EXHIBIT 15

76 S.Ct. 994
351 U.S. 377, 76 S.Ct. 994, 100 L.Ed. 1264
(Cite as: 351 U.S. 377, 76 S.Ct. 994)

Briefs and Other Related Documents

Supreme Court of the United States
UNITED STATES of America, Appellant,
v.
E. I. dU PONT dE NEMOURS AND CO.
No. 5.

Argued Oct. 11, 1955.
Decided June 11, 1956.

Civil suit by United States charing defendant with monopolizing, attempting to monopolize and conspiracy to monopolize interstate commerce in cellophane and cellulosic caps and bands. The United States District Court for the District of Delaware, 118 F.Supp. 41, held that evidence demonstrated no unlawful monopolization. A direct appeal was taken by the government. The United States Supreme Court, Mr. Justice Reed, held that there was no illegal monopoly where, although defendant might be assumed to control cellophane itself, there existed competition and interchangeability with other flexible wrappings.

Affirmed.

Mr. Chief Justice Warren, Mr. Justice Black and Mr. Justice Douglas dissented.

See also 107 F.Supp. 324.

West Headnotes

[1] Armed Services ⇐ 20.8(3)
34k20.8(3) Most Cited Cases
(Formerly 265k12(1.3))
Classification, which is made under the Universal Military Training and Service Act, and which is based on prejudice because of affiliation with particular religious organization, is arbitrary and contrary to law and regulations, and local board's action so classifying a registrant is invalid and void. Universal Military Training and Service Act, § 12(a), 50 U.S.C.A.Appendix, § 462(a).

[2] Antitrust and Trade Regulation ⇐ 642
29Tk642 Most Cited Cases
(Formerly 265k12(1.3))
Control of relevant market, in sense in which such control is considered in determining whether there has been a violation of section of Sherman Act proscribing monopolization of trade, depends upon availability of alternative commodities for buyers: i. e., whether there is a cross-elasticity of demand between alternative commodities. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[3] Antitrust and Trade Regulation ⇐ 976
29Tk976 Most Cited Cases
(Formerly 265k24(12))
In civil action by United States under section of Sherman Act, proscribing monopolization of trade, burden was upon the government to establish monopoly. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[4] Federal Courts ⇐ 478
170Bk478 Most Cited Cases
(Formerly 30k1009(1))
On direct appeal to the United States Supreme Court by United States, in civil case wherein District Court had held, upon findings of fact and law stated, that the government had failed to sustain its burden of proving monopoly, United States could not prevail except by showing that erroneous legal tests had been applied to essential findings of fact or that findings themselves were clearly erroneous. Fed.Rules Civ.Proc. rule 52(a), 28 U.S.C.A.; Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[5] Federal Courts ⇐ 445
170Bk445 Most Cited Cases
(Formerly 30k893(1))
Supreme Court of United States does not try facts of cases de novo. Fed.Rules Civ.Proc. rule 52(a), 28 U.S.C.A. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[6] Antitrust and Trade Regulation ⇐ 523
29Tk523 Most Cited Cases
(Formerly 265k10)
Because the Sherman Act is couched in broad terms, it is adaptable to the changing types of commercial production and distribution which have evolved

since its passage. Sherman Anti-Trust Act, §§ 1-8 as amended 15 U.S.C.A. §§ 1-7, 15 note. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[7] Antitrust and Trade Regulation ⇐ 524
29Tk524 Most Cited Cases
(Formerly 265k10)
Judicial construction of anti-trust legislation has generally been left unchanged by Congress, and this is true of the standard of reason, drawn from the common law, known as the Rule of Reason. Sherman Anti-Trust Act, §§ 1-8 as amended 15 U.S.C.A. §§ 1-7, 15 note. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[8] Antitrust and Trade Regulation ⇐ 534
29Tk534 Most Cited Cases
(Formerly 265k12(1.3))
Under Sherman Act, some agreements and practices are invalid per se while others are illegal only as applied to particular situations. Sherman Anti-Trust Act, §§ 1-8 as amended 15 U.S.C.A. §§ 1-7, 15 note. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[9] Antitrust and Trade Regulation ⇐ 641
29Tk641 Most Cited Cases
(Formerly 265k12(1.3))
Under Sherman Act, a party has monopoly power if it has, over any part of the trade or commerce among the several states, a power of controlling prices or unreasonable restricting competition. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[10] Antitrust and Trade Regulation ⇐ 641
29Tk641 Most Cited Cases
(Formerly 265k12(1.3))
"Monopoly power", within proscription of the Sherman Act, is the power to control prices or exclude competition. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[11] Antitrust and Trade Regulation ⇐ 641
29Tk641 Most Cited Cases
(Formerly 265k12(1.3))
Whatever the market may be, control of price or competition establishes existence of "monopoly power" under section of Sherman Act proscribing the monopolizing of trade. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[12] Antitrust and Trade Regulation ⇐ 641
29Tk641 Most Cited Cases
(Formerly 265k12(1.3))
Section of Sherman Act proscribing the monopolization of trade requires application of a reasonable approach in determining existence of "monopoly power", just as did section making combination in restraint of trade illegal, but this does not mean that there can be a reasonable monopoly. Sherman Anti-Trust Act, §§ 1, 2 as amended 15 U.S.C.A. §§ 1, 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[13] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
When a product is controlled by one interest, without substitutes available in the market, there is "monopoly power" within proscription of Sherman Act. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[14] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
In determining, for purposes of Sherman Act, whether substitutes are available in the market for a product controlled by one interest, an infinite range cannot be given to definition of substitutes, but neither is it a proper interpretation of the act to require that products be fungible to be considered in the relevant market. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[15] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
Where there are market alternatives which buyers may readily use for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[16] Antitrust and Trade Regulation ⇐ 642
29Tk642 Most Cited Cases
(Formerly 265k12(1.3))

[16] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
In determining, for purposes of Sherman Act, whether substitutes are available in the market for a product controlled by one interest, what is called for is an appraisal of the "cross-elasticity" of demand in the trade, and varying circumstances of each case determine the result. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[17] Antitrust and Trade Regulation ⇐ 644
29Tk644 Most Cited Cases
(Formerly 265k12(1.3))
In considering what is the "relevant market" for determining whether there is control of price and competition, no more definite rule can be declared than that the commodities reasonably interchangeable by consumers for the same purposes make up that part of the trade or commerce, monopolization of which may be illegal. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[18] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
Industrial activities cannot be confined to trim categories, and illegal monopolies under section of Sherman Act proscribing monopolization of trade may well exist over limited products in narrow fields where competition is eliminated. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton, and Mr. Justice Minton.)

[19] Antitrust and Trade Regulation ⇐ 644
29Tk644 Most Cited Cases
(Formerly 265k12(1.3), 266k12(1.3))
In determining the "relevant market" under section of Sherman Act proscribing monopolization of trade, it is use or uses to which the commodity is put that control. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[20] Antitrust and Trade Regulation ⇐ 642
29Tk642 Most Cited Cases
(Formerly 265k12(1.3))

[20] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
In determining whether there is "cross-elasticity" of demand between products for purpose of determining, under Sherman Act, whether substitutes are available for a product controlled by one interest, an element for consideration is the responsiveness of the sales of one product to price changes of the other. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton.)

[21] Antitrust and Trade Regulation ⇐ 977(5)
29Tk977(5) Most Cited Cases
(Formerly 265k24(13))
In civil action by United States under section of Sherman Act proscribing the monopolization of trade, evidence sustained trial court's finding that great sensitivity of customers in the flexible packaging markets to price or quality changes prevented defendant from possessing monopoly control over price. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2.

[22] Antitrust and Trade Regulation ⇐ 670
29Tk670 Most Cited Cases
(Formerly 265k12(1.3))
Interchangeability of cellophane with other flexible wrapping materials sufficed to make it a part of flexible packaging material market, so that, although cellophane could be assumed to be controlled by defendant, there was no illegal "monopoly". Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2.

[23] Antitrust and Trade Regulation ⇐ 977(3)
29Tk977(3) Most Cited Cases
(Formerly 265k24(13))
In civil action by United States under section of Sherman Act prohibiting monopolization of trade, evidence failed to establish that defendant ever possessed power to exclude any producer from expanding flexible packaging market. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2.

[24] Antitrust and Trade Regulation ⇐ 977(3)

29Tk977(3) Most Cited Cases
(Formerly 265k24(13))
In civil action by United States under section of Sherman Act prohibiting monopolization of trade, defendant's liberal profits from sale of cellophane did not demonstrate existence of monopoly without proof of lack of comparable profits during those years in other prosperous industries or that defendant's rate of return was greater than that of other producers of flexible packaging materials. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton)

[25] Antitrust and Trade Regulation ⇐ 645
29Tk645 Most Cited Cases
(Formerly 265k12(1.3))
The market which one must study to determine when a producer has monopoly power will vary with the part of commerce under consideration, but the tests are constant, and the market is composed of products that have reasonable interchangeability for the purposes for which they are produced, with price, use and qualities considered. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2. (Per Mr. Justice Reed, Mr. Justice Burton and Mr. Justice Minton)

[26] Antitrust and Trade Regulation ⇐ 670
29Tk670 Most Cited Cases
(Formerly 265k12(1.3))
Though cellophane itself could be assumed to be controlled by one interest, there was no illegal "monopoly", in view of showing of competition and interchangeability with other flexible wrappings. Sherman Anti-Trust Act, § 2 as amended 15 U.S.C.A. § 2.

**997 Mr. *378 Charles H. Weston, Washington, D.C., for appellant.

**998 Mr. Gerhard A. Gesell, Washington, D.C., for appellee.

Mr. Justice REED delivered the opinion of the Court.

The United States brought this civil action under s 4 of the Sherman Act against E. I. du Pont de Nemours and Company. The complaint, filed December 13, 1947, in the United States District Court for the District of Columbia, charged du Pont with monopolizing, attempting to monopolize and conspiracy to monopolize interstate commerce in cellophane and cellulosic caps and bands in violation of s 2 of the Sherman Act. Relief by injunction was sought against defendant and its officers, forbidding monopolizing or attempting to monopolize interstate trade in cellophane. The prayer also sought action to dissipate the effect of the monopolization by divestiture or other steps. On defendant's motion under 28 U.S.C. s 1404(a). 28 U.S.C.A. s 1404(a), the case was transferred to the District of *379 Delaware. After a lengthy trial, judgment was entered for du Pont on all issues. [FN1]

FN1. United States v. E. I. du Pont de Nemours & Co., D.C., 118 F.Supp. 41. The opinion occupies 192 pages of the volume. The Findings of Fact, 854 in number, cover 140 pages. The citations to findings in our opinion, where references are not made to our appendices, 76 S.Ct. 1012 to 1016, are to the Federal Supplement. We noted probable jurisdiction October 14, 1954, 348 U.S. 806, 75 S.Ct. 41, 99 L.Ed. 637.

The Government's direct appeal here does not contest the findings that relate to caps and bands, nor does it raise any issue concerning the alleged attempt to monopolize or conspiracy to monopolize interstate commerce in cellophane. The appeal, as specifically stated by the Government, 'attacks only the ruling that du Pont has not monopolized trade in cellophane.' At issue for determination is only this alleged violation by du Pont of s 2 of the Sherman Act. [FN2]

FN2. 'Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal * * *.' 15 U.S.C. 1952 ed. Supp. III, s 1, 15 U.S.C.A. s 1.
'Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding fifty thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.' Id., s 2.
'The several district courts of the United States are invested with jurisdiction to prevent and restrain violations of sections 1--7 of this title * * *.' 15

U.S.C. s 4, 15 U.S.C.A. s 4.

During the period that is relevant to this action, du Pont produced almost 75% of the cellophane sold in the United States, and cellophane constituted less than 20% of all 'flexible packaging material' sales. This was the designation accepted at the trial for the materials listed in Finding 280, Appendix A, this opinion, 76 S.Ct. 1012.

***380** The Government contends that, by so dominating cellophane production, du Pont monopolized a 'part of the trade or commerce' in violation of s 2. Respondent agrees that cellophane is a product which constitutes 'a 'part' of commerce within the meaning of Section 2.' Du Pont brief, pp. 16, 79. But it contends that the prohibition of s 2 against monopolization is not violated because it does not have the power to control the price of cellophane or to exclude competitors from the market in which cellophane is sold. The court below found that the 'relevant market for determining the extent of du Pont's market control is the market for flexible packaging materials,' and that competition from those other materials prevented du Pont from possessing ****999** monopoly powers in its sales of cellophane. Finding 37.

[1][2] The Government asserts that cellophane and other wrapping materials are neither substantially fungible nor like priced. For these reasons, it argues that the market for other wrappings is distinct from the market for cellophane and that the competition afforded cellophane by other wrappings is not strong enough to be considered in determining whether du Pont has monopoly powers. Market delimitation is necessary under du Pont's theory to determine whether an alleged monopolist violates s 2. The ultimate consideration is such a determination is whether the defendants control the price and competition in the market for such part of trade or commerce as they are charged with monopolizing. Every manufacturer is the sole producer of the particular commodity it makes but its control in the above sense of the relevant market depends upon the availability of alternative commodities for buyers: i.e., whether there is a cross-elasticity of demand between cellophane and the other wrappings. This interchangeability is largely gauged by the purchase of competing products for similar uses considering the price, characteristics and adaptability of the ***381** competing commodities. The court below found that the flexible wrappings afforded such alternatives. This Court must determine whether the trial court erred in its estimate of the competition afforded cellophane by other materials.

[3][4][5] The burden of proof, of course, was upon the Government to establish monopoly. See United States v. Aluminum Co. of America, 2 Cir., 148 F.2d 416, 423, 427. This the trial court held the Government failed to do, upon findings of fact and law stated at length by that court. For the United States to succeed in this Court now, it must show that erroneous legal tests were applied to essential findings of fact or that the findings themselves were 'clearly erroneous' within our rulings on Rule 52(a) of the Rules of Civil Procedure, 28 U.S.C.A. See United States v. UnitedStates Gypsum Co., 333 U.S. 364, 393--395, 68 S.Ct. 525, 541, 92 L.Ed. 746. We do not try the facts of cases de novo. Timken Roller Bearing Co. v. United States, 341 U.S. 593, 597, 71 S.Ct. 971, 974, 95 L.Ed. 1199. [FN3]

FN3. See also United States v. Yellow Cab Co., 338 U.S. 338, 70 S.Ct. 177, 94 L.Ed. 150; United States v. Oregon State Medical Soc., 343 U.S. 326, 339, 72 S.Ct. 690, 698, 96 L.Ed. 978; United Shoe Machinery Corp. v. United States, 347 U.S. 521, 74 S.Ct. 699, 98 L.Ed. 910.

Two additional questions were raised in the record and decided by the court below. That court found that, even if du Pont did possess monopoly power over sales of cellophane, it was not subject to Sherman Act prosecution, because (1) the acquisition of that power was protected by patents, and (2) that power was acquired solely through du Pont's business expertness. It was thrust upon du Pont. 118 F.Supp. at pages 213--218.

Since the Government specifically excludes attempts and conspiracies to monopolize from consideration, a conclusion that du Pont has no monopoly power would obviate examination of these last two issues.

1. Factual Background.--For consideration of the issue as to monopolization, a general summary of the development of cellophane is useful.

***382** In the early 1900's, Jacques Brandenberger, a Swiss chemist, attempted to make tablecloths

impervious to dirt by spraying them with liquid viscose (a cellulose solution available in quantity from wood pulp, Finding 361) and by coagulating this coating. His idea failed, but he noted that the coating peeled off in a transparent film. This first 'cellophane' was thick, hard, and not perfectly transparent, **1000 but Brandenberger apparently foresaw commercial possibilities in his discovery. By 1908 he developed the first machine for the manufacture of transparent sheets of regenerated cellulose. The 1908 product was not satisfactory, but by 1912 Brandenberger was making a saleable thin flexible film used in gas masks. He obtained patents to cover the machinery and the essential ideas of his process.

It seems to be agreed, however, that the disclosures of these early patents were not sufficient to make possible the manufacture of commercial cellophane. The inadequacy of the patents is partially attributed to the fact that the essential machine (the Hopper) was improved after it was patented. But more significant was the failure of these patents to disclose the actual technique of the process. This technique included the operational data acquired by experimentation. [FN4]

FN4. Initially, the proper cellulose content of the viscose must be determined. This viscous fluid is ripened according to a 'ripening index,' a test whereby viscose is put in a salt solution and shaken to bring out the coagulation point. The requisite strength of this solution varies according to the ripening time. Fourteen additional baths follow the first coagulating bath. The most advantageous ripening time, temperature, size, composition, and duration of each of the baths were all determined by the trials and errors of Brandenberger and La Cellophane, the corporation he directed. It was estimated that in 1923 it would have taken four or five years of experimentation by a new producer of cellophane to attain this production technique.

In 1917 Brandenberger assigned his patents to La Cellophane Societe Anonyme and joined that organization. *383 Thereafter developments in the production of cellophane somewhat paralleled those taking place in artificial textiles. Chemical science furnished the knowledge for perfecting the new products. The success of the artificial products has been enormous. Du Pont was an American leader in the field of synthetics and learned of cellophane's successes through an associate, Comptoir des Textiles Artificiel.

In 1923 du Pont organized with La Cellophane an American company for the manufacture of plain cellophane. The undisputed findings are that:
'On December 26, 1923, an agreement was executed between duPont Cellophane Company and La Cellophane by which La Cellophane licensed duPont Cellophane Company exclusively under its United States cellophane patents, and granted duPont Cellophane Company the exclusive right to make and sell in North and Central America under La Cellophane's secret processes for cellophane manufacture. DuPont Cellophane Company granted to La Cellophane exclusive rights for the rest of the world under any cellophane patents or processes duPont Cellophane Company might develop.' Finding 24.

Subsequently du Pont and La Cellophane licensed several foreign companies, allowing them to manufacture and vend cellophane in limited areas. Finding 601. Technical exchange agreements with these companies were entered into at the same time. However, in 1940, du Pont notified these foreign companies that sales might be made in any country, [FN5] and **1001 by 1948 all the technical exchange agreements were canceled.

FN5. Substantially identical letters were sent in this form:
'Question has been raised within our organization as to the existence of territorial limitations under our agreements with your company relating to regenerated cellulose film. In order that our position may be clearly and frankly established, we desire to record with you our conclusions.
'Based upon the provisions of the contracts, and in the light of legal developments in this country, we construe these agreements as imposing no restrictions upon the sale of regenerated cellulose film in any country in which the public is free to sell. Thus we regard each party as free to export such film to any country in the world, subject only to such limitations as lawfully may be based upon the unauthorized use of patented inventions or trademarks in the country of manufacture, or in the country of use or sale.
'This letter is not intended to modify any of the provisions of our agreements involving the exchange of technical information.' R. 3323.

*384 Sylvania, and American affiliate of a Belgian producer of cellophane not covered by the license agreements above referred to, began the manufacture of cellophane in the United States in 1930. Litigation between the French and Belgian companies resulted in a settlement whereby La Cellophane came to have a stock interest in Sylvania, contrary to the La Cellophane-du Pont agreement. This resulted in adjustments as compensation for the intrusion into United States of La Cellophane that extended du Pont's limited territory. The details do not here seem important. Since 1934 Sylvania has produced about 25% of United States cellophane.

An important factor in the growth of cellophane production and sales was the perfection of moistureproof cellophane, a superior product of du Pont research and patented by that company through a 1927 application. Plain cellophane has little resistance to the passage of moisture vapor. Moistureproof cellophane has a composition added which keeps moisture in and out of the packed commodity. This patented type of cellophane has had a demand with much more rapid growth than the plain.

In 1931 Sylvania began the manufacture of moistureproof cellophane under its own patents. After negotiations over patent rights, du Pont in 1933 licensed Sylvania to manufacture and sell moistureproof cellophane produced*385 under the du Pont patents at a royalty of 2% of sales. These licenses with the plain cellophane licenses, from the Belgian company, made Sylvania a full cellophane competitor, limited on moistureproof sales by the terms of the licenses to 20% of the combined sales of the two companies of that type by the payment of a prohibitive royalty on the excess. Finding 552. There was never an excess production. The limiting clause was dropped on January 1, 1945, and Sylvania was acquired in 1946 by the American Viscose Corporation with assets of over two hundred million dollars.

Between 1928 and 1950, du Pont's sales of plain cellophane increased from $3,131,608 to $9,330,776. Moistureproof sales increased from $603,222 to $89,850,416, although prices were continuously reduced. Finding 337. It could not be said that this immense increase in use was solely or even largely attributable to the superior quality of cellophane or to the technique or business acumen of du Pont, though doubtless those factors were important. The growth was a part of the expansion of the commodity-packaging habits of business, a by-product of general efficient competitive merchandising to meet modern demands. The profits, which were large, apparently arose from this trend in marketing, the development of the industrial use of chemical research and production of synthetics, rather than from elimination of other producers from the relevant market. That market is discussed later at 76 S.Ct. 1006. Tables appearing at the end of this opinion (Appendix A, Findings 279--292, inclusive, 76 S.Ct. 1012--1014) show the uses of cellophane in comparison with other wrappings. [FN6] See the discussion, infra, 76 S.Ct. 1009 et seq.

FN6. Further information from the findings as to competition will be found in Findings 150--278.

**1002 [6] II. The Sherman Act and the Courts.--The Sherman Act has received long and careful application by this Court to achieve for the Nation the freedom of enterprise *386 from monopoly or restraint envisaged by the Congress that passed the Act in 1890. Because the Act is couched in broad terms, it is adaptable to the changing types of commercial production and distribution that have evolved since its passage. Chief Justice Hughes wrote for the Court that 'As a charter of freedom, the act has a generality and adaptability comparable to that found to be desirable in constitutional provisions.' Appalachian Coals, Inc., v. United States, 288 U.S. 344, 359-- 360, 53 S.Ct. 471, 474, 77 L.Ed. 825. Compare on remedy, Judge Wyzanski in United States v. United Shoe Machinery Corp., D.C., 110 F.Supp. 295, 348. It was said in Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 50, 31 S.Ct. 502, 511, 55 L.Ed. 619, that fear of the power of rapid accumulations of individual and corporate wealth from the trade and industry of a developing national economy caused its passage. Units of traders and producers snowballed by combining into so-called 'trusts.' Competition was threatened. Control of prices was feared. Individual initiative was dampened. While the economic picture has changed, large aggregations or private capital, with power attributes, continue. Mergers go forward. Industries such as steel, automobiles, tires, chemicals, have only a few production organizations. A considerable

size is often essential for efficient operation in research, manufacture and distribution.

[7][8] Judicial construction of anti-trust legislation has generally been left unchanged by Congress. This is true of the Rule of Reason. [FN7] While it is fair to say that the Rule *387 is imprecise, its application in Sherman Act litigation, as directed against enhancement of price or throttling of competition, has given a workable content to antitrust legislation. See note 18, infra. It was judicially declared a proper interpretation of the Sherman Act in 1911, with a strong, clear-cut dissent challenging its soundness on the ground that the specific words of the Act covered every contract that tended to restrain or monopolize. [FN8] This Court has not receded from its position on the Rule. [FN9] There is not, we think, any inconsistency between it and the development of the judicial theory that agreements as to maintenance of prices or division of territory are in themselves a violation of the Sherman Act. [FN10] It is logical that some agreements and practices are invalid per se, while others are illegal only as applied to particular situations. [FN11]

FN7. This was set forth and defined in Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 58--62, 31 S.Ct. 502, 516, 55 L.Ed. 619. It was based on the generality of ss 1 and 2 of the Sherman Act, which were said to be 'broad enough to embrace every conceivable contract or combination which could be made concerning trade or commerce' and therefore required a 'standard.' The standard of reason, drawn from the common law, was adopted. See Adams, The 'Rule of Reason,' 63 Yale L.J. 348; and Oppenheim, Federal Antitrust Legislation, 50 Mich.L.Rev., at 1156, notes 11 and 13.

FN8. Id., 221 U.S. at page 86 et seq., 31 S.Ct. at page 526.

FN9. United States v. Columbia Steel Co., 334 U.S. 495, 529, 68 S.Ct. 1107, 1125, 92 L.Ed. 1533; Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 614--615, 73 S.Ct. 872, 883, 97 L.Ed. 1277.

FN10. See United States v. Trenton Potteries Co., 273 U.S. 392, 47 S.Ct. 377, 71 L.Ed. 700; American Tobacco Co. v. United States, 328 U.S. 781, 813, 66 S.Ct. 1125, 1140, 90 L.Ed. 1575; Timken Roller Bearing Co. v. United States, 341 U.S. 593, 71 S.Ct. 971, 95 L.Ed. 1199.

FN11. Cf. Oppenheim, Federal Antitrust Legislation, 50 Mich.L.Rev. 1139, 1151--1152; Adams, The 'Rule of Reason', 63 Yale L.J. 348; and The Schwartz Dissent, 1 Antitrust Bulletin 37, 47.

**1003 Difficulties of interpretation have arisen in the application of the Sherman Act in view of the technical changes in production of commodities and the new distribution practices. [FN12] They have called forth reappraisal of the effect of the Act by business and government. [FN13] *388 That reappraisal has so far left the problems with which we are here concerned to the courts rather than to administrative agencies. Cf. Federal Trade Commission Act, 38 Stat. 721, 15 U.S.C.A. s 46. It is true that Congress has made exceptions to the generality of monopoly prohibitions, exceptions that spring from the necessities or conveniences of certain industries or business organizations, or from the characteristics of the members of certain groups of citizens. [FN14] But those exceptions express legislative *389 determination of the national economy's need of reasonable limitations on cutthroat competition or prohibition of monopoly. '(W)here exceptions are **1004 made, Congress should make them.' United States v. Line Material Co., 333 U.S. 287, 310, 68 S.Ct. 550, 562, 92 L.Ed. 701. They modify the reach of the Sherman Act but do not change its prohibition of other monopolies. We therefore turn to s 2 (note 2, supra) to determine whether du Pont has violated that section by its dominance in the manufacture of cellophane in the before-stated circumstances.

FN12. United States v. Columbia Steel Co., 334 U.S. 495, 526, 68 S.Ct. 1107, 1123, 92 L.Ed. 1533.

FN13. Final Report, Investigation of Concentration of Economic Power, S.Doc. No. 35, 77th Cong., 1st Sess.; Monograph No. 38 of that Investigation, Handler, A Study of the Construction and Enforcement of the Federal Antitrust Laws, 76th Cong., 3d Sess., Effective Competition, Report to the Secretary of Commerce, Charles Sawyer, by his Business Advisory Council, December 18, 1952; Report of the Attorney General's National Committee to Study the Antitrust Laws, March 31, 1955; Oppenheim, Federal Antitrust Legislation, 50 Mich.L.Rev. 1139; Kahn, A Legal and Economic Appraisal of the 'New' Sherman and Clayton Acts.

63 Yale L.J. 293; Adams, The 'Rule of Reason,' 63 Yale L.J. 348; Rostow, Monopoly Under the Sherman Act: Power or Purpose? 43 Ill.L.Rev. 745.

FN14. Numerous Acts contain specific exemptions from the operation of the antitrust laws: Clayton Act, 15 U.S.C. s 17 (1946), 15 U.S.C.A. s 17 (all labor organizations); McCarran-Ferguson Act, 15 U.S.C. s 1013 (1952), 15 U.S.C.A. s 1013 (insurance companies); Webb-Pomerene Act, 15 U.S.C. s 62 (1946), 15 U.S.C.A. s 62 (limited exemption for foreign trade associations); Capper-Volstead Act, 7 U.S.C. ss 291, 292 (1927), 7 U.S.C.A. ss 291, 292 (farm cooperatives); Interstate Commerce Act, 49 U.S.C. s 5(11) (1952), 49 U.S.C.A. s 5(11) (carriers participating in an approved transaction); Civil Aeronautics Act, 49 U.S.C. s 494 (1952), 49 U.S.C.A. s 494 (exemption for acts ordered by the CAB).
Market entry is carefully regulated in some of the country's largest businesses: Natural Gas Act, 15 U.S.C. s 717f, 15 U.S.C.A. s 717f (natural gas companies); Federal Communications Act, 47 U.S.C. s 307(a) (1952), 47 U.S.C.A. s 307(a) (limits new stations); Civil Aeronautics Act, 49 U.S.C. s 481(d) (1951), 49 U.S.C.A. s 481(d) (limits market entry); Motor Carrier Act, 49 U.S.C. s 307 (1952), 49 U.S.C.A. s 307 (motor vehicle common carriers).
Price fixing in some areas is authorized by the legislature: Reed-Bulwinkle Act, 49 U.S.C. s 5b (1952), 49 U.S.C.A. s 5b (railroad rate agreements); Civil Aeronautics Act, 49 U.S.C. s 492 (1952), 49 U.S.C.A. s 492 (approval of transportation rate agreements); Miller-Tydings Act, 15 U.S.C. s 1 (1946), 15 U.S.C.A. s 1 (resale price maintenance); Shipping Act, 46 U.S.C. s 814 (1952), 46 U.S.C.A. s 814 (water carriers' rate agreements).
Combination of strong competitors in some major instances has been encouraged: Federal Communications Act, 47 U.S.C. ss 221(a), 222(c)(1) (1952), 47 U.S.C.A. ss 221(a) 222(c)(1); Federal Power Act, 16 U.S.C. s 824a(b), (1952), 16 U.S.C.A. s 824a(b); Interstate Commerce Act, 49 U.S.C. s 5b (1952), 49 U.S.C.A. s 5b (all common carriers).
That competition is not always to be encourage is made evident by noting that the farmers have been actually barred from production in most major crops and some groups of workers are told that they may not, in production of commodities for commerce, work for less than a minimum wage. Fair Labor Standards Act, 29 U.S.C. s 206 (1952), 29 U.S.C.A. s 206.
See Report of Attorney General's National Committee to Study the Antitrust Laws, pp. 261--313, for discussion of 'Exemptions From Antitrust Coverage.'

[9] III. The Sherman Act, s 2--Monopolization.--The only statutory language of s 2 pertinent on this review is: 'Every person who shall monopolize * * * shall be deemed guilty * * * .' This Court has pointed out that monopoly at common law was a grant by the sovereign to any person for the sole making or handling of anything so that others were restrained or hindered in their lawful trade. Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 51, 31 S.Ct. 502, 512, 55 L.Ed. 619. However, as in England, it came to be recognized here that acts bringing the evils of authorized monopoly--unduly diminishing competition and enhancing prices--were undesirable, id., 221 U.S. at pages 56, 57, 58, 31 S.Ct. at pages 514, 515, and were declared illegal by s 2. Id., 221 U.S. at pages 60--62, 31 S.Ct. at pages 515--516. Our cases determine that a party has monopoly power if it has, over 'any part of the trade or commerce among the several states', a power of controlling prices or unreasonably restricting competition. Id., 221 U.S. at page 85, 31 S.Ct. at page 525.

*390 Senator Hoar, in discussing s 2, pointed out that monopoly involved something more than extraordinary commercial success, 'that it involved something like the use of means which made it impossible for other persons to engage in fair competition.' [FN15] This exception to the *391 Sherman Act prohibitions of monopoly **1005 power is perhaps the monopoly 'thrust upon' one of United States v. Aluminum Co. of America, 2 Cir., 148 F.2d 416, 429, left as an undecided possibility by American Tobacco Co. v. United States, 328 U.S. 781, 66 S.Ct. 1125, 90 L.Ed. 1575. Compare United States v. United Shoe Machinery Corp., D.C., 110 F.Supp. 295, 342. [FN16]

FN15. 21 Cong.Rec. 3151:
'Mr. Kenna. Mr. President, I have no disposition to delay a vote on the bill, but I would like to ask, with his permission, the Senator from Vermont a question touching the second section: "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade, etc."

'It is intended by the committee, as the section seems to indicate, that if an individual engaged in trade between States or between States and Territories, or between States or Territories and the District of Columbia, or between a State and a foreign country, by his own skill and energy, by the propriety of his conduct generally, shall pursue his calling in such a way as to monopolize a trade, his action shall be a crime under this proposed act? To make myself understood, if I am not clear--

'Mr. Edmunds. I think I understand the Senator.

'Mr. Kenna. Suppose a citizen of Kentucky is dealing in shorthorn cattle and by virtue of his superior skill in that particular product it turns out that he is the only one in the United States to whom an order comes from Mexico for cattle of that stock for a considerable period, so that he is conceded to have a monopoly of that trade with Mexico; is it intended by the committee that the bill shall make that man a culprit?

'Mr. Edmunds. It is not intended by it and the bill does not do it. Anybody who known the meaning of the word 'monopoly,' as the courts apply it, would not apply it to such a person at all; and I am sure my friend must understand that.' Id., at 3152:

'Mr. Hoar. I put in the committee, if I may be permitted to say so (I suppose there is no impropriety in it), the precise question which has been put by the Senator from West Virginia, and I had that precise difficulty in the first place with this bill, but I was answered, and I think all the other members of the committee agreed in the answer, that 'monopoly' is a technical term known to the common law, and that it signifies--I do not mean to say that they stated what the signification was, but I became satisfied that they were right and that the word 'monopoly' is a merely technical term which has a clear and legal signification, and it is this: It is the sole engrossing to a man's self by means which prevent other men from engaging in fair competition with him.

'Of course a monopoly granted by the King was a direct inhibition of all other persons to engage in that business or calling or to acquire that particular article, except the man who had a monopoly granted him by the sovereign power. I suppose, therefore, that the courts of the United States would say in the case put by the Senator from West Virginia that a man who merely by superior skill and intelligence, a breeder of horses or raiser of cattle, or manufacturer or artisan of any kind, got the whole business because nobody could do it as well as he could was not a monopolist, but that it involved something like the use of means which made it impossible for other persons to engage in fair competition, like the engrossing, the buying up of all other persons engaged in the same business.'

FN16. See 76 S.Ct. 999

[10] If cellophane is the 'market' that du Pont is found to dominate, it may be assumed it does have monopoly power over that 'market.' [FN17] Monopoly power is the power to control prices or exclude competition. [FN18] It seems apparent *392 that du Pont's power to set the price of cellophane has been limited only by the competition afforded by other flexible packaging materials. Moreover, it may be practically impossible for anyone to commence manufacturing cellophane without full access to du Pont's technique. However, du Pont has no power to prevent competition from other wrapping materials. The trial court consequently had to determine whether competition from the other wrappings prevented du Pont from possessing monopoly power in violation of s 2. Price and competition are so intimately entwined that any discussion of theory must treat them as one. It is inconceivable that price could be controlled without power over competition or vice versa. This approach to the determination of monopoly power is strengthened by this Court's conclusion in prior cases that, when an alleged monopolist has power over price and competition, an intention to monopolize in a proper case may be assumed. [FN19]

FN17. Compare Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 74, 31 S.Ct. 502, 522, 55 L.Ed. 619, and American Tobacco Co. v. United States, 328 U.S. 781, 813--814, 66 S.Ct. 1125, 1140--1141; United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 226, 60 S.Ct. 811, 846, 84 L.Ed. 1129, last paragraph, note 59

FN18. See American Tobacco Co. v. United States, 328 U.S. 781, 811, 66 S.Ct. 1125, 1139; Apex Hosiery Co. v. Leader, 310 U.S. 469, 501, 60 S.Ct. 982, 996, 84 L.Ed. 1311; Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 58, 31 S.Ct. 502, 515. See Stocking and Mueller, The Cellophane Case and the New Competition, XLV American Economic Rev. 29, 54; Cole, An Appraisal of Economic Change, XLIV American Economic Rev.

35, 61; Wilcox, TNEC Monograph No. 21, pp. 9, 11; The Schwartz Dissent, 1 Antitrust Bulletin at 39; Report of Attorney General's National Committee to Study the Antitrust Laws, p. 43; Neal, The Clayton Act and the Trans-America Case, 5 Stan.L.Rev. 179, 205, 213.

FN19. United States v. Columbia Steel Co., 334 U.S. 495, 525, 68 S.Ct. 1107, 1123, 92 L.Ed. 1533; United States v. Paramount Pictures, 334 U.S. 131, 173, 68 S.Ct. 915, 936, 92 L.Ed. 1260; Apex Hosiery Co. v. Leader, 310 U.S. 469, 501, 60 S.Ct. 982, 996, 84 L.Ed. 1311; cf. Rostow, 43 Ill.L.Rev. 745, 753--763; Oppenheim, Federal Antitrust Legislation, 50 Mich.L.Rev. 1139, 1193.

If a large number of buyers and sellers deal freely in a standardized product, such as salt or wheat, we have complete or pure competition. Patents, on the other hand, furnish the most familiar type of classic monopoly. As the producers of a standardized product bring about significant differentiations of quality, ****1006** designed, or packaging in the product that permit differences of use, competition becomes to a greater or less degree incomplete and the producer's power over price and competition greater over his article and its use, according to the differentiation he is able to create and maintain. A retail seller may have in one sense a monopoly on certain trade because of location, as an isolated country store or filling station, or because no ***393** one else makes a product of just the quality or attractiveness of his product, as for example in cigarettes. Thus one can theorize that we have monopolistic competition in every nonstandardized commodity with each manufacturer having power over the price and production of his own product. [FN20] However, this power that, let us say, automobile or soft-drink manufactures have over their trademarked products is not the power that makes an illegal monopoly. Illegal power must be appraised in terms of the competitive market for the product. [FN21]

FN20. See Chamberlin, Theory of Monopolistic Competition, c. IV.

FN21. See United States v. Columbia Steel Co., 334 U.S. 495, 527, 68 S.Ct. 1107, 1124; Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 610, 73 S.Ct. 872, 881, 97 L.Ed. 1277; Standard Oil Co. (Indiana) v. United States, 283 U.S. 163, 179, 51 S.Ct. 421, 427, 75 L.Ed. 926.

[11][12] Determination of the competitive market for commodities depends on how different from one another are the offered commodities in character or use, how far buyers will go to substitute one commodity for another. For example, one can think of building materials as in commodity competition but one could hardly say that brick competed with steel or wood or cement or stone in the meaning of Sherman Act litigation; the products are too different. This is the interindustry competition emphasized by some economists. See Lilienthal, Big Business, c. 5. On the other hand, there are certain differences in the formulae for soft drinks but one can hardly say that each one is an illegal monopoly. Whatever the market may be, we hold that control of price or competition establishes the existence of monopoly power under s. 2. Section 2 requires the application of a reasonable approach in determining the existence of monopoly power just as surely as did s. 1. This of course does not mean that there can be a reasonable monopoly. See notes 7 and 9, supra. Our next step is to determine whether du Pont has monopoly power over cellophane: that is, power over its price in relation to or competition with ***394** other commodities. The charge was monopolization of cellophane. The defense, that cellophane was merely a part of the relevant market for flexible packaging materials.

[13][14] IV. The Relevant Market.--When a product is controlled by one interest, without substitutes available in the market, there is monopoly power. Because most products have possible substitutes, we cannot, as we said in Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 612, 73 S.Ct. 872, 882, give 'that infinite range' to the definition of substitutes. Nor is it a proper interpretation of the Sherman Act to require that products be fungible to be considered in the relevant market.

The Government argues:

'we do not here urge that in no circumstances may competition of substitutes negative possession of monopolistic power over trade in a product. The decisions make it clear at the least that the courts will not consider substitutes other than those which are substantially fungible with the monopolized product and sell at substantially the same price.'

[15][16][17] But where there are market alternatives that buyers may readily use **1007 for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others. If it were not so, only physically identical products would be a part of the market. To accept the Government's argument, we would have to conclude that the manufactures of plain as well as moistureproof cellophane were monopolists, and so with films such as Pliofilm, foil, glassine, polyethylene, and Saran, for each of these wrapping materials is distinguishable. These were all exhibits in the case. New wrappings appear, generally similar to cellophane, is each a monopoly? What is called for is an appraisal of the 'cross-elasticity' of demand in the trade. See Note, 54 Col.L.Rev. 580. *395 The varying circumstances of each case determine the result. [FN22] In considering what is the relevant market for determining the control of price and competition, no more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes make up that 'part of the trade or commerce', monopolization of which may be illegal. As respects flexible packaging materials, the market geographically is nationwide

FN22. Maple Flooring Mfrs' Ass'n v. United States, 268 U.S. 563, 579, 45 S.Ct. 578, 583, 69 L.Ed. 1093:
'It should be said at the outset that in considering the application of the rule of decision in these cases to the situation presented by this record, it should be remembered that this court has often announced that each case arising under the Sherman Act must be determined upon the particular facts disclosed by the record, and that the opinions in those cases must be read in the light of their facts and of a clear recognition of the essential differences in the facts of those cases, and in the facts of any new case to which the rule of earlier decisions is to be applied.'

[18][19] Industrial activities cannot be confined to trim categories. Illegal monopolies under s 2 may well exist over limited products in narrow fields where competition is eliminated. [FN23] That does **1008 not settle the issue here. In *396 determining the market under the Sherman Act, it is the use or uses to which the commodity is put that control. The selling price between commodities with similar uses and different characteristics may vary, so that the cheaper product can drive out the more expensive. Or, the superior quality of higher priced articles may make dominant the more desirable. Cellophane costs more than many competing products and less than a few. But whatever the price, there are various flexible wrapping materials that are bought by manufacturers for packaging their goods in their own plants or are sold to converters who shape and print them for use in the packaging of the commodities to be wrapped

FN23. The Government notes that the prohibitions of s 2 of the Sherman Act have often been extended to producers of single products and to businesses of limited scope. But the cases to which the Government refers us were not concerned with the problem that is now before the Court. In Story Parchment Co. v. Paterson Parchment Paper Co., 282 U.S. 555, 51 S.Ct. 248, 75 L.Ed. 544, a conspiracy to monopolize trade in vegetable parchment was held to be a violation of s 2. Parchment paper is obviously no larger a part of commerce than cellophane. Recovery, however, was based on proven allegations of combination and conspiracy to monopolize, and the scope of the market was not in issue. 282 U.S. at page 560, 51 S.Ct. at page 249. Similarly, Indiana Farmer's Guide Pub. Co. v. Prairie Farmer Publishing Co., 293 U.S. 268, 55 S.Ct. 182, 79 L.Ed. 356, ruled that a combination or conspiracy for the purpose of monopolizing the farm-paper business in the north central part of the Nation would be illegal by reason of the second section of the Sherman Act. Lorain Journal Co. v. United States, 342 U.S. 143, 72 S.Ct. 181, 96 L.Ed. 162, a case not cited by the Government, was concerned with even a smaller geographical area (dissemination of news in a community and surrounding territory). But the Court held only that defendant had attempted to monopolize not that he had in fact monopolized. Also, this Court found in United States v. Columbia Steel Co., 334 U.S. 495, 68 S.Ct. 1107, 1124, 92 L.Ed. 1533, that the 'relevant competitive market' for determining whether there had been an unreasonable restraint of trade (or an attempt to monopolize) was the market for 'rolled steel' products in an 11-state area. Women's dresses of original design.' Fashion Originators' Guild of America v. Federal Trade Comm., 312 U.S. 457, 61 S.Ct. 703, 85 L.Ed. 949; 'first run' motion pictures. United States v. Paramount Pictures, 334 U.S. 131, 68 S.Ct. 915, 92 L.Ed. 1260; the news services of one news agency. United States v. Associated Press, D.C.S.D.N.Y.,

52 F.Supp. 362, affirmed 326 U.S. 1, 65 S.Ct. 1416, 89 L.Ed. 2013, and newspaper advertising as distinguished from other means of news dissemination. Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 73 S.Ct. 872, have all been designated as parts of commerce. All four were concerned only with the question of whether there had been an attempt to monopolize. United States v. Aluminum Co. of America, 2 Cir., 148 F.2d 416, did involve the question of monopolization. Judge Hand found that the relevant market for measuring Alcoa's power was the market for 'virgin' aluminum; he refused to consider the close competition offered by 'secondary' (used) aluminum. The reason for the narrow definition was that Alcoa's control over virgin aluminum permitted it to regulate the supply of used aluminum even though the latter should be actually sold by a competitor. Consequently, the case is not particularly helpful in the problem of market definition now before the Court.

*397 Cellophane differs from other flexible packaging materials. From some it differs more than from others. The basic materials from which the wrappings are made and the advantages and disadvantages of the products to the packaging industry are summarized in Findings 62 and 63. They are aluminum, cellulose acetate, chlorides, wood pulp, rubber hydrochloride, and ethylene gas. It will adequately illustrate the similarity in characteristics of the various products by nothing here Finding 62 as to glassine. [FN24] Its use is almost as extensive as cellophane, Appendix C, 76 S.Ct. 1016, and many of its characteristics equally or more satisfactory to users. [FN25]

FN24. '62. * * * Greaseproof paper is made by beating wood pulp in a vat filled with water until the fibers become saturated and gelatinous in texture. Resulting product is translucent and resistant to oil and grease.
'Glassine is produced by finishing greaseproof paper between highly polished metal rollers under heat and at pressure. This process develops the transparency and surface gloss with are characteristic of glassine. It is greaseproof, and can be sealed by heat, if coated. It is made moistureproof by coating and with appropriate lacquers or waxes and may be printed.'

FN25. '63. There are respects in which other flexible packaging materials are as satisfactory as cellophane:
'Glassine.
'Glassine is, in some types, about 90% transparent, so printing is legible through it.
'Glassine affords low cost transparency.
'Moisture protection afforded by waxed or lacquered glassine is as good as that or moistureproof cellophane.
'Glassine has greater resistance to tearing and breakage than cellophane.
'Glassine runs on packaging machinery with ease equal to that of cellophane.
'Glassine can be printed faster than cellophane, and can be run faster than moistureproof cellophane on bag machines.
'Glassine has greater resistance than cellophane to rancidity-inducing ultraviolet rays.
'Glassine has dimensional stability superior to cellophane.
'Glassine is more durable in cold weather than cellophane.
'Printed glassine can be sold against cellophane on the basis of appearance. 'Glassine may be more easily laminated than cellophane.
'Glassine is cheaper than cellophane in some types, comparable in others.'

*398 It may be admitted that cellophane combines the desirable elements of transparency, strength and cheapness more **1009 definitely than any of the others. Comparative characteristics have been noted thus:
'Moistureproof cellophane is highly transparent, tears readily but has high bursting strength, is highly impervious to moisture and gases, and is resistant to grease and oils. Heat sealable, printable, and adapted to use on wrapping machines, it makes an excellent packaging material for both display and protection of commodities.
'Other flexible wrapping materials fall into four major categories: (1) opaque nonmoistureproof wrapping paper designed primarily for convenience and protection in handling packages; (2) moistureproof films of varying degrees of transparency designed primarily either to protect, or to display and protect, the products they encompass; (3) nonmoistureproof transparent films designed primarily to display and to some extent protect, but which obviously do a poor protecting job where exclusion or retention of moisture is important; and (4) moistureproof materials other than films of varying degrees of transparency (foils and paper products) designed to protect and

display.' [FN26]

FN26. Stocking and Mueller, The Cellophane Case, XLV Amer. Economic Rev. 29, 48–49.

An examination of Finding 59, Appendix, B, 76 S.Ct. 1015, will make this clear.

*399 But, despite cellophane's advantages it has to meet competition from other materials in every one of its uses. Cellophane's principal uses are analyzed in Appendix A, Findings 281 and 282. Food products are the chief outlet, with cigarettes next. The Government makes no challenge to Finding 283 that cellophane furnishes less than 7% of wrappings for bakery products, 25% for candy, 32% for snacks, 35% for meats and poultry, 27% for crackers and biscuits, 47% for fresh produce, and 34% for frozen foods. Seventy-five to eighty percent of cigarettes are wrapped in cellophane. Finding 292. Thus, cellophane shares the packaging market with others. The over-all result is that cellophane accounts for 17.9% of flexible wrapping materials, measured by the wrapping surface. Finding 280, Appendix A., 76 S.Ct. 1012.

Moreover a very considerable degree of functional interchangeability exists between these products, as is shown by the tables of Appendix A and Findings 150--278. [FN27] It will be noted, Appendix B, that except as to permeability to gases, cellophane has no qualities that are not possessed by a number of other materials. Meat will do as an example of interchangeability. Findings 205--220. Although du Pont's sales to the meat industry have reached 19,000,000 pounds annually, nearly 35%, this volume is attributed 'to the rise of self-service retailing of fresh meat.' Findings 212 and 283. In fact, since the popularity of self-service meats, du Pont has lost 'a considerable proportion' of this packaging business to Pliofilm. Finding 215. Pliofilm is more expensive than cellophane, but its superior physical characteristics apparently offset cellophane's price advantage. While retailers *400 shift continually between the two, the trial court found that Pliofilm is increasing its share of the business. Finding 216. One further example is worth noting. Before World War II, du Pont cellophane wrapped between 5 and 10% of baked and smoked meats. The peak year was **1010 1933. Finding 209. Thereafter du Pont was unable to meet the competition of Sylvania and of greaseproof paper. Its sales declined and the 1933 volume was not reached again until 1947. Findings 209--210. It will be noted that greaseproof paper, glassine, waxed paper, foil and Pliofilm and used as well as cellophane, Finding 218. Findings 209--210 show the competition and 215--216 the advantages that have caused the more expensive Pliofilm to increase its proportion of the business.

FN27. There are eighteen classifications: White Bread; Specialty Breads; Cake and Sweet Goods; Meat; Candy; Crackers and Biscuits; Frozen Foods; Potato Chips, Pop Corn and Snacks; Cereals; Fresh Produce; Paper Goods and Textiles; Cigarettes; Butter; Chewing Gum; Other Food Products; Other Tobacco Products; Cheese; Oleomargarine.

[20][21] An element for consideration as to cross-elasticity of demand between products is the responsiveness of the sales of one product to price changes of the other. [FN28] If a slight decrease in the price of cellophane causes a considerable number of customers of other flexible wrappings to switch to cellophane, it would be an indication that a high cross-elasticity of demand exists between them; that the products compete in the same market. The court below held that the '(g)reat sensitivity of customers in the flexible packaging markets to price or quality changes' prevented du Pont from possessing monopoly control over price. 118 F.Supp. at page 207. The record sustains these findings. See references made by the trial court in Findings 123--149.

FN28. Scitovsky, Welfare and Competition (1951) 396; Bain, Pricing, Distribution, and Employment (1953 rev.ed.), 52.

[22] We conclude that cellophane's interchangeability with the other materials mentioned suffices to make it a part of this flexible packaging material market.

The Government stresses the fact that the variation in price between cellophane and other materials demonstrates they are noncompetitive. As these products are *401 all flexible wrapping materials, it seems reasonable to consider, as was done at the trial, their comparative cost to the consumer in terms of square area. This can be seen in Finding 130, Appendix C. Findings as to price competition are set out in the margin. [FN29] Cellophane costs

two or three times as much, surface measure, as its chief competitors for the flexible wrapping market, glassine and greaseproof papers. Other forms of cellulose wrappings and those from other chemical or mineral substances, with the exception of aluminum foil, are more expensive. The uses of these materials, as can be observed by Finding 283 in Appendix A, are largely to wrap small packages for retail distribution. The wrapping is a relatively small proportion of the entire cost of the article. [FN30] Different producers need different qualities in wrappings and their need may vary from time to time as their products undergo change. But the necessity for flexible wrappings is the central and unchanging demand. We cannot say that these differences in cost gave du Pont monopoly power over prices in view of the findings of fact on that subject. [FN31]

FN29. '132. The price of cellophane is today an obstacle to its sales in competition with other flexible packaging materials. '133. Cellophane has always been higher priced than the two largest selling flexible packaging materials, wax paper and glassine, and this has represented a disadvantage to sales of cellophane.
'134. DuPont considered as a factor in the determination of its prices, the prices of waxed paper, glassine, greaseproof, vegetable parchment, and other flexible packaging materials.
'135. DuPont, in reducing its prices, intended to narrow price differential between cellophane and packaging papers, particularly glassine and waxed paper. The objective of this effort has been to increase the use of cellophane. Each price reduction was intended to open up new uses for cellophane, and to attract new customers who had not used cellophane because of its price.'

FN30. See, e.g., R. 4846.

FN31. '140. Some users are sensitive to the cost of flexible packaging materials; others are not. Users to whom cost is important include substantial business: for example, General Foods, Armour, Curtiss Candy Co., and smaller users in the bread industry, cracker industry, and frozen food industry. These customers are unwilling to use more cellophane because of its relatively high price, would use more if the price were reduced, and have increased their use as the price of cellophane has been reduced.
'141. The cost factor slips accounts away from cellophane. This hits at the precarious users, whose profit margins on their products are low, and has been put in motion by competitive developments in the user's trade. Examples include the losses of business to glassine in candy bar wraps in the 30's, frozen food business to waxed paper in the late 40's, and recent losses to glassine in cracker packaging.
'142. The price of cellophane was reduced to expand the market for cellophane. DuPont did not reduce prices for cellophane with intent of monopolizing manufacture or with intent of suppressing competitors.
'143. DuPont reduced cellophane prices to enable sales to be made for new uses from which higher prices had excluded cellophane, and to expand sales. Reductions were made as sales volume and market conditions warranted. In determining price reductions, DuPont considered relationship between its manufacturing costs and proposed prices, possible additional volume that might be gained by the price reduction, effect of price reduction upon the return duPont would obtain on its investment. It considered the effect its lowered price might have on the manufacture by others, but this possible result of a price reduction was never a motive for the reduction.
'144. DuPont never lowered cellophane prices below cost, and never dropped cellophane prices temporarily to gain a competitive advantage.
'145. As duPont's manufacturing costs declined, 1924 to 1935, duPont reduced prices for cellophane. When costs of raw materials increased subsequent to 1935, it postponed reductions until 1938 and 1939. Subsequent increases in cost of raw material and labor brought about price increases after 1947.'

**1011 *402 It is the variable characteristics of the different flexible wrappings and the energy and ability with which the manufacturers push their wares that determine choice. A glance at 'Modern Packaging,' a trade journal, will give, by its various advertisements, examples of the competition among manufacturers for the flexible packaging market. The trial judge visited the 1952 Annual Packaging *403 Show at Atlantic City, with the consent of counsel. He observed exhibits offered by 'machinery manufacturers, converters and manufacturers of flexible packaging materials.' He stated that these personal observations confirmed his estimate of the competition between cellophane and other packaging materials. Finding 820. From this wide variety of evidence, the Court reached the conclusion

expressed in Finding 838:

'The record establishes plain cellophane and moistureproof cellophane are each flexible packaging materials which are functionally interchangeable with other flexible packaging materials and sold at same time to same customers for same purpose at competitive prices; there is no cellophane market distinct and separate from the market for flexible packaging materials; the market for flexible packaging materials is the relevant market for determining nature and extent of duPont's market control; and duPont has at all times competed with other cellophane producers and manufacturers of other flexible packaging materials in all aspects of its cellophane business.'

[23][24] The facts above considered dispose also of any contention that competitors have been excluded by du Pont from the packaging material market. That market has many producers and there is no proof du Pont ever has possessed power to exclude any of them from the rapidly expanding flexible packaging market. The Government apparently concedes as much, for it states that 'lack **1012 of power to inhibit entry into this so-called market (i.e., flexible packaging materials), comprising widely disparate products, is no indicium of absence of power to exclude competition in the manufacture and sale of cellophane.' The record shows the multiplicity of competitors and the financial strength of some with individual assets running to the hundreds of millions. Findings 66--72. Indeed, the *404 trial court found that du Pont could not exclude competitors even from the manufacture of cellophane, Finding 727, an immaterial matter if the market is flexible packaging material. Nor can we say that du Pont's profits, while liberal (according to the Government 15.9% net after taxes on the 1937--1947 average), demonstrate the existence of a monopoly without proof of lack of comparable profits during those years in other prosperous industries. Cellophane was a leader over 17%, in the flexible packaging materials market. There is no showing that du Pont's rate of return was greater or less than that of other producers of flexible packaging materials. Finding 719.

[25][26] The 'market' which one must study to determine when a producer has monopoly power will vary with the part of commerce under consideration. The tests are constant. That market is composed of products that have reasonable interchangeability for the purposes for which they are produced--price, use and qualities considered. While the application of the tests remains uncertain, it seems to us that du Pont should not be found to monopolize cellophane when that product has the competition and interchangeability with other wrappings that this record shows.

On the findings of the District Court, its judgment is affirmed.

Affirmed.

Mr. Justice CLARK and Mr. Justice HARLAN took no part in the consideration or decision of this case.

*405 Appendix A.

VIII. Results of du Pont's Competition With Other Materials.

(Findings 279--292.)

279. During the period du Pont entered the flexible packaging business, and since its introduction of moistureproof cellophane, sales of cellophane have increased. Total volume of flexible packaging materials used in the United States has also increased. Du Pont's relative percentage of the packaging business has grown as a result of its research, price, sales and capacity policies, but du Pont cellophane even in uses where it has competed has not attained the bulk of the business, due to competition of other flexible packaging materials.

280. Of the production and imports of flexible packaging materials in 1949 measured in wrapping surface, du Pont cellophane accounted for less than 20% of flexible packaging materials consumed in the United States in that year. The figures on this are:

	Thousands of Square Yards
Glassine, Greaseproof and Vegetable Parchment Papers	3,125,826
Waxing Papers (18 Pounds and over)	4,614,685
Sulphite Bag and Wrapping Papers	1,788,615
Aluminum Foil	1,317,807
Cellophane	3,366,068
Cellulose Acetate	133,982
Pliofilm, Polyethylene, Saran and Cry-O-Rap	373,871
Total	14,720,854
Total du Pont Cellophane Production	2,629,747
Du Pont Cellophane Per Cent of Total United States Production and Imports of These Flexible Packaging Materials	17.9%

*406 281. Eighty percent of cellophane made by du Pont is sold for packaging **1013 in the food industry. Of this quantity, 80% is sold for packaging baked goods, meat, candy, crackers and biscuits, frozen foods, fresh vegetables and produce, potato chips, and 'snacks,' such as peanut butter sandwiches, popcorn, etc. A small amount is sold for wrapping of textiles and paper products, etc. Largest nonfood use of cellophane is the overwrapping of cigarette packages.

The breakdown of du Pont cellophane sales for the year 1949 was:

Use	Sales (M pounds)	Percent of Total Sales
TOBACCO		
Cigarettes	20,584	11.6
Cigars	3,195	1.8
Other Tobacco	1,657	0.9
Total	25,436	14.3
FOOD PRODUCTS		
Candy & Gum	17,054	9.6
Bread & Cake	40,081	22.5
Crackers & Biscuits	12,614	7.1
Meat	11,596	6.5
Noodles & Macaroni	2,602	1.5

Tea & Coffee	1,380	0.8
Cereals	2,487	1.4
Frozen Foods	5,234	2.9
Dried Fruit	333	0.2
Nuts	2,946	1.7
Popcorn & Potato Chips	6,929	3.9
Dairy Products	3,808	2.1
Fresh Produce	4,564	2.6
Unclassified Foods	8,750	4.9
Total	120,478	67.7

407

MISCELLANEOUS		
Hosiery	1,370	0.7
Textiles	3,141	1.8
Drugs	1,031	0.6
Rubber	317	0.2
Paper	2,736	1.5
Unclassified	18,602	10.5
Total	27,197	15.3
Domestic Total	173,011	97.3
Export	4,820	2.7
Grand Total	177,831	100.0

*407 282. Sales of cellophane by du Pont in 1951, by principal uses, were approximately as follows:

	Pounds
White bread	between 8 and 9,000,000
Specialty breads	15,700,000
Cake and other baked sweet goods	22,000,000
Meat	19,000,000
Candy (including chewing gum)	20,000,000
Crackers and biscuits	17,000,000
Frozen foods	5,800,000
Cigarettes	23,000,000

283. 1949 sales of 19 major representative converters whose business covered a substantial segment of the total converting of flexible packaging materials for that year showed the following as to their sales of flexible packaging materials, classified by end use:

End Use	Quantity (Millions sq. in.)	Percent of Total End Use
BAKERY PRODUCTS		

Cellophane	109,670	6.8
Foil	2,652	.2
Glassine	72,216	4.4
Papers	1,440,413	88.6
Films	215	.0
	1,625,166	100.0

CANDY

Cellophane	134,280	24.4
Foil	178,967	32.5
Glassine	117,634	21.4
Papers	119,102	21.6
Films	484	.1
	550,467	100.0

SNACKS

Cellophane	61,250	31.9
Foil	1,571	.8
Glassine	120,556	62.8
Papers	8,439	4.4
Films	79	.1
	191,895	100.0

MEAT AND POULTRY

Cellophane	59,016	34.9
Foil	88	.1
Glassine	4,524	2.7
Papers	97,255	57.5
Films	8,173	4.8
	169,056	100.0

CRACKERS AND BISCUITS

Cellophane	29,960	26.6
Foil	192	.2
Glassine	11,253	10.0
Papers	71,147	63.2
Films	8	.0
	112,560	100.0

FRESH PRODUCE

Cellophane	52,828	47.2
Foil	43	.1
Glassine	96	.1
Papers	51,035	45.6
Films	7,867	7.0
	111,869	100.0

409

FROZEN FOOD EXCLUDING DAIRY PRODUCTS		
Cellophane	31,684	33.6
Foil	629	.7
Glassine	1,943	2.1
Papers	56,925	60.3
Films	3,154	3.3
	94,335	100.0

**1014 *409 284. About 96% of packaged white bread produced in the United States is wrapped in waxed paper or glassine, and about 6% in cellophane. The cellophane figure includes sales by all U.S. producers.

285. Forty-eight percent of specialty breads are wrapped in du Pont cellophane, the remainder in other cellophane or other materials. Most of this balance is wrapped in waxed paper and glassine.

286. Approximately 45% of cake and baked sweet goods packaged by wholesale bakers is wrapped in du Pont cellophane. The balance is wrapped in other cellophane or in waxed paper or glassine.

287. Between 25% and 35% of packaged candy units sold in the United States are wrapped in du Pont cellophane.

288. Of sponge and sweet crackers and biscuits combined approximately 25 to 30% of the packaged units produced in 1951 were wrapped in du Pont cellophane.

289. Du Pont cellophane at the present time is used on approximately 20 to 30% of packaged retail units of frozen foods. The remainder use waxed paper, waxed glassine, polyethylene, Pliofilm, Cry-O-Vac, or vegetable parchment.

290. Approximately 20 to 30% of packages of potato chips and other snacks are wrapped in du Pont cellophane. Most of the remainder are packaged in glassine and other flexible wraps.

*410 291. Approximately 4 to 6% of the packaged units of cereal are wrapped in du Pont cellophane. The principal flexible packaging materials used are waxed paper and glassine.

292. Du Pont cellophane is used as an outer wrap on the paper-foil packages for approximately 75 to 80% of cigarettes sold in the United States. Sales for this use represent about 11.6% of du Pont's total sales of cellophane.

**1015 *411 Appendix B.

59. The accompanying Table compares, descriptively, physical of cellophane and other flexible packaging materials:

PHYSICAL PROPERTIES

Packaging Materials	Heat Sealability	Print-ability	Clarity	Tear Strength (Elmendorf)
Cellophane (plain)	Yes (if coated)	Yes	Highly Transparent	Low
Cellophane (Moisture-proof)	Yes (if coated)	Yes	Highly Transparent	Low
Plain grease-proof paper	No	Yes	Opaque	Good
Plain Glassine	No	Yes	Commercially Transparent to Opaque	Good
Lacquered Glassine	Yes	Yes	Commercially Transparent to Translucent	Good
Waxed Glassine	Yes	(1)	Commercially Transparent to Translucent	Good
Vegetable Parch-ment	No	Yes	Tends to be Opaque	Good
Waxed Paper (18 lbs. or over)	Yes	(1)	Commercially Transparent	High
Aluminum Foil	No	Yes	Opaque	Low
Aluminum Foil (Heat Sealing)	Yes	Yes	Opaque	Low
Cellulose Acetate	Yes	Yes	Highly Transparent	Low
Pliofilm (rubber hydrochloride)	Yes (3)	Yes (3) with Slight Haze	Highly Transparent	Medium
Saran (Vinylidene Chloride)	Yes (3)	Yes (3)	Highly Transparent	High
Polyethylene	Yes (3)	Yes (3)	Transparent with Slight Haze	High
Cry-O-Rap	Yes (3)	Yes (3)	Transparent with Slight Haze	High
Sulphite (high fin-ish wrapper and label paper)	No	Yes	Opaque #	High

TABLE CONTINUED

Bursting Strength	Water Absorption in 24 hrs. Immersion	Moisture Permeabil-ity	Dimens. Permeabi-lity to Gases (2)	Resistance Change With Humid Diff.	Wrapping Machine to Grease & Oils	Running Qualities
High	High	High	Very Low	Large	Excellent	O.K.
High	High	Low-Medium	Very Low	Large	Excellent	O.K.

Low	High	High	Medium	Moderate	Good	O.K.
Low	High	High	Low	Moderate	Good	O.K.
Low	Low	Low-Medium	Low	Moderate	Good	O.K.
Low	Low	Low	Low	Moderate	Good	O.K.
Good	High	High	Low	Moderate	Good	O.K.
Good	Low	Low-Medium	High	Moderate	None	O.K.
Low	Nil	Very Low	Very Low	None	Excellent	O.K.
Low	Nil	Nearly Nil	Very Low	None	Excellent	O.K.
High	Low	High	Variable	Very Small	Excellent	O.K.
High	Low	Medium	Low	Very Small	Excellent	Good (3)
High	Low	Very Low	Very Low	None	Excellent	Poor (3)
High	Low	Medium	High	None	(4)	Poor (3)
High	Low	Medium	Low	None	Excellent	Poor (3)
Medium	High	Very High	High	Moderate	None	O.K.

FNReferences:
FN(1) Normally printed before waxing.
FN(2) The permeability to gases can vary greatly depending upon the gas and the humidity conditions. The levels indicated in this chart apply particularly to flavor type volatiles as found in many food products.
FN(3) Plastic films may require special heat sealing techniques, and printing processes or special machines.
FN(4) Not affected by greases but penetrated by some oils.
FN(5) The information on this chart is based upon the generally accepted properties of the materials listed; however, materials produced by different processes, formulations, coatings, raw materials, surface treatments, and thicknesses can show considerable variation from the properties indicated.

**1016 *412 Appendix C.
(Finding of Fact 130.)
1949 average wholesale prices of flexible packaging materials in the United States were:

Packaging Material	Price per 1,000 sq. in. (cents)	Price per lb. (cents)	Yield per lb. (sq. in.)
Saran			
100 Gauge #517	6.1	99.0	16,300
Cellulose Acetate			
.00088"	3.3	82.0	25,000
Polyethylene			
.002"--18" Flat Width	5.4	81.0	15,000

Pliofilm			
120 Gauge N 2	3.8	80.8	21,000
Aluminum Foil			
.00035"	1.8	52.2	29,200
Moistureproof Cellophane			
300 MST--51	2.3	47.8	21,000
Plain Cellophane			
300 PT	2.1	44.8	21,500
Vegetable Parchment			
27#	1.4	22.3	16,000
Bleached Glassine			
25#	1.0	17.8	17,280
Bleached Greaseproof			
25#	.9	15.8	17,280
Plain Waxed Sulphite			
25# Self-Sealing	1.1	15.2	14,400
Plain Waxed Sulphite			
25# Coated Opaque	.7	11.9	17,280
Cry-O-Rap	Sold only in converted form. No unconverted quotations.		

*413 Mr. Justice FRANKFURTER, concurring.

I concur in the judgment of the Court and in so much of Mr. Justice REED'S opinion as supports the conclusion that cellophane did not by itself constitute a closed market but was a part of the relevant market for flexible packaging materials.

Mr. Justice REED has pithily defined the conflicting claims in this case. 'The charge was monopolization of cellophane. The defense, that cellophane was merely a part of the relevant market for flexible packaging materials.' Since this defense is sustained, the judgment below must be affirmed and it becomes unnecessary to consider whether du Pont's power over trade in cellophane would, had the defense failed, come within the prohibition of 'monopolizing' under s 2 of the Sherman Act. Needless disquisition on the difficult subject of singlefirm monopoly should be avoided since the case may be disposed of without consideration of this problem.

The boundary between the course of events by which a business may reach a powerful position in an industry without offending the outlawry of 'monopolizing' under s 2 of the Sherman Act and the course of events which brings the attainment of that result within the condemnation **1017 of that section, cannot be established by general phrases. It must be determined with reference to specific facts upon considerations analogous to those by which s 1 of the Sherman Act is applied. These were illuminatingly stated by Mr. Justice Brandeis for the Court:

'The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition. To determine that question the court must ordinarily consider the facts peculiar to the business to which *414 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 the purpose or end sought to be attained, are all relevant facts. * * *' Board of Trade of City of Chicago v. United States, 246 U.S. 231, 238, 38 S.Ct. 242, 244, 62 L.Ed. 683.

Sections 1 and 2 of course implicate different considerations. But the so-called issued of fact and law that call for adjudication in this legal territory are united, and intrinsically so, with factors that entail social and economic judgment. Any consideration of 'monopoly' under the Sherman law can hardly escape judgment, even if only implied, on social and economic issues. It had best be withheld until a case inescapably calls for it.

Mr. Chief Justice WARREN, with whom Mr. Justice BLACK and Mr. Justice DOUGLAS join, dissenting.

This case, like many under the Sherman Act, turns upon the proper definition of the market. In defining the market in which du Pont's economic power is to be measured, the majority virtually emasculate s 2 of the Sherman Act. They admit that 'cellophane combines the desirable elements of transparency, strength and cheapness more definitely than any of' a host of other packaging materials. Yet they hold that all of those materials are so indistinguishable from cellophane as to warrant their inclusion in the market. We cannot agree that cellophane, in the language of Times-Picayune Publishing Co v. United States, 345 U.S. 594, 613, 73 S.Ct. 872, 883, 97 L.Ed 1277, is "the selfsame product" as glassine, greaseproof and vegetable parchment papers, waxed papers, sulphite papers, *415 aluminum foil, cellulose acetate, and Ptiofilm and other films [FN1]

FN1 In Times--Picayune Publishing Co v. United States, 345 U.S. 594, 612, note 31, 73 S.Ct 872, 882, the Court said:
'For every product, substitutes exist But a relevant market cannot meaningfully encompass that infinite range The circle must be drawn narrowly to exclude any other product to which, within reasonable variations in price, only a limited number of buyers will turn; in technical terms, products whose 'cross-elasticities of demand' are small '

The majority opinion states that 'It will adequately illustrate the similarity in characteristics of the various products by noting here Finding 62 as to glassine.' But Finding 62 merely states the respects in which the selected flexible packaging materials are as satisfactory as cellophane; it does not compare all the physical properties of cellophane and other materials. The Table incorporated in Finding 59 does make such a comparison, and enables us to note cellophane's unique combination of qualities lacking among less expensive materials in varying degrees. [FN2] A glance at this Table reveals that cellophane has a high **1018 bursting strength while glassine's is low; that cellophane's permeability to gases is lower than that of glassine; and that both its transparency and its resistance to grease and oils are greater than glassine's *416 Similarly, we see that waxed paper's bursting strength is less than cellophane's and that it is highly permeable to gases and offers no resistance whatsoever to grease and oils. With respect to the two other major products held to be close substitutes for cellophane, Finding 59 makes the majority's market definition more dubious. In contrast to cellophane, aluminum foil is actually opaque and has a low bursting strength. And sulphite papers, in addition to being opaque, are highly permeable to both moisture and gases, have no resistance to grease and oils, have a lower bursting strength than cellophane, and are not even heat sealable. Indeed, the majority go further than placing cellophane in the same market with such products. They also include the transparent films, which are more expensive than cellophane. These bear even less resemblance to the lower priced packaging materials than does cellophane. The juxtaposition of one of these films, Cry-O-Rap, with sulphite in the Table facilitates a comparison which shows that Cry-O-Rap is markedly different and far superior.

FN2. See 118 F Supp. at page 64. The majority opinion quotes at length from Stocking and Mueller, The Cellophane Case, XLV Amer.Economic Rev. 29, 48--49, in noting the comparative characteristics of cellophane and other products. Unfortunately, the opinion fails to quote the conclusion reached by these economists. They state: 'The (trial) court to the contrary notwithstanding, the market in which cellophane meets the 'competition' of other wrappers is narrower than the market for all flexible packaging materials.' Id., at 52. And they conclude that '* * * cellophane is so differentiated from other flexible wrapping materials that its cross elasticity of demand gives du Pont significant and continuing monopoly power ' Id., at 63.

If the conduct of buyers indicated that glassine, waxed and sulphite papers and aluminum foil were actually 'the selfsame products' as cellophane, the qualitative differences demonstrated by the comparison of physical properties in Finding 59 would not be conclusive. But the record provides convincing proof that businessmen did not so regard these products. During the period covered by the complaint (1923--1947) cellophane enjoyed phenomenal growth. Du Pont's 1924 production was 361,249 pounds, which sold for $1,306,662. Its 1947 production was 133,502,858 pounds, which sold for $55,339,626. Findings 297 and 337. Yet throughout this period the price of cellophane was

far greater than that of glassine, waxed paper or sulphite paper. Finding 136 states that in 1929 cellophane's price was seven times that of glassine, in 1934, four times, and in 1949 still more than twice *417 glassine's price. Reference to DX--994, the graph upon which Finding 136 is based, shows that cellophane had a similar price relation to waxed paper and that sulphite paper sold at even less than glassine and waxed paper. We cannot believe that buyers, practical businessmen, would have bought cellophane in increasing amounts over a quarter of a century if close substitutes were available at from one-seventh to one-half cellophane's price. That they did so is testimony to cellophane's distinctiveness.

The inference yielded by the conduct of cellophane buyers is reinforced by the conduct of sellers other than du Pont. Finding 587 states that Sylvania, the only other cellophane producer, absolutely and immediately followed every du Pont price change, even dating back its price list to the effective date of du Pont's change. Producers of glassine and waxed paper, on the other hand, displayed apparent indifference to du Pont's repeated and substantial price cuts. DX--994 shows that from 1924 to 1932 du Pont dropped the price of plain cellophane 84%, while the price of glassine remained constant. [FN3] And during the period 1933--1946 the prices for glassine **1019 and waxed paper actually increased in the face of a further 21% decline in the price of cellophane. If 'shifts of business' due to 'price sensitivity' had been substantial, glassine and waxed paper producers who wanted to stay in business would have been compelled by market forces to meet du Pont's price challenge just as Sylvania was. The majority correctly point out that:

FN3. The record provides no figures for waxed paper prior to 1933.

'An element for consideration as to cross-elasticity of demand between products is the responsiveness of the sales of one product to price changes of the other. If a slight decrease in the price of cellophane causes a considerable number of customers of other flexible wrappings to switch to cellophane, it would be an *418 indication that a high cross-elasticity of demand exists between them; that the products compete in the same market.'

Surely there was more than 'a slight decrease in the price of cellophane' during the period covered by the complaint. That producers of glassine and waxed paper remained dominant in the flexible packaging materials market without meeting cellophane's tremendous price cuts convinces us that cellophane was not in effective competition with their products. [FN4]

FN4. See Stocking and Mueller, The Cellophane Case, XLV Amer.Economic Rev. 29, 56.

Certainly du Pont itself shared our view. From the first, du Pont recognized that it need not concern itself with competition from other packaging materials. For example, when du Pont was contemplating entry into cellophane production, its Development Department reported that glassine 'is so inferior that it belongs in an entirely different class and has hardly to be considered as a competitor of cellophane.' [FN5] This was still du Pont's view in 1950 when its survey of competitive prospects wholly omitted reference to glassine, waxed paper or sulphite paper and stated that 'Competition for du Pont cellophane will come from competitive cellophane and from non-cellophane films made by us or by others.' [FN6]

FN5. R. 3549, GX--392. The record contains many reports prepared by du Pont from 1928 to 1947. They virtually ignore the possibility of competition from other packaging materials. E.g., R. 3651, 3678, 3724, 3739.

FN6. R. 4070. It is interesting to note that du Pont had almost 70% of the market which this report considered relevant.

Du Pont's every action was directed toward maintaining dominance over cellophane. Its 1923 agreements with La Cellophane, the French concern which first produced commercial cellophane, gave du Pont exclusive *419 North and Central American rights to cellophane's technology, manufacture and sale, and provided, without any limitation in time that all existing and future information pertaining to the cellophane process be considered 'secret and confidential,' and be held in an exclusive common pool. [FN7] In its subsequent agreements with foreign licensees, du Pont was careful to preserve its continental market inviolate. [FN8] In 1929, while it was still the sole domestic **1020 producer of cellophane, du Pont won its long struggle to raise the tariff from 25% to 60%, ad valorem, on

cellophane imports, [FN9] substantially foreclosing foreign competition. When Sylvania became the second American cellophane producer the following year and du Pont filed suit claiming infringement of its moistureproof patents, they settled the suit by entering into a cross-licensing agreement. Under this agreement du Pont obtained the right to exclude third persons from use of any patentable moistureproof invention made during the next 15 years by the sole other domestic cellophane producer, and, by a prohibitive royalty provision, it limited Sylvania's moistureproof production to approximately *420 20% of the industry's moistureproof sales. [FN10] The record shows that du Pont and Sylvania were aware that, by settling the infringement suit, they avoided the possibility that the courts might hold the patent claims invalid and thereby open cellophane manufacture to additional competition. [FN11] If close substitutes for cellophane had been commercially available, du Pont, an enlightened enterprise, would not have gone to such lengths to control cellophane.

FN7. See Finding 24; GX--1001, R. 3253; and GX--1002, R. 3257--3260. The agreement of June 9, 1923, in which the parties agreed to divide the world cellophane market, is illegal per se under Timken Roller Bearing Co. v. United States, 341 U.S. 593, 596--599, 71 S.Ct. 971, 973--975, 95 L.Ed. 1199. The supplementary agreement providing for the interchange of technological information tightened the cellophane monopoly and denied to others any access to what went into the common pool--all in violation of United States v. National Lead Co., 332 U.S. 319, 328, 67 S.Ct. 1634, 1638, 91 L.Ed. 2077. As was said in United States v. Griffith, 334 U.S. 100, 107, 68 S.Ct. 941, 945, 92 L.Ed. 1236: 'The anti-trust laws are as much violated by the prevention of competition as by its destruction.'

FN8. See Finding 602; GX--1087, R. 3288; and GX--1109, R. 3301.

FN9. Finding 633. On appeal from an adverse decision by the Commissioner of Customs, du Pont persuaded the United States Customs Court to order reclassification of cellophane.

FN10. The agreement is summarized in Finding 545 and appears in full in GX--2487, R. 3383--3408. We believe that under the principles set forth in Transparent-Wrap Machine Corp. v. Stokes & Smith Co., 329 U.S. 637, 646, 67 S.Ct. 610, 615, 91 L.Ed. 563, this agreement violated the Sherman Act.

FN11. GX--2811, R. 6073--6074.

As predicted by its 1923 market analysis, [FN12] du Pont's dominance in cellophane proved enormously profitable from the outset. After only five years of production, when du Pont bought out the minority stock interests in its cellophane subsidiary, it had to pay more than fifteen times the original price of the stock. [FN13] But such success was not limited to the period of innovation, limited sales and complete domestic monopoly. A confidential du Pont report shows that during the period 1937--1947, despite great expansion of sales, du Pont's 'operative return' (before taxes) averaged 31%, while its average 'net return' (after deduction of taxes, bonuses, and fundamental research expenditures) was 15.9%. [FN14] Such profits provide a powerful incentive for the entry of competitors. [FN15] *421 Yet from 1924 to 1951 only one new firm, Sylvania, was able to begin cellophane production. And Sylvania could not have entered if La Cellophane's secret process had not been stolen. [FN16] It **1021 is significant that for 15 years Olin Industries, a substantial firm, was unsuccessful in its attempt to produce cellophane, finally abandoning the project in 1944 after having spent about $1,000,000. [FN17] When the Government brought this suit, du Pont, 'to reduce the hazard of being judged to have a monopoly of the U.S. cellophane business,' [FN18] decided to let Olin enter the industry. Despite this demonstration of the control achieved by du Pont through its exclusive dominion over the cellophane process, the District Court found that du Pont could not exclude competitors from the manufacture of cellophane. Finding 727. This finding is 'clearly erroneous.' [FN19] The majority avoid *422 passing upon Finding 727 by stating that it is 'immaterial * * * if the market is flexible packaging material.' They do not appear to disagree with our conclusion, however, since they concede that '* * * it may be practically impossible for anyone to commence manufacturing cellophane without full access to du Pont's technique.'

FN12. R. 3563.

FN13. When du Pont Cellophane was organized in 1923, du Pont received 52,000 shares of its stock in

return for $866,666.67 in cash, or $16.67 per share. F. 22; DX--735, R. 5402. In 1929 du Pont had to surrender stock having a market value of $12,129,600 in order to obtain the 48,000 shares held by French interests, a sum equal to $252.70 per share. DX--735, R. 5403.

FN14. R. 4155.

FN15. See Stocking and Mueller, The Cellophane case, XLV Amer. Economic Rev. 29, 60--63, where the authors compare the domestic economic history of rayon with that of cellophane. The first American rayon producer earned 64.2% on its investment in 1920, thereby attracting du Pont. After a loss in 1921, du Pont's average return for the next four years was roughly 32%. As more firms began rayon production, du Pont's and the industry's return on investment began to drop. When 6 new firms entered the industry in 1930, bringing the number of producers to 20, average industry earnings for that year declined to 5% and du Pont suffered a net loss. 'From the beginning of the depression in 1929 through the succeeding recovery and the 1938 recession du Pont averaged 29.6 per cent before taxes on its cellophane investment. On its rayon investment it averaged only 6.3 per cent.' Id., at 62--63.

FN16. In 1924 two of La Cellophane's principal officials absconded with complete information on the cellophane process. A Belgian concern was then set up to use this process in making cellophane, and it later organized Sylvania as an American affiliate. Findings 615--618.

FN17. R. 2733--2736.

FN18. See memorandum du Pont submitted to prospective entrants. R. 3893.

FN19. See Rule 52(a), Federal Rules of Civil Procedure, 28 U.S.C.A.

The trial court found that
'Du Pont has no power to set cellophane prices arbitrarily. If prices for cellophane increase in relation to prices of other flexible packaging materials it will lose business to manufacturers of such materials in varying amounts for each of du Pont cellophane's major end uses.' Finding 712.
This further reveals its misconception of the antitrust laws. A monopolist seeking to maximize profits cannot raise prices 'arbitrarily.' Higher prices of course mean smaller sales, but they also mean higher per-unit profit. Lower prices will increase sales but reduce per-unit profit. Within these limits a monopolist has a considerable degree of latitude in determining which course to pursue in attempting to maximize profits. The trial judge thought that, if du Pont raised its price, the market would 'penalize' it with smaller profits as well as lower sales. [FN20] Du Pont proved him wrong. When 1947 operating earnings dropped below 26% for the first time in 10 years, it increased cellophane's price 7% and boosted its earnings in 1948. Du Pont's division manager then reported that 'If an operative return of 31% is considered inadequate then an upward revision in prices will be necessary to improve the return.' [FN21] It is this latitude with respect to price, this broad power of choice, that the antitrust *423 laws forbid. [FN22] Du Pont's independent pricing policy and the great profits consistently yielded by that policy leave no room for doubt that it had power to control the price of cellophane. The findings of fact cited by the majority cannot affect this conclusion. [FN23] For they merely demonstrate, that during the period covered by the complaint, du Pont was a 'good monopolist,' i.e., that it did not engage in predatory practices and that it chose to maximize profits by lowering price and expanding sales. Proof of enlightened exercise of monopoly power certainly does not refute the existence of that power.

FN20. 118 F.Supp. at page 206.

FN21. R. 4154--4155.

FN22. See, e.g., American Tobacco Co. v. United States, 328 U.S. 781, 805--806, 66 S.Ct. 1125, 1137, 90 L.Ed. 1575.

FN23. See note 31, majority opinion.

The majority opinion purports to reject the theory of 'interindustry competition.' Brick, steel, wood, cement and stone, it says, are 'too different' to be placed in the same market. But cellophane, **1022 glassine, wax papers, sulphite papers, greaseproof and vegetable parchment papers, aluminum foil, cellulose acetate, Pliofilm and other films are not 'too different,' the opinion concludes. The majority approach would apparently enable a monopolist of

motion picture exhibition to avoid Sherman Act consequences by showing that motion pictures compete in substantial measure with legitimate theater, television, radio, sporting events and other forms of entertainment. Here, too, 'shifts of business' undoubtedly accompany fluctuations in price and 'there are market alternatives that buyers may readily use for their purposes'. Yet, in United States v. Paramount Pictures, 334 U.S. 131, 68 S.Ct. 915, 92 L.Ed. 1260, where the District Court had confined the relevant market to that for nationwide movie exhibition, this Court remanded the case to the District Court with directions to determine whether there was a monopoly on the part of the five major distributors 'in the first-run field for the entire *424 country, in the first-run field in the 92 largest cities of the country, or in the first-run field in separate localities.' 334 U.S. at page 172, 68 S.Ct. at page 936. Similarly, it is difficult to square the majority view with United States v. Aluminum Co. of America, 2 Cir., 148 F.2d 416, a landmark s 2 case. There Judge Learned Hand, reversing a district court, held that the close competition which 'secondary' (used) aluminum offered to 'virgin' aluminum did not justify including the former within the relevant market for measuring Alcoa's economic power. Against these and other precedents, which the Court's opinion approves but does not follow, the formula of 'reasonable interchangeability,' as applied by the majority, appears indistinguishable from the theory of 'interindustry competition.' The danger in it is that, as demonstrated in this case, it is 'perfectly compatible with a fully monopolized economy.' [FN24]

FN24. Adams, The 'Rule of Reason': Workable Competition or Workable Monopoly? 63 Yale L.J. 348, 364.

The majority hold in effect that, because cellophane meets competition for many end uses, those buyers for other uses who need or want only cellophane are not entitled to the benefits of competition within the cellophane industry. For example, Finding 282 shows that the largest single use of cellophane in 1951 was for wrapping cigarettes, and Finding 292 shows that 75 to 80% of all cigarettes are wrapped with cellophane. As the recent report of the Attorney General's National Committee to Study the Antitrust Laws states: 'In the interest of rivalry that extends to all buyers and all uses, competition among rivals within the industry is always important [FN25] (Emphasis added.)' Furthermore, those buyers who have 'reasonable alternatives' between cellophane *425 and other products are also entitled to competition within the cellophane industry, for such competition may lead to lower prices and improved quality.

FN25. Report of Attorney General's National Committee to Study the Antitrust Laws, p. 322. The majority decision must be peculiarly frustrating to the cigarette industry, whose economic behavior has been restrained more than once by this Court in the interest of competition. See American Tobacco Co. v. United States, 328 U.S. 781, 66 S.Ct. 1125, 90 L.Ed. 1575; United States v. American Tobacco Co., 221 U.S. 106, 31 S.Ct. 632, 55 L.Ed. 663.

The foregoing analysis of the record shows conclusively that cellophane is the relevant market. Since du Pont has the lion's share of that market, it must have monopoly power, as the majority concede. [FN26] This being so, we think it clear that, in the circumstances of this case, du **1023 Pont is guilty of 'monopolization.' The briefest sketch of du Pont's business history precludes it from falling within the 'exception to the Sherman Act prohibitions of monopoly power' (majority opinion, 76 S.Ct. 1004) by successfully asserting that monopoly was 'thrust upon' it. Du Pont was not 'the passive beneficiary of a monopoly' within the meaning of United States v. Aluminum Co. of America, supra, 148 F.2d at pages 429--430. It sought and maintained dominance through illegal agreements dividing the world market, concealing and suppressing technological information, and restricting its licensee's production by prohibitive royalties, [FN27] and through numerous maneuvers which might have been 'honestly industrial' but whose necessary effect was nevertheless exclusionary. [FN28] Du Pont cannot bear 'the burden of *426 proving that it owes its monopoly solely to superior skill * * *.' (Emphasis supplied.) United States v. United Shoe Machinery Corp., D.C., 110 F.Supp. 295, 342, affirmed per curiam 347 U.S. 521, 74 S.Ct. 699, 98 L.Ed. 910.

FN26. 'If cellophane is the 'market' that du Pont is found to dominate, it may be assumed it does have monopoly power over that 'market.' Monopoly power is the power to control prices or exclude competition. It seems apparent that du Pont's power

to set the price of cellophane has only been limited by the competition afforded by other flexible packaging materials. Moreover, it may be practically impossible for anyone to commence manufacturing cellophane without full access to du Pont's technique.' Majority opinion, 76 S.Ct. 1005.

FN27. See notes 7 and 10, our dissent.

FN28. See United States v. Aluminum Co. of America, 2 Cir., 148 F.2d 416, 431.

Nor can du Pont rely upon its moistureproof patents as a defense to the charge of monopolization. Once du Pont acquired the basic cellophane process as a result of its illegal 1923 agreements with La Cellophane, development of moistureproofing was relatively easy. Du Pont's moistureproof patents were fully subject to the exclusive pooling arrangements and territorial restrictions established by those agreements. And they were the subject of the illicit and exclusionary du Pont-Sylvania agreement. Hence, these patents became tainted as part and parcel of du Pont's illegal monopoly. Cf., Mercoid Corp. v. Mid-Continent Inv. Co., 320 U.S. 661, 670, 64 S.Ct. 268, 273, 88 L.Ed. 376. Any other result would permitone who monopolizes a market to escape the statutory liability by patenting a simple improvement on his product.

If competition is at the core of the Sherman Act, we cannot agree that it was consistent with that Act for the enormously lucrative cellophane industry to have no more than two sellers from 1924 to 1951. The conduct of du Pont and Sylvania illustrates that a few sellers tend to act like one and that an industry which does not have a competitive structure will not have competitive behavior. The public should not be left to rely upon the dispensations of management in order to obtain the benefits which normally accompany competition. Such beneficence is of uncertain tenure. Only actual competition can assure long-run enjoyment of the goals of a free economy.

We would reverse the decision below and remand the cause to the District Court with directions to determine the relief which should be granted against du Pont.

351 U.S. 377, 76 S.Ct. 994, 100 L.Ed. 1264

Briefs and Other Related Documents (Back to top)

. 1955 WL 72627 (Appellate Brief) Reply Brief for the United States (Oct. 1955)

. 1955 WL 72625 (Appellate Brief) Brief for Appellee (Sep. 14, 1955)

. 1955 WL 72626 (Appellate Brief) Brief for the United States (Aug. 5, 1955)

. 1954 WL 72823 (Appellate Brief) Appellant's Brief in Opposition to Motion to Clarify and Define the Assignment of Errors and Statement as to Jurisdiction or in the Alternative to Dismiss (May 1954)

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