



DIRECTORATE FOR FINANCIAL, FISCAL AND ENTERPRISE AFFAIRS
COMMITTEE ON COMPETITION LAW AND POLICY

Working Party No. 2 on Competition and Regulation

COMPETITION IN THE PHARMACEUTICAL INDUSTRY

-- United States --

This note is submitted by the Delegation of United States to the Working Party No. 2 FOR DISCUSSION at its next meeting on 7 June 2000.

92138

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

COMPETITION IN THE PHARMACEUTICAL

United States

I. The Pharmaceutical Industry: Market Structure

Market Structure

(1.1) Please describe the market structure of pharmaceutical firms in your country - which firms are active, with what market share, in which therapeutic classes and with what level of R&D (including generic producers). Which firms co-operate to jointly undertake R&D or to jointly market certain products? Is there one or more associations of pharmaceutical manufacturers in your country? Is this association politically important?

1. The U.S. pharmaceutical industry is composed of approximately 700 companies that develop, manufacture and market ethical pharmaceutical products, including proprietary (brand name) and generic medicines.¹ The value of U.S. shipments of pharmaceutical products in 1997 was estimated at nearly \$83 billion. Sales from the U.S. operations of the ten largest pharmaceutical companies with operations in the U.S. were about \$49 billion in 1997.² As noted below, there has been continuing industry consolidation but recent market share figures are not readily available.

2. The most useful sources of data on market share in the form requested are proprietary. Appendix 1 hereto contains available public data on market shares for some therapeutic classes, and public information from private sources listing the firms that are engaged in manufacturing, fabricating or processing drugs in pharmaceutical preparations for human or veterinary use, their profits and their expenditures for research and development.

3. More important than market share is the evolution of the U.S. market toward increased horizontal consolidation and vertical integration involving both companies producing brand -name and generic drugs. There has also been a movement toward price competition from non-price competition as a result of cost containment strategies of managed care organizations and pharmacy benefit management companies. For one discussion of the industry changes, see FTC Bureau of Economics Staff Report, "The Pharmaceutical Industry: A Discussion of Competitive and Antitrust Issues in an Environment of Change," Chapter II (March 1999) (available at www.ftc.gov/ftc/economics.htm).

4. Given the high cost of R&D and the efficiencies of co-promotion and co-marketing, joint efforts in these areas are common among drug producers. Specific information on joint venture activity can be found in each individual firm's annual report but, to our knowledge, is not collected for publication.³

5. According to the Pharmaceutical Research and Manufacturers of America ("PhRMA"), a trade association that represents nearly all major prescription pharmaceutical firms in the U.S., the drug industry devotes a higher percentage of sales to R&D than any other industry in the U.S. PhRMA reports that industry R&D to develop prescription pharmaceuticals in 1999 accounted for 20.8% of total revenues, up from 16.2% in 1990⁴ and that most leading pharmaceutical manufacturers spend between 14% and 18% of their revenues on R&D.⁵

6. The main industry trade associations are: Generic Pharmaceutical Industry Association (generic drug manufacturers), National Association of Pharmaceutical Manufacturers (independent generic drug

manufacturers and suppliers of bulk pharmaceutical chemicals), Nonprescription Drug Manufacturers Association (over-the counter drug manufacturers) and Pharmaceutical Research and Manufacturers of America (prescription pharmaceutical firms). These associations represent their members in legislative, regulatory and related matters.

II. Regulation of Supply

Protection of Intellectual Property Rights

(2.1) *Please describe the regulatory framework established for the protection of intellectual property rights in the pharmaceutical industry.*

7. Article I, Section 8, Clause 8 of the United States Constitution grants Congress the power to create a patent system. A patent for an invention is the grant of a property right to the inventor and is issued by the U.S. Patent and Trademark Office. U.S. patent grants are effective only within the U.S. and its territories and positions. Patents on pharmaceutical products can be issued either on a drug's chemical structure or on its method of manufacture or synthesis. The term of the patent is twenty years from the date on which the application for the patent was filed or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees.⁶ Patents confer rights to exclude others from making, using, offering for sale or selling the invention claimed by the patent in the U.S. or importing such invention into the U.S.

8. Under the Drug Price Competition and Patent Term Restoration Act of 1984 and amendments thereto, commonly known as the Hatch-Waxman Act, a holder of a pharmaceutical patent for a new chemical entity never approved by the U.S. Food and Drug Administration ("FDA") is entitled to extend patent protection in order to compensate for delays caused by the FDA's premarket approval process. Those extensions, granted after the drug is approved, equal half of the time the drug spent in clinical testing (usually six to eight years) plus the time FDA spent reviewing its new drug application (usually two years). However, the extension cannot be longer than five years, and the FDA cannot grant a total period of patent protection that exceeds fourteen years after the drug is approved. See Appendix 3 for details. The patent term extension was given to the patent holders in exchange for a provision authorizing generic producers to rely on safety and efficacy testing submitted by the original patent holder, thus expediting FDA approval of lower cost generic drugs by eliminating the need for generic producers to submit their own test data to the FDA.

9. The Food and Drug Administration Modernization Act of 1997 added 6 months of patent exclusivity for drugs requiring further review for pediatric applications.⁷

10. During the FTC's 1995 Hearings on Global and Innovation-Based Competition, the pros and cons of compulsory licensing as a remedy were debated by numerous participants at the hearings. Some argued that antitrust should be more receptive to this remedy. Others asserted, however, that compulsory licensing would stifle follow-on innovation.⁸ Compulsory licensing has been a remedy in antitrust actions brought by the Antitrust Division of the Department of Justice alleging unlawful provisions in patent and copyright licenses, in addition to enjoining further enforcement of the offending provisions or entering into similar agreements. See, e.g. *United States v. Glaxo Group*, 410 U.S. 52, 64 (1973). In that case, the Supreme Court stated that "[m]andatory selling on specified terms and compulsory patent licensing at reasonable charges are recognized antitrust remedies." *Id.* at 64. The Commission has ordered compulsory licensing in one recent case to restore competition allegedly reduced as a result of a proposed merger. In 1997, the Commission challenged the merger of Ciba-Geigy and Sandoz, alleging that the merger would have given Ciba-Geigy a monopoly in certain patents and trade secrets for the development of gene

therapies, which hold promise for the treatment of some forms of cancer and AIDS. The Commission's consent order required Ciba-Geigy to license certain patents and technologies so that R&D efforts to develop those products would not be dominated by a single firm.⁹

New Drug Approvals

(2.2) Please provide an overview of the drug approval process.

11. The Food and Drug Administration regulates the approval of prescription drugs in the U.S. To receive marketing approval companies are required to demonstrate that drugs are safe and effective. Estimates for the 1990-96 period indicate that new drug approvals have taken an average of 14.9 years with elapsed times varying across the regulatory stages.¹⁰ The first stage of the FDA approval process involves the submission of an Investigational New Drug Application (IND). After 30 days, if the FDA does not place a hold on the IND, the applicant may begin testing the drug in humans, typically in three phases. Phase 1 involves safety tests on 20-100 volunteers (usually healthy people) to determine safe dosage levels and toxicity. This takes on average several months. Phase 2 involves efficacy and some short-term safety tests, using up to several hundred people with the disease that the drug is designed to combat. This takes on average of up to two years. Phase 3 looks at additional safety issues, efficacy and dosing. The drug is tested in up to several thousand persons, usually in two controlled clinical trials. Phase 3 studies are also used to determine whether the benefits are statistically significant and possible side effects. This phase typically last from one to four years. After the Phase 3 studies are completed, the applicant submits a New Drug Application (NDA) to the FDA. The NDA contains pre-clinical studies, clinical human studies (from Phases 1-3), manufacturing details, labeling, and additional information. The FDA's current median time for approval of an NDA is 12 months. Following approval, the agency continues to monitor the post-marketing testing and use of the drug, and makes any necessary regulatory changes (e.g., modify labeling to reflect new safety concerns).¹¹

12. The Hatch-Waxman Act provides new procedures for abbreviated new drug applications (ANDAs) for generic versions of previously approved drugs.¹² To begin the FDA approval process, the generic application must submit information that shows that: 1) the conditions of use for the proposed drug are the same as those for the listed drug; 2) the active ingredient(s) for the proposed drug are the same as those for the listed drug; 3) the route of administration, dosage form and strength of the proposed drug are the same as those for the listed drug; 4) the proposed drug is bioequivalent to the listed drug; and 5) the labeling for the proposed drug is the same as that for the listed drug. The application must also contain one of the following four certifications: 1) the patent information has not been submitted to the FDA (paragraph I certification); 2) the patent has expired (paragraph II certification); 3) the date on which the patent will expire (paragraph III certification); or 4) the patent is invalid or will not be infringed by the manufacture, use, or sale of the new drug for which the application is submitted (paragraph IV certification).

13. An applicant relying on a paragraph IV certification must: 1) certify in its ANDA that the patent in question is invalid or is not infringed by the generic product; and 2) notify the patent holder of the filing of the ANDA. If the patent holder files an infringement suit against the generic applicant within 45 days of the ANDA notification, FDA approval to market the generic drug is automatically stayed for 30 months unless the patent expires or is judicially determined to be invalid or not infringed. This stay allows the patent holder time to assert its patent rights in court before a generic competitor is permitted to enter.

14. Under the ANDA process, entry with a therapeutically equivalent generic form requires: 1) developing a generic formulation for possible clinical evaluation; 2) meeting FDA bioequivalence requirements for ANDA approval; 3) meeting FDA's chemistry, manufacturing and control requirements; 4) complying with FDA's Good Manufacturing Practice regulations; 5) meeting FDA labeling

requirements; and 6) marketing the generic drug after FDA approval. Establishing bioequivalence typically requires clinical studies with a group of 18 to 36 to establish that the rate and extent of absorption of the generic form does not significantly differ from that of the brand-name drug. The Hatch-Waxman Act (Bolar Amendment) permits the preliminary production and testing of generic drugs prior to the expiration of any relevant patents on corresponding brand name drugs. Thus, generic entrants can receive ANDA approval as soon as the patents expire.

Trade Regulation

(2.3) Please describe any barriers to international trade or investment in pharmaceuticals. Are there restrictions on international trade in drugs by third parties (such as parallel trade or re-imports)? Are there restrictions on mail-order or Internet supply of drugs? Does the regulatory regime distinguish between domestic and foreign firms in any way?

15. Parallel imports are defined as genuine goods produced or sold abroad with the consent of the owner of the applicable intellectual property right – copyright, trademark or patent – that are subsequently sought to be imported into the domestic market without the consent of the intellectual property right owner. Over the past decade, the United States has advocated the need for protection from parallel importation in the copyright and patent laws of our trading partners, a position is consistent with U.S. law. Appendix 2 briefly summarizes U.S. law on parallel imports.

16. The Food, Drug and Cosmetic Act (“FDCA”),¹³ enforced by the FDA, to control parallel imports. The FDCA requires manufacturers and sellers of drugs to register with the FDA and comply with FDA rules. It applies also to firms that relabel drugs and covers imports as well as domestically made drugs. The FDCA also prohibits counterfeit drugs from being marketed in the U.S.; this would also apply to parallel imports of such products.¹⁴ Section 801(d) of the FDCA bars the reimportation of prescription drugs made in the U.S. by any person other than the original manufacturer or by the FDA for emergency medical care.

17. Additional record-keeping and registration requirements apply if the drug is a controlled substance. See 21 U.S.C. § § 822, 829, and 841. Sections 5 (prohibition of unfair or deceptive acts or practices) and 12 (prohibition of false advertising of food, drugs and cosmetics) of the Federal Trade Commission Act could furnish bases for a federal enforcement action where an online company makes false or misleading claims about the products or services it provides.

18. The FDA does not distinguish between foreign and domestic products; all pharmaceuticals sold in the U.S. must meet FDA regulatory requirements. Foreign firms shipping to the U.S. must register with the FDA. There is no requirement for domestic manufacture. The U.S. and the EU negotiated in 1997 a pharmaceutical Mutual Recognition Agreement to eliminate regulatory barriers and promote trade between them. They agreed to recognize each other’s inspections of manufacturing facilities for human drugs and biologics in their respective regions (previously, inspectors from each area had to inspect every factory in which a drug imported into that jurisdiction was manufactured).

19. Under federal law, prescription drugs may be dispensed only with a valid prescription under the professional supervision of a physician or other practitioner licensed to administer the drug. 21 U.S.C. § 353. A prescription drug that is dispensed without a valid prescription is “misbranded.” 21 U.S.C. § 353 (b). The introduction or distribution of misbranded drugs into interstate commerce is prohibited by section 301 (a) of the FDCA.

20. Regarding Internet sales in particular, many government officials and health care professionals are raising concerns about the availability of prescription drugs over the Internet without a valid

prescription or based solely on answers to online questionnaires. Several states have challenged online companies that dispense prescription drugs without a valid prescription based on state consumer protection laws as well as state medical and pharmacy regulations. The grounds for these state challenges include deceptive misrepresentation or omissions, and practice of medicine without a license.

Industrial Policy

(2.4) Please describe any industrial policy objectives in this sector. Describe the objectives and effects of any tax concessions or subsidies that exist.

21. The U.S. relies on the market for the development of the pharmaceutical sector. Other than government subvention of academic institutional research, we are unaware of any subsidies targeted to the pharmaceutical industry.

22. The industry, like many others, takes advantage of generally available tax credits (e.g. the 1981 Economic Recovery Tax Act, discussed below) and participates in joint R&D activities with federal and university laboratories that promote scientific breakthroughs and product innovation that benefit society. The credit provides tax incentives for companies that increase their R&D spending over a base amount. Congress has extended the R&D tax credit for limited periods (usually one year) ten times since it was first enacted. The most recent extension expired in 1999.

23. The Orphan Drug Act is specifically designed to encourage R&D for drug products used to treat rare diseases or conditions with small patient populations, where there is little commercial incentive.¹⁵ If the FDA agrees that the drug meets the statutory definition, manufacturers may receive tax credits and certain other assistance for the cost of clinical trials and, upon the date of new drug approval or biological licensure, extended periods of market exclusivity,¹⁶ as incentives to invest in the development of potential treatments.

24. As more fully explained in Appendix 3, the patent term extension provisions of the Hatch-Waxman Act, discussed above, were designed to create new incentives for R&D of certain products subject to premarket government approval by a regulatory agency.

III. Regulation of Demand : Controls on Pharmaceutical Prices, Quantities and Consumption

3.1 We invite you to discuss how the predominant forms of health insurance in your country (whether public or private) affect the demand of health consumers for pharmaceuticals.

25. There is abundant literature on the effect of health insurance, in particular of health maintenance organizations (“HMO”), on the demand for pharmaceuticals. The Health Insurance Association of America, which represents a cross-section of companies that finance and deliver health care and provide other health insurance products and services, released in September 1999 a white paper on “Prescription Drugs: Cost and Coverage Trends.” The report cited liberal coverage policy by most health plans that insulates the consumer from the total cost of drugs as one factor driving increased pharmaceutical use. The paper does not, however, estimate the percent or dollar impact of each factor.¹⁷ Nonetheless, the inclusion of a manufacturer’s drug on a formulary in return for a manufacturer-provided discount or a formulary practice of limiting the therapeutic class of approved drugs to a few products, may significantly influence the demand for a particular drug.

26. Many health insurance plans (including traditional fee-for-service plans) hold down drug costs by managing their outpatient prescription drug benefits either themselves or through organizations called pharmaceutical benefit management companies (PBMs). As described more fully in the response to question 3.3 below, these techniques, in particular the use of formularies, have put downward pressure on the prices that PBMs and health plans pay for brand-name drugs sold through pharmacies. They have also significantly increased the purchase of generic drugs.

27. Such cost containment techniques have a significant effect on drug usage. Use of prescription drugs may be higher in HMOs and some other managed care plans because they tend to have more extensive coverage of physicians' services and sometimes of prescription drugs. Managed care plans also may sometimes favor the use of prescription drugs over other, more expensive forms of medical treatment.¹⁸ As a result the increasing prevalence of managed care plans may have resulted in an increase in the quantity of prescription drugs sold in the U.S.

Formularies

(3.2) Please describe the main features of the formulary system in your country.

28. Managed care organizations, especially HMOs, have developed a number of cost containment strategies for prescription drugs including generic substitution, drug utilization review, formularies, and therapeutic interchange and step-care therapy.¹⁹ The emergence of professionally managed prescription drug benefit programs - pharmacy benefit management companies or PBMs - is an important force in the managed care revolution. PBMs administer the prescription part of health insurance plans on behalf of plan sponsors, such as self-insured employers, insurance companies, and HMOs. PBMs typically select participating pharmacists, drug manufacturers and suppliers, administer point of sale claims processing systems, negotiate quantity discounts with pharmaceutical manufacturers and pharmacists, administer plan record keeping and payment systems, and maintain quality control. A common technique PBMs use to manage pharmacy care is formulary development. They attempt to control costs by negotiating discounts from manufacturers, usually in the form of rebates, in return for placing the manufacturer's drug on the PBM's formulary.

29. A formulary is a list of prescription drugs grouped by therapeutic category that are approved for insurance coverage. The formulary is produced by the PBM, the health plan or others. Drugs are included in the formulary on the basis of therapeutic value, side effects and cost - a formulary includes relative cost information. Formularies are made available to pharmacies, physicians, third-party payers, or other persons involved in the health care industry to guide them in the prescribing and dispensing of pharmaceuticals. PBMs and health plan sponsors typically encourage physicians to prescribe lower-cost formulary drugs over both nonformulary and higher-cost formulary drugs for health plan enrollees. The formularies encourage the substitution of brand-name drugs with generic versions, or sometimes with other, less expensive brand-name drugs. Formularies range in restrictiveness from "open" to "closed." An "open" formulary allows for the reimbursement of any drug a physician prescribes,²⁰ whether or not it is actually listed on the formulary, whereas a "closed" formulary limits reimbursement to the specific drugs listed. Based on industry sources, the percentage of HMOs using closed formularies was almost 50% in 1999.²¹ A 1995 study by the U.S. General Accounting Office found that the vast majority of formularies managed by PBMs were open.²² However, a 1997 private-sector report notes a strong trend towards adoption of a "selective/partially closed" formulary in which reimbursement is limited to prescribed formulary drugs plus select nonformulary drugs, utilizing such processes as prior authorization to determine approval.²³

30. Private sector health plans and PBMs use computer networks at pharmacies and electronic card systems for enrollees that allow pharmacists, before filling an enrollee's prescription, to consult a list (or

formulary). Savings result not only from substitution but also discounts offered to health plans or PBMs by manufacturers of brand-name drugs in exchange for being included on their formulary. PBMs, which represent a large pool of customers, can also negotiate with networks of pharmacies to obtain discounts from the retail price per prescription for the health plan enrollees. Since the late 1980s, those techniques have put downward pressure on prices that PBMs and health plans pay for prescription drugs.

31. The Departments of Veterans Affairs (VA) and Defense (DoD) provide medications and medical supplies to their beneficiaries as an adjunct to their health care delivery systems. The VA utilizes a formulary developed by field-based practitioners to address medication and medical supply needs for its beneficiaries.²⁴ The VA's formulary process includes the development, promulgation and growing use of pharmacologic treatment guidelines. The guidelines reflect best practices for a predominantly geriatric patient population. The VA does not seek discounts or rebates in exchange for formulary listing (see discussion of private health care in response to 3.3 below). The VA determines what is clinically best for veteran beneficiaries and then contracts for an individual drug or therapeutic class of drugs. DoD utilizes a so-called "core formulary" of items available at its own medical treatment facilities; a larger array of drug products is available to DoD beneficiaries through a retail pharmacy network and mail order provider.

See also response to question 3.3.

Price Control Policies

(3.3) Please describe the operation of the controls on pharmaceutical prices in your country.

32. The U.S. has no direct price controls on pharmaceuticals. With respect to cost containment programs, The Omnibus Budget Reconciliation Act of 1990 ("OBRA") contains regulations intended to reduce Medicaid's outlay for prescription drugs. In effect, OBRA requires drug companies to treat Medicaid recipients as a "most-favored-nation" class. It mandates that drug companies, in order to have their drugs reimbursed by the Medicaid program, pay a rebate on these products to the state Medicaid program that is based on the lowest prices available to other customers. In general the rebate on outpatient prescription drugs equals the greater of a fixed percentage of the average manufacturing price ("AMP") or the difference between the AMP and the lowest price any purchaser paid for that drug, called the "drug's best price." Rebate amounts are based on a unit amount computed by the Department of Health and Human Services to which the Medicaid utilization information is applied by states in invoicing the manufacturer for rebates. Another Medicaid reimbursement policy is the use of formularies by certain states as criteria for reimbursement.

33. The 1992 Veteran Health Care Act conditioned Medicaid coverage for a manufacturer's drugs on participation in three additional discount programs: the federal ceiling price program, the public health service grantees; and federal supply schedule. The federal ceiling price program requires that manufacturers sell new (non-generic) prescription drugs to the VA, the DOD, the Public Health Service and the Coast Guard at or below federal ceiling prices that are average non-federal manufacturer's price minus 24 per cent. Manufacturers are also required to sell to the Public Health Service grantees (e.g., community and migrant health centers, hemophilia centers, AIDS drug-assistance programs) at discounted prices equal to the AMP minus the Medicaid rebate. Brand-name manufacturers also must agree to list all pharmaceutical products on the Federal Supply Schedule, a government-wide list of discounted products for federal agency procurement.

34. Another major government discount program is conducted by the Department of Defense. This program is voluntary and is not required for Medicaid reimbursement. The Department negotiates the prices for purchases with manufacturers through its prime vendors. These payments cannot exceed federal ceiling prices.

35. Under the Medicare program, health insurance provided to the elderly and the disabled, drugs furnished to a beneficiary during an in-patient hospital stay are covered as part of Medicare's payment to the hospital for that stay (i.e., payment based on the appropriate diagnosis related group or DRG). Medicare covers outpatient drugs only in the following situations:

- Drugs Furnished Incident To a Physician's Services: These are injectable or intravenous drugs that are furnished by a physician or under the physician's direct supervision and cannot be self-administered.
- Statutorily Covered Drugs: Examples include immuno-suppressive drugs, hemophilia clotting factors, erythropoietin for trained home dialysis patients, allergens under certain conditions, and certain oral anti-cancer drugs, pneumococcal, influenza and hepatitis vaccines.
- DME Drugs: A very few drugs that are used in conjunction with Medicare-covered durable medical equipment; e.g., inhalation drugs (albuterol sulfate) used with a nebulizer.

36. The Balanced Budget Act of 1997 set Medicare payment based on the lower of the billed charge or 95% of average wholesale price (AWP). In 1998, the total Medicare billed charges were approximately \$7 billion for drugs that are paid by Medicare at the lesser of the actual charge or 95% of the AWP.

Control of Physician Prescribing Practices

(3.4) Please describe the systems in place to encourage high-quality cost-effective physician prescribing practices.

37. In the managed care sector, high-quality, cost-effective physician prescribing practices are promoted through use of best practice guidelines, disease management programs, provider profiling and dynamic medication use committees.²⁵ In addition, the cost containment strategies of HMOs and other health insurance plans discussed above, in particular the monitoring of physician's prescribing practices under the drug utilization review, are aimed at encouraging physicians to prescribe the lowest cost/highest quality prescription drugs.

Regulation of Pharmacies and Pharmaceutical Distribution

3.5 Please describe the nature of any controls on pharmacy margins, entry/or ownership structure. Please describe also the nature of any rules governing the discretion of pharmacists to substitute other products.

38. Entry is largely controlled by the state governments. The 1999-2000 National Association of Boards of Pharmacy's Survey of Pharmacy Law reports that 13 states impose some limitation on prescriber ownership of a pharmacy; examples are prohibition of ownership if the prescriber is likely to benefit due to the prescriptions he/she writes and prohibition of self-referral.

39. Pharmacies are typically part of PBM networks (see response to question 3.3, *supra*) that administer the drugs benefits portions of health insurer plans. Computers linking network pharmacies to PBMs enable pharmacists to check which brand name or generic substitutions are required by the patient's health insurer, whether the doctor is prescribing according to health plan policy, and what co-payment amount applies. Managed care payors accounted for about 68% of all retail pharmacy prescriptions dispensed between June 1998 and June 1999; Medicaid represented 11%.²⁶

40. There are state laws that govern the discretion of pharmacists to substitute a generic drug when a prescription specifies a brand name one. In the early 1970s, it was illegal in many states for a pharmacist to dispense a generic drug when a physician prescribed a brand name drug. By 1984, all states had drug-product substitution laws that gave pharmacists more discretion. Under these new laws, a pharmacist can dispense a generic drug even when a brand name drug is specified as long as the physician had not indicated otherwise on the prescription.

See also response to question 3.3 above.

Policy Towards Generics

(3.6) What share of non-prescription/over-the-counter, prescription and hospital markets are held by generics? Please describe the programs you have adopted to promote the consumption of generics?

41. According to data supplied by the Generic Pharmaceutical Industry Association, in 1998 generics accounted for 41% of retail prescriptions and 8.6% of total dollars spent on pharmaceuticals.

42. The Hatch-Waxman Act (see response to question 2.2 *supra*) streamlined the process for approving generic drugs by requiring only that manufacturers demonstrate “bioequivalence” to an already-approved innovator drug, making generic entry easier and less costly. As noted above, most states have passed drug-product substitution laws that allow pharmacists to dispense a generic drug even when the prescription calls for a brand-name drug.

43. In addition, privately managed care providers and government programs such as Medicaid and VA have actively promoted generic substitution. The VA reports that 91% of its drug expenditures are for branded products and the remaining 9% on generics. Its policy is to use FDA-approved generic products unless there are specific clinical reasons not to do so.

IV. Competition Issues in the Pharmaceuticals Sector

(4.1) Does the competition law apply to the different components of this sector (manufacturing, health insurance, health services, distribution and pharmacies) without exemption or exception? Which agency is responsible for enforcing the competition law in this sector?

44. The U.S. antitrust laws, including the Sherman Act, the Clayton Act, and the Federal Trade Commission Act and state antitrust laws generally apply to all components of the pharmaceutical sector. These laws are enforced by the Federal Trade Commission, the Antitrust Division of the Department of Justice, the state attorneys general and private plaintiffs.

45. The McCarran–Ferguson Act, 15 U.S.C. § 1011-15 (1994), which reserves to the states the power to regulate and tax the business of insurance, provides a limited antitrust exemption for conduct relating to health insurance. The Sherman, Clayton, and FTC Acts apply to the “business of insurance” to the extent that such business is not regulated by state law.²⁷ To qualify for the exemption the challenged activity must be (1) part of “the business of insurance,” (2) “regulated by State Law,” and (3) not constitute an agreement to or act of boycott, coercion, or intimidation.²⁸

46. Additionally under the judicially created “state action” doctrine, anticompetitive activities by private parties may be immune from challenge under the Federal antitrust laws if (1) the challenged restraint is “clearly articulated and affirmatively expressed as state policy” and (2) “the policy [is] ‘actively

supervised' by the state.²⁹ Many states have enacted legislation purporting to confer state action immunity upon health care "networks" that apply to the state for approval of the network's proposed structure and plans. Whether such statutes are able to confer such immunity is, however, open to question.

Market Definition Issues and Barriers to Entry

(4.2) Have you had the occasion to address the definition of the relevant market in the pharmaceuticals sector? Did you find that the relevant product market could be approximated by commonly-accepted therapeutic groups? What techniques did you use to determine whether certain products were effective substitutes? Did you find it necessary to distinguish the market for drugs consumed in hospitals from the market for drugs prescribed by physicians and/or market for over-the-counter (nonprescription) drugs? Was the relevant market national or international?

47. As indicated by the cases discussed below, the U.S. antitrust agencies and courts frequently have addressed market definition issues in the pharmaceuticals sector. We define product and geographic markets on a case-by-case basis, examining demand substitution following the analytical approach set forth in Sections 1.1 and 1.2 of the FTC and DOJ Horizontal Merger Guidelines.³⁰ The agencies rely on evidence from customers, competitors, medical experts and market data to make this determination. Any distinctions between drugs consumed in hospitals from those prescribed by physicians or non-prescription drugs are made on a case-by-case basis using the standards set out in the Merger Guidelines.

48. The United States typically is the relevant geographic market for finished, prescription drugs because the FDA regulations and U.S. patent and other intellectual property laws impose significant barriers to entry on the introduction of products that do not meet these legal requirements.

49. For an example of how the U.S. authorities define a product market, see the discussion below (responses to questions 4.6 and 4.7) of the FTC's successfully litigated case challenging two separate mergers of the four largest drug wholesalers in the U.S. For a second example, in the FTC's recent (non-merger) case against Abbott Laboratories and Geneva Pharmaceuticals, summarized in our response to question 4.4, below, the complaint identifies terazosin HCL as the relevant product market, alleging that other drugs are not effective substitutes because they have different chemical compositions, safety, efficacy, and side effects. In addition, the complaint alleges little price sensitivity between terazosin HCL and non-terazosin HCL products.

(4.3) Did you consider that the pharmaceutical industry is characterized by barriers to entry/exit? What barriers did you identify?

50. The FTC has alleged high entry barriers in several of its complaints involving horizontal mergers, for an example, those identified for the gene therapy market in the FTC's complaint accompanying a consent order challenging the 1996 merger of Ciba-Geigy and Sandoz to become the merged entity, Novartis:

Entry into the gene therapy market requires lengthy clinical trials, data collection and analysis, and expenditures of significant resources over many years to qualify manufacturing facilities with the Food and Drug Administration. Entry into each gene therapy market can extend up to and beyond 10-12 years. The complaint further alleges that the most significant barriers to entry include technical, regulatory, patent, clinical, and production barriers. The FDA must approve all phases of gene therapy development, including preclinical and clinical work. No company may reach advanced stages of development in the relevant gene therapy markets without: (i) clinical gene therapy expertise; (ii) scientific research that requires years to complete; (iii) patent rights to all the necessary proprietary inputs in to the gene therapy product sufficient to provide the

company with reasonable assurances of freedom to operate; and (iv) clinical grade product manufacturing expertise, regulatory approvals and capacity to complete clinical development. The necessary proprietary inputs include genes, vectors and vector manufacturing technology, and cytokines, proteins necessary for many gene therapy applications.

51. The FTC's complaint in the *Zeneca/Astra* merger, discussed below, succinctly described the barriers to entry as "the difficulty of researching and developing a new product, obtaining FDA approval and gaining customer acceptance."

Anticompetitive Agreements

(4.4) Have you had the opportunity to address questions of explicit or implicit collusion in the pharmaceutical sector? What forms of collusion have you found? Have pharmaceutical manufacturers or pharmacies acted in combinations to attempt to increase (or resist decreases in) pharmaceutical reimbursement rates in health insurance plans?

52. The Commission has brought two cases involving generic drug competition for brand-name drugs, alleging that agreements between producers of prescription drugs were intended to delay the introduction of lower-cost generic alternative to particular drugs. This is a tremendously important area, with high stakes to consumers and the efforts to control medical costs. Generics drugs play a vital role in bringing low-cost drugs to the market.

53. The FTC's complaint against Hoechst Marion Roussel (recently renamed Aventis following the merger between Hoechst and Rhone-Poulenc) and Andrx Corp., issued in March 2000,³¹ involves a widely prescribed once-a-day diltiazem drug for treatment of hypertension and angina, Cardizem CD. The complaint alleges that Hoechst agreed to pay Andrx millions of dollars in return for Andrx's agreement to delay bringing to market a generic drug that would compete with Cardizem CD, which possessed 70% of a \$700 million market. Under current federal drugs laws, Andrx, as the first generic applicant for Cardizem CD, is entitled to 180 days of marketing exclusivity before other generic competitors can enter the market. Pursuant to the agreement with Hoechst, Andrx would not market its product when it received approval from the FDA, would not give up or transfer its 180-day exclusivity right as the first to file its application for FDA approval of a generic version of Cardizem CD, and would not even market a non-infringing generic version of Cardizem CD. According to the complaint, the agreement acted as a bottleneck preventing any other potential competitors from entering the market because: i) Andrx would not market its product and thus its 180 days of exclusivity would not begin to run; and ii) other generics were precluded from entering the market because Andrx agreed not to give up or transfer its exclusivity. The complaint charges that the agreement between Hoechst and Andrx was an unlawful restraint of trade because it prevented or discouraged lower cost generic entry; and that Hoechst attempted to preserve its monopoly and conspired with Andrx to create a monopoly in the relevant market.

54. Simultaneously, the Commission entered into a consent order with Abbott Laboratories and Geneva Pharmaceuticals³² to settle similar allegations involving another drug, Hytrin, the brand name for terazosin HCL, a prescription drug widely used to treat hypertension and benign prostatic hyperplasia (enlarged prostate). Accordingly to the complaint, Abbott paid Geneva \$4.5 million per month to keep Geneva's generic version of Hytrin off the U.S. market. This agreement allegedly also resulted in significant delay in the introduction of other generic versions of Hytrin because Geneva was the first filer with FDA and other companies could not market their generic products until 180 days after Geneva's entry. Abbott had forecast that entry of a generic version of Hytrin would eliminate over \$185 million in Hytrin sales in just six months. The consent order bars Abbott and Geneva from, among other things, entering into agreements in which a generic company agrees with a manufacturer of a branded drug to delay or stop the production of a competing drug. This provision remains in effect for ten years. In

connection with this consent, the Commission issued a statement placing pharmaceutical companies on notice that it would consider its entire range of remedies against such agreements in future matters, including possibly seeking disgorgement of illegally obtained profits.

55. The Commission has brought several enforcement actions against pharmacies and pharmaceutical associations for acting in combination to increase or resist decreases in pharmaceutical reimbursement rates in health insurance plans.³³ An example is *Institutional Pharmacy Network*,³⁴ in which the FTC alleged that five institutional pharmacies unlawfully fixed prices and restrained competition among institutional pharmacies in Oregon, leading to higher reimbursement levels for serving Medicaid patients in Oregon long-term care institutions. The five pharmacies, which provided institutional pharmacy services for 80% of patients in Oregon receiving such services, compete to provide prescription drugs and services to long term care institutions. According to the complaint, the pharmacies formed Institutional Pharmacy Network (IPN) to offer their services collectively and maximize their leverage in bargaining over reimbursement rates, but did not share risk or provide new or efficient services.

56. The order prohibits IPN and the institutional pharmacy respondents from entering into similar price fixing arrangements. The order, however, allows the respondents to engage in 1) any "qualified clinically integrated joint arrangement" (with prior notice to the Commission), and 2) conduct that is reasonable necessary to operate any "qualified risk-sharing joint arrangement" as set forth in the DOJ/FTC Statements of Antitrust Enforcement Policy in Health Care.³⁵

57. In *United States v. Bolar Pharmaceutical Co., Inc.*, the DOJ alleged the defendants – Bolar Pharmaceutical Co., Inc. ("Bolar"), a corporation that manufactures and sells generic drug products throughout the U.S., Vitarine Pharmaceuticals, Inc. ("Vitarine"), a corporation that also manufactures and sells generic drug products throughout the U.S., two senior executives of these firms, and unnamed co-conspirators with conspiring to fix the price of generic Dyazide, a medication generally prescribed to treat high blood pressure, and to allocate certain customers that purchased generic Dyazide. The DOJ alleged that this conspiracy eliminated competition in the sale of generic Dyazide sold throughout the U.S. Vitarine pled *nolo contendere* and was fined \$500,000; Bolar pled *nolo contendere* and was fined \$1 million.

(4.5) Cooperative or collaborative ventures (such as co-marketing and co-promotion agreements) seem to be an important component of the pharmaceutical industry. Have you had the opportunity to examine the competitive effects of such agreements? What features of these agreements give rise to competition concerns? Have you opposed joint research and development and/or joint marketing arrangements?

58. The recently issued FTC/DOJ *Antitrust Guidelines for Collaborations among Competitors*³⁶ provide a general statement of the agencies' analytical approach to competitor collaborations. The guidelines describe an analytical framework addressing a broad range of horizontal agreements, including joint ventures, strategic alliances and other competitor collaborations.³⁷ They also set forth general principles concerning potential procompetitive benefits and potential anticompetitive harms. The FTC and the DOJ have brought no cases challenging joint research and development or joint marketing arrangements in the pharmaceutical industry in recent years.³⁸

(4.6) and (4.7) What cases of mergers or concentrations have you addressed in the pharmaceutical industry? In what markets were concerns over market power most focused? In the pharmaceutical industry where competition is primarily by way of new innovation (as opposed to competition on prices), what are the primary anti-competitive effects of a merger? Have mergers been opposed on the grounds that the merging companies might be competitors in the future (although they were not actually competing at the time of the merger)? What sorts of remedies have been imposed as a condition on merger approval? Have the merging companies been required to divest or license certain products to third parties?

59. Acquisitions in the pharmaceutical sector may produce procompetitive as well as anticompetitive effects. Possible anticompetitive effects include not only higher prices but also slowing innovation of life-enhancing products. The Commission has addressed horizontal mergers between actual³⁹ and potential⁴⁰ competitors and vertical mergers (see response to 4.8 below). In 1998 the FTC successfully challenged two mergers involving the four largest wholesalers in the U.S. – McKesson Corporation merging with AmeriSource Health Corporation and Cardinal Health with Bergen-Brunswig.⁴¹ The \$2.25 billion acquisition by McKesson of AmeriSource would have combined the largest and fourth largest full service wholesale distributors of prescription drugs in the U.S. and Canada. The \$ 2.5 billion acquisition of Bergen Brunswig Corporation by Cardinal Health, Inc. would have combined the nation’s largest supplier of pharmaceuticals to the managed care market and second largest wholesale distributor of pharmaceuticals with the nation’s third largest wholesale distributor of prescription drugs, over-the-counter pharmaceutical products and health and beauty aids with the country’s largest supplier. The FTC filed the two actions in district court in March 1998, alleging that if the mergers had been permitted, the two surviving firms would have controlled over 80% of the prescription drug wholesaling market and would significantly reduce competition on price and services. The case was litigated for approximately seven weeks. The court granted the Commission’s motion blocking the proposed acquisitions on July 31, 1998. Subsequently, the parties abandoned the transactions.

60. As in most merger cases, definition of the relevant product market was a hotly contested issue. The FTC allege that the relevant market consisted of the cluster of services provided by drug wholesalers to institutional customers (e.g., hospitals) and retail pharmacies, including warehousing, distribution, and other value-added services. The defendants argued for a broader market that would included such other means of distribution as direct purchases from manufacturers and self-warehousing. Addressing the key question of whether customers had economically viable substitutes for wholesale distribution services, the court found that hospitals and independent drugstores would not turn to purported substitutes – primarily direct delivery and self-warehousing– to defeat an anticompetitive price increase, adopting the narrower market that the FTC asserted. The court, observing that different classes of customers have varied ability to substitute the services currently provided by wholesalers, concluded that the majority of Defendants’ customers cannot replicate the wholesalers’ services themselves nor obtain them from any other source or supplier. The court relied not only on testimony from customers, but also on defendants’ documents reflecting that they did not view the other forms of distribution to be viable competitors or substitutes. In sum, the court relied on the practical, rather than the theoretical, boundaries of substitutability to define the relevant product market.

61. The court opinion also provided an detailed and thoughtful analysis of the timeliness, likelihood, and sufficiency of entry. One issue that arose during trial was whether there was some form of regulatory relief that could be imposed to ameliorate the anticompetitive effects and to permit the mergers to occur. The parties pledged not to increase prices and to pass on 50% of any costs savings resulting from the merger. The FTC argued that involving the court as a regulator of prices would be a “second best” solution to continued competition among the four firms. would be unsound antitrust policy, and was contrary to law. The court agreed with the FTC position, finding that resorting to a “price cap” would deprive consumers of the lower prices that would result from competition.

62. In several recent merger cases, the FTC considered acquisitions of patents and related technology where the merging firms were either the only two, or two of only a few, firms capable of innovating in high-tech markets. Many of the Commission’s pharmaceutical merger cases involve the acquisition of intellectual property and relevant product markets defined as innovation markets. Innovation markets arise from the recognition that future competition can be harmed by a reduction in research and development.⁴² In industries where the main focus of competition is the development of new technologies rather than price competition, antitrust principles will apply, and the competitive rivalry must be protected. If too much of

the ability to innovate in a relevant market is accumulated in one entity, and substitutes are lacking, competition will suffer. The FTC/DOJ Merger Guidelines recognize that a transaction may lessen competition in such nonprice attributes as “product quality, service or innovation.”⁴³

63. An interesting example of an innovation market merger is the FTC’s 1995 enforcement action in *Glaxo/Wellcome*.⁴⁴ In that case, the FTC alleged harm to innovation markets where the merging parties, Glaxo and Burroughs Wellcome, were the two firms furthest along in developing an oral drug to treat migraine headaches. Current migraine drugs were available only in injectable form and were not sufficiently substitutable to be included in the relevant market. According to the complaint, both Glaxo and the acquired firm, Wellcome, competed to develop the new drugs, and the expectation was that the drugs would compete with each other after they were developed. Barriers to entry, based on the necessity of completing the FDA approval, were alleged to be high. The Commission alleged that the acquisition would eliminate actual competition between the two companies in researching and developing migraine remedies. The Commission also alleged that the acquisition would reduce the number of research and development tracks for these migraine treatments and increase Glaxo’s unilateral ability to reduce research and development of these oral drugs. Glaxo allegedly would have had the incentive to do so because the remaining research and development effort would presumably produce a monopoly product until another firm could complete the FDA approval process many years later.

64. Glaxo and Wellcome reached a consent agreement with the FTC that allowed them to proceed with the merger. The agreement required the combined firm to divest Wellcome’s assets related to the research and development of the oral drug, including patents, technology, manufacturing information, testing data, research materials and customer lists. The assets also included inventory needed to complete all trials and studies required to obtain FDA approval. The order imposed significant obligations on Glaxo to assist the acquirer of these divested assets in its efforts to continue the research and development successfully. Glaxo had to provide information, technical assistance and advice to the acquirer about the research and development efforts, including consultation with and training by Glaxo employees knowledgeable about the project. It appears that the remedy succeeded, as both Glaxo and the acquirer, Zeneca Pharmaceuticals, now have oral migraine drugs on the market. With the required assistance from Glaxo, Zeneca received complete FDA approval within 15 months after the FTC approved Glaxo’s application to divest to that firm.

(4.8) Have pharmaceutical manufacturers sought to integrate into downstream components of the health industry, such as hospitals, insurers, pharmacies or so-called pharmacy benefits managers (“PBMs”)? Have you found such actions to be anti-competitive? What remedies have you imposed?

65. When Merck and Co., Inc., acquired Medco Containment Services in 1993, it became the first pharmaceutical manufacturer to vertically integrate into the then relatively new business of pharmacy benefit management. Since then several other pharmaceutical companies have joined with PBMs. On August 27, 1998, the Commission accepted an agreement with Merck to resolve antitrust concerns regarding the 1993 Medco acquisition.⁴⁵

66. Medco is the largest PBM in the U.S. As an intermediary between pharmaceutical companies and managed care plans, Medco negotiates with pharmaceutical manufacturers, including Merck, concerning placement of drugs on the Medco formulary - a list of drugs that it gives to pharmacies, physicians, and third-party payers to guide them in prescribing and dispensing prescriptions to health plan beneficiaries. Medco also negotiates rebates, discounts, and prices that pharmacy benefit plans managed by Medco pay for pharmaceutical products. According to the complaint, Medco thereby influences the prices of pharmaceutical products and the availability of such products under its pharmacy benefit plans. The complaint alleges that the merger tended to cause a reduction in competition for pharmaceutical products stemming from Medco’s favoritism toward Merck drugs in the formularies of drugs available

under the plans that it manages. In addition, there were concerns raised because the merger had made it possible for Medco to provide Merck with sensitive pricing information obtained from Merck's competitors, with the potential for fostering collusion among manufacturers. The complaint also alleges likely anticompetitive effects in eliminating Medco as an independent negotiator of pharmaceutical prices with manufacturers and a likely reduction of other manufacturers' incentives to develop innovative pharmaceuticals.

67. The consent order requires Merck-Medco to maintain an "open formulary" – a formulary including drugs selected and approved by an independent committee consisting of physicians and pharmacologists with no financial interest in Merck. It also requires that Merck cause Medco to accept all discounts, rebates, or other concessions offered by other manufacturers on the open formulary, and to accurately reflect the impact of these factors on price in establishing relative rankings of products on that formulary. An addition order provision prohibits Merck and Medco from sharing "non-public information" with each other, including information concerning other firm's bids, proposals, contracts, prices, rebates, discounts, and other terms of sale.

68. In 1995, the FTC challenged Eli Lilly and Company's acquisition of PCS, another PBM, from the McKesson Corporation,⁴⁶ and pledged to monitor the industry carefully to determine if further action against manufacturer-pharmacy benefit manager integrations was necessary. As in Merck/Medco, the complaint alleged that Lilly's ownership of PCS would allow Lilly to favor its own drugs on PCS's formularies. The consent order settling the charges requires Lilly/PCS to maintain an open formulary.

(4.9) What cases of abuse of dominance have you addressed. In what ways can a pharmaceutical firm with a dominant position reduce competition from rivals?

69. In a complaint seeking injunctive and other relief filed on December 23, 1998 in U.S. District Court for the District of Columbia, the Commission charged Mylan Laboratories and three other companies, Profarmaco S.R.L., Cambrex Corporation, and Gyma Laboratories, with restraint of trade, monopolization and conspiracy to monopolize the market for two generic anti-anxiety drugs, lorazepam and chlorazepate.⁴⁷ Thirty-four state Attorneys General filed a companion complaint.⁴⁸

70. Lorazepam, the generic version of the brand-name product Ativan, is used to treat anxiety, agitation, insomnia and panic disorder, and as a preoperative sedative. Chlorazepate, the generic version of Tranxene, is used to treat anxiety, as well as hypertension, and in adjunct therapy for nicotine and opiate withdrawal. Doctors in the United States annually issue over 3 million chlorazepate prescriptions, and over 18 million lorazepam prescriptions.

71. According to the FTC's complaint, Mylan, the nation's second largest generic drug manufacturer, sought to restrain competition through exclusive licensing arrangements for the supply of the raw material necessary to produce the lorazepam and chlorazepate tablets, allowing Mylan to dramatically increase the price of lorazepam and chlorazepate tablets. The FTC's complaint alleges, *inter alia*, that Mylan sought and obtained agreements with Profarmaco and its agent and U.S. distributor, Gyma. The agreements provided that Profarmaco would supply exclusively to Mylan for ten years the active pharmaceutical ingredients (API) used in Mylan's manufacture of the two drugs and, in return, Mylan would share its profits from the sale of these drugs with Profarmaco. In 1997, Profarmaco supplied through Gyma over 90% of the lorazepam API and 100% of the chlorazepate API to generic manufacturers in the U.S. market.

72. The FTC complaint charges that, as a result of the exclusive agreements and other acts by the defendants, Mylan effectively monopolized the markets for the two drugs (and their APIs) and, thereupon, raised the prices of lorazepam from \$11.36 to approximately \$377.00 per bottle of 500 tablets, and of chlorazepate from \$7.30 to approximately \$190.00 per bottle of 500 tablets. The complaint alleges that

competitive entry to defeat these price increases is not likely to be timely and effective because entry into these markets is subject to FDA regulation and takes an average of 18 months, but can take even longer.

73. After the parties received notice of the FTC's complaint, they announced that they would drop the exclusivity and profit-sharing provisions of the agreement. The parties' action does not remedy the harm already done to consumers nor does it guarantee that the parties will not continue to pursue the strategy embodied in their agreements. To remedy the harm caused to consumers by the anticompetitive conduct of the defendants, the FTC has asked the court to enjoin the parties from their allegedly unlawful conduct, to rescind the exclusive agreements, and to order the disgorgement and restitution of an amount exceeding \$120 million plus interest, which represents the estimated revenues resulting from the defendants' anticompetitive agreements and conduct.

74. On July 7, 1999, the court denied defendants' motions to dismiss the FTC complaint, finding that § 13(b) of the FTC Act allows the Commission to seek permanent injunctive relief for violations of "any provision of law" enforced by the FTC, and allows the Commission to seek monetary remedies such as the disgorgement of profits, which the complaint in this case seeks. Trial is scheduled for early 2001.

NOTES

- 1 U.S. International Trade Commission, Review of Global Competitiveness in the Pharmaceutical Industry (“ITC report 1999”), Publication 3172, April 1999, at 3-4. An “ethical” product is one that is available only through prescription and can be either brand name or generic.
- 2 *Id.* at 3-5
- 3 *See generally* www.pharma.org/facts/index/html.
- 4 Standard and Poor’s, Industry Surveys - Healthcare: Pharmaceuticals , Dec. 16, 1999 (“Standard and Poor’s Industry Survey”) at 22.
- 5 *Id.* at 24.
- 6 35 U.S.C. 154 (a) (2)(1994). To accommodate the transition from a 17-year to a 20-year patent term, measured from the date of filing and not issuance, the Uruguay Round Agreements Act provides that any patent that was either in force on, or resulted from an application filed prior to, June 8, 1995 (the effective date of the change in the patent term) will have a term that is 17 years from the year of issuance or 20 years from the date of filing, whichever is longer.
- 7 Public Law No. 105-115.
- 8 See Susan DeSanti, “The Intersection of Antitrust and Intellectual Property Issues: A Report from the FTC Hearings,” Remarks before the Conference on Antitrust for High-Tech Companies Business Development Associates, San Francisco, February 2, 1996 (www.ftc.gov/speeches/other/desanti1.htm).
- 9 See *Ciba-Geigy Ltd.*, Dkt C- 3275 (consent order, March 29, 1997).
- 10 ITC report 1999, *supra* note 1, at 3-13. Using 14.9 years as the base, the approval process consists of an average of 6.0 years for pre-clinical testing of the drug involving laboratory and animal testing of a chemical to gauge its safety for testing in humans, 6.7 years for the FDA-required clinical trials, and 2.2 years for final FDA approval phase. During the 1990s the FDA took several steps to speed approval of new drugs with successful results. *Id.* at 3-13 - 3-15. According to one trade association, the FDA was able to cut drug approval times in half during 1993-1997. See Pharmaceutical Research and Manufacturers of America, 1999 Pharmaceutical Industry Profile, Ch.3, at 6.
- 11 The FDA’s Internet site has further information under “New Drug Development and Review” at <http://www.fda.gov/cder/handbook/index.htm>.
- 12 21 U.S.C. 355(j)(2)(A).
- 13 21 U.S.C. §§ 321-393.
- 14 21 U.S.C. § 352(i).
- 15 21 U.S.C. 360 aa-ee.
- 16 The law provides a guarantee of 7 years of market exclusivity.

- 17 A link to the paper can be found at www.hiaa.org.
- 18 See, e.g., Standard and Poor's Standard and Poor's Industry Survey, *supra* note 5, at 22, stating that managed care has historically favored drug therapies because of their cost-effectiveness.
- 19 Therapeutic interchanges involve the dispensing of a different drug having a different chemical composition than the one prescribed within the same therapeutic class. Step-care therapy requires that physicians follow a sequence of treatments for a given condition, usually starting with the lowest-cost treatment and progressing to higher-cost treatments only if previous treatments are not effective. Drug utilization review involves retrospective monitoring of physicians' prescribing patterns to ensure that the lowest cost/highest quality prescription drugs are made available to plan enrollees. Generic substitution programs require substitution of generic for brand-name drugs.
- 20 Nonlisted drugs carry higher co-payments than listed drugs.
- 21 Standard and Poor's, *supra* note 5, at 11.
- 22 GAO/HEHS-96-45 Pharmacy Benefit Managers at 7.
- 23 Novartis Pharmacy Benefit Report: 1997 Trends and Forecasts at 13.
- 24 The VA's formulary and other information about VA's drug benefit is available at www.dppm.med.VA.gov.
- 25 Best practice guidelines are clinical practice guidelines for the treatment of disease that reflect the opinion and experience of experts in the specific field. Disease management programs are mostly aimed at chronic diseases and at efficient and effective treatment of a disease, integrating various treatment components. Provider profiling consists of ongoing review, analysis and sharing of prescribing patterns for an individual prescribers and their peers with the aim of modifying physician practice patterns to reflect those of his/her peers without compromising quality patient care. Dynamic medication use committees are intended to enhance traditional pharmacy and therapeutic committee functions, i.e., the creation and maintenance of formularies through dynamic, systematic analyses and include ongoing adverse event monitoring and trending and applied research involving therapeutic outcomes.
- 26 Standard and Poor's, *supra* note 9 at 11.
- 27 15 U.S.C. § 1013 (b).
- 28 See, e.g., *Group Life & Health Insurance Co. v. Royal Drug*, 440 U.S. 205 (1979).
- 29 See, e.g., *California Retail Liquor Dealers Ass'n v. Midcal Aluminum, Inc.*, 445 U.S. 97 (1980).
- 30 U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (April 2, 1992).
- 31 Hoechst-Andrx, Docket No. 9293.
- 32 Abbot-Geneva, File No. 981-0395.

- 33 See www.ftc.gov/bc/rxupdate.htm for a complete listing of such cases.
- 34 C-3822 (consent order issued August 11, 1998).
- 35 Revised Department of Justice and Federal Trade Commission Statements of Antitrust Enforcement Policy in Health Care, August 26, 1996. See www.ftc.gov/bc/guidelin.htm.
- 36 See www.ftc.gov/antitrust.
- 37 In the Preamble, “competitors” are defined to include both actual and potential competitors, and a “competitor collaboration” is defined as “a set of one or more agreements, other than merger agreements, between or among competitors to engage in economic activity, and the resulting economic activity.”
- 38 In *United States v. Proctor & Gamble Co.* (Civ 90-5144, 8/7/90), the DOJ filed suit to stop defendants – the Proctor & Gamble Co. (“P&G”), which produces and sells the over-the-counter (“OTC”) stomach remedy Pepto Bismol, and Rhone-Poulenc Rorer, Inc. (“Rorer”) which produces and sells the OTC Maalox line of stomach remedies, from consummating an agreement pursuant to which P&G would acquire the exclusive right to market and distribute, and an option to purchase the assets used to manufacture, the OTC Maalox line of stomach remedies from Rorer. The DOJ alleged that, if consummated, the transaction would eliminate competition in the U.S. between P&G and Rorer, as well as substantially lessen competition in the U.S. OTC stomach remedies market. P&G and Rorer announced on August 23, 1990, their intention to terminate their proposal that P&G acquire the rights to Rorer’s Maalox line of OTC stomach remedies. On August 27, 1990, the parties agreed to, and submitted to the court, a Stipulation of Voluntary Dismissal.
- 39 See, e.g., *Roche Holding Ltd*, C-3809 (Feb. 25, 1998, consent order). The FTC charged that Roche Holding’s proposed acquisition of Corange Ltd. would eliminate actual competition between the two firms in the markets for research, development, manufacture and sale of cardiac thrombolytic agents and of DAT reagents use in workplace testing. The complaint alleged that the acquisition would increase the likelihood that Roche, as the producer of the two safest and most effective agents in the U.S., would unilaterally exercise market power in the market for cardiac thrombolytic agents and the likelihood of collusion or coordinated action among the remaining firms in the highly-concentrated DAT reagents market.
- 40 See, e.g., *Zeneca Group plc*, C-3880 (March 25, 1999, consent order). The FTC alleged that Zeneca’s proposed acquisition of Astra allegedly was likely to lead to anticompetitive effects by eliminating Zeneca as an actual potential competitor in the U.S. market for long-acting local anesthetics. Astra is the leading supplier in the U.S. and worldwide, and is one of only two companies with FDA approval for the manufacture and sale of long-acting local anesthetics in the U.S. While Zeneca was not then producing or selling long-acting anesthetics, it entered into an agreement with Chiroscience Group plc, to market and assist in the development of levobupivacaine, a new long-acting local anesthetic that allegedly represents the only potential new competition in the relevant market for the foreseeable future.
- 41 *FTC v. Cardinal Health, Inc., and FTC v. McKesson Corp.*, 12 F. Supp. 2d 34 (D.D.C. 1998).
- 42 In the FTC/DOJ 1995 Antitrust Guidelines for the Licensing of Intellectual Property, www.ftc.gov/bc/guidelin.htm, an innovation market is defined as follows:

An innovation market consists of the research and development directed to particular new or improved goods or processes, and the close substitutes for that research and development. The close substitutes are research and development efforts, technologies, and goods that significantly constrain the exercise of market power with respect to the relevant research and development, for example by limiting the ability and incentive of a hypothetical monopolist to retard the pace of research and development. The Agencies will delineate an innovation market only when the capabilities to engage in research and development can be associated with specialized assets or characteristics of specific firms.

Id. at 11.

- 43 Merger Guidelines § 0.1 n.6.
- 44 Glaxo PLC, 119 FTC 815 (June 14, 1995).
- 45 C-3853 (Feb. 18, 1999, consent order).
- 46 C-3594 (July 28, 1995, consent order). The order was recently set aside because Lilly sold PCS to Rite Aid Corp. Eli Lilly/PCS, C-3594 (July 28, 1995).
- 47 FTC v. Mylan Laboratories et. al., Civil Action No. 1:98CV3114 (D.D.C., filed December 22, 1998; amended complaint filed February 8, 1999).
- 48 Civil Action No. 1:98CV3115 (D.D.C.), filed December 22, 1998; amended complaint filed February 8, 1999.

APPENDIX 1-1

**PRODUCT LINE SALES AND PROFITS
FOR MAJOR PHARMACEUTICAL COMPANIES**

COMPANY	PRODUCT CATEGORY	1998 SALES (MIL. \$)	1998 PROFITS (MIL. \$)
Abbott Labs	Pharmaceuticals	2,601	1,402
American Home Products	Pharmaceuticals	8,902	2,488
Glaxo Wellcome	Pharmaceuticals	13,230	3,043
Johnson & Johnson	Pharmaceuticals	8,562	3,016
Pfizer	Pharmaceuticals	12,230	3,351
Pharmacia & Upjohn	Pharmaceuticals	6,127	691
Schering-Plough	Pharmaceuticals	7,342	2,261
SmithKline Beecham	Pharmaceuticals	7,701	2,010
Warner-Lambert	Pharmaceuticals	5,604	1,474

Source: Standard & Poor's, Healthcare: Pharmaceuticals Industry Survey

APPENDIX 1 -2

RESEARCH & DEVELOPMENT EXPENDITURES

COMPANY	1998 MIL. \$	% OF SALES
Abbott	1,222	10
American Home Products	1,655	12
Bristol-Myers Squibb	1,577	9
Eli Lilly	1,739	19
Glaxo Wellcome	1,927	15
Johnson & Johnson	2,269	10
Merck	1,821	7
Pfizer	2,279	17
Pharmacia & Upjohn	1,199	18
Schering-Plough	1,007	12
SmithKline-Beecham	1,508	11
Warner-Lambert	877	9

Source: Standard & Poor's, Healthcare: Pharmaceuticals Industry Survey (December 16, 1999)

APPENDIX 1-3

STANDARD INDUSTRY SURVEYS & POORS

Healthcare,
Pharmaceuticals

DECEMBER 16, 1999 / HEALTHCARE: PHARMACEUTICALS THIS ISSUE REPLACES THE ONE DATED JULY 29, 1999. THE NEXT UPDATE OF THIS SURVEY IS SCHEDULED FOR JUNE 2000.

Herman -Saftlas

Pharmaceuticals Analyst

(Excerpt from CURRENT ENVIRONMENT, pages 4-7)

Yet new products in the industry's R&D pipeline are relatively sparse. Part of the problem reflects more competition from biotechnology drugs that have eclipsed conventional drugs in many therapeutic categories. At the same time, FDA approvals of breakthrough products (defined as new molecular entities, or NMEs), have been in a downtrend in recent years. Pharmaceutical NMEs totaled 30 in 1998, down from 39 in 1997 and 53 in 1996.

but long-term fundamentals remain sound

Despite its problems, the domestic pharmaceutical industry is still one of the healthiest and highest-margined industries in the United States. Historically, the industry has rejuvenated itself by developing premium-priced breakthrough therapies that made older drugs obsolete and opened up entirely new markets, and we fully expect that this pattern to persist.

An estimated 50,000 scientists employed by U.S. pharmaceutical companies are currently researching several thousand new compounds to treat cancer, heart disease, AIDS, Alzheimer's disease, and many other diseases. More than one thousand new drugs are now in the industry's R&D pipeline to treat cancer, heart disease, AIDS, mental illness, and other ailments.

The overall drug discovery process is undergoing a transformation, thanks to major advances in biomedical science. New processes have been invented that should help scientists develop growing numbers of compounds that can be used in the battle against major diseases in the years ahead. Some of the new methods that hold much future promise include rational drug design, combinatorial chemistry, and high throughput screening. (See this issue's "How the Industry Operates" section for more details on these methods.)

Strategic alliances proliferate

Rather than engage in costly mergers and acquisitions, many pharmaceutical companies firms have chosen alternative means of maximizing product sales. These include: entering into co-promotion deals with other drugmakers; expanding product offerings by manufacturing and/or distributing drugs developed by other firms (a process known in-licensing); and developing new biotech products through research collaborations with smaller firms.

The industry has witnessed a flurry of co-marketing deals as drug companies pool their sales forces to make a greater impact. Most leading drugmakers are also stepping up their joint venture and licensing activities with smaller biotechnology companies to empower their R&D programs. According to Burrill & Co., a private merchant bank, the value of drug biotech partnering deals (in up-front payments and equity investments) was nearly \$3.7 billion in the first nine months of 1999.

These deals are seen as a "win-win" situation for all parties. For large companies, collaborations provide limited-risk access to cutting-edge research expertise in areas where they're weak. For the smaller firms, these arrangements provide cash to finance ongoing research, manufacturing, and marketing efforts. These collaborations are becoming relatively more important to large drug companies, whose in-house pipelines are less promising than several years ago.

Recent performance in key ethical sectors

In this section, we review this market's key therapeutic categories and examine their recent performance, principal products, and developments affecting each sector.

Central nervous system drugs

Representing the largest single ethical drug segment in the United States, central nervous system (CNS) drugs are also one of the industry's fastest-growing sectors. Accounting for about 21% of the U.S. retail pharmacy market, sales of CNS drugs rose 14% in the 12 months ended August 1999, based on data provided by IMS Health Inc., a Connecticut-based market research firm specializing in pharmaceuticals.

CNS drugs include various narcotic and non-narcotic analgesics, sedatives, anti-anxiety agents, antidepressants, anti-epileptics, and nonsteroidal anti-inflammatory drugs (NSAIDs, which are prescribed mainly for arthritis). This sector also includes drugs for Alzheimer's disease, Parkinson's disease, and related neurological disorders.

Antipsychotics. One of the strongest CNS segments has been antipsychotics, whose overall U.S. market is expected to expand from about \$2.2 billion in 1998 to \$3.5 billion in 2000. The worldwide antipsychotic market is projected to approach \$6 billion by 2002, up from an estimated \$4 billion in 1999.

The leading product in this class is Johnson & Johnson's Risperdal, with one third of the U.S. market as of September 1999. Steadily gaining is Eli Lilly's Zyprexa, with about 28% of the market. Recently, Zyprexa prescriptions have grown more rapidly than Risperdal, helped by the drug's ability to treat all major symptoms of schizophrenia without the often-severe side effects associated with some of the older medications. Lilly recently received what is called an "approveable" letter from an FDA advisory committee, allowing Zyprexa to be used for the treatment of bipolar (or manic-depressive) illness. The drug is also being studied for use in treating Alzheimer's disease. Other important antipsychotics include Novartis's Clozaril and AstraZeneca's Seroquel.

Selective serotonin reuptake inhibitors (SSRIs). Total U.S. retail prescriptions written for SSRIs in September 1999 were 9.9% above September 1998, based on IMS data. Greater acceptance of depression as a drug-treatable illness, several successful new products, and expanded insurance reimbursement have all contributed to more widespread use of SSRIs in recent years.

Eli Lilly's Prozac still leads this antidepressant class with about a 17% market share as of September 1999. However, its market position has eroded in recent years, as new rivals with enhanced benefits have nudged

it from its former pre-eminent position. Prozac sales dropped 13% during the third quarter of 1999 and are expected to show further erosion in 2000 as well.

Other leading antidepressants that have exhibited good growth in recent years include: Pfizer's Zoloft (with a 16% market share), SmithKline Beecham's Paxil (14%), and American Home Products's Effexor (6%).

Although it currently holds only a small portion of the total market, Forest Laboratories Inc.'s Celexa antidepressant is exhibiting vigorous growth and is rapidly moving up to the big leagues. As of September 1999, Celexa accounted for about 5.4% of all new SSRI prescriptions, **up from** less than 1 % a year earlier. This drug, which is being co-marketed by Warner-Lambert, is benefitting from a number of purported advantages over conventional antidepressants. These include a lower incidence of sexual dysfunction, reduced negative interactions when taken with other prescription drugs, and more rapid onset of therapeutic action.

* **Migraine treatments.** The migraine market is on the verge of substantial growth in the years ahead. It is estimated that close to 10% of the general population suffers from migraines, but that fewer than half of them treat their condition with prescription drugs. A substantial percentage of these individuals would benefit from treatment.

At present, the \$1.5 billion worldwide market is dominated by Glaxo Wellcome's Imitrex, with roughly half of the U.S. market as of September 1999. The overall migraine drug market is expected to triple over the next four years, augmented by direct-to-consumer (DTQ) advertising campaigns that will accompany the launch of several new products. These campaigns should significantly raise the proportion of migraine sufferers receiving treatment. Four new drugs targeting this market include: AstraZeneca's-Zomig (with a 9% market share in September 1999), Merck's Maxalt (7%), and Elan Corp.'s Midrin (3%). Warner-Lambert's Relpax is being readied for this market, subject to FDA approval. Relpax is believed to have better efficacy than Imitrex.

* **Antiarthritics.** The principal drugs used to treat osteoarthritis, a painful inflammatory condition affecting close to 20 million Americans, are nonsteroidal anti-inflammatory drugs (NSAIDs). The outstanding success of a new wave of NSAIDs have breathed new life into a sector that had previously shown only modest growth. Bolstered by the new drugs called COX-2 inhibitors, total anti-arthritic prescriptions in September 1999 were about 21% higher than those of September 1998.

The new products are Searle's Celebrex (with a 21 % market share) and Merck's Vioxx (8%). These drugs are potent treatments for arthritis and pain, without the adverse gastrointestinal side effects associated with existing NSAIDs. Merck's lower market share reflects its launch in late May 1999, about six months after Celebrex. The rest of the NSAID market is fairly crowded with older drugs, most with market shares of less than 3%.

Cardiovasculars

Cardiovascular drugs comprise the second-largest therapeutic segment, with about 18% of the U.S. retail market. This broad-based group includes treatments for heart attacks, hypertension, angina, arrhythmia, and elevated cholesterol levels.

Cardiovasculars; have shown decent growth, with sales for the 12 months through August 1999 up 11% from the preceding 12-month period. Heart drugs represent a high priority for many leading drug companies, given the huge size of the heart-patient market and the life-saving potential of these therapies. Plus, from a purely business standpoint, these are patients that need to remain on medication for the rest of their lives.

Cholesterol drugs. The cholesterol-lowering market is expected to exhibit vigorous growth in the years ahead, as people become more aware of the dangers of elevated blood cholesterol. Total prescriptions written for this class in September 1999 were 20% above the year-earlier level.

The American Heart Association has estimated that over 50% of all American adults have elevated blood cholesterol counts. Persons with high cholesterol are initially advised to change their diets to low-fat foods and to lose weight through exercise. However, if these measures are unsuccessful, physicians often recommend drug therapies. Only about one-fifth of all persons who could benefit from these drugs are currently taking them.

The strongest performer in the cholesterol market has been Warner-Lambert's Lipitor. This drug has shown to be more efficacious than its rivals while maintaining an excellent side-effect profile. Sales of Lipitor are expected to rise from an indicated \$3.4 billion in 1999 to more than \$8 billion within the next five years. As of September 1999, Lipitor accounted for about 42% all new prescriptions for cholesterol reducers. Other leading cholesterol drugs include Merck's Zocor (21 % of the market) and Bristol-Myers Squibb Co.'s Pravachol (14%).

* **Antihypertensives.** Affecting close to 60 million Americans, hypertension or high blood pressure is a generally symptomless condition that if left untreated can lead to stroke, aneurysm, heart attack, and kidney failure. A large number of drugs with different mechanisms of action are available to treat hypertension.

The largest-selling categories include calcium channel blockers, led by Pfizer's Norvasc, and ACE inhibitors, of which Merck's Vasotec/Vaseretic is the biggest seller. Older groups include products such as beta blockers, diuretics, vasodilators, and others.

The most recent wave of antihypertensives are angiotensin II antagonists, led by Merck's Cozaar/Hyzaar (with about a 50% market share of the angiotensin II market as of September 1999). Other leading drugs in this class include Novartis's Diovan/Diovan HCT (27%) and Bristol-Myers's Avapro (15%). Bristol-Myers is expected to soon launch a new antihypertensive called Vanlev. This drug has a unique advantage in that it lowers both diastolic and systolic blood pressure (when the heart relaxes and contracts, respectively), whereas conventional antihypertensives lower only diastolic pressure. (In most cases, the diastolic number is the most significant.)

Gastrointestineffinetabolism agents

This large sector, which includes antiulcer drugs, diabetes compounds, antiobesity agents, oral contraceptives, and related drugs, accounted for 15% of U.S. drug sales in the 12 months through August 1999, based on IMS data. Volume growth for most drugs in this class has been in only the single digits in recent years, reflecting the market's relative maturity and a rising proportion of inexpensive generics in the total mix. However, certain segments such as diabetes treatments are showing above-average growth.

* Antiulcer drugs. This \$6.5 billion U.S. market comprises older H2 antagonists such as SmithKline Beecham's Tagamet and Glaxo Wellcome's Zantac, as well as newer proton pump inhibitors such as AstraZeneca's Prilosec - the largest-selling prescription drug in the world, with sales of more than \$4 billion in 1998.

Unlike rival H2 antagonists, Prilosec (accounting for 34% of all prescriptions in this class in September 1999) is a proton pump inhibitor combined with an antibiotic. It's used to eradicate helicobacter pylori, the

bacterium responsible for recurrent peptic ulcers. Another popular proton pump antiulcer drug is Abbott Laboratories's Prevacid, which has a 22% market share.

Diabetes drugs. This \$3.5 billion market is expected to quadruple over the next several years, fueled by a growing patient population and new breakthrough treatments. Most of the growth should reflect rapid expansion in sales of new drugs for Type 2, or adult-onset, non-insulin-dependent, diabetes. Typically affecting persons who are over 40 or clinically obese, this condition is characterized by the body's inability to make enough insulin or to use it properly. The number of patients suffering from Type 2 diabetes has increased significantly in recent years, to a large extent reflecting unhealthy American diets.

The industry leader in this market is Bristol-Myers Squibb's Glucophage (with about 32% of the market in September 1999), followed by Pfizer's Glucotrol (15%). Recent entrants include SmithKline Beecham's Avandia and Eli Lilly's Actos.

Type I diabetes is a serious condition in which the body does not produce any insulin. Daily injections of the hormone are necessary for the patients survival. A number of companies are now working on newer noninjectable insulin products, including oral and inhaled formulations.

APPENDIX 2

Parallel Imports

The following paragraphs briefly summarize U.S. law in each of the three major areas of intellectual property rights.

(1) Copyright

The Copyright Act, 17 U.S.C. 106 *et seq.*, provides protection against parallel imports manufactured abroad and imported into the United States without the consent of the right holder. The Supreme Court decision in the *Quality King* case clarifies that parallel import protection is not available for copyrighted works that are manufactured in the United States, then exported and re-imported.¹ The Court's opinion, however, turns on its interpretation of the first sale doctrine in section 109(a), which applies to copies "lawfully made under this title" (*i.e.*, made in the U.S.). For this reason, works manufactured abroad, that are protected not under U.S. copyright law but under foreign copyright law, do not fall within the purview of the ruling. Their importation is prohibited under 17 U.S.C. 602(a), which provides that "importation into the United States, without the authority of the owner of copyright under this title, of copies or phonorecords of a work that have been acquired outside the United States is an infringement of the exclusive right to distribute copies"

(2) Patent

i. Patent Act

United States patent law recognizes that the rights of the patent holder include the right to prevent unauthorized importation of patented inventions. Section 271 of title 35 of the United States Code provides, in part, that "whoever without authority $\frac{1}{4}$ imports into the United States any patented invention during the term of the patent thereof, infringes the patent." The first sale doctrine applies in the patent context, but its applicability to the parallel import situation is limited by the requirement that the patent holder must have authorized the sale of such imports within the United States. In other words, the holder of a United States patent may maintain an action for patent infringement against an importer who acquired its products from a foreign licensee or distributor that was not authorized by the patentee to import the patented technology into the United States. See *Boesch v. Graff*, 133 U.S. 697 (1890); *Sanofi, S.A. v. Med-Tech Veterinarian Prod., Inc.*, 220 U.S.P.Q. 416 (D.N.J. 1983).

ii. Prescription Drug Marketing Act

U.S. law effectively prevents parallel imports (except in limited emergency medical situations). The Prescription Drug Marketing Act of 1987 prohibits the reimportation of prescription drugs except by the manufacturer. See 21 U.S.C. §§ 381(d)(1) & (2) (no prescription drug "which is manufactured in a State and exported may be imported into the United States unless the drug is imported by the manufacturer of the drug"). In passing this statute, Congress found that "[t]he existence and operation of a wholesale submarket, commonly known as the "diversion market," prevents effective control over or even routine knowledge of the true sources of prescription drugs in a significant number of cases;" that reimported drugs "are a health and safety risk to American consumers because they may have become subpotent or adulterated during foreign handling and shipping;" and that "the ready market for prescription drug

1. *Quality King Distributors Inc. v. L'Anza Research International Inc.*, 523 U.S. 135 (1998).

reimports has been the catalyst for a continuing series of frauds against American manufacturers and has provided the cover for the importation of foreign counterfeit drugs.” P.L. 100-293, § 2 (1988), reprinted in notes accompanying 21 U.S.C. § 353. The legislative history of this provision elaborates on these concerns. See Prescription Drug Marketing Act of 1987, S. Rep. 100-303, p. 58 (Mar. 18, 1988).

(3) Trademark

i. Genuine Goods Exclusion Act (19 U.S.C. § 1526(a))

This Act prohibits importation of a product “that bears a trademark owned by a citizen of . . . the United States, and is registered in the [PTO] . . . unless written consent of the owner of such trademark is produced” Treasury Department regulations upheld by the Supreme Court provide an exception where the foreign and domestic trademark owners are the same or subject to common control. See 19 C.F.R. 133.21(c)(1) and (2); K-Mart v. Cartier, Inc., 486 U.S. 281 (1988). Where they are not the same or subject to common control, section 1526(a) bars the parallel imports.

ii. Lanham Act (15 U.S.C. § 1124)

The Lanham Act provides a second statutory basis for protection against parallel imports that are physically or materially different from the products sold under the trademark in the United States. Lever Bros. Co. v. United States, 981 F.2d 1330 (D.C. Cir. 1993). In the context of a case under Section 337 of the Trade Act, the U.S. International Trade Commission has prohibited parallel imports of a trademarked product based on a finding of material differences, and the Administration allowed the order to enter into effect. Inv. No. 337-TA-380 (1997). New Treasury regulations establish a procedure by which Customs will allow importation of physically different products, provided that they are properly labeled as such. 64 Fed. Reg. 9058 (1999).

APPENDIX 3

Patent Term Extension Under 35 U.S.C. 156

The right to a patent term extension based upon regulatory review is the result of the Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98-417, 98 St. 1585 (Codified at 21 U.S.C. 355(b),(j),(l), 35 U.S.C. § 156, 271,282) (Hatch-Waxman Act). The act sought to eliminate two distortions to the normal "patent term produced by the requirement that certain products must receive premarket regulatory approval." *Eli Lilly & Co. v. Medtronic Inc.*, 496 U.S. 661, 669, 15 USPQ2d 1121, 1126 (1990). The first distortion was that the patent owner loses patent term during the early years of the patent because the product cannot be commercially marketed without approval from a regulatory agency. The second distortion, occurred after the end of the patent term because competitors delayed entry into the market because they were not allowed to begin testing and performing other activities necessary for their own approval process until the patent had expired.

The part of the act codified as 35 U.S.C. 156 was designed to create new incentives for research and development of certain products subject to premarket government approval by a regulatory agency. The statute enables the owners of patents on certain human drugs, food or color additives, medical devices, animal drugs, and veterinary biological products to restore to the terms of those patents some of the time lost while awaiting premarket government approval from a regulatory agency.

The rights derived from extension of the patent are limited to the approved product. 35 U.S.C. 156(b). Accordingly, if the patent claims other products in addition to the approved product, the exclusive patent rights to the additional products expire with the original expiration date of the patent. In exchange for extension of the term of the patent, Congress legislatively overruled *Roche Products v. Bolar Pharmaceuticals*, 733 F.2d 858, 221 USPQ 937 (Fed. Cir. 1984) as to products covered by 35 U.S.C. 271(e) and provided that it shall not be an act of infringement, for example, to make and test a patented drug solely for the purpose of developing and submitting information for an Abbreviated New Drug Application (ANDA). 35 U.S.C. 271(e)(1). See Donald O. Beers, *Generic and Innovator Drugs: A Guide to FDA Approval Requirements*, Fourth Edition, Aspen Law & Business, 1995, 4.3[2] for a discussion of the Hatch-Waxman Act and infringement litigation. Furthermore, Congress provided that an ANDA cannot be filed until five years after the approval date of the product if the active ingredient or a salt or ester of the active ingredient had not been previously approved under section 505(b) of the Federal Food, Drug and Cosmetic Act. 21 U.S.C. 355(j)(4)(D)(ii). See also, Lourie, *Patent Term Restoration: History, Summary, and Appraisal*, 40 *Food, Drug and Cosmetic L. J.* 351, 353-60 (1985). See also Lourie, *Patent Term Restoration*, 66 *J. Pat. Off. Soc'y* 526 (1984).

On November 16, 1988, 35 U.S.C. 156 was amended by Public Law 100-670, essentially to add animal drugs and veterinary biologics to the list of products that can form the basis of patent term extension. Animal drug products which are primarily manufactured through biotechnology are excluded from the provisions of patent term extension.

On December 3, 1993, 35 U.S.C. 156 was further amended to provide for interim extension of a patent where a product claimed by the patent was expected to be approved, but not until after the original expiration date of the patent. Public Law 103-179, Section 5.

Patent term extension under 35 U.S.C. 156 restores a portion of the patent term lost as a result of regulatory agency premarketing testing and approval requirements for human drugs, food additives, color additives, medical devices, animal drugs, and veterinary biological products. Under specified

circumstances, the statute authorizes the extension of the term of a patent which claims these federally regulated products or methods of using or manufacturing these federally regulated products.

An application for the extension of the term of a patent under 35 U.S.C. 156 must be submitted by the owner of record of the patent or its agent within the sixty day period beginning on the date the product received permission for commercial marketing or use under the provision of law under which the applicable regulatory review period occurred for commercial marketing or use. See 35 U.S.C. 156(d)(1). The Patent and Trademark Office initially determines whether the application is formally complete and whether the patent is eligible for extension. The statute requires the Commissioner of Patents and Trademarks to notify the Secretary of Agriculture or the Secretary of Health and Human Services of the submission of an application for extension of patent term which complies with the section within sixty days and to submit to the Secretary a copy of the application. Not later than thirty days after receipt of the application from the Commissioner, the Secretary will determine the length of the applicable regulatory review period and notify the Commissioner of the determination. If the Commissioner determines that the patent is eligible for extension, the Commissioner calculates the length of extension for which the patent is eligible under the appropriate statutory provision and issues an appropriate Certificate of Extension.