&D venture to the actual damages sustained by such persons,⁵ and to further discourage private suits against joint R&D ventures, the Act requires attorney's fees to be paid to prevailing defendants in certain circumstances.⁶

The law was passed by unanimous votes in both houses of Congress, and was hailed as one of the most important pieces of legislation to be passed in the 98th Congress.⁷ In adopting the National Cooperative Research Act, Congress sought to remove any uncertainty on the part of American business as to the antitrust standards applicable to research joint ventures. Proponents of the Act believed that American competitiveness in international markets would be enhanced if companies were encouraged to pool their research and development resources in a cooperative manner. Their optimistic views were supported by the former Chief of the Antitrust Division of the United States Department of Justice who predicted that "[t]he net result of the Act will be an increase in R&D activity and a quickening of the pace of innovation, to the benefit of the American economy."⁸

This Comment will begin by presenting in Section I the legislative history of the National Cooperative Research Act. In order to evaluate Congressional perceptions and motivations, the research joint venture business form will then be described and prior antitrust treatment of research joint ventures will be analyzed in the context of the Act's legislative history. The antitrust treatment of joint R&D ventures under the National Cooperative Research Act will be presented in Section II, followed by a discussion in Section III of private industry response and Justice Department implementation of the Act. Section IV will consider whether Congress fully achieved its goal of removing uncertainty in the law, and will suggest amendments to the National Cooperative Research Act designed to minimize the anticompetitive risks associated with research joint ventures. The final section of this Comment will argue that the National Cooperative Research Act should not serve as precedent for further relaxation of the federal antitrust laws, as some have

5. 15 U.S.C. § 4303(a).

6. 15 U.S.C. § 4304.

7. 130 CONG. REC. S11844 (daily ed. Sept. 26, 1984) (statement of Sen. Thurmond).

8. *Antitrust Division Chief's Nov. 2 Speech on Joint Ventures*, [July-Dec.] ANTITRUST & TRADE REG. REP. (BNA) No. 1189, at 872, 873 (Nov. 8, 1984) (speech delivered by Ass't Att'y. Gen. J. Paul McGrath at 18th Annual New England Antitrust Conference) [hereinafter cited as *Division Chief's Speech*].

argued,⁹ at least not until there has been more time to evaluate the Act's impacts.

I. PRELUDE TO NEW ANTITRUST TREATMENT OF RESEARCH JOINT VENTURES

A. Legislative History of the National Cooperative Research Act

Antitrust exemptions for research joint ventures were considered by the Federal Government as early as 1979,¹⁰ but the first concerted Congressional efforts to promote cooperative research among American corporations by modifying the antitrust laws began in 1983 and spanned the entire term of the 98th Congress.¹¹ The House and Senate Judiciary Committees considered ten different joint R&D bills during the next eighteen months,¹² including the National Productivity and Innovation Act,¹³ President Reagan's proposed legislation to modify the antitrust laws. Legislation providing special antitrust treatment for joint R&D ventures¹⁴ passed the U.S. House of Representatives on May 1, 1984, by a unanimous roll call vote of 417 to 0.¹⁵ Similar legislation¹⁶ was passed by the U.S. Senate on July 31, 1984, by a unanimous vote of 97 to 0.¹⁷ A joint conference committee was appointed and presented its conference report on September 21, 1984.¹⁸ The conference report was

9. See *ABA Antitrust Section Examines Deregulation, Enforcement Shifts* [July-Dec.] ANTI-TRUST & TRADE REG. REP. (BNA) No. 1224, at 156, 160 (July 18, 1985) (remarks of Commerce Sec'y Malcolm Baldrige); see also *Reagan Getting Soft on Antitrust*, San Francisco Exam., Feb. 10, 1986 at C-5, col. 3 (remarks of Ass't Att'y Gen. Douglas Ginsburg).

10. U.S. DEP'T OF COMMERCE, ADVISORY COMM. ON INDUSTRIAL INNOVATION, FINAL REPORT 103 (1979).

11. The first joint R&D bill of the 98th Congress was introduced in the House of Representatives on opening day, January 3, 1983. H.R. 108, 98th Cong., 1st Sess. (1983). President Reagan signed the National Cooperative Research Act of 1984 into law on October 11, 1984.

12. For a comparison of these different bills, see Crane, *Joint Research and Development Ventures and The Antitrust Laws*, 21 HARV. J. ON LEGIS. 405, 442-53 (1984).

13. H.R. 3878, 98th Cong., 1st Sess. (1983). For details of the President's proposal, see 129 CONG. REC. S11983-84 (daily ed. Sept. 12, 1983) (written statement of President Reagan).

14. H.R. 5041, 98th Cong., 2d Sess., 130 CONG. REC. H8729 (daily ed. Aug. 9, 1984).

15. 130 CONG. REC. H3216 (daily ed. May 1, 1984).

16. S. 1841, 98th Cong., 2d Sess., 130 CONG. REC. H8729 (daily ed. Aug. 9, 1984).

17. 130 CONG. REC. S9525 (daily ed. July 31, 1984).

18. 130 CONG. REC. H9939 (daily ed. Sept. 21, 1984). The primary issues that were resolved in Conference Committee concerned (1) the definition of qualifying joint research and development ventures; (2) the scope of the notification requirement; and (3) the awarding of attorney's fees to prevailing defendants. See 130 CONG. REC. H10565-66 (daily ed. Oct. 1, 1984) (statement of Rep. Rodino). The Conferees also agreed on a new short title for the legislation, the National Cooperative Research Act of

approved by the Senate on September 26, 1984,¹⁹ and, in one of the last official acts of the 98th Congress, the House of Representatives adopted the conference report on October 1, 1984.²⁰

Bipartisan support for the National Cooperative Research Act was based primarily on a belief that the legislation was a major step forward in improving America's international competitiveness.²¹ Congressman Carlos Moorhead (R.-Cal.) stated during a floor debate on the National Cooperative Research Act that "the overriding purpose of [the bill] is to encourage American companies to compete more effectively in the international marketplace [and that] all of the provisions of this legislation should be interpreted in a manner consistent with that overriding purpose and intent."²² Furthermore, the bill was not considered to be solely a "high technology" bill, because the benefits of the statute were to be available to traditional industries such as steel, automobiles and pharmaceuticals.²³

The declining competitive position of American firms in the world marketplace was dramatically apparent in escalating trade deficits and declining market shares in traditional areas of American preeminence. In 1984, while the legislation was under consideration, the broadest measure of the nation's trade deficit, the current account, was running in excess of \$25 billion per quarter for an annual total in excess of \$100 billion.²⁴ In the high technology area, the United States during the period 1965 to 1980 lost world market share in seven out of ten industrial sectors, including electronics, professional and scientific instruments, medicine and plastics.²⁵

U.S. competitiveness in high technology sectors had been deteriorating since before the post-1980 appreciation of the dollar, which suggested a general weakness in the technological performance of the

1984. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 7, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131.

19. 130 CONG. REC. S11845 (daily ed. Sept. 26, 1984).

20. 130 CONG. REC. H10570 (daily ed. Oct. 1, 1984).

21. 130 CONG. REC. H10567 (daily ed. Oct. 1, 1984) (statement of Rep. Fish) ("All [of the different joint R&D bills considered by Congress] had a common objective: to enable American companies to compete in the world marketplace in the 1980's and beyond.").

22. 130 CONG. REC. H10570 (daily ed. Oct. 1, 1984) (statement of Rep. Moorhead).

23. *Id.*

24. Duke, *Current Account Gap Grew in Quarter, Confirming U.S. is Debtor Nation*, Wall St. J., Sept. 17, 1985, at 3, col. 2 (e. ed.). The merchandise trade deficit has since grown worse, reaching almost \$125 billion in 1985. *Trade Deficit Breaks Records for Period, Year*, Wall St. J., Mar. 13, 1986, at 54, col. 4 (w. ed.).

25. 1 PRESIDENT'S COMMISSION ON INDUSTRIAL COMPETITIVENESS, GLOBAL COMPETITION: THE NEW REALITY 16 (1985) [hereinafter cited as PRESIDENT'S COMMISSION]. See generally *America's High-Tech Crisis: Why Silicon Valley Is Losing Its Edge*, BUS. WK., Mar. 11, 1985, at 56-67.

U.S. economy.²⁶ This diminished technological competitiveness on the part of American firms corresponded with a decline in the levels of overall R&D spending.²⁷ International competitiveness is highly correlated with R&D funding: firms that devote a small portion of their revenues to R&D tend to be poor competitors internationally, while firms that are strongly committed to R&D tend to be highly competitive in global markets.²⁸ The proponents of the National Cooperative Research Act argued that underinvestment in R&D and declining technological competitiveness were due to a reluctance on the part of American firms to enter research joint ventures because of their fear of antitrust liability for treble damages.²⁹

In considering antitrust exemptions for cooperative research ventures, some members of Congress seemed particularly concerned that American antitrust laws were much stricter than those of our competitors. "Our major trading partners—Japan, Germany, and France, for example—have all sanctioned collaborative efforts on research and development," noted Congressman Henry Hyde (R.-Ill.) during Congressional debates.³⁰ Senator Dennis DeConcini (D.-Ariz.) said: "Of particular concern is that Japanese antitrust law does not prohibit companies from conducting joint research and development in such areas as computers, microelectronics, electronic instruments, optical communications, lasers, robots, and aerospace."³¹

Congress' assessment of the antitrust laws of our trading partners was generally accurate. For example, while European antitrust law is

26. CONGRESSIONAL BUDGET OFFICE, *FEDERAL SUPPORT FOR R&D AND INNOVATION* 43 (1984).

27. American firms cut their new research and development spending by half in both real and money terms between 1980-81 and 1982-83 despite mounting foreign technological competition. L. THUROW, *THE ZERO SUM SOLUTION* 148 (1985). Total American R&D spending peaked at 2.9 percent of GNP in the mid-1960s, fell substantially in the mid-1970s and then recovered to 2.6 percent of GNP in 1982 through 1984. BUREAU OF THE CENSUS, U.S. DEP'T. OF COMMERCE, *STATISTICAL ABSTRACT OF THE UNITED STATES* 1986, at 577 (1985). Total company spending on research and development actually declined in the 1970s, but it resumed its earlier growth path in the late 1970s with a 6.6 percent compound growth rate in company R&D spending between 1976 and 1984. STAFF OF JOINT ECONOMIC COMM., 99TH CONG., 1ST SESS., *THE R&D TAX CREDIT: AN EVALUATION OF EVIDENCE ON ITS EFFECTIVENESS* 8 (Comm. Print 1985).

28. CONGRESSIONAL BUDGET OFFICE, *supra* note 26, at xiv.

29. See generally *The National Productivity and Innovation Act and Related Legislation: Hearings on S. 1841 and on S. 568, S. 737, and S. 1383 Before the Senate Comm. on the Judiciary*, 98th Congress, 1st and 2d Sess. (1984) [hereinafter cited as *Senate Judiciary Comm. Hearings*]; see also Wines, *The Administration, in High-Tech's Name, Takes Aim at Antitrust Laws*, 15 NAT'L J. 1000 (1983).

30. 130 CONG. REC. H10568 (daily ed. Oct. 1, 1984) (statement of Rep. Hyde).

31. 130 CONG. REC. S8963 (daily ed. June 29, 1984) (statement of Sen. DeConcini).

generally restrictive of research joint ventures,³² a number of recent rules adopted by the European Economic Community ("EEC") give explicit exemptions from the European antitrust laws to research joint ventures.³³ In Japan, where antitrust enforcement is lax by United States standards, there are several provisions in an otherwise rigorous antimonopoly law which specifically permit several types of legal cartels, including research joint ventures.³⁴ Japan's Ministry of Trade and Industry ("MITI") is authorized to approve research joint ventures and exempt the participants from the antimonopoly laws. MITI has successfully organized and contributed funding to large scale R&D efforts by Japanese firms.³⁵

In floor debates and in the Conference Report, the sponsors of the National Cooperative Research Act stressed repeatedly that the Act was meant to be a "clarification" of the antitrust laws, not a revision.³⁶

32. See Blechman, *Use of Joint Ventures to Foster U.S. Competitiveness in International Markets*, 53 ANTITRUST L.J. 65, 67 (1984). For example, the Treaty of Rome contains antitrust provisions similar to those found in American law. Article 85(1) is similar to section 1 of the Sherman Act and prohibits, among other things, price-fixing and agreements between undertakings which involve the "limitations or control of production, markets, technical development or investment" Article 85(3) provides, however, that Article 85(1) may be declared inapplicable to agreements which contribute to promoting technical or economic progress. Treaty Establishing the European Economic Community, Mar. 25, 1957, 298 U.N.T.S. 11, 47-48.

33. In 1971, the EEC adopted regulations which empowered the Commission to apply Article 85(3) to grant block exemptions to certain agreements and practices which had as their object research and development. This included agreements regarding the use of resulting data and industrial property rights. HIRSCH, BECHTOLD & HOOTZ, *COMMON MARKET CARTEL LAW* 131 (A. Gleiss trans. 3d ed. 1981). Early in 1984, the EEC proposed a new group exemption for research joint ventures. 27 O.J. EUR. COMM. (No. C 16) 3 (1984). The final version of the group exemption was adopted December 19, 1985 and became effective March 1, 1985. 28 O.J. EUR. COMM. (No. L 53) 5 (1985). It provides that Article 85(1) shall not apply to agreements entered into for the purpose of joint research and development. The exemption does not apply, however, when two or more of the parties to the venture are competing manufacturers and their combined production of the products capable of being improved or replaced by the R&D-products exceeds 20% of the market for such products in the Common Market. For a discussion of the EEC Block Exemption Regulation for R&D cooperation agreements see *Emerging International Antitrust Perspectives on Research and Development Joint Ventures*, 16 L. & POL'Y INT'L. BUS. 1181, 1197-1209 (1984).

34. See *Antitrust Policy and Joint Research and Development Ventures, Hearings Before the Joint Economic Comm.*, 98th Cong., 1st Sess. 195 (1983) (statement of Gary R. Saxonhouse, Professor of Economics, University of Michigan, citing articles 21 through 24 of Japan's antimonopoly law) [hereinafter cited as *Joint Economic Comm. Hearings*]. Japan's Research Association Law, enacted in 1961 and revised in 1963, allows several companies to pool their financial personnel and capital resources to do long-term research and development work. See generally H. IYORI & A. UESUGI, *THE ANTIMONOPOLY LAWS OF JAPAN* (1983).

35. STAFF OF HOUSE COMM. ON SCIENCE AND TECHNOLOGY, 98TH CONG., 2D SESS., *JAPANESE TECHNOLOGICAL ADVANCES AND POSSIBLE UNITED STATES RESPONSES USING RESEARCH JOINT VENTURES* 46-47 (Comm. Print 1984).

36. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 14, reprinted in 1984 U.S. CODE CONG.

According to Senator Joseph Biden (D.-Del.), the legislation was designed to send the proper positive signal to businesses otherwise prepared to invest in joint research that the antitrust laws did not prevent them from doing so.³⁷ Business decisionmakers, it was argued, could not tell in advance whether their behavior in forming and carrying out research joint ventures violated federal antitrust law, thus subjecting themselves to criminal prosecution³⁸ or exposing their companies to substantial damage claims.³⁹ In testimony before Congress, the Assistant Secretary of Commerce asserted that "[presently] no legal counsel of any major company will allow his chief executive officer to risk treble damages, and criminal sanctions in a high-risk effort that involves a pooled R&D collaborative program."⁴⁰

Uncertainty may have been a particular problem in the research joint venture area prior to passage of the Act not because of inconsistencies in judicial opinions, but because of a lack of case law and precedent on the subject.⁴¹ The Reagan Administration argued that there was a risk that some courts might not fully appreciate the beneficial aspects of joint research and development,⁴² and that the availability of treble damages increased the costs associated with the risk that some court might incorrectly condemn a particular practice that was procompetitive.⁴³ The main problem caused by the perceived uncertainty in the antitrust law was overdeterrence. Congress was persuaded that lawful procompetitive joint ventures were not being formed for fear of antitrust

& AD. NEWS 3131, 3139 ("a pre-eminent purpose of this bill is to clarify the antitrust analysis of joint R&D ventures"). These claims must have been referring to the statutory enunciation of the rule of reason test for evaluating joint R&D ventures, because detrebling was not a clarification of prior law.

37. S. REP. NO. 427, 98th Cong., 2d Sess. 31, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3105, 3125-26 (statement of Sen. Biden).

38. Violations of the Sherman Act are felonies punishable with potential jail sentences of up to three years and/or fines up to \$100,000 for individuals and \$1,000,000 for corporations. 15 U.S.C. § 1-2 (1982).

39. Section 4 of the Clayton Act gives private parties the right to sue antitrust violators for three times the damages caused by the violation, plus attorney's fees. 15 U.S.C. § 15 (1982).

40. *Senate Judiciary Comm. Hearings*, supra note 29, at 259 (statement of Ass't Sec'y of Commerce D. Bruce Merrifield).

41. *Joint Economic Comm. Hearings*, supra note 34, at 19 (statement of Ass't Att'y Gen. William F. Baxter).

42. Message of the President to Congress, 19 WEEKLY COMP. PRES. DOC. 1235 (Sept. 12, 1983), reprinted in 130 CONG. REC. S11983 (daily ed. Sept. 12, 1983).

43. *Senate Judiciary Comm. Hearings*, supra note 29, at 35 (statement of Ass't Att'y Gen. William F. Baxter). A recurrent criticism of treble damage suits is that, as a result of uncertainty in the law, they may deter socially beneficial conduct. See STAFF OF HOUSE COMM. ON JUDICIARY, 98TH CONG., 2D SESS., STUDY OF THE ANTITRUST TREBLE DAMAGE REMEDY 24-25 (Comm. Print 1984) [hereinafter cited as TREBLE DAMAGE STUDY].

liability, and that the net result was an underinvestment in joint research and development.⁴⁴ There were relatively few research joint ventures being formed per year compared with the total number of new R&D projects in the economy.⁴⁵ Officials of the Department of Justice testified that uncertainty in the law was inhibiting the formation of competitive R&D joint ventures, but they were unable to cite specific examples of ventures not formed due to antitrust concerns.⁴⁶

A specific example of a research joint venture that expressed its concern over potential antitrust liability was the Microelectronics and Computer Technology Corporation ("MCC"). MCC, located in Austin, Texas, is one of the largest research joint ventures in the country today. MCC is a separate corporation whose more than twenty shareholders include companies such as Control Data Corporation, Kodak, Boeing and National Semiconductor Corporation.⁴⁷ After the MCC joint venture was formed, the participants were each threatened with an antitrust lawsuit by a prominent plaintiff's law firm.⁴⁸ The founders of the venture reported that many companies were hesitant to become involved in MCC because of their fear of potential antitrust liability.⁴⁹ Nevertheless, the shareholders invested a total of \$600 million to employ 260 scientists on research projects ranging from computer architecture to semiconductor manufacturing. The goal of MCC, according to its promoters, is to produce technological innovations that will keep member companies

44. See H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8-9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133.

45. S. BERG, J. DUNCAN & P. FRIEDMAN, JOINT VENTURE STRATEGIES AND CORPORATE INNOVATION 71 (1982). See also *Joint Economic Comm. Hearings*, supra note 34, at 139 (statement of Charles H. Herz, General Counsel, National Science Foundation) (identifying only twenty-one joint R&D ventures with no production or marketing components formed during the period 1977-79.)

46. *Senate Judiciary Comm. Hearings*, supra note 29, at 250-51 (statement of Ass't Att'y Gen. J. Paul McGrath). See also *Joint Economic Comm. Hearings*, supra note 34, at 19 (statement of Ass't Att'y Gen. William F. Baxter).

47. Notice, 50 Fed. Reg. 15,989 (1985). All but two members of MCC are Fortune 500 companies with significant assets and revenues. MCC therefore does not fit the model of a research joint venture made up of small corporations that cannot afford research on their own, but rather appears to be designed to obtain efficiencies such as economies of scale while avoiding duplication of effort. For a comparison of MCC with other types of joint research efforts, see Fusfeld & Haklisch, *Cooperative R&D for Competitors*, HARV. BUS. REV., Nov.-Dec. 1985, at 65.

48. See Letter from Joseph M. Alioto to Chairmen of the Boards of MCC shareholders (Jan. 27, 1983), reprinted in *Joint Economic Comm. Hearings*, supra note 34, at 13.

49. *Japanese Technological Advances and Possible United States 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. 374 (1983) (statement of Steven J. Olson, associate general counsel, Control Data Corporation) [hereinafter cited as *House Science and Technology Comm. Hearings*].

competitive with American and Japanese computer industry leaders.⁵⁰ This joint venture was described by its supporters as especially necessary for the United States to stay competitive with the Japanese in technology advances.⁵¹

There was almost no opposition to the legislation from private industry. Congressman Ed Zschau (R.-Cal.) testified that no Silicon Valley firm expressed disagreement with the bill.⁵² The American Bar Association supported Congressional efforts to subject research joint ventures to the rule of reason, but suggested that the participants in such a venture should be freed from treble damages without having to report the venture in advance to the government.⁵³ The most vocal opposition to the elimination of treble damages in private antitrust cases involving research joint ventures came from legal scholars in the academic community who argued that the antitrust laws were already permissive toward research joint ventures.⁵⁴ These opponents were essentially ignored. The result is a new legal regime for research joint ventures.

Although there was bipartisan agreement on the need to restore American competitiveness in international markets, there were differences of opinion along party lines as to how lenient the antitrust laws should be toward research joint ventures. Generally speaking, Republican Senators tended to deny the presence of any anticompetitive risks associated with research joint ventures,⁵⁵ while Democrats expressed more concern about removing incentives for the private action

50. Bobby Inman: *The High Technocrat of R&D*, BUS. WK., Feb. 18, 1985, at 76. MCC will engage in advanced, long-term research and development activities in four areas: (1) advanced computer architectures; (2) developing processes for high density packaging of semiconductors; (3) improving software quality and productivity; and (4) VLSI/CAD (Very Large Scale Integration/Computer Aided Design). Notice, 50 Fed. Reg. 15,989 (1985); Fischetti, *A Review of Progress at MCC*, IEEE SPECTRUM, Mar. 1986, at 76.

51. MCC's founders and its president, Admiral Bobby Inman, were among the most vocal advocates for passage of the National Cooperative Research Act, appearing at virtually every Congressional hearing on the issue of antitrust and research joint ventures.

52. *Joint Economic Comm. Hearings*, *supra* note 34, at 16 (statement of Rep. Zschau).

53. AMERICAN BAR ASS'N, SUMMARY OF ACTION OF THE HOUSE OF DELEGATES 21 (Aug. 7-8, 1984) (Resolution on the National Productivity and Innovation Act of 1983).

54. See, e.g., Letter from Prof. Lawrence A. Sullivan to Sen. Strom Thurmond (Mar. 13, 1984), reprinted in *Senate Judiciary Comm. Hearings*, *supra* note 29, at 343-44 (no evidence of economically useful ventures limited to R&D being deterred by antitrust concerns); *Senate Judiciary Comm. Hearings*, *supra* note 29, at 103 (statement of Prof. Joseph Brodley).

55. See, e.g., S. REP. NO. 427, 98th Cong., 2d Sess. 27, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3105, 3122-23 (Additional Views of Senator Robert Dole) ("[J]oint research and development ventures . . . by definition, pose little anticompetitive risk."); *id.* at 25, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3121 (Additional Views of Senators Hatch, Laxalt, Simpson, East, and Denton) ("[W]e have recognized that joint R&D activity is a procompetitive economic necessity.").

remedy through detrebling and the awarding of attorneys fees to prevailing defendants.⁵⁶ The final version of the bill that emerged from the Conference Committee was hailed by both Democrats and Republicans as a genuine compromise between all concerned parties.⁵⁷ The two most contested issues in the Congressional hearings were first, the advantages and disadvantages of the research joint venture form to the economy and innovation generally, and second, the actual state of the antitrust laws with respect to research joint ventures. A brief discussion of these two issues is necessary and is presented below.

B. Research Joint Ventures In Theory and Practice

Almost any agreement or undertaking between two or more firms can be described as a joint venture. This has led corporations law commentators to describe a joint venture as nothing more than an "ad hoc partnership."⁵⁸ While there are an unlimited number of ways to structure such a business arrangement, a joint venture has been defined for antitrust purposes as an integration of operations between two or more separate firms under the following conditions:

1. the enterprise is under the joint control of the parent firms, which are not under related control;
2. each parent makes a substantial contribution to the joint enterprise;
3. the enterprise exists as a business entity separate from its parents; and
4. the joint venture creates significant new enterprise capability in terms of new productive capacity, new technology, a new product, or entry into a new market.⁵⁹

A corporate joint venture contemplates the use of a separate corporation, established and controlled by the joint venturers who usually make an equity contribution and become shareholders in the venture.⁶⁰ A joint venture is a partial rather than complete integration of two or more firms which allows for continued competition between their

56. See, e.g., *id.* at 32, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3126 (Additional Views of Mr. Metzenbaum).

57. 130 CONG. REC. S11843 (daily ed. Sept. 26, 1984) (statements of Sen. Metzenbaum and Sen. Dole).

58. See R. JENNINGS & R. BUXBAUM, CORPORATIONS: CASES AND MATERIALS 31 (5th ed. 1979).

59. Brodley, *Joint Ventures and Antitrust Policy*, 95 HARV. L. REV. 1521, 1526 (1982).

60. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 12. Alternatives to joint ventures tend to be contractual. Consortiums, for example, usually involve less restrictive contracts than those used for joint ventures and, since they usually do not involve equity capitalization, a separate legal entity is not created. Ohmae, *Consortium May Loosen Up Stiff Joint Venture*, Wall St. J., Mar. 11, 1985, at 28, col. 3 (e. ed.).

unintegrated operations.⁶¹ For example, joint research projects, unlike mergers, do not necessarily eliminate independent research activity by the parties to the venture.⁶²

Business enterprises form joint ventures with other companies, including their marketplace rivals, for numerous reasons. The primary incentives for participation in joint ventures, considered in greater detail below, include: (1) risk avoidance, (2) technology acquisition, (3) utilization of the assets and attributes belonging to partners, and (4) organizational superiority. Although diversification of risk is not usually the primary motivation behind most joint ventures, a share in several projects can reduce risk relative to complete ownership of one.⁶³ Firms also may participate in joint ventures in order to acquire new technology that is unavailable or prohibitively expensive through licensing.⁶⁴ Joint ventures involving the sharing of technology allow participants individually to apply the technology acquired to new products, processes and services for markets of their own choosing.⁶⁵

A joint venturer may seek from its partners that which is unavailable elsewhere (or which is available but too expensive) in the form of either assets, such as capital, trademarks or patents, or attributes such as foreign nationality or customers for the venture output.⁶⁶ Many companies use joint ventures with foreign companies in order to enter foreign markets that are otherwise closed for lack of capital, technology or personnel or where particular economic sectors are closed to majority-owned foreign enterprises.⁶⁷ Some American manufacturers

61. See Ginsburg, *Antitrust, Uncertainty and Technological Innovation*, 24 ANTITRUST BULL. 635, 670 (1979).

62. ANTITRUST DIV., U.S. DEP'T OF JUSTICE, ANTITRUST GUIDE CONCERNING RESEARCH JOINT VENTURES 7 (1980), reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. (BNA) No. 992, at 1, 3 (Special Supp. Dec. 4, 1980) [hereinafter cited as ANTITRUST GUIDE]. Research joint ventures, for example, usually involve the contribution by the participants of less than all of their assets and frequently involve only a portion of a firm's assets devoted to R&D. Participants in joint research ventures are frequently corporations with their own very large internal R&D budgets. Fuschfeld & Haklisch, *supra* note 47, at 60.

63. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 94. The overall risk of failure associated with a given project is the same whether the joint venture form is used or not, but the potential rewards of a successful project can be recouped by participants with much smaller investment levels and therefore less total exposed risk.

64. See generally J. KILLING, STRATEGIES FOR JOINT VENTURE SUCCESS 87-102 (1983).

65. Norris, *Cooperative R&D: A Regional Strategy*, ISSUES IN SCI. AND TECH., Winter 1985, at 92, 94.

66. J. KILLING, *supra* note 64, at 53-54. Partners contributing either attributes or assets are advised to play a passive role in managing the venture because their managerial contribution is not important. While these assets and attributes may be necessary to the joint venture's success, they do not require managerial involvement on the part of the parent supplying them. *Id.*

67. R. HALL, THE INTERNATIONAL JOINT VENTURE 1 (1984).

view joint ventures with foreign companies as the best way to succeed in product markets characterized by global competition.⁶⁸ American automobile manufacturers, for example, have recently formed joint production and marketing ventures with Japanese automobile manufacturers to produce small cars for the American market, in the apparent hope of taking advantage of Japanese cost efficiencies while learning Japanese production methods.⁶⁹

Finally, joint ventures are attractive for organizational reasons because they can be formed for a discrete project or series of projects, the participants need not totally merge all their assets and operations, and each co-venturer retains more control over the direction of the enterprise than would a mere investor.⁷⁰

There are many disincentives to forming joint ventures apart from potential antitrust liability for the participants.⁷¹ The decision to engage in a joint venture is difficult because both the relative contributions to be made by the participants and the payoffs from the venture are uncertain.⁷² Joint ventures are viewed by some corporate executives as a last resort because of the substantial organizational difficulties involved in their operation.⁷³ If joint venture ownership is divided equally, deadlocks in decisionmaking authority may occur. In a joint research organization, for example, disagreements may arise over research priorities or the location of research facilities.⁷⁴

Economic and industry-specific factors appear to be the key determinants of joint venture activity. Over time, joint venture activity appears to follow the business cycle, with significant drops in aggregate joint venture activity occurring during economic recessions.⁷⁵ Joint

68. J.D. Baxter, *Management Challenge: U.S. Industry Fights Back in World Trade*, IRON AGE, June 18, 1984, at 43, 49. These ventures between American and foreign corporations raise unique issues not specifically addressed in this Comment primarily because few of these international joint ventures are limited to research and development.

69. *Chrysler Deal Dooms America's Cheap Small Cars*, BUS. WK., Apr. 29, 1985, at 27; General Motors Corp. and Toyota Motor Corp., FTC File No. 821 0159, Proposed Consent Agreement with Analysis to Aid Public Comment, 48 Fed. Reg. 57,426 (1983).

70. L. SCHWARTZ, J. FLYNN & H. FIRST, *FREE ENTERPRISE AND ECONOMIC ORGANIZATION: ANTITRUST* 555 (6th ed. 1983).

71. *Senate Judiciary Comm. Hearings*, *supra* note 29, at 103 (statement of Prof. Joseph Brodley) (businessmen discouraged not by antitrust laws but by difficulty of joint venture managerial form).

72. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 11.

73. *Id.* at 72; *see also* J. KILLING, *supra* note 64, at 8-12. For example, there are likely to be differing economic and strategic objectives of the participants and, where the success of a joint venture depends primarily on one firm's capability, that firm is likely to prefer undertaking the project on its own. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 44.

74. 4 P. AREEDA & D. TURNER, *ANTITRUST LAW* ¶ 947b (1980).

75. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 15.

venture activity also varies across industries, with the heaviest incidence in mining, electrical and nonelectrical machinery and chemical industry groups.⁷⁶

The three primary incentives for conducting research and development on a cooperative basis appear to be sharing risks, obtaining missing ingredients, and achieving economies of scale. A research joint venture offers an optimal organizational form for projects involving high risks, technological innovations or high information costs.⁷⁷ A survey of corporate managers reveals that technologically-oriented joint ventures are seen as particularly viable when an industry is characterized by barriers to entry, rapid growth and relatively large R&D expenditures.⁷⁸

Research is a high-risk activity that may produce little or no return on investment due to uncertainties associated with the ultimate completion and successful commercial application of the research product, as well as possible preemption by a rival.⁷⁹ Research joint ventures spread the risks and costs that may otherwise be unacceptably high for individual firms in light of expected returns.⁸⁰ Firms can increase the overall return on their investment when they are allowed access to the fruits of everyone's contribution to the joint venture. Control Data Corporation, for example, estimates that its \$14 million investment in MCC will give it access in the first three years to R&D results costing about \$119 million.⁸¹

76. *Id.* at 16. According to a recent survey based on Federal Trade Commission and private data covering the years 1964 to 1975, the computer and electronics industry had 48 joint ventures and ranked fourth in overall activity and eighteenth when measured by joint venture intensity due to the large number of firms in the industry. *Id.* at 18. Joint venture activity refers to the cumulative number of joint venture participations by parent firms, while joint venture intensity refers to the number of participations relative to the number of firms in the industry.

77. Brodley, *supra* note 59, at 1529.

78. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 156. Non-technologically oriented ventures are more often attempts to achieve diversification.

79. Research also presents possible free-rider problems. A free-rider is someone who obtains the benefits of another organization's labor without contributing a proportionate (or any) share of the expenses. See R. POSNER & F. EASTERBROOK, *ANTITRUST: CASES, ECONOMIC NOTES AND OTHER MATERIALS* 177 (2d ed. 1981). In the R&D context, a free rider would be a non-participant firm that copies the advances made by the joint venture either illegally or through reverse engineering.

80. Schwartz & Cooper, *Antitrust Policy and Technological Innovations: A Response*, *ISSUES IN SCI. AND TECH.*, Spring 1985, at 128, 129. Many firms defer research projects until their potential for success is very high. One survey of industrial research found that seventy-five percent of projects undertaken in private laboratories had probabilities of success estimated at eighty percent or more, while only three percent had estimates of less than fifty percent. F. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 416 (2d ed. 1980).

81. Norris, *supra* note 65, at 94.

Individual firms can utilize joint ventures to share the speculative risks associated with the long-term basic research projects necessary for the technological advance of their industry.⁸² A recent survey of corporate joint research efforts found them to be characterized by well-endowed research budgets averaging about \$20 million annually, concentrated in high technology industries, and focused on developing a stronger technical basis for enhanced productivity and competitiveness.⁸³ Modern research joint ventures are characterized as "precompetitive,"⁸⁴ in contrast to earlier joint research efforts which focused on noncompetitive activities such as health and safety and dissemination of technical information.⁸⁵

Individual firms lacking all the ingredients necessary for a successful research project (e.g. trained personnel, essential patents and licenses, or access to raw materials) are likely to form research joint ventures with other firms possessing different missing ingredients. The combination of complementary abilities and expertise in particular areas of research may produce a synergistic effect which lowers the total cost of R&D. This also avoids the duplication of R&D expenditures and frees up financial and intellectual resources necessary to expand the technological horizons of the participants.⁸⁶

A research joint venture can take advantage of economies of scale and thereby make it feasible for small firms to conduct research together that would be infeasible for any one of the firms acting alone.⁸⁷ When effective research requires extremely expensive facilities which small firms cannot afford by themselves, a joint venture may result in an overall increase in R&D.⁸⁸ Each successive scientific and technical barrier in an industry may require significantly larger R&D investments than those needed for the previous breakthrough. In addition, "the unit cost of operating very sophisticated scientific machinery used in experiments generally decreases as the frequency of use increases."⁸⁹

82. Note, *Joint Research Ventures Under the Antitrust Laws*, 39 GEO. WASH. L. REV. 1112, 1113 (1971).

83. Fusfeld & Haklisch, *supra* note 47, at 60.

84. "Precompetitive" research activities occur when no single company can develop or sustain the technical base required for an industry to stay competitive. They are strategically designed by the participants to strengthen the technical infrastructure of their industries. *Id.* at 65.

85. *Id.* at 61.

86. Norris, *supra* note 65, at 94.

87. L. SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST 298 (1977).

88. P. AREEDA & D. TURNER, *supra* note 74, at ¶ 955.

89. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 12, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3136.

Research joint ventures are not a universally popular form. Some industries may be too secretive and protective of proprietary data for firms to be inclined to collaborate on joint research.⁹⁰ Some American companies refuse to participate in any research joint venture because they do not want to share proprietary information with their competitors.⁹¹ Other companies such as Advanced Micro Devices, Inc., Control Data Corporation and RCA are participants in several research joint ventures.⁹²

The National Cooperative Research Act appears to proceed from the assumption that at least in the short run any and all research joint ventures will accelerate innovation and therefore be in the public interest. This assumption merits closer scrutiny than it received from Congress. Research joint ventures do accelerate innovation and improve product market competition if the venture candidates face R&D competition primarily from others rather than from each other.⁹³ "On the other hand," two economists recently concluded, "if the prospective joint venturers . . . have more to lose from each other's unilateral advances than they do from together falling behind the rest of the market or from failing together to jump ahead of the rest of the market, then the [research joint venture] may slow the pace of innovation."⁹⁴

Although there are many potential social benefits from research joint ventures, their net effect on the economy is unknown and the impact of joint venture activity on total innovation and on economy-wide levels of R&D is not clear.⁹⁵ Joint ventures may have a long-term substitution effect on internal R&D expenditures for individual firms due to expectations that future technological needs can be at least partially satisfied through joint ventures.⁹⁶ However, according to one study, as industry joint venture propensities increased, the R&D intensities among individual firms in the industry also increased, suggesting that research joint ventures have a procompetitive impact on industrial R&D.⁹⁷

90. Spalding, *Why the Industry Is Slow to Enter Joint Research*, CHEMICAL WK., May 15, 1985, at 62.

91. Monsanto, for example, refuses to collaborate on biotechnology research with Dupont or Dow Chemical. *Id.* at 64.

92. While each separate venture may have different research objectives and the participants may only be trying to maximize their chances of being a member of a successful project, multiple memberships raise antitrust concerns because they can facilitate the companies' attempts to control and monitor innovation in a greater portion of the industry.

93. See Ordovery & Willig, *Antitrust for High Technology Industries: Assessing Research Joint Ventures and Mergers*, 28 J.L. & ECON. 311, 313 (1985).

94. *Id.*

95. S. BERG, J. DUNCAN & P. FRIEDMAN, *supra* note 45, at 71, 77.

96. *Id.* at 145, 156-67.

97. *Id.* at 100.

Research joint ventures additionally can avoid the wasteful duplication of research and development expenditures and effort that can result when numerous companies compete to develop similar technologies.⁹⁸ In summary, the long-term impacts on the economy of the higher levels of joint research activity envisioned by the sponsors of the National Cooperative Research Act are uncertain.

C. Antitrust Treatment of Research Joint Ventures Prior to the National Cooperative Research Act

It is necessary to briefly examine American antitrust law, particularly as it has been applied to research joint ventures, in order both to evaluate Congressional perception of prior law and to fully understand the changes made by the National Cooperative Research Act.⁹⁹ The underlying economic rationale of the antitrust laws is that vigorous competition between firms will produce optimum prices and output of products for consumers.¹⁰⁰ The antitrust laws are also designed to protect economic liberty¹⁰¹ as well as to promote diffusion of corporate control and thereby avoid concentration of economic power.¹⁰²

Research joint ventures are subject to the federal antitrust laws because they are susceptible to anticompetitive abuse. Joint ventures formed to conduct research and development pose the three types of anticompetitive risks which characterize any joint venture: collusion, loss of potential competition and market exclusion.¹⁰³ A research joint venture among direct competitors poses a risk of collusion on output and prices even if the venture is narrowly confined to research. If participating firms would have independently undertaken the research project now being assumed by the joint venture, potential and actual competition in the market has been reduced, causing industry innovation in turn to

98. Such duplication is especially harmful when research resources, particularly human resources in the form of engineers and scientists, are scarce.

99. This background is also important because Congress intended that nothing in the National Cooperative Research Act should modify the interpretation of the antitrust laws as applied to any activity not within the scope of the statute's definition of joint research and development venture (e.g., joint ventures formed for production and marketing purposes). Congress intended that these activities are to be analyzed and judged solely under existing antitrust principles. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3132-33.

100. "The Sherman Act . . . rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress . . ." *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 4-5 (1958).

101. *Id.* at 4.

102. *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 541-42 (1973) (Douglas, J., concurring).

103. See Brodley, *supra* note 59, at 1530.

suffer.¹⁰⁴ Product innovation may suffer if joint venturers conspire to deliberately slow the pace of technological advance, or if the venture has the effect of reducing the incentives of the participants to aggressively develop and introduce new products on their own. Excluding competitors from the venture and denying them access to the technology developed by the venture is troublesome where the technology is necessary for effective competition and the research achieved by the venture cannot be duplicated effectively by those outside of the venture.

The legality of joint ventures, and research joint ventures in particular, cannot be determined by reference to a single statute or theory of liability.¹⁰⁵ Any joint venture may be subject to separate antitrust claims under the Sherman Act section 1¹⁰⁶ and section 2,¹⁰⁷ section 5 of the Federal Trade Commission Act,¹⁰⁸ and section 7 of the Clayton Act.¹⁰⁹ Similar conclusions about the antitrust legality of research joint ventures can be reached regardless of which of these statutes is applied.¹¹⁰ Prior to adoption of the National Cooperative Research Act, there were four main concerns about the status of research joint ventures under the antitrust laws: (1) whether rule of reason or per se treatment was appropriate under section 1 of the Sherman Act; (2) whether section 7 applied to research joint ventures; (3) the implications of *Berkey Photo, Inc. v. Eastman Kodak Co.*;¹¹¹ and (4) the Department of Justice enforcement position.

1. *Per Se or Rule of Reason?*

Section 1 of the Sherman Act prohibits *every* contract combination and conspiracy in restraint of trade.¹¹² Since almost every contract can be characterized as a restraint of trade, the Supreme Court has

104. See ANTITRUST GUIDE, *supra* note 62, at 8-10, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 4.

105. L. SCHWARTZ, J. FLYNN & H. FIRST, *supra* note 70, at 557.

106. 15 U.S.C. § 1 (1982).

107. 15 U.S.C. § 2 (1982). This Comment does not consider separate monopolization liability for joint venturers under section 2 of the Sherman Act. "Analysis of a joint research project under section 2 begins with definition of the relevant market and evaluation of the degree of market power possessed by the participants as a group." ANTITRUST GUIDE, *supra* note 62, at 22 n.1, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 7 n.1.

108. 15 U.S.C. § 45 (1982).

109. 15 U.S.C. § 18 (1982).

110. See ANTITRUST GUIDE, *supra* note 62, at 6, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 3 ("[A]nalysis of the effects of a joint research venture depends heavily on the facts and far less on the precise legal standard applied."); see also Brodley, *supra* note 59, at 1539 n.54 (suggesting unified approach to joint venture analysis).

111. 603 F.2d 263 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).

112. 15 U.S.C. § 1 (1982) (emphasis added).

interpreted this statute to forbid only *unreasonable* restraints of trade.¹¹³ Certain agreements among competitors, such as those having the sole or primary purpose to fix prices or divide markets, are deemed unreasonable regardless of any claimed benefits or efficiencies, and in the language of the antitrust law are deemed to be "per se" illegal.¹¹⁴

Business practices which are not conclusively presumed to be anticompetitive, and are therefore not per se illegal, are evaluated by weighing the competitive benefits of the practice against any anticompetitive impacts. Under this style of analysis, known as the "rule of reason," the factfinder weighs all of the circumstances of a case in deciding whether a restrictive practice should be prohibited because it imposes an unreasonable restraint on competition.¹¹⁵ The rule of reason is the legal standard applied to the majority of anticompetitive practices challenged under section 1 of the Act.¹¹⁶

Prior to adoption of the National Cooperative Research Act, the rule of reason was the prevailing legal standard for antitrust analysis of research joint ventures, although a number of joint ventures outside the R&D context had been declared per se illegal. Several Supreme Court cases contain broad language suggesting that under certain circumstances any joint venture is per se unlawful under section 1 of the Sherman Act,

113. *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1, 60 (1911).

114. As a general rule, the following are subject to per se treatment: (1) horizontal price fixing, *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 218 (1940); (2) horizontal territorial allocation, *United States v. Topco Assoc.*, 405 U.S. 596, 608 (1972); (3) group boycotts, *Klor's, Inc. v. Broadway-Hale Stores, Inc.*, 359 U.S. 207, 212 (1959), but see *Northwest Wholesale Stationers Inc. v. Pacific Stationery and Printing Co.*, 105 S. Ct. 2613 (1985) (applying rule of reason to expulsion from joint buying cooperative); and (4) vertical price maintenance, *Albrecht v. Herald Co.*, 390 U.S. 145 (1968).

115. *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 50 (1977). Justice Brandeis identified the factors to be considered in an often-cited statement of the rule of reason:

[T]he court must consider the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable. The history of the restraint, the evil believed to exist, the reason for adopting the particular remedy, the purpose or end sought to be attained, are all relevant factors.

Chicago Bd. of Trade v. United States, 246 U.S. 231, 238 (1918).

116. *GTE Sylvania*, 433 U.S. at 49. The continuing debate about the proper spheres of rule of reason and per se analysis is beyond the scope of this Comment. The Supreme Court has admitted that there is often no bright line separating conduct that should be analyzed under the per se rule from that which should be analyzed under the rule of reason. *National Collegiate Athletic Ass'n v. Board of Regents of the Univ. of Okla.*, 104 S. Ct. 2948 (1984). For a discussion of the differences between the per se and rule of reason categories, see Flynn, *Rethinking Sherman Act Section 1 Analysis: Three Proposals for Reducing the Chaos*, 49 ANTITRUST L.J. 1593 (1980). See also Gellhorn & Tatham, *Making Sense Out of the Rule of Reason*, 35 CASE W. RES. L. REV. 155 (1984).

but none of these cases involved research joint ventures.¹¹⁷ All of these cases involved joint venture arrangements used by the participants as a vehicle to fix prices, allocate markets or pool products, and all of the parties involved were actual competitors before the joint venture was formed. The most plausible interpretation of these cases is that under section 1 of the Sherman Act, a joint venture among competitors will constitute an unreasonable restraint of trade if the primary purpose or effect of the venture is to fix prices or allocate markets.¹¹⁸

Despite the per se language of these cases, the implication of recent Supreme Court holdings is that joint ventures challenged under section 1 of the Sherman Act will be judged under the rule of reason,¹¹⁹ particularly where the venture is designed to result in efficiencies.¹²⁰ The prevailing legal approach to joint ventures has thus been characterized as "highly permissive."¹²¹ However, if the purpose of the joint venture is illegal per se (e.g., to fix prices or divide markets), the joint venture is likewise illegal per se.¹²² But despite the apparent judicial recognition of the competitive efficiencies offered by joint ventures,¹²³ the early cases condemning joint ventures as per se illegal in certain circumstances have

117. See, e.g., *United States v. Topco Assoc., Inc.*, 405 U.S. 596 (1972) (licensing rules of cooperative association of regional supermarket chains formed to market grocery items under Topco brand name viewed as horizontal restraints and therefore per se illegal); *Citizen Publishing Co. v. United States*, 394 U.S. 131 (1969) (condemning advertising and subscription rate price-fixing and profit pooling by jointly managed subsidiary of two competing daily newspapers); *Timken Roller Bearing Co. v. United States*, 341 U.S. 593 (1951) (rejecting proposition that agreements between legally separate persons to suppress competition can be justified as reasonable merely by labelling the project a "joint venture"); *Associated Press v. United States*, 326 U.S. 1 (1945) (invalidating exclusionary membership by-laws of cooperative news service as restraints of trade "on their face," without regard to their past effect); *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 223 (1940) (declaring that any combination formed for the purpose and with the effect of fixing prices is illegal per se).

118. ABA ANTITRUST SECTION, ANTITRUST LAW DEVELOPMENTS 2D 50 (1984).

119. See *GTE Sylvania*, 433 U.S. at 58-59. ("[D]eparture from the rule-of-reason standard must be based upon demonstrable economic effect rather than . . . upon formalistic line drawing."); see also *National Collegiate Athletic Ass'n v. Board of Regents of the Univ. of Okla.*, 104 S. Ct. 2948 (1984) (applying rule of reason to horizontal price-fixing and output limitation of college football television plan where such restraints were essential for the product to be available at all).

120. *Division Chief's Speech*, *supra* note 8, at 872.

121. *Brodley*, *supra* note 59, at 1534.

122. *Id.* at 1535.

123. See, e.g., *National Collegiate Athletic Ass'n v. Board of Regents of the Univ. of Okla.*, 104 S. Ct. 2948 (1984); *Broadcast Music, Inc. v. CBS, Inc.*, 441 U.S. 1 (1979); *Yamaha Motor Co. v. FTC*, 657 F.2d 971 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982).

never been overruled.¹²⁴ The result has been uncertainty over the legal treatment of these business arrangements.¹²⁵

Although there is uncertainty surrounding joint ventures in general, joint research efforts have never been held illegal per se under the antitrust laws.¹²⁶ Indeed, no cases, in the Supreme Court or otherwise, have held joint research and development to be a violation of the antitrust laws.¹²⁷ An early Supreme Court case suggested in dictum that joint research between competitors would not necessarily be unlawful.¹²⁸ The Department of Justice concluded in a 1980 published report that "[a] 'rule of reason' established by case law under [section 1 of the Sherman Act] applies in evaluating the legality of joint research if there is a legitimate business purpose for performing research jointly."¹²⁹ The view that courts should use a rule of reason analysis to evaluate the harms and benefits of joint research programs challenged under section 1 is also supported by the commentators.¹³⁰

2. Section 7 of the Clayton Act

In addition to potential liability for unreasonable restraints of trade under section 1 of the Sherman Act, research joint ventures may be subject to the standards of section 7 of the Clayton Act¹³¹ if they involve the acquisition of assets of another participant (including tangible

124. These cases, however, may have been thoroughly discredited. See 5 TRADE REG. REP. (CCH) ¶ 50,447 (May 10, 1983) (Remarks of Ass't Att'y Gen. William F. Baxter before the National Ass'n of Mfrs.). The Justice Department claims that cases such as *Topco* would not be decided the same way today. See *Joint Ventures Offer Firms Flexibility, Antitrust Safety for Cooperative Activities*, [July-Dec.] ANTITRUST & TRADE REG. REP. (BNA) No. 1241, at 869, 873 (Nov. 21, 1985) (statement of Deputy Ass't Att'y Gen. Charles F. Rule).

125. See McCracken, *Joint Ventures: Evaluating the Risk Under Existing Antitrust Laws*, COMPUTER LAWYER, Mar. 1984, at 12, 14, 15 ("[T]here is no 'safe harbor' for joint ventures under existing antitrust principles. . . . Companies desiring to enter into joint ventures do so at their own risk . . .").

126. LEGAL STRATEGIES FOR INDUSTRIAL INNOVATION 56 (R. Givens ed. 1982).

127. *Joint Economic Comm. Hearings*, *supra* note 34, at 18 (statement of Ass't Att'y Gen. William F. Baxter). Even where the venture itself is lawful, collateral (or ancillary) restrictions on the activities of the participants may be unlawful when not reasonably related to the legitimate objectives of the venture. See *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 302 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).

128. *United States v. Line Material Co.*, 333 U.S. 287, 310 (1948) (cross-licensing of patents to fix prices held an unlawful use of monopoly rights).

129. ANTITRUST GUIDE, *supra* note 62, at 6, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 3.

130. See L. SULLIVAN, *supra* note 87 at 303; see also ABA ANTITRUST SECTION, *supra* note 118, at 52.

131. Section 7 of the Clayton Act prohibits a person from acquiring the stock or assets of another "where . . . the effect of such acquisition . . . may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18 (1982).

property such as copyrights or patents) or if the participants create a separate entity in which they each have an equity interest.¹³² Section 7 was enacted primarily to regulate mergers,¹³³ but joint ventures may also violate section 7 if they threaten to eliminate actual competition among the joint venture partners or discourage joint venturers from entering a new market on an individual basis.¹³⁴

Under the potential competition theory first articulated in *United States v. Penn-Olin Chemical Co.*,¹³⁵ the formation of a joint venture should be analyzed by considering whether it eliminated "the potential competition of the corporation that might have remained at the edge of the market continually threatening to enter."¹³⁶ The Court noted that a well-financed and aggressive corporation "waiting anxiously to enter an oligopolistic market would be a substantial incentive to competition which cannot be underestimated."¹³⁷ Despite section 7 and the potential competition doctrine, a joint venture between two parties may pass anti-trust muster where their merger would not because the participants may continue to compete vigorously in many markets after entering the joint venture.¹³⁸ Furthermore, the government has never successfully challenged a research joint venture on section 7 grounds.

3. *The Berkey Case*

*Berkey Photo, Inc. v. Eastman Kodak Co.*¹³⁹ established legal standards for antitrust analysis of research joint ventures.¹⁴⁰ *Berkey* is a factually complex case involving section 1 restraint of trade and section 2 monopolization claims brought against Kodak, *Berkey's* principal competitor in the camera and photo finishing businesses.¹⁴¹ Kodak made

132. ANTITRUST GUIDE, *supra* note 62, at 5-6, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 3. The legal standard under section 7 of the Clayton Act may be similar to the rule of reason under section 1 of the Sherman Act so far as joint research is concerned. *Id.*

133. *Brown Shoe Co. v. United States*, 370 U.S. 294, 312-16 (1962).

134. *United States v. Penn-Olin Chemical Co.*, 378 U.S. 158 (1964).

135. *Id.*

136. *Id.* at 173.

137. *Id.* at 174.

138. *Division Chief's Speech*, *supra* note 8, at 873. See also P. AREEDA & D. TURNER, *supra* note 74, at ¶ 947.

139. 603 F.2d 263 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).

140. While the arrangements at issue in *Berkey* were joint development programs and not technically research joint ventures, the Second Circuit treated them as such. *Id.* at 301.

141. This Comment will consider only the section 1 claims in *Berkey* since they are most relevant to analysis of joint venture activity. For a discussion of the monopolization claims and the Second Circuit's treatment in *Berkey* of innovation issues under section 2, see P. AREEDA & D. TURNER, *supra* note 74, at ¶ 738.2.

cameras and film but did not make flash devices for taking photographs in dim lighting. In 1967 Sylvania came to Kodak with a flash invention called the "magicube" which represented a major advance over prior flashes since it did not require batteries. Kodak and Sylvania subsequently entered into a joint project to develop and market the Sylvania invention. As a condition for joint development of the magicube, Kodak prohibited Sylvania from disclosing its inventions to any other camera manufacturer so that all details of the new device would be withheld from the public and the trade. Shortly thereafter, General Electric also approached Kodak with proposals for a new flash device. In exchange for Kodak's agreement to produce the General Electric flash as part of a joint venture, General Electric was similarly forbidden to disclose its invention to others.

Berkey charged that Kodak violated section 1 of the Sherman Act by requiring that Sylvania and General Electric not predisclose to competing camera manufacturers information regarding flashcube innovations on which Kodak, Sylvania and General Electric were working. Berkey claimed that the secrecy agreements Kodak extracted from GE and Sylvania were an unreasonable restraint of trade because they prevented other camera makers from competing in the production of cameras that could operate with the new flash devices. The jury agreed with Berkey and found that Kodak's conduct was an unreasonable restraint of trade.¹⁴² On appeal, the Second Circuit found that there was enough evidence for the jury to have found a violation of section 1. The court found that without any technological justification, GE kept a desirable innovation off the market for two years solely to suit Kodak's convenience. "There is a hollow ring to a claim of justification by appeal to the need to promote innovation, where the result of the conduct was such a clear loss to consumers," the court noted.¹⁴³

Berkey represents the best example of the type of antitrust scrutiny to which research joint ventures were subject prior to the National Cooperative Research Act. In *Berkey*, the Second Circuit held that joint technology development agreements were not per se violations of section 1.¹⁴⁴ "Joint development programs can benefit competition," the court

142. *Berkey Photo, Inc. v. Eastman Kodak Co.*, 457 F. Supp. 404, 410 (S.D.N.Y. 1978).

143. 603 F.2d at 302. As to Berkey's claim that Kodak was liable for monopolization, the court stated that "we respect innovation" and refused to require predisclosure of Kodak's own inventions. *Id.* at 301. By effectively rejecting a predatory innovation cause of action, the court deliberately construed section 2 of the Sherman Act to avoid an interpretation that would stifle innovation. *Id.* "But this is . . . different from an agreement among a few firms to restrict to themselves the rewards of innovation," which is the subject of section 1. *Id.*

144. *Id.* at 302 (citing *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 49-50 & n.16 (1977)).

noted, "but they are not without their costs."¹⁴⁵ Under the rule of reason articulated by the Second Circuit,¹⁴⁶ the market power of the participant firms is likely to be the most significant factor.¹⁴⁷ Joint ventures involving a monopolist such as Kodak must be particularly scrutinized in order to prevent barriers to entry. The court did not condemn all research joint ventures involving a monopolist, however, because they may sometimes result in an increase in research output. Instead the court warned that where the market structure is such that only a dominant firm has the resources necessary to exploit the complementary technology being offered by a firm in a complementary market, the alternative to joint development could be no development at all.¹⁴⁸

Berkey also established that research joint ventures possessing market power have exclusionary potential¹⁴⁹ and therefore may be required to disclose information about the research results to nonparticipants. If access to the joint venture research is essential for nonparticipants to compete effectively, and the research is not easily duplicated by nonparticipants, unreasonable restrictions on access to the joint research may violate section 1.¹⁵⁰ The sole purpose of a joint venture cannot be to limit the rewards of technology to a limited number of competitors, especially where there is evidence of any intent to monopolize. Restraints placed on the venture participants which are not necessary to achieve the venture's legitimate goals are suspect.¹⁵¹

Assuming that the venture is not a sham for the purposes of fixing prices or dividing markets, the *Berkey* case illustrates that the ultimate issue for antitrust purposes is whether the research joint venture will stimulate or retard innovation.¹⁵² A joint venture among competing firms in an industry presumably reduces the incentives of the participants to conduct similar research individually. Whether the joint venture presents an antitrust problem depends, among other things, on the industry market structure, the venture's research program, and the

145. *Id.* at 301.

146. According to the court:

The relevant variables [for rule of reason] might include: the size of the joint venturers; their share of their respective markets; the contributions of each party to the venture and the benefits derived; the likelihood that, in the absence of the joint effort, one or both parties would undertake a similar project, either alone or with a smaller firm in the other market; the nature of the ancillary restraints imposed and the reasonableness of their relationship to the purposes of the venture.

Id. at 302.

147. *Id.* at 301 (citing *L. SULLIVAN*, *supra* note 87, at 298-303).

148. *Id.* at 302.

149. *See id.*

150. ABA ANTITRUST SECTION, *supra* note 118, at 52.

151. *See Berkey*, 603 F.2d at 302-04.

152. *See Schwartz & Cooper*, *supra* note 80, at 134.

internal R&D budgets of the participants. The larger the number and the size of participating firms in the joint venture, the greater the potential for monopolization and a slowdown in research.

4. *United States Department of Justice Enforcement Position*

A pure research joint venture without ancillary restraints has never been challenged by the Antitrust Division of the United States Department of Justice.¹⁵³ Furthermore, the Department of Justice has never brought criminal charges against joint R&D project participants.¹⁵⁴ The government did, however, challenge a joint research program between major automobile manufacturers to develop air pollution control devices in compliance with government environmental regulations.¹⁵⁵ The ancillary restraints associated with this joint venture between direct competitors were believed to be resulting in a slowdown in research output. It was alleged that the participants had an incentive to delay progress because there was no deadline on the program and because the successful development of the technology would not have increased demand but only raised the industry's costs. The government objected to the joint venture and forced the automobile manufacturers to agree to a consent decree prohibiting them from conspiring to delay or obstruct the development and installation of the devices.¹⁵⁶

To help alleviate uncertainty over the government's position on research joint ventures, the Department of Justice in 1980 published its *Antitrust Guide Concerning Research Joint Ventures*.¹⁵⁷ Under the multi-

153. ANTITRUST GUIDE, *supra* note 62, at 2, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 2.

154. *Joint Economic Comm. Hearings*, *supra* note 34, at 136 (statement of Ass't Att'y Gen. William F. Baxter) ("I do not think any lawyer would seriously suggest that the threat of criminal liability deterred an effort to form any bona fide joint R&D effort.').

155. *United States v. Automobile Mfrs. Ass'n*, 1969 Trade Cas. (CCH) ¶ 72,907 (C.D. Cal. 1969), *modified sub. nom.* *United States v. Motor Vehicles Mfrs. Ass'n*, 1982-83 Trade Cas. (CCH) ¶ 65,088 (C.D. Cal. 1982).

156. *Id.* For a discussion of the conflicting incentives involved in performing joint research to meet governmental requirements, see L. SULLIVAN, *supra* note 87, at 301-03.

157. ANTITRUST GUIDE, *supra* note 62. The *Antitrust Guide* did not remove all uncertainty in this area because the report was not binding on either its author or the courts. The Justice Department report stated: "The wide variety of actual and possible joint research ventures makes it difficult to lay down rules that will be applicable to every particular case, and additional factors [that would increase the anticompetitive risks] may have to be considered in some circumstances . . ." *Id.* at 13-14, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 5. The *Antitrust Guide* nevertheless represented the Justice Department position until the passage of the National Cooperative Research Act. See *Joint Economic Comm. Hearings*, *supra* note 34, at 50 (statement of Ass't Att'y Gen. William F. Baxter). The 1980 *Antitrust Guide* has been superseded by the legislative history of the National Cooperative Research Act as the best explanation of the Justice Department's current enforcement position. *Joint Ventures Offer Firms Flexibility, Antitrust Safety for Cooperative Activities*, [July-Dec.] ANTITRUST & TRADE REG. REP. No. 1241,

factor test announced by the Justice Department, the legality of a research joint venture depended on the nature of the proposed research, the identity of the joint venturers, the industry and the restraints on conduct imposed in connection with the project. In general, research joint ventures conducting basic research in unconcentrated industries with limited collateral restraints would not offend the antitrust laws.¹⁵⁸ According to the Justice Department, joint research among firms in non-competing industries will seldom give rise to antitrust concerns, nor will joint ventures between competitors possessing small market shares where there are no unreasonably restrictive collateral restraints.¹⁵⁹ The Justice Department concluded that "much joint research may be engaged in without violating the antitrust laws."¹⁶⁰

II. THE NATIONAL COOPERATIVE RESEARCH ACT

The National Cooperative Research Act affects joint R&D ventures in three important ways. First, it attempts to clarify the proper standard for evaluating this type of joint venture under the antitrust laws. Second, the Act grants special protections in the way of reduced damage exposure to joint R&D ventures that file notifications with the Federal government. Finally, parties to a joint R&D venture can recover attorney's fees when successfully defending antitrust suits in certain prescribed circumstances. These three areas are discussed below.

A. The Reasonableness Standard

The Act provides that "[i]n any action under the federal antitrust laws, or under any State law similar to the antitrust laws, the conduct of any person in making or performing a contract to carry out a joint research and development venture shall not be deemed illegal per se."¹⁶¹ Instead, such conduct is to be judged on the basis of its reasonableness, taking into account all relevant factors affecting competition, including its effect on competition in relevant research and development markets.¹⁶² It is important to remember that use of this standard, which applies to all activities that come within the statutory definition of a joint research and development venture, does not necessarily mean that the

at 869, 873 (BNA) (Nov. 21, 1985) (statement of Deputy Ass't Att'y Gen. Charles F. Rule).

158. ANTITRUST GUIDE, *supra* note 62, at 3, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 2.

159. *Id.* at 7, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 3.

160. *Id.* at 2, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 2.

161. 15 U.S.C. § 4302 (Supp. II 1984).

162. *Id.*

venture will survive antitrust scrutiny. There are three main issues raised by the Act's statutory rule of reason standard: (1) the scope of conduct that is consistent with the Act's definition of a joint R&D venture; (2) the definition of the relevant R&D market; and (3) the competitive factors that are to be considered in determining the antitrust legality of joint R&D ventures.

1. *Definition of Joint Research and Development Venture*

Under the National Cooperative Research Act, a "joint research and development venture" means any group of activities by two or more persons for the purpose of:

- (A) theoretical analysis, experimentation, or systematic study of phenomena or observable facts,
- (B) the development or testing of basic engineering techniques,
- (C) the extension of investigative findings or theory of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, prototypes, equipment, materials and processes, or
- (D) the collection, exchange and analysis of research information.¹⁶³

Joint R&D ventures may pursue any combination of the purposes specified above, and they may establish and operate facilities for conducting research.¹⁶⁴ The Act also permits the joint venture to be conducted on a protected and proprietary basis, to prosecute applications for patents and to grant licenses for the results of the venture.¹⁶⁵

The protections of the Act are unavailable to joint ventures that do not engage in research and development conduct as defined in the statute. The drafters of the statute intended that "the determination of whether or not a particular venture falls within the purview of this Act will be based solely upon this Act's definition, this Act's legislative history, and judicial interpretation of this Act."¹⁶⁶ The definition is

163. 15 U.S.C. § 4301(a)(6)(A)-(D).

164. 15 U.S.C. § 4301(a)(6)(E).

165. *Id.* This Comment does not consider the types of intellectual property protections which may be undertaken by joint R&D ventures. The precursor to the National Cooperative Research Act as submitted by the Reagan Administration also contained provisions to clarify the antitrust treatment of certain intellectual property devices such as patent pools, but the Justice Department withdrew these proposals for further study. See *Senate Judiciary Comm. Hearings, supra* note 29, at 254 (statement of Ass't Att'y Gen. J. Paul McGrath).

166. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 7, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3132.

intended to exclude from statutory protection most conduct by a joint R&D venture that could result in spillover effects into decisions about such items as the price or output of goods or services sold outside the venture.¹⁶⁷

The following activities are specifically excluded from the definition of a "joint research and development venture": (1) the exchange of information among competitors relating to costs, prices or marketing that is not reasonably required to conduct the R&D that is the purpose of the venture; (2) agreements involving the production and marketing of products or processes, such as trade secrets and patents, that are not developed through the R&D venture; and (3) agreements to restrict or require the sale, licensing or sharing of inventions not developed through the venture, or to restrict or require participation in other R&D activities, that are not reasonably required to prevent misappropriation of proprietary information.¹⁶⁸

Classic cartel-like conduct by joint ventures, such as horizontal price-fixing and territorial restrictions and restraints on competition that are ancillary to a legitimate cooperative R&D venture, are not included in the definition of a joint R&D venture and are therefore excluded from the protections of the Act.¹⁶⁹ Moreover, "when the sole purpose of the joint activity is to prepare a product for the commercial marketplace, the protections of the Act are not available."¹⁷⁰

2. *Defining the Relevant Market*

Courts are required under the Act to pay special attention to the "effects on competition in properly defined relevant research and development markets" when analyzing joint R&D ventures for antitrust legality.¹⁷¹ Market definition and the assessment of market power are the crucial first steps in rule of reason antitrust analysis.¹⁷² However,

167. *Id.* at 11, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS at 3135. The definitions and exclusions are also intended to deny the Act's protections to restraints on competition that are ancillary to a legitimate joint R&D venture. 130 CONG. REC. H10566 (daily ed. Oct. 1, 1984) (statement of Rep. Rodino).

168. 15 U.S.C. § 4301(b).

169. *See* H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3132. Representative Peter Rodino stated during the floor debates: "We are creating no exemptions for anticompetitive behavior." 130 CONG. REC. H10565 (daily ed. Oct. 1, 1984) (statement of Rep. Rodino). It should be noted that such conduct engaged in by research joint ventures may still be subject to rule of reason treatment under prior case law.

170. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8 (1984), *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3132.

171. 15 U.S.C. § 4302.

172. Harris & Jorde, *Antitrust Market Definition: An Integrated Approach*, 72 CALIF. L. REV. 1, 5-6 (1984).

there is little case law precedent for defining R&D markets, and the legislative history of the National Cooperative Research Act is surprisingly sketchy on the proper methodology for defining "relevant research and development markets." Under traditional antitrust doctrine, the relevant product and geographic markets must first be determined, and then the market share possessed by the firm or joint venture in question must be calculated.¹⁷³

a. Product Market

The basic products of research and development are knowledge and information.¹⁷⁴ The activity of research and development as a separate market consists primarily of private firms conducting, or capable of conducting, R&D for their own use, under contract or for license to others. Research by private non-profit foundations, university scientists and government laboratories should also be considered for inclusion in the market if they are conducting comparable R&D to that conducted by the joint venture.¹⁷⁵

"The relevant R&D market must be defined largely by identifying firms (other than the joint venturers) that are undertaking the same or similar research and development or that would be willing and able to undertake similar R&D in response to an increase in the expected rate of return on investment in that R&D," according to William F. Baxter.¹⁷⁶ "To be included in the relevant R&D market," according to the Conference Report accompanying the Act, "firms must have the ability and incentive, either individually or in collaboration with one another, to

173. *Id.* at 5.

174. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134. See also *Joint Economic Comm. Hearings*, *supra* note 34, at 18 (statement of Ass't Att'y Gen. William F. Baxter).

175. It is not clear whether Congress intended that the R&D work being carried out by the Federal Government, which accounts for about half of the total R&D conducted in the United States, should usually be considered in the relevant market. Most of the research and development conducted by the Federal Government does not have competitiveness as its goal. PRESIDENT'S COMMISSION, *supra* note 25, at 19.

176. Baxter, *Antitrust Law and the Stimulation of Technological Invention and Innovation*, *Joint Economic Comm. Hearings*, *supra* note 34, at 73. Baxter's approach would identify and include in the market those companies who are currently performing R&D that is similar to that performed by the joint venture, or who could begin to perform such R&D relatively rapidly. See also Jorde & Harris, *supra* note 172, at 29 (suggesting transactional approach to market definition which emphasizes subjective perceptions of firms). The Conference Report accompanying the Act, however, states that an objective standard should be used in deciding whether to include a firm in the relevant market. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134.

undertake R&D comparable to that of the joint venture in question."¹⁷⁷ In addition to a firm's ability and incentive to compete in a relevant R&D market, an evaluation of the "firm's business objectives, facilities, technologies, and other available assets" will determine whether it is included in the market.¹⁷⁸ Since a primary anticompetitive concern surrounding joint R&D ventures is the risk of collusion that will result in an underinvestment in R&D,¹⁷⁹ the relevant R&D market should be defined to include those individual firms and business combinations outside the joint R&D venture which have a realistic chance of upsetting any plans by the participants to slow research progress.¹⁸⁰ Firms therefore need not be actual competitors at the production or marketing stage in order to be included in the relevant R&D market, since this is not relevant to their ability or incentive to compete in the R&D market.¹⁸¹

While the most important competitive measuring stick is "effects on competition in properly defined relevant research and development markets,"¹⁸² the Conference Report states that this does not mean that other competitive factors should be ignored.¹⁸³ Under the Act all relevant factors affecting competition should be taken into account in considering the reasonableness of a joint R&D venture.¹⁸⁴ This means that other markets besides the R&D market will be relevant because joint R&D ventures can affect price and output competition among the participants at the production and marketing stages, either currently or in the future.¹⁸⁵ The Conference Report suggests that a joint R&D venture

177. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134.

178. *Id.*

179. Courts must specifically consider whether any challenged joint R&D venture could reduce R&D competition and thus deter innovation. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133.

180. Strictly speaking, the R&D market should be narrowly defined as separate from the market for innovation. R&D itself provides only the scientific and technical advances needed to sustain rapid rates of innovation, while several steps are usually needed to translate R&D into competitive advantage. Firms that may be willing and able to manufacture, package or sell the goods and services that result from the R&D efforts of the venture might be part of a relevant "innovation market" (if there is such a thing) but they should not be included in the relevant R&D market unless they actually conduct comparable research or would be capable of conducting such research.

181. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133.

182. *Id.*

183. *Id.*

184. 15 U.S.C. § 4302.

185. Baxter, *Antitrust Law and the Stimulation of Technological Invention and Innovation*, Joint Economic Comm. Hearings, *supra* note 34, at 70. There may therefore be three markets that are relevant for antitrust purposes when examining the competitive impacts of a joint research and development venture. The first is today's market for existing products and services. The second is the R&D market itself. The third is "tomorrow's markets for the new goods and services that will result from the successful R&D joint

might have anticompetitive effects if it includes a large portion of the competitors in properly defined relevant markets for goods and services that are currently being produced.¹⁸⁶ The overall reasonableness of the venture will therefore probably require consideration of several distinct product markets. Joint R&D ventures may therefore be condemned not only because of their negative effects on R&D competition, but because of anticompetitive effects in one of several product markets.¹⁸⁷

b. Geographic Market

The relevant geographic market for a joint R&D venture will generally be international because of the unique nature of research and information, because it is virtually costless to transmit the information that embodies the fruits of R&D and because of the presence or potential of foreign competition in many areas.¹⁸⁸ The Conference Report instructs courts to consider the international dimension of R&D markets because overseas R&D competitors can be significant factors in properly defined R&D markets.¹⁸⁹

c. Market Share and Market Power

Once the relevant R&D market has been defined, the market share of the joint venture should be calculated. The purpose of calculating market shares is to determine the relative abilities of the market participants to engage in successful R&D. There is, however, no ideal measure

venture." Baxter, *The Definition and Measurement of Market Power in Industries Characterized by Rapidly Developing and Changing Technologies*, 53 ANTITRUST L.J. 717 (1984) [hereinafter cited as Baxter, *Market Definition*].

186. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 11, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3135.

187. Attempts to examine all the potential competitive effects of joint R&D ventures by lumping everything into the R&D market should be resisted because R&D markets are only one relevant product market. Assistant Attorney General Baxter suggested that "if the technology being pursued by the joint venture is sufficiently understood and developed to evaluate its commercial potential, alternative technologies that clearly would be competitive with the joint venture's technology should be included in the market definition." Baxter, *Antitrust Law and the Stimulation of Technological Invention and Innovation*, Joint Economic Comm. Hearings, *supra* note 34, at 72. The problem with this approach is that rarely will courts (or even the participants) be able to determine what technologies will result from the basic research being conducted by a joint R&D venture. According to Baxter, "technologies that would be at least 90 to 95 percent as efficient . . . as the venture's technology would counteract the joint venture's ability to suppress innovation." *Id.* This is probably true but is irrelevant for determining which firms belong in the relevant R&D market. Baxter's approach is relevant only for deciding which firms to include in current or future product markets.

188. *Division Chief's Speech*, *supra* note 8, at 873.

189. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134.

of market share for a joint R&D venture because the traditional concepts of shipments or capacity as measured in dollars or unit volume are not applicable to research and development. The Department of Justice will assign R&D market shares based on absolute R&D expenditures, adjusting those shares where necessary to reflect the differing abilities of market participants to perform R&D.¹⁹⁰ An alternative proxy for determining market share is the use of "R&D-oriented assets."¹⁹¹ In a variety of situations, market share and market concentration data may either understate or overstate the likely future competitive significance of a firm or firms in the market,¹⁹² so uncertainty in characterizing market power is inevitable.¹⁹³

3. *Weighing Competitive Effects*

The Act declares that "the conduct of any person in making or performing a contract to carry out a joint research and development venture shall . . . be judged on the basis of its reasonableness."¹⁹⁴ A "reasonableness" test means that courts must consider the actual competitive effects of such ventures under something similar to the "rule of reason" antitrust standard.¹⁹⁵ The Act says courts should take into account "all relevant factors affecting competition,"¹⁹⁶ which is consistent with prior doctrine.¹⁹⁷ A joint R&D venture shall not be deemed to violate the antitrust laws if it has no anticompetitive effects at all, or if the venture's procompetitive effects outweigh any anticompetitive effects.¹⁹⁸ The first

190. *Division Chief's Speech*, *supra* note 8, at 873. Absolute expenditures must be weighted in some way to reflect the relative R&D efficiency and effectiveness of each firm. Even though two firms spend identical amounts on R&D, one may be a more significant provider of R&D. Baxter, *Antitrust Law and the Stimulation of Technological Innovation and Innovation*, *Joint Economic Comm. Hearings*, *supra* note 34, at 70.

191. Baxter, *Market Definition*, *supra* note 185, at 720-21.

192. See P. AREEDA & D. TURNER, *supra* note 74, at ¶ 955.

193. See, e.g., *United States v. General Dynamics*, 415 U.S. 486 (1974) (holding that merger would not substantially lessen competition where market share figures regarding past coal production were irrelevant for measuring future ability to compete).

194. 15 U.S.C. § 4302.

195. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133. It has been questioned whether courts can under this standard consider alleged benefits not directly linked to competitive impact. See Katsh, *Congress Reduces Antitrust Roadblocks for Basic and Applied R&D Joint Ventures*, *COMPUTER LAWYER*, Jan. 1985, at 32, 36. The noncompetitive factors appropriate for consideration under the antitrust statutes generally are limited. See *National Soc'y of Professional Engineers v. United States*, 435 U.S. 679 (1978) (rejecting public health and safety rationale offered to support ban on competitive bidding by professional engineers).

196. 15 U.S.C. § 4302.

197. See *supra* note 115.

198. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133.

inquiry therefore is whether a particular joint R&D venture has or may have anticompetitive effects. The Conference Report identifies four anticompetitive effects that courts should consider when evaluating joint R&D ventures.

a. Overinclusiveness

The major anticompetitive concern associated with joint R&D ventures is that there will be too many participants in the joint venture, thus reducing the number of competing R&D efforts.¹⁹⁹ If there are too few competing R&D ventures and too few independent research efforts, the incentives for the joint venture to innovate might be diminished. The incentives created by the potential rewards of winning and the costs of losing in the R&D competition are reduced when joint venture participants are required to share the venture's successes and failures with many competitors.²⁰⁰ If fewer businesses are pursuing alternative research programs because they are members of a single large joint venture, R&D mistakes and failures become more costly.²⁰¹ Overinclusive joint R&D ventures therefore present the dual risks of diminished incentives for innovation and costly mistakes in research strategy, both of which can diminish the output of useful research and development.

There is no standard size or minimum number of joint ventures necessary to ensure adequate R&D competition.²⁰² Congress heard testimony that a joint venture containing only fifteen to twenty percent of the relevant R&D market would be unlikely to produce anticompetitive effects.²⁰³ A joint R&D venture is unlikely to present a problem of overinclusiveness if, after its formation, four or five other equal-sized ventures would still be possible in the relevant R&D market.²⁰⁴ This does not mean that a joint R&D venture is necessarily anticompetitive when there are (or can only be) fewer than four entities in the R&D market.²⁰⁵ Joint R&D ventures that encompass an entire industry are permissible if

199. *Id.* at 10, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3134.

200. *Id.*

201. *Id.*

202. *Id.* The optimal size of the joint venture will depend on the structure of the industry, the number of firms involved, and the nature of the research being undertaken.

203. See *Senate Judiciary Comm. Hearings*, *supra* note 29, at 23 (statement of Ass't Att'y Gen. William F. Baxter). Baxter believes that a research joint venture controlling 15 to 20 percent of R&D assets in a relevant market is benign as a matter of law. Baxter, *Market Definition*, *supra* note 185, at 723.

204. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134-35.

205. *Id.* at 10, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3135.

necessary to achieve the efficiency gains that justified the formation of the joint venture in the first place.²⁰⁶

b. Exclusion of Competitors

When research objectives can be efficiently achieved only when a large portion of the competitors in a market are included in the joint venture (e.g., to achieve economies of scale), the exclusion of competitors may be anticompetitive. For example, if the optimal size of a joint R&D venture includes fifty-one percent of the market, the venture may have to include the other forty-nine percent of the market if they are incapable of forming an efficient venture on their own.²⁰⁷ The Conference Report recognizes that there may be situations in which all of the competitors in the relevant R&D market should be included in the joint venture.²⁰⁸

Antitrust commentators generally agree that exclusion of rivals by joint action is anticompetitive when there is no efficiency gain, but they disagree as to how strong a showing of efficiency gain is required to justify exclusion of a rival.²⁰⁹ If the joint venture would give the participants a unique advantage over rivals, excluding competitors from access to the products of the venture may be justified only if it is indispensable to achieve productive benefits that outweigh any competitive loss.²¹⁰ Under traditional antitrust doctrine, private facilities which are essential to entry in a market or industry must generally be made available to competitors on nondiscriminatory terms.²¹¹

c. Slowing the Pace of Innovation

Any agreement by participants in a joint R&D venture to slow the pace of innovation or unreasonably discourage the commercialization and exploitation of the fruits of the venture would be highly anticompetitive.²¹² Collusion of this kind has previously been rejected by courts.²¹³ It is often difficult, of course, to detect such collusion, and

206. *Id.* When only a venture of this size can efficiently pursue the research objectives, the exclusion of competitors by the venture may be anticompetitive. *Id.*

207. *Senate Judiciary Comm. Hearings, supra* note 29, at 23 (statement of Ass't Att'y Gen. William F. Baxter).

208. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3135.

209. Brodley, *supra* note 59, at 1534 n.31.

210. Brodley, *Joint Ventures with Foreign Partners*, 53 ANTITRUST L.J. 73, 80 (1984).

211. *See United States v. Terminal Road Ass'n*, 224 U.S. 383 (1912).

212. *See* H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10-11, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3135.

213. *See Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263 (2d Cir. 1979) (applying rule of reason); *see also United States v. Automobile Mfrs. Ass'n*, 1969 Trade Cas.

consumers may not feel the direct effects of agreements to slow innovation for a long time.

d. Spillover Effects

Spillover occurs when permissible coordination of research and development activities leads to anticompetitive conduct concerning non-R&D matters such as the manufacturing and pricing of current products. Collusion among competitors with respect to the price or output of goods and services sold outside their joint R&D venture, or with respect to strategic business decisions unrelated to research and development, is likely to be anticompetitive.²¹⁴ The definition of "joint R&D venture" in the Act is intended to preclude spillover effects by limiting the range of permissible activities.²¹⁵ Joint R&D ventures should emphasize basic research²¹⁶ and limit their agreements involving production and marketing to those concerning the proprietary information developed through the venture, such as patents and trade secrets.²¹⁷ Participants wishing to avoid spillover effects should consider implementing safeguards such as separating all marketing and sales people from involvement in management of the joint R&D venture.²¹⁸

Once the anticompetitive effects of a particular joint R&D venture are established, they must be weighed against any demonstrated procompetitive benefits. Among the procompetitive factors which must be considered are the enhancement of efficiency through economies of scale and synergies created by complementary abilities of different competitors.²¹⁹ The possible efficiency contributions of joint ventures include:

(CCH) ¶ 72,907 (C.D. Cal. 1969), *modified sub. nom.* United States v. Motor Vehicles Mfrs. Ass'n, 1982-83 Trade Cas. (CCH) ¶ 65,088 (C.D. Cal. 1982) (case ended by government consent decree).

214. See H.R. REP. NO. 1044, 98th Cong., 2d Sess. 11, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3135.

215. *Id.*

216. *Id.* In fact, joint R&D ventures must limit themselves to basic research in order to retain the benefits of the Act. 15 U.S.C. § 4301(a)(6).

217. 15 U.S.C. § 4301(b)(2).

218. Safeguards built into a program can minimize the likelihood of spillover effects. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 11, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3135. See *Centrifugal Pump Industry Wins Justice Clearance for \$6 Million R&D Joint Venture*, [July-Dec.] ANTITRUST & TRADE REG. REP. (BNA), No. 1223, at 69 (July 11, 1985) (reporting Justice Department approval of joint research and development venture that will be run by independent contractor, and supervised by board of directors composed of representatives with no pricing or marketing responsibility for their company, who will keep records of all meetings and telephone conversations) [hereinafter cited as *Centrifugal Pump Industry Clearance*].

219. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 12, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3136.

(1) economies of scale; (2) complementing assets or specialized skills; (3) acquiring new technological or managerial capabilities; and (4) improving the risk/reward ratio for introduction of new products or entry into new geographic markets.²²⁰ Procompetitive benefits are more likely to outweigh anticompetitive effects as the cost of an R&D venture increases relative to a single firm's budgetary limits, or as greater economies of scale can be achieved by cooperative research.²²¹ Since the Conference Report's discussion is not exhaustive regarding the factors to be considered under the rule of reason,²²² courts should consider competitive factors such as those described by the Second Circuit in *Berkey*.²²³

Potential competition theories under section 7 of the Clayton Act and the *Penn-Olin* decisions appear to still be applicable to joint R&D ventures after the Act.²²⁴ The Act states that in any action under "the antitrust laws,"²²⁵ the conduct of any person in making a contract to carry out a joint R&D venture shall be judged on the basis of its reasonableness, taking into account all factors affecting competition. Potential competition would seem to be a "relevant factor" for consideration, although there is no legislative history on this precise question. This means that the mere formation of a joint R&D venture could be found to violate the antitrust laws if its effect might be to substantially lessen competition in the relevant R&D market.²²⁶

B. Notification and Detrebling

Proper notification to the agencies charged with antitrust enforcement²²⁷ allows joint research and development ventures to invoke a

220. Weston & Ornstein, *Efficiency Considerations in Joint Ventures*, 53 ANTITRUST L.J. 85 (1984).

221. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 11, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3136.

222. *Id.* at 9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3133.

223. See *supra* note 146.

224. But see Stoll & Goldfein, *Joint Ventures--Farewell to 'Penn-Olin'?*, N.Y.L.J., Nov. 20, 1984 at 1, col. 1. See *supra* text accompanying notes 135-38 for a discussion of the potential competition theory.

225. See 15 U.S.C. § 4301(a) (defining "antitrust laws" affected by the National Cooperative Research Act by reference to 15 U.S.C. § 12(a) (1982) which includes the Clayton Act).

226. The Act covers the making of a contract to carry out a joint R&D venture as well as the performing of the contract. 15 U.S.C. § 4302.

227. Notifications filed pursuant to the Act must be delivered in writing to the Federal Trade Commission's Bureau of Competition and the Antitrust Division of the Department of Justice. 49 Fed. Reg. 50,122 (1984) (statement of Ass't Att'y Gen. J. Paul McGrath). Within thirty days after receiving notification, the Department of Justice will publish a notice in the *Federal Register* identifying the parties to the venture and describing in general terms its area of planned activity. 15 U.S.C. § 4305(b). The contents of

special statutory protection from treble damages.²²⁸ Any plaintiff making a successful antitrust claim against a joint R&D venture based on conduct that is within the scope of a notification that has been filed pursuant to the Act is limited to recovering actual damages, interests and costs, including a reasonable attorney's fee.²²⁹

The original notification must disclose the identities of the participants and the nature and objectives of the venture.²³⁰ Notification must occur not later than ninety days after parties have entered into a written agreement to form such a venture.²³¹ Any change in a joint R&D venture's membership must be disclosed in a notification within ninety days in order to maintain the continuous protections of the Act.²³² Additional notifications may have to be filed when the joint venture undertakes new or different research activities,²³³ but even without these new notifications, joint R&D ventures will continue to enjoy the Act's detrebling protections for activity which was disclosed in the original notification.²³⁴

The decision to register under the National Cooperative Research Act is entirely voluntary.²³⁵ Congress left it to the venturers themselves to weigh the disadvantages of disclosure against the advantages of limit-

the *Federal Register* Notice must be made available to the joint venturers prior to publication. *Id.* This will allow the parties to exercise their right to withdraw a notification before publication of a notice. 15 U.S.C. § 4305(e). Alternatively, the Department of Justice invites joint venturers to submit their own draft *Federal Register* Notices. 49 Fed. Reg. 50,122 (1984).

228. 15 U.S.C. § 4305(a).

229. 15 U.S.C. § 4303(a).

230. 15 U.S.C. § 4305(a). There is no requirement that joint R&D ventures notify the antitrust agencies of their specific research activities; only the "nature and objectives" of a research project must be disclosed. The parties need only provide as part of the notification adequate information to permit the antitrust agencies to publish a notice. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 19, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3144.

231. Courts should determine this date under generally accepted principles of commercial contract law. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 17, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3142.

232. Failure to disclose that a new member has joined the joint R&D venture will terminate the protections of the Act for all parties to the venture at the conclusion of the 90 day period. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 17-18, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3142.

233. 15 U.S.C. § 4305(a). "[W]here the previous disclosure does not cover activities engaged in by parties to an R&D venture, there will be no [detrebling] protection for such activities." 130 CONG. REC. H10567 (daily ed. Oct. 1, 1984) (statement of Rep. Edwards) (emphasis added).

234. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 18, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3143.

235. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 21, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3146 ("joint ventures are free to take advantage of the notification procedure if they so choose.").

ing their potential exposure to actual damages.²³⁶ The Act's reasonableness test and provisions permitting defendants to recover attorney's fees in certain circumstances apply to joint R&D ventures (as defined) even if they have not notified the antitrust enforcement agencies.²³⁷ A decision by a particular joint research and development venture not to file a notification does not create a negative inference or presumption of non-compliance under the statute,²³⁸ but the venture will not qualify for de-trebling protection.

Joint venturers must also exercise their own discretion in determining the quantity and form of the material required to describe the nature and objectives of their venture.²³⁹ Parties to a joint R&D venture have an incentive to be accurate (if not thorough) in their notifications because in the event of litigation a reviewing court will look to see if the notification accurately describes the venture's activities before allowing the Act's protections.²⁴⁰

The antitrust agencies' roles in implementing the notification provision are intended to be purely ministerial.²⁴¹ Notification does not involve a type of federal regulation of joint R&D because publication of the notice in the *Federal Register* implies neither approval nor certification of the conduct of the joint venturers by the enforcement agencies.²⁴² Congress did not believe that regulations to implement the notification procedures needed to be promulgated because Congress only

236. The 90 day filing period was provided so that the venturers could have sufficient time to decide whether to file notification materials. *Id.* at 17, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS at 3142.

237. *Id.* at 21, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS at 3146.

238. *Id.*

239. 49 Fed. Reg. 50,122 (1984). A completely uninformative notification, however, such as "research and development to promote the mutual interests of the parties," would not satisfy the requirements of section 4305(a). H.R. REP. NO. 1044, 98th Cong., 2d Sess. 19, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3144.

240. Nonsubstantive or technical omissions in the filing will not destroy the protections of 15 U.S.C. § 4303 where a joint venture has made a good faith effort to comply with the written notification requirements. *See* H.R. REP. NO. 1044, 98th Cong., 2d Sess. 19, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3143.

241. 130 CONG. REC. H10,570 (daily ed. Oct. 1, 1984) (statement of Rep. Moorhead). Any action taken or not taken by the Attorney General or the Federal Trade Commission with respect to notifications filed under the Act is not subject to judicial review. 15 U.S.C. § 4305(f).

242. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 17, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3142. The published notifications cannot suggest that the joint venture is entitled to the protection of the Act because this will only be determined by courts if the venture is involved in litigation under the Act. All the notices published in the *Federal Register* state that "the notification was filed for the purpose of invoking the Act's provisions limiting the recovery of antitrust plaintiffs to actual damages under specified circumstances." (emphasis added). *See, e.g.,* Notice, 50 Fed. Reg. 26,850 (1985).

wanted joint venturers to submit adequate information for the publication of a notice in the *Federal Register*.²⁴³

The advantages of notification are not available to all joint ventures involving research,²⁴⁴ and companies wishing to maintain privacy from either the government or competitors or both may forgo the protections of the Act's detrebling provisions if they view the level of required disclosure as too high.²⁴⁵ Although the National Cooperative Research Act modifies the right granted to private parties to sue for treble damages,²⁴⁶ injured parties²⁴⁷ may still sue for full recovery of their actual damages, the cost of suit, reasonable attorney's fees and prejudgment interest²⁴⁸ unless the court finds that such an award is unjust.²⁴⁹

To summarize, R&D conduct within the scope of a joint research and development venture's notification is never subject to recovery for more than actual damages when there is compliance with the notification requirements. It must be emphasized that detrebling is linked to notification and a joint R&D venture must file a proper notification and file additional notifications as necessary when the scope of the research or membership in the joint venture changes. The other advantages of the Act, including the reasonableness standard and the awarding of attorney's fees to prevailing parties in certain circumstances, do not depend on notification.

243. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 18, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3143.

244. Firms are likely to forgo filing if research and development is but one component of a broader joint venture effort that includes manufacturing and marketing. These commercial activities are explicitly excluded from the Act's definition, except where they involve the production or marketing of proprietary information developed through the venture. 15 U.S.C. § 4301(b)(2).

245. *But cf.* 15 U.S.C. § 4305(d) (protecting from disclosure under the Freedom of Information Act and from open judicial or administrative proceedings all information and documentary material submitted by the joint R&D venture but not appearing in the published notice).

246. 15 U.S.C. § 15 (1982).

247. Plaintiffs presumably will continue to be confronted with traditional standing tests requiring antitrust injury. To have standing, a plaintiff must prove that it suffered "antitrust injury" which is "injury of the type the antitrust laws were intended to prevent and that flows from that which makes the defendant's acts unlawful." *Brunswick Corp. v. Pueblo Bowl-O-Mat*, 429 U.S. 477, 489 (1977) (denying standing to bowling centers challenging Brunswick's acquisition of competing centers under Clayton Act § 7).

248. 15 U.S.C. § 4303(a).

249. 15 U.S.C. § 4301(d). See H.R. REP. NO. 1044, 98th Cong., 2d Sess. 13, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3138 (examples of when payment of prejudgment interest would be unjust).

C. Attorney's Fees

When a plaintiff's claim or its conduct of litigation in either a state or federal antitrust suit against a joint R&D venture is held to be "frivolous, unreasonable, without foundation, or in bad faith," the defendant may be reimbursed for fees incurred in defending against such claim or conduct.²⁵⁰ The bill originally adopted by the House of Representatives would routinely have awarded attorney's fees to the prevailing party.²⁵¹ Congress, however, did not want to discourage plaintiffs from performing their valuable function as "private attorneys general" under the anti-trust laws, so there is no liability for attorney's fees when a plaintiff loses a non-frivolous case brought in good faith.²⁵²

In choosing to allow courts to award prevailing defendants attorney's fees only for suits that are "frivolous, unreasonable, without foundation, or in bad faith," Congress followed the standard adopted by the Supreme Court for awarding attorney's fees to defendants in Title VII employment discrimination cases.²⁵³ Since joint ventures by definition include multiple parties, a plaintiff's potential liability for his opponents' attorney's fees might be extremely high.²⁵⁴ A trial court may offset part or all of any fee award if it finds that the prevailing party conducted a portion of the litigation frivolously, unreasonably, without foundation, or in bad faith.²⁵⁵ The Act's provisions for attorney's fees do not apply to *parens-patriae* suits brought by State Attorneys General under section 4C of the Clayton Act.²⁵⁶

250. 15 U.S.C. § 4304(a)(2).

251. H.R. 5041, 98th Cong., 1st Sess., 130 CONG. REC. H8730 (daily ed. Aug. 9, 1984).

252. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 14-15, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3139.

253. See *id.* at 15, reprinted in 1984 U.S. CODE CONG. & AD. NEWS at 3139-40 (detailed discussion of how this standard for awarding attorney's fees should operate). The Supreme Court first articulated this standard in *Christianburg Garment Co. v. EEOC*, 434 U.S. 412, 417-22 (1978).

254. A joint research and development venture that takes the corporate form could alternatively be sued in its individual capacity.

255. 15 U.S.C. § 4304(b). See also H.R. REP. NO. 1044, 98th Cong., 2d Sess. 16, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3140.

256. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 16, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3141. Section 4C, codified at 15 U.S.C. § 15c, provides that "the court may, in its discretion, award a reasonable attorney's fee to a prevailing defendant upon a finding that the State attorney general has acted in bad faith, vexatiously, wantonly, or for oppressive reasons." 15 U.S.C. § 15c(d)(2) (1982).

III. IMPLEMENTATION OF THE NATIONAL COOPERATIVE RESEARCH ACT

A. Private Industry Response

As of January 31, 1986, thirty-two joint R&D ventures had filed written notifications with the Justice Department and had notices published in the *Federal Register* pursuant to the Act. While many of these ventures will be conducting research in the high technology areas of computers, semiconductors and telecommunications, a majority of the joint ventures have been formed to perform research in traditional fields such as steel fabrication, concrete and cement, truck transmissions, oil and gas drilling, and automobiles. This early experience is consistent with the suggestions of a recent *Harvard Business Review* survey that the cooperative research efforts most likely to respond to a modification of the antitrust laws will be those composed of a small number of companies cooperating in a single development project or technical area and guided by a well-defined business plan.²⁵⁷ Only fifteen of the joint R&D ventures that have filed notifications appear to have been in existence prior to the Act's official enactment.²⁵⁸

While private industry response in the first year may be an insufficient basis on which to speculate on the Act's long-term effectiveness, eighty-five percent of the industrial organization economists responding to a recent survey predicted that the amount of joint research being conducted would increase as a result of the National Cooperative Research Act.²⁵⁹ However, the most common expectation was that in quantitative terms the increase was likely to be de minimus.²⁶⁰ Forty-six percent of those responding to the survey stated that the competitive performance of firms in this country would decrease as a result of the Act because it will allow firms to engage in illegal activity such as price fixing.²⁶¹ Many of the economists concluded that competitive research would continue because of the chance for individual firms to invent something on their own. The economists were

257. Fusfeld & Haklisch, *supra* note 47, at 74.

258. Preexisting joint ventures were required to notify the Federal Government not later than January 9, 1985, 15 U.S.C. § 4305(a), and the Justice Department was required by law to publish the Federal Register notice within 30 days after filing. 15 U.S.C. § 4305(b). It was therefore assumed that joint R&D ventures that had been in existence prior to the effective date of the Act would have had notices published in the Federal Register on or before February 15, 1985.

259. Cartwright, Kamerschen, Tilley & Wright, *Some Economists' Perceptions of the Economic Impact of the National Cooperative Research Act of 1984* (1985) (Department of Economics, University of Georgia; copy of unpublished manuscript available at *High Technology Law Journal* office).

260. *Id.* at 6-7.

261. *Id.* at 7.

consistent in their opinion that the law will not substantially affect the economy at home or abroad.

B. Current Department of Justice Enforcement Policy

The Justice Department's ministerial function of processing notifications pursuant to the National Cooperative Research Act has not displaced either its traditional enforcement function or its routine investigation of business combinations for antitrust violations. With incentives for private antitrust suits against joint R&D ventures dramatically reduced by the National Cooperative Research Act, the United States government may in fact be the primary plaintiff challenging joint R&D ventures under the antitrust statutes. The current Justice Department position is that it will not be concerned with joint R&D ventures unless they result in highly concentrated markets for research.²⁶² The Department will consider efficiency justifications that yield high market shares, and will be sensitive to the need for reasonable restrictions on venture-generated technology.²⁶³

The Justice Department believes collateral restrictions are legal if they directly further a joint venturer's essential purpose and are of limited scope and duration,²⁶⁴ but will oppose collateral agreements that bear no reasonable relationship to the success of the joint R&D venture, in particular those involving horizontal price fixing or market division.²⁶⁵ A commitment by joint venture partners to forgo all independent R&D activity, for example, would be highly suspect.

The Justice Department recommends reliance on the business review letter process if there is a concern about the antitrust treatment of a specific proposed venture,²⁶⁶ and joint R&D ventures continue to seek

262. *Division Chief's Speech*, *supra* note 8, at 874. The current Department of Justice position is consistent with the analysis in the 1980 *Antitrust Guide*. See generally ANTI-TRUST GUIDE, *supra* note 62, at 16-19, reprinted in [Oct.-Dec.] ANTI-TRUST & TRADE REG. REP. at 5-6. According to an interview with former Assistant Attorney General McGrath, antitrust officials try to judge whether a joint venture "is likely to produce something that would not have been produced as efficiently, whether economic benefits will flow that otherwise would not occur, and then balance that against the risk of price fixing or collusion of some other troublesome sort." Henderson, *Antitrust and the Efficiency Test*, Wash. Post Nat'l Weekly Ed., Apr. 8, 1985, at 21, col. 3.

263. *Division Chief's Speech*, *supra* note 8, at 874.

264. *Id.* Examples of such permissible restraints include agreements that venture partners exchange previous research results, not disclose venture-related research results to outsiders until patents are obtained, and divide up research efforts among themselves. *Id.* This position is consistent with the approach adopted in *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 302 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).

265. *Division Chief's Speech*, *supra* note 8, at 874.

266. *Id.* Although the Justice Department is not authorized to issue advisory opinions to private parties, in certain circumstances, the Antitrust Division analyzes proposed business plans at the written request of interested parties and states its present enforce-

business review clearance even if they have already filed notifications pursuant to the Act.²⁶⁷ Government scrutiny of joint research has been demanding and clearance has not been automatic. Microelectronics and Computer Technology Corporation, for example, was informed in 1982 that the Antitrust Division would not challenge its formation because the mere establishment of the joint venture did not raise anticompetitive concerns.²⁶⁸ However, because the proposed venture had the potential of lessening competition in research, the Antitrust Division indicated that it would subsequently review the specific research ventures planned by MCC to determine whether they would result in any anticompetitive effects. In March, 1985, the Justice Department announced that it would not challenge the implementation of MCC's current joint research and development programs.²⁶⁹

The Justice Department in deciding whether to give business review approval to joint R&D ventures may apply a higher standard than a court would apply in a lawsuit under the Act. The Act is concerned primarily with the formation of joint R&D ventures, requires no advance showing of efficiencies before granting its protections and directs its focus primarily on research markets. The Justice Department, on the other hand, seems to have adopted a "predictive collusion" test which considers more than simply the R&D market in order to predict at the time of formation whether the joint R&D venture is likely to have long-term negative impacts on competition in future product markets.²⁷⁰ The Justice Department position, for example, is that the relevant market for the joint R&D venture would be the same as the relevant market for evaluating the potential anticompetitive effects of a merger between the joint venturers.²⁷¹ The Justice Department has suggested that, as a rough

ment intention. Such statements are issued under regulations providing that the request and response will be released at the time a business review letter is announced. See 28 C.F.R. § 50.6 (1985).

267. In granting business review clearance to research joint ventures, the Division reserves the right to institute enforcement proceedings if the actual operation of the research joint venture proves anticompetitive in purpose or effect. See *Centrifugal Pump Industry Clearance*, *supra* note 218, at 70.

268. United States Department of Justice Press Release (Dec. 27, 1982), reprinted in *House Science and Technology Comm. Hearings*, *supra* note 49, at 433.

269. *Justice Department Determines MCC's Joint R&D Programs will not Threaten Competition*, [Jan.-June] ANTITRUST & TRADE REG. REP. (BNA) No. 1205, at 424 (Mar. 7, 1985).

270. *Schwartz & Cooper*, *supra* note 19, at 132-33. See *Centrifugal Pump Industry Clearance*, *supra* note 218, at 69 (business review clearance granted to research joint venture after determination that there was no "countervailing significant risk to competition in existing products or in future products outside the scope of the venture.").

271. *Baxter, Antitrust Law and the Stimulation of Technological Invention and Innovation*, *Joint Economic Comm. Hearings*, *supra* note 34, at 70. The 1984 Merger Guidelines define a market as a group of products such that a hypothetical firm that is the only present and future seller of those products would possess the power to profitably restrict

rule of thumb, if a joint venture were a merger and would pass muster under the merger guidelines, it is legal.²⁷² This approach to market definition that attempts to predict the effect of a joint R&D venture on current or future product markets in order to determine the venture's legality at its point of formation has been criticized because many joint R&D ventures that present no danger to R&D competition may fail concentration tests focusing on today's and tomorrow's product markets.²⁷³ Nevertheless, the Justice Department recently gave its approval to a four partner research joint venture comprised of the only four current United States manufacturers of centrifugal pumps.²⁷⁴

IV. ANALYSIS AND ARGUMENT

The National Cooperative Research Act represents a short-term solution to the long-term declines in research and development expenditures, productivity and international competitiveness on the part of American industry.²⁷⁵ There can be little doubt about the seriousness of the problems Congress was hoping to solve by passing the National Cooperative Research Act. Substantial evidence presented to Congress in the legislative hearings demonstrated a need for legislative clarification in an area where uncertainty may have been limiting national research progress. However, it is doubtful whether Congress fully achieved its goals and whether its response in the form of the National Cooperative Research Act was the most effective means of addressing these problems. Subjecting joint research and development venturers to antitrust scrutiny under the rule of reason, reducing the incentives for private parties to pursue claims against such ventures and limiting judgments to actual damages are by themselves unlikely to result in a significant acceleration in the pace of industrial innovation. Furthermore, legal mechanisms that carefully distinguish between anticompetitive and

output and to raise prices. Antitrust Div., U.S. Dep't of Justice, 1984 Merger Guidelines, 49 Fed. Reg. 26,823, 26,824 (1984).

272. *Enactment of Statutory Protections Improves Climate for Joint Ventures*, [July-Dec.] ANTITRUST & TRADE REG. REP. (BNA) No. 1188, at 800, 802 (Nov. 1, 1984) (statement of Acting Ass't Att'y Gen. Charles F. Rule). In evaluating mergers, the Department considers both the post-merger market concentration and the increase in concentration resulting from the merger. The Department will not challenge mergers in unconcentrated markets, but will, for example, challenge the merger of any firm with the leading firm in the market having over 35 percent market share. Antitrust Div., U.S. Dep't of Justice, 1984 Merger Guidelines, 49 Fed. Reg. 26,823 (1984).

273. See Schwartz & Cooper, *supra* note 80, at 132-34.

274. *Centrifugal Pump Industry Clearance*, *supra* note 218, at 69. The venture will conduct basic research into the reliability and performance of centrifugal pumps.

275. Some of these problems have in fact worsened since late 1984. The trade deficit, for example has continued to escalate. Freadhoff, *New 1985 Trade Deficit Figures Confirm Widening of Imbalance*, *Investor's Daily*, Mar. 13, 1986, at 31, col. 3.

procompetitive joint R&D ventures at their point of formation may eventually be needed.

A. Codifying Prior Law

The National Cooperative Research Act has, to a large extent, merely codified existing antitrust doctrine. This codification by itself is unlikely to have a significant effect on the nation's R&D output, which has prompted some to criticize the Act as unnecessary.²⁷⁶ The Act does not establish that joint R&D ventures are legal under the antitrust laws, nor does it provide any antitrust immunity for joint R&D ventures. Safe harbors from the application of the antitrust laws for qualifying research joint ventures were not seriously considered by Congress, perhaps because of the difficulty of developing a formula for characterizing those research joint ventures which should come within the scope of a safe harbor protection clause.²⁷⁷ Nevertheless, Congress believed that even if the Act was a clarification in the law, eliminating some legal uncertainty would increase the attractiveness of cooperative R&D and help reduce the overall risk normally associated with major R&D projects.²⁷⁸ However, it is questionable how much uncertainty has actually been removed by the Act.²⁷⁹

Furthermore, the private right of action, although emasculated by the Act's detrebling and attorney's fees provisions, remains intact and private lawsuits against joint R&D ventures are still possible. Private litigants will continue to have incentives to sue the participants in a joint R&D venture. First, such venturers may still be found to have engaged in unreasonable conduct, and an award of actual damages can be substantial. Second, if the joint venture engages in research or conduct beyond the scope of notification, the detrebling provisions no longer apply. Finally, treble damages are not the only motivation for private use of the antitrust laws.²⁸⁰

276. See Baxter, *Antitrust Law and Technological Innovation*, ISSUES IN SCI. & TECH., Winter 1985, at 80, 91.

277. See Ordovery & Willig, *supra* note 93, at 313.

278. Zschau, *Antitrust Law and Technological Innovation*, ISSUES IN SCI. & TECH., Spring 1985, at 9.

279. See *infra* text accompanying notes 281-98.

280. Relaxed Justice Department enforcement of antitrust laws in the merger area, for example, has prompted private companies to sue competitors who are planning mergers. The goal of such lawsuits does not appear to be the collection of treble damage awards but rather the frustration through costly and time-consuming litigation of those mergers that pose a competitive risk. Herry, *Corporate Vigilantes*, FORBES, Mar. 25, 1985, at 145. Chrysler's suit against the General Motors-Toyota joint venture for manufacturing Japanese small cars in America is a good example of suit brought for other reasons than the prospect of a treble damages award. Chrysler dropped its suit against General Motors one day before announcing a similar joint venture of its own with Mitsubishi Mo-

B. Continuing Antitrust Uncertainty for Joint R&D Ventures

To date, there has been no reported litigation concerning the National Cooperative Research Act. Eventually courts will be forced to interpret the new law and weigh anticompetitive effects against procompetitive benefits. The Conference Report is intended to guide the courts in weighing the competitive effects of joint R&D ventures, but Congress anticipated that "the courts will continue to develop further rules and presumptions based upon experience with joint R&D programs."²⁸¹ This means that despite the clarification sought by Congress, uncertainty remains in the antitrust law governing research joint ventures.

The statute's ultimate goal appears to be an increase in productive R&D output. While a "consumer welfare" test is not mentioned in the National Cooperative Research Act or the accompanying legislative history, it has been argued that consumer welfare should be the principal goal of antitrust.²⁸² If the result of the formation or the conduct of the joint R&D venture is directly and identifiably disadvantageous to the welfare of consumers, then there is likely to be a violation of the antitrust laws under the Act's reasonableness test just as there would be under prior law.²⁸³

The rule of reason is an attractive legal standard because it can be adapted to the particular circumstances of the firm and industry in question,²⁸⁴ but it does not always provide the predictability of outcome that

tors of Japan. As part of the settlement of its suit, Chrysler did, however, achieve certain concessions from General Motors that were not part of the FTC consent decree. Buss, *Chrysler Settles Suit Over Link of GM, Toyota*, Wall. St. J., Apr. 15, 1985, at 2, col. 1 (w. ed.).

281. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3133.

282. R. BORK, THE ANTITRUST PARADOX 405 (1978). According to Bork, productive efficiency is the single most important factor contributing to consumer welfare. *Id.* Consumer welfare is now an important feature of modern antitrust law. See, e.g., *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979) ("Congress designed the Sherman Act as a consumer welfare prescription.").

283. *Berkey Photo, Inc. v. Eastman Kodak Co.* represents an important example of the consumer welfare principle in action. The Second Circuit said that predisclosure was not necessary to avoid section 2 monopolization liability, 603 F.2d at 284 & n.28, but then suggested that pre-disclosure was necessary to avoid liability for restraint of trade under section 1. *Id.* at 303-04. This distinction appears to turn on the likelihood of decreased innovation and the threat of delay for competitive advantage and market control by a monopolist like Kodak. If the result of the research joint venture's actions is directly and identifiably disadvantageous to consumer welfare, then there is an antitrust violation.

284. This may explain why the judicial trend in recent years has been to narrow the application of per se rules and expand the types of business combinations subject to rule of reason. See Baxter, *Antitrust: A Policy in Search of Itself*, 54 ANTITRUST L.J. 15, 16 (1985).

business decisionmakers seem to desire. Little predictive guidance is possible under the rule of reason for joint ventures because the ultimate legal result depends on judicial characterization of a complex factual transaction.²⁸⁵ If interpreted by courts to resemble traditional rule of reason doctrine, the Act's reasonableness test will require that *all* the circumstances of a case be weighed in deciding whether a restrictive practice should be prohibited for imposing an unreasonable restraint on competition.²⁸⁶ Uncertain and inconsistent treatment of joint R&D ventures may result as courts develop their own rules and presumptions under the multi-factor balancing test required by the rule of reason. Specifically, uncertainty is likely to arise regarding the type of non-research activity that can be undertaken consistent with the Act's definitions, the consideration of efficiency and the appropriate size of joint R&D ventures.

1. Definitions

A key issue is the extent to which the Act's protections will be forfeited by joint ventures that do not exclusively limit themselves to research and development activities.²⁸⁷ The definition of "joint R&D venture" in the Act allows for joint production and marketing efforts involving proprietary information developed through the venture²⁸⁸ and other conduct that is "reasonably required" to conduct the venture or protect against misappropriation of proprietary information.²⁸⁹ It has been argued that this allows companies the opportunity to structure joint ventures that include a wide variety of non-R&D activities yet remain within the Act's purview so long as the sole purpose of the joint activity is not to prepare a product for the commercial marketplace.²⁹⁰ There is strong evidence of Congressional intent to allow some commercialization activities by joint R&D ventures.²⁹¹ However, the statute is not directed

285. Brodley, *supra* note 59, at 1536.

286. See *Continental TV, Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 49 (1977) (emphasis added).

287. The uncertainty over what activities will qualify for the Act's protections is due primarily to the phrasing of the exclusion provisions which suggest a considerably broader reach for the Act than the narrow research activities included in the definition of "joint R&D venture." Compare 15 U.S.C. § 4301 (a)(6) with 15 U.S.C. § 4301(b). See also Holmes, *Research Joint Ventures and the Antitrust Laws: Recent Statutory and Administrative Changes*, 83 PAT. & TRADEMARK REV. 59, 63 (1985).

288. 15 U.S.C. § 4301(b)(2).

289. 15 U.S.C. §§ 4301(b)(1) and (b)(3).

290. See, e.g., Stoll & Goldfein, *Joint Ventures -- Farewell to "Penn-Olin"?*, N.Y.L.J., Nov. 20, 1984, at 2, col. 1; Kobak, *Application of Antitrust Laws to Joint Research, Development*, N.Y.L.J., Dec. 10, 1984, at 6, col. 1.

291. "[M]arketing the intellectual property developed through a joint R&D program may be the ultimate goal and a key financial aspect of a joint R&D program and is rightfully viewed as an integral part of it." S. REP. NO. 427, 98th Cong. 2d Sess. 16, *reprinted*

to joint ventures in production and marketing, even though they may have significant procompetitive effects.²⁹² Ventures which do not engage in the basic research activities set out in the Act's definition, or which engage in marketing and manufacturing of products and services other than the underlying intellectual property developed by the venture, should not be included in the Act's purview and are likely to be judged under preexisting antitrust principles.

2. Efficiency Considerations

Once anticompetitive effects have been identified, courts will be required to evaluate the efficiency justifications that are likely to be offered by various joint R&D ventures. Courts looking for guidance on this question may refer to the articulated policies of the antitrust enforcement agencies.²⁹³ The Department of Justice when analyzing mergers will reject claims of efficiencies if equivalent or comparable savings can reasonably be achieved by the parties through other means. Courts applying such reasoning to joint R&D ventures might ask if there were other partners whose participation in the venture would raise less anticompetitive risks. Joint R&D venturers may be required to meet a high evidentiary burden to prove their claimed efficiency advantages and establish a greater level of expected net efficiencies for more significant anticompetitive risks.²⁹⁴ Non-scale economies are difficult if not impossible to quantify,²⁹⁵ and assessments must therefore be essentially qualitative.²⁹⁶ Furthermore, as the FTC has observed, "even behavior that improves

in 1984 U.S. CODE CONG. & AD. NEWS 3105, 3112-13. This Senate Judiciary Committee Report, which accompanied S. 1841, accurately reflects Congressional intent as to the activities to be excluded from the Act's definitions. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 8, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3132.

292. S. REP. NO. 427, 98th Cong. 2d Sess. 15, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3105, 3112.

293. The Federal Trade Commission, in reviewing efficiency claims is interested in "real technical efficiencies" which increase productivity, including scale economies and technological transfers. Purely pecuniary economies, such as tax benefits, that may be grounded in sound business motivation fail to qualify as real technical efficiencies in the FTC scheme. *Enactment of Statutory Protections Improves Climate for Joint Ventures*, [July-Dec.] ANTITRUST & TRADE REG. REP. (BNA) No. 1188, at 800, 802 (Nov. 1, 1984) (reporting statement of FTC Commissioner George Douglas). According to the Department of Justice, cognizable efficiencies in the merger area include achieving economies of scale, better integration of facilities, plant specialization, lower transportation costs, and sometimes reductions in general administrative and overhead expenses. Antitrust Div., U.S. Dep't of Justice, 1984 Merger Guidelines, 49 Fed. Reg. 26,823, 26,834 (1984).

294. Parties to a merger must establish efficiencies by clear and convincing evidence. Antitrust Div., U.S. Dep't of Justice, Merger Guidelines, 49 Fed. Reg. 26,823, 26,834 (1984).

295. P. AREEDA & D. TURNER, *supra* note 74, at ¶ 955.

296. Brodley, *supra* note 210, at 77.

efficiency or technology may still be unreasonable, since the benefits may be only incidental in relation to the adverse effects (e.g. improvements instituted merely as a temporary measure for the purpose of driving competitors out of the market)."²⁹⁷

3. *Optimal Size.*

A final area of uncertainty for joint R&D ventures, related to efficiency considerations, involves selecting the correct number of participants and the proper size of the venture. It may be anticompetitive for a joint venture either to have too many members or to exclude participants from the venture, depending on the nature of the relevant R&D market and the research being undertaken. Parties forming a joint research and development venture who believe, for example, that the optimum size of the venture includes forty percent of the relevant market²⁹⁸ face a dilemma similar to that which they would have faced before the passage of the Act: should they form the larger and more efficient venture with the expectation that if challenged they would be able to sustain their efficiency justification, or should they scale back the size of the venture to a less efficient size in order to minimize the risk of being found overinclusive? The optimal size of a research joint venture is a question of fact involving economic rather than legal questions; however, judges, not economists, will be the ones who ultimately determine this issue on a case-by-case basis when litigation under the Act arises.

C. Anticompetitive Risks

Even if the Act leads to some noticeable increase in the amount of joint research being conducted in this country, there are potentially serious long-term anticompetitive consequences that could result from the special treatment given joint R&D ventures under the Act. Specifically, certain companies taking advantage of the Act's provisions may be allowed to consolidate their dominant positions in their respective industries, thus leading to concentration in research markets. Barriers to entry are likely to increase if new companies find that in order to compete successfully they need either to be members of joint R&D ventures or to have access through licensing or other means to the technology produced by established ventures. The most serious antitrust problems

297. *FTC v. du Pont*, [1979-83 Transfer Binder] TRADE REG. REP. (CCH) ¶ 21,770 n.38 (Nov. 3, 1980).

298. This is substantially more than the 20% market share suggested by Congress as the point at which anticompetitive effects are unlikely. See H.R. REP. NO. 1044, 98th Cong., 2d Sess. 10, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134-35.

associated with joint research and development ventures are likely to arise not in the R&D phase but in the subsequent manufacturing and vertical distribution phases when pricing decisions must be made. The primary anticompetitive risks are that the joint R&D venture can facilitate price and output decisions of the venturers and that the venture's R&D decisions may negatively affect the R&D activities of other active and potential rivals.

One of the primary purposes of the antitrust laws is to prevent collusion by market competitors,²⁹⁹ but the National Cooperative Research Act may actually facilitate collusion among competitors.³⁰⁰ Collusion in R&D is especially troublesome because it may be a more enduring and stable kind of collusion than collusion in product markets.³⁰¹ Since collusion on research and development matters does not take the form of higher prices, it is not susceptible to market correction except over the very long term.³⁰²

A major criticism of the National Cooperative Research Act is that it has drastically reduced the incentives for private enforcement at a time when government antitrust enforcement is at an all-time low. While research joint ventures that are formed in whole or in part out of a desire to control innovation in an industry are still illegal under the Act, they will be less likely to be detected because of the emasculated private remedies. Also, even if there is eventual detection, which is likely, any short-term delays in R&D progress due to collusion may prove very significant in the longer-term because of the ripple effects of each individual innovation and because the threats from foreign competition are so intense.³⁰³

The detrebling provisions of the Act should be linked to an evaluation of anticompetitive risks rather than solely to disclosure and timely notification to federal agencies, especially when the required disclosure is so minimal.³⁰⁴ Congress left the quantity and form of disclosure to the

299. R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 22. See *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 4-5 (1958) ("The Sherman Act . . . rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress . . .").

300. Thirty-one percent of the economists who responded to the University of Georgia Study believed that the Act is likely to promote collusion. Cartwright, Kamerschen, Tilley & Wright, *supra* note 259, at 7.

301. Baxter, *Market Definition*, *supra* note 185, at 722.

302. *Id.* This is because there is no incentive or means for consumers, who purchase only end products, to shift to other researchers, and hence there is no corresponding opportunity for fringe firms to grow.

303. See PRESIDENT'S COMMISSION, *supra* note 25, at 16.

304. Congress intended that the notices in the *Federal Register* provide notice to private parties of those joint R&D ventures that seek the newly created protection of the Act. However, detrebling protection is tied to the notification filed under 15 U.S.C.

discretion of the joint venturers, rather than insisting that joint venturers provide sufficient information in the notices for preliminary antitrust scrutiny. The required disclosure of the research objectives and the identity of the participants in a joint R&D venture bears little relationship to the potential impact of the joint venture on competition. Further, the notices published in the *Federal Register* contain no information about the capital structure of the joint venture, its total capitalization or any estimate of its share of the market for R&D. It is impossible to determine from the public notices precisely what level of financial and organizational commitment has been made by each of the members of these joint ventures, or the size and scope of the research efforts being undertaken. In short, it is too easy for firms to place themselves under the umbrella of the National Cooperative Research Act. Even anticompetitive joint R&D ventures apparently qualify for the statute's detrebbling protections merely by filing notifications and stating some vague R&D objectives in a brief filing to the Justice Department and Federal Trade Commission.³⁰⁵

D. Possible Amendments to Counter Anticompetitive Risks

To ensure competition in domestic markets while better achieving the goal of promoting American international competitiveness, amendments to the National Cooperative Research Act should be considered. Four possible amendments to the statute, some of which were considered and rejected by Congress, would limit qualifying joint R&D ventures in terms of their duration, size, definition, and access restrictions.

1. *Limit the Duration of Qualifying Joint Ventures*

The statute in no way limits the duration of a joint R&D venture to a specific period of time.³⁰⁶ Limiting the duration of the joint venture is desirable because joint research projects of short duration are less likely to have anticompetitive consequences than lengthier ones.³⁰⁷ First, anticompetitive effects are confined to the prescribed time period. Second, competitive rivalry among venturers who know of the venture's termination is likely to be increased,³⁰⁸ creating incentives for participants to

§ 4305(a) and not to the notice published in the *Federal Register*. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 16, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3141.

305. But see *supra* note 237.

306. Qualifying joint R&D ventures are already limited to the basic research phase, and subsequent production and marketing phases are excluded from the Act's protections. See *supra* text accompanying notes 287-92. The research and development phase, however, can be unlimited in time.

307. See ANTITRUST GUIDE, *supra* note 62, at 10-11, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 4.

308. See Brodley, *supra* note 59, at 1547.

retain their independent research capabilities. One standard for measuring the reasonableness of the duration of technology-sharing agreements is the "reverse engineering" period, the time needed for a party lacking the technology to develop it on its own.³⁰⁹

2. *Limit the Size of Qualifying Joint Ventures*

Limiting the size of a qualifying joint venture based on market shares or some other objective criterion would help to prevent overinclusiveness and the associated risk of a slowdown in innovation.³¹⁰ The Act does not distinguish between small joint R&D ventures and those formed by participants who together possess a very large share of the relevant R&D market. The size of the joint research and development venture itself and the relative sizes of the participants will be relevant factors in a rule of reason analysis, but it may be preferable to subject joint ventures that include either the largest companies in the industry or that represent a monopolist's share of the relevant market to a higher level of preliminary scrutiny. The current statute does not prevent the formation of a joint R&D venture that encompasses the entire industry, even though it may prove later to have significant anticompetitive and spillover effects. Instead, the venture is permitted to begin operations virtually unreviewed, with only a slight possibility of antitrust scrutiny if a suit is subsequently brought. It might make more sense to have a reviewing process that screens very large ventures when their notification is filed rather than allowing them to function unless and until someone brings suit.

3. *Limit Research Objectives*

Joint venturers who seek to invoke the Act's protections need not show that their particular joint venture will in some way improve America's competitive position or promote innovation. The Act and the accompanying Conference Report contain no guidance as to how the research carried out by the joint ventures should be conducted.

309. ANTITRUST DIV., U.S. DEP'T OF JUSTICE, ANTITRUST GUIDE FOR INTERNATIONAL OPERATIONS 25 (1977), reprinted in [Jan.-June] ANTITRUST & TRADE REG. REP. (BNA) No. 799, at E-1, E-9 (Feb. 7, 1977).

310. This approach has already been considered in Europe. A proposed group exemption from Article 85(1) of the Treaty of Rome for research joint ventures would have specifically excluded joint ventures where more than one of the top three firms in an industry is involved in a joint venture. The European proposal would also have prohibited research joint ventures where the aggregate sales of all the joint venturers were more than \$500 million. In essence, the EEC proposed to allow exemptions from antitrust only for joint ventures between medium and small-sized companies. 27 O.J. EUR. COMM. (No. C 16) 3 (1984); see also Blechman, *supra* note 32, at 67-68.

Research objectives will still be determined by private companies acting in secret, and the free market and the profit motives of firms are to be trusted to determine optimal R&D priorities and funding levels. Furthermore, there is no government involvement in directing research objectives. The exact contribution that joint R&D ventures will make toward improving our position in the international economy is therefore unclear. It is ironic that Congress should be so trusting of the motives of the participants in joint R&D ventures when, as Senator Biden stated during the deliberations over the Act, "the whole reason for the antitrust laws is that we [in Congress] do not trust the companies to be competitive."³¹¹

The provisions of the National Cooperative Research Act should be limited to those joint R&D ventures that are likely to improve America's international competitive position. This could be accomplished by requiring that the parties to a joint R&D venture demonstrate an intent to challenge foreign competitors in the domestic market, which would require a showing of present or future threats, or an intent to sell abroad in foreign markets. Another requirement for antitrust exemption should be a statement of the type and quantity of the efficiency gains that are expected from the joint research and development venture. Under the National Cooperative Research Act's regime, there is no alternative but to wait for private litigation or independent Justice Department investigations to determine whether the joint R&D venture produces net efficiencies. Because technology changes quickly, with one round of advances building on those that precede it, falling behind in one round of innovation makes it much harder to enter the competition later on.³¹² If we cannot afford to lose even small steps in our race with foreign competitors, some minimal advance showing of a joint R&D venture's expected efficiency gains should be required.

4. *Limit Restrictions on Distribution of Research Results*

It is easier to accept joint R&D ventures as procompetitive when participants are willing to make their outputs available to nonparticipants because the exclusionary aspects of the venture are reduced. While some experts strongly opposed mandatory licensing of the fruits of joint R&D ventures,³¹³ the founders of MCC argued for mandatory licensing after a period of three years, on the assumption that the three years of exclusive use of the product plus reasonable royalties would

311. *Senate Judiciary Comm. Hearings*, *supra* note 29, at 99 (statement of Sen. Biden).

312. PRESIDENT'S COMMISSION, *supra* note 25, at 16.

313. See *Senate Judiciary Comm. Hearings*, *supra* note 29, at 90 (statement of Ass't Att'y Gen. William F. Baxter).

provide sufficient incentives for inventors.³¹⁴ Given the risks inherent in high technology research, participants need to be assured of commensurate rewards, so some restrictive licensing practices should be tolerated. Under any scheme requiring open access to research output, however, venture participants should be assured of reasonable royalties. Wider distribution of technology will occur as long as the venture's output is available on a nondiscriminatory and reasonable basis.³¹⁵ This is important because, as the President's Commission on Industrial Competitiveness observed, "[i]t does us little good to design state-of-the-art products if within a short time our foreign competitors can manufacture them more cheaply."³¹⁶

V. THE NATIONAL COOPERATIVE RESEARCH ACT AS PRECEDENT FOR ANTITRUST REFORM

A. Responding to International Competition

Passage of the National Cooperative Research Act reflects a growing consensus in Washington that American antitrust laws should be relaxed in order to encourage increased technological innovation and to allow American companies to better compete in the global economy.³¹⁷ The paradox of the National Cooperative Research Act is that, like most of the other proposed antitrust law reforms whose stated goals are to restore American international competitiveness, it permits and indeed requires a reduction in inter-firm competition among American companies to achieve its intended results. The potential costs associated with such large-scale inter-firm cooperation include monopolization, greater industry concentration and increased barriers to entry. This is unfortunate

314. *Joint Economic Comm. Hearings*, *supra* note 72, at 188 (statement of John W. Laycey, Executive Vice President, Control Data Corporation). The bylaws of MCC provide that participants have exclusive access to the technology developed by the venture for three years. After three years, MCC may make licenses available to third parties on reasonable and nondiscriminatory terms, with participants collecting a pro rata share of royalties. MCC Bylaws (Dec. 7, 1982), *reprinted in House Science and Technology Comm. Hearings*, *supra* note 49, at 429-33.

315. *See* L. SULLIVAN, *supra* note 87, at 299.

316. PRESIDENT'S COMMISSION, *supra* note 25, at 20.

317. *See, e.g., id.* at 42, 48; *see also Reagan Administration's Package to Congress for Revision of Federal Antitrust Laws*, [Jan.-June] ANTITRUST & TRADE REG. REP. (BNA) No. 1253, at S-1, S-4 (Special Supp. Feb. 20, 1986) (letter from Att'y Gen. Edwin Meese III and Commerce Sec'y Malcolm Baldrige). Examples of recent statutory changes include the Export Trading Act of 1982, 15 U.S.C. §§ 4001-4021 (1982) (providing a specific antitrust immunity for certain export activities via a certification process), and 1982 amendments to the Sherman Act, 15 U.S.C. § 6a (1982) (declaring that section 1 of the Sherman Act does not apply to conduct involving trade or commerce with foreign nations unless there is a direct, substantial and reasonably foreseeable effect on U.S. imports or domestic commerce).

because technological advance in an industry is an integral aspect of industrial competition, motivated by the prospect of competitive advantage and the fear of losing in the competitive race.³¹⁸

Some argue that it is better for small American companies to be crushed by big American companies than to be crushed by big foreign companies.³¹⁹ This is a short-sighted policy premise. America is likely to face stiff international competition for years to come, but this should not force us to sacrifice a vigorous competitive environment in domestic markets. The most significant problem in terms of our international competitive position is that foreign governments appear to be able to function in coordinated ways that the United States government does not, because antitrust is regarded in America as something separate and distinct from general economic policy. There are political and cultural barriers to an effective American national planning policy, however, and the experience of other countries may not be readily transferable to the American system.³²⁰ What is needed is an institutionally acceptable way of accommodating antitrust and other legitimate economic policies in the enforcement process.³²¹

Two alternative approaches represent intermediate steps that fall short of full scale national planning. First, there should be more attention given to international competition in traditional antitrust enforcement. The National Cooperative Research Act represents an important step in this direction. Second, a greater government role in supporting and overseeing research and development activities in the private sector should be initiated.

Consideration of international markets³²² is one of the most direct ways of introducing foreign competition as a factor in the antitrust laws,³²³ and represents an advancement from earlier doctrine. For example, the Department of Justice in its 1980 *Guide to Research Joint*

318. See R. NELSON, *HIGH TECHNOLOGY POLICIES: A FIVE NATION COMPARISON* (1984) xi (recommending government support of generic research by industry).

319. L. THUROW, *supra* note 27, at 182.

320. See Sullivan, *U.S. Policy in a Mixed World Economy*, 15 N.Y.U.J. OF INT'L L. & POL. 309, 316-19 (1983) (suggesting continued conventional antitrust enforcement).

321. Blechman, *supra* note 32, at 65.

322. The President's Commission on Industrial Competitiveness, in recommending that U.S. antitrust laws be changed to reflect the new global markets within which American firms operate, points out that antitrust statutes were enacted when America was isolated from the rigors of international competition. PRESIDENT'S COMMISSION, *supra* note 25, at 39.

323. The Act's inclusion of international markets in antitrust analysis is consistent with the 1984 Department of Justice Merger Guidelines, which give explicit recognition to foreign competition and world markets when evaluating the market impacts of mergers. Antitrust Div., U.S. Dep't of Justice, 1984 Merger Guidelines, 49 Fed. Reg. 26,823, 26,826 (1984).

Ventures, in a hypothetical case involving a joint venture that could increase the ability of American companies to compete with foreign companies, refused to consider this factor. The 1980 *Antitrust Guide* stated: "[A]ctivities by American firms objectionable under the antitrust laws are not allowable simply because they would arguably defend or improve the position of U.S. firms vis-a-vis foreign competitors."³²⁴

Consideration of international markets will allow for some large-scale joint ventures among American companies that dominate the domestic market as long as they are relatively insignificant factors in international markets. These international markets under the Act will include all the firms that "have the ability and incentive, either individually or in collaboration with one another, to undertake R&D comparable to the joint venture in question."³²⁵ World R&D markets are not highly concentrated,³²⁶ so concentration increases in R&D markets among American firms are therefore not likely to raise competitive concerns.³²⁷

A greater government role in directing private research and development than that contemplated by the National Cooperative Research Act may be desirable.³²⁸ Other industrialized countries have demonstrated that by coordinating research and development and then sharing the information widely it is possible to cut the costs of technological advancement and increase the speed with which new technologies show up in the economy.³²⁹ Social rates of return on innovation are greater than individual rates of return,³³⁰ which suggests that societal

324. ANTITRUST GUIDE, *supra* note 62, at 45, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 12.

325. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 9, reprinted in 1984 U.S. CODE CONG. & AD. NEWS 3131, 3134.

326. Baxter, *Market Definition*, *supra* note 185, at 719.

327. For a discussion of how consideration of global markets will permit more aggressive joint venture activities generally, see Halverson, *Changing Antitrust Standards in Light of Today's Global Economy*, Paper Prepared for State Bar of Texas Antitrust & Trade Regulation Section Annual Institute on Antitrust in the 80's (Apr. 25, 1985) (available in *High Technology Law Journal* office).

328. See Keyworth, *Technology Research: A Government Role?--Cooperation Aids Competitiveness*, Wall St. J., Dec. 9, 1985, at 24, col. 5 (e. ed.) (former Presidential science adviser recommending research partnerships between government, industry and universities).

329. L. THUROW, *supra* note 27, at 108. Thurow argues for using public money and having government help finance civilian research and development projects with long to medium term payoffs, and to then rapidly spread the knowledge around the economy. *Id.* at 273-77.

330. Mansfield, Rapoport, Romeo, Wagner & Beardsley, *Social and Private Rates of Return from Industrial Innovations*, 91 Q.J. ECON. 221, 234 (1977). This is because dissemination of information can occur relatively rapidly and costlessly, and because it is difficult for a single firm to capture all of the benefits of any breakthrough.

mechanisms to disseminate the knowledge that will form the basis for innovation would be desirable.

Possible government roles include direct funding and tax incentives, as well as charting research objectives for collaborative research projects. Our international competitors all have a government agency which partially finances civilian cooperative medium-term industrial research on new products or new production processes.³³¹ The Federal government could establish similar programs and agree to finance up to fifty percent of industrial R&D projects and limit financial support to groups of companies working on a collaborative basis. When only one firm is willing to participate in a research project, the government could still provide financial assistance so long as the research output would be freely cross-licensed to other firms, with the government sharing in any license fees received.³³²

B. The National Cooperative Research Act as Precedent for Future Detrebling

Enforcement of the federal antitrust laws does not rest exclusively with the Justice Department and other agencies of the Federal government. Indeed, private actions have become the principal vehicle for the enforcement of the antitrust laws.³³³ Private parties that meet the standing tests are given the right to sue antitrust violators for three times the damages caused by the violation, plus attorney's fees.³³⁴ By providing incentives for nongovernmental plaintiffs and their lawyers to act as "private attorneys general" in helping to deter anticompetitive conduct that the government lacks the resources to detect and prosecute, private enforcement serves the multiple goals of punishing the violator, deterring misconduct and compensating the victim.³³⁵

The Conference Report accompanying the Act "emphasize[s] that the elimination of treble damages for agreements limited to joint research and development for which notification has been provided is not to be regarded as a precedent for any further elimination of treble damages."³³⁶ According to Congress, certain unique characteristics justify eliminating treble damages in this narrow context,³³⁷ and "the elimi-

331. L. THUROW, *supra* note 27, at 264.

332. *Id.*

333. TREBLE DAMAGE STUDY, *supra* note 43, at 1.

334. 15 U.S.C. § 15.

335. TREBLE DAMAGE STUDY, *supra* note 43, at 1.

336. H.R. REP. NO. 1044, 98th Cong., 2d Sess. 13, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 3131, 3137.

337. Specifically, joint R&D ventures are unique because of foreign competition, the difficulty of assessing antitrust risks, and the deterrent effect of highly speculative damage exposure on potential members of a venture. *Id.*

nation of treble damages in this context cannot be relied upon to justify de-trebling in other circumstances where these special characteristics of joint R&D are not present."³³⁸

The Reagan Administration recently proposed "The Antitrust Remedies Improvements Act of 1986," which would eliminate treble damages for all antitrust violations other than price-fixing which results in overcharging or undercharging.³³⁹ This detrebling proposal is motivated principally by the same perception which motivated proponents of the National Cooperative Research Act, namely a continuing weakness in America's international trade position believed to be due in part to overly stringent American antitrust laws.³⁴⁰ The threat of treble damages, it is argued, has deterred conduct that would benefit competition.

One solution to any overdeterrence problem is to refine and clarify the substantive law to lessen areas of uncertainty, which would not necessitate tinkering with the treble damage remedy.³⁴¹ In the joint research area, Congress could have stated the reasonableness test as it did in the Act and not detrebled, or vice versa. Clarifying the substantive law *and* limiting judgments to actual damages as the National Cooperative Research Act does may not have been necessary to solve overdeterrence problems. In fact, the National Cooperative Research Act may underdeter anticompetitive conduct because of its open-ended protections and the emasculation of private rights of action. Similarly, detrebling in non-price fixing areas may not be necessary if there is judicial recognition of the procompetitive and efficiency-enhancing aspects of the business practices that are sought to be encouraged by the antitrust reforms.

C. Antitrust Laws, Innovation, and High Technology

By promoting competition in the market, antitrust policy attempts to promote innovation.³⁴² A number of business people have expressed concern that the antitrust laws actually discourage innovation.³⁴³ Competition of some sort is an essential incentive for firms to undertake

338. *Id.*

339. S. 2162, 99th Cong., 2d Sess., 132 CONG. REC. S2284-85 (1986).

340. See *Reagan Administration Unveils Antitrust Reform Package; Rodino Attacks Proposals*, [Jan.-June] ANTITRUST & TRADE REG. REP. (BNA) No. 1253, at 307 (Feb. 20, 1986).

341. TREBLE DAMAGE STUDY, *supra* note 43, at 37.

342. ANTITRUST GUIDE, *supra* note 62, at 2-3, reprinted in [Oct.-Dec.] ANTITRUST & TRADE REG. REP. at 2.

343. See generally BOCK, THE INNOVATOR AS AN ANTITRUST TARGET (Conf. Bd. Info. Bull. No. 74) (1980); see also Rudge, *Innovation - Friend or Foe of the Antitrust Laws*, in LEGAL AND COMMERCIAL DEVELOPMENT INTERRELATIONSHIPS: IMPACT ON INNOVATION 66 (Commercial Development Association, Inc. ed. 1980).

expensive research projects. However, it is acknowledged that the prospect of monopoly profits is one of the primary incentives for many innovators. The economist Joseph A. Schumpeter's theory of innovation and competition was that temporary monopoly profits are not only acceptable but are also necessary to stimulate innovation.³⁴⁴ In adopting the National Cooperative Research Act, Congress may have been following Schumpeter's theories which postulate a positive relationship between market concentration and technological progressiveness. The evidence does suggest a positive but weak association between concentration and innovation by industry, as innovation appears to be disproportionately centered in the largest several hundred manufacturing corporations, most of them oligopolists. Innovation is traceable to large firms operating in oligopolistic markets, supporting the Schumpeterian theory.³⁴⁵

Research and development can be considered to be an investment with innovation as the return on that investment.³⁴⁶ Innovation by itself is rarely sufficient to translate into competitive advantage. Instead, innovation must be accompanied by cost advantages in marketing, distribution, manufacturing, purchasing or application engineering if it is to contribute to a sustainable competitive position.³⁴⁷

Contrary to popular belief, new scientific knowledge is among the least reliable and least predictable sources of successful innovations.³⁴⁸ Furthermore, knowledge-based innovation has the longest lead-time of all innovation, nearing twenty-five to thirty years.³⁴⁹ Knowledge-based innovation is usually based on the convergence of several different kinds of knowledge, not all of them scientific or technological. It is simplistic to assume that modification of the antitrust laws will automatically result in accelerated rates of innovation, or that the antitrust laws are by themselves unduly restrictive of technologically innovative activity.³⁵⁰ Congress should commission an empirical evaluation of the effects of the

344. See J. SCHUMPETER, *CAPITALISM, SOCIALISM & DEMOCRACY* (1942). The essence of Schumpeter's position is that market power is necessary for innovation, and the competition that matters most is the competition that comes from the innovation itself.

345. *INDUSTRIAL CONCENTRATION: THE NEW LEARNING* 246-78 (H. Goldschmid, M. Mann & J. Weston eds. 1974).

346. CONGRESSIONAL BUDGET OFFICE, *supra* note 26, at 3.

347. R. REICH & I. MAGAZINER, *MINDING AMERICA'S BUSINESS: THE DECLINE AND RISE OF THE AMERICAN ECONOMY* 96 (1982).

348. P. DRUCKER, *INNOVATION AND ENTREPRENEURSHIP: PRACTICE AND PRINCIPLES* 36 (1985).

349. *Id.* at 111.

350. See R. GIVENS, *ANTITRUST: AN ECONOMIC PERSPECTIVE* § 29.01 (1984) (citing numerous examples where legal uncertainty of antitrust treatment of innovation has been reduced).

National Cooperative Research Act before making further changes in the nation's antitrust laws for the purposes of promoting technological innovation.

CONCLUSION

By explicitly subjecting joint research and development ventures to rule of reason scrutiny under the antitrust statutes and by limiting potential liability to single rather than treble damages for those joint research and development ventures which properly notify the Federal government, the National Cooperative Research Act will almost certainly lead to an increase in the total amount of joint research undertaken. The Act is, however, weak medicine for America's ills of rising trade deficits and declining international competitiveness. The positive contributions which Congress felt joint R&D ventures can make to the American economy in the form of enhanced efficiencies, economies of scale and reduced duplication of effort are not likely to be achieved in the immediate future. Furthermore, not all research joint ventures should be encouraged because some have the potential for facilitating collusion, raising barriers to entry and skewing the competitive incentives for conducting research. Nevertheless, the Act provides legislative clarification in an area where antitrust uncertainty may have been inhibiting national research progress. Thus the National Cooperative Research Act constitutes a positive step toward improving our base of scientific and technological knowledge.

