

*The*  
*Special Studies Series*

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**Multinational Corporations,  
OPEC, Cartels,  
Foreign Investment  
and Technology Transfer  
1971-1981**

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**Multinational Corporations,  
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Foreign Investment  
and Technology Transfer  
1971-1981**

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**A Microfilm Project of  
UNIVERSITY PUBLICATIONS OF AMERICA, INC.  
44 North Market Street • Frederick, MD 21701**

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ISBN 0-89093-507-6.

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# REEL INDEX

## Reel I

Frame

### MULTINATIONAL CORPORATIONS

- 0001 **The Multinational Corporation. Studies on U.S. Foreign Investment. Volume 1.**  
*Industry and Trade Administration, Washington, D.C. Office of International Finance, Investment and Services. March 1972. 206pp.*  
Volume I presents the following studies: (1) 'Policy Aspects of Foreign Investment by U.S. Multinational Corporations' provides a survey of the role and significance of the multinational corporations and discusses the interaction of the multinational corporation, government and labor, in the areas of employment, technology transfers, investment controls, and balance of payments. (2) 'U.S. Multinational Enterprises and the U.S. Economy' presents a summary and extrapolation of the conclusions drawn from nine case and industry studies. (3) Trends in Direct Investment Abroad by U.S. Multinational Corporations, 1960-1970, provides a statistical analysis of the main elements of the growth in U.S. foreign direct investment during the decade of the 1960's.
- 0207 **Special Survey of U.S. Multinational Companies, 1970.**  
*Bureau of Economic Analysis, Washington, D.C. November 1972. 106pp.*  
Domestic and international operations of 298 U.S. multinational companies are covered in aggregate, including both the U.S. parents and their 5,200 majority-owned foreign affiliates. Data are given for 1966 and 1970 on the balance sheets, income statements, employment, and wage bill. The part of U.S. foreign trade associated with these multinational enterprises is analyzed in detail, including U.S. exports and imports between the parents and their affiliates, between other U.S. residents and affiliates, and between parents and other foreigners.
- 0313 **The U.S. Energy Crisis, the Multinational Oil Corporations and Their Relationship to U.S. Foreign Policy in the Middle East.**  
*Army War College, Carlisle Barracks, Pa. John G. Pappageorge. Feb. 28, 1973. 55pp.*  
America's current energy crisis consists of a growing dependence on foreign oil brought about by a continuing diminution in known domestic petroleum reserves and aggravated by a host of domestic anomalies that cry out for some sort of unified energy policy. Yet any steps taken domestically will have far reaching international

effects, particularly in the Middle East. Eight giant corporations (five of them American) in effect of the consumer in the West and in Japan and, on the other hand, they are the ones who discover and pump most of the oil out of the ground in the producing countries. Hence, they have a powerful influence in the Middle East and are a contributing factor in the stability of that politically volatile part of the world.

**0368 The National Security Implications of Multinational Corporations.**

*Army War College, Carlisle Barracks, Pa. Phillip D. Engle. Feb. 28, 1973. 49pp.*

The basic problem is the identification and assessment of factors pertinent to the multinational corporation (MEC) which may influence the national security of the U.S. over the next few years. Literature search constitutes the principal technique for data and information collection. Major factors and trends that identify the explosive growth of the multinational have been examined.

**0417 The Multinational Corporation. Studies on U.S. Foreign Investment. Volume 2.**

*Industry and Trade Administration, Washington, D.C. Office of International Finance, Investment and Services. April 1973. 85pp.*

Volume II contains two studies that will: (1) assess and analyze the factors that cause U.S. companies to undertake foreign investment, as determined by a survey of multinational companies being conducted for the U.S. Department of Commerce by the Conference Board; and (2) provide statistical data and analyses on the financial, trade and employment effects of a selected sample of U.S. multinational corporations.

**0502 Multinational Firms and the Factor Intensity of Trade.**

*National Bureau of Economic Research, Inc., New York. Robert E. Lipsey and Merle Yahr Weiss. Sept. 1973. 29pp.*

This study considers the characteristics of the exports and imports and overseas production of multinational enterprises, in terms of relative capital or research intensity and examines the effects of their activities (in light of these characteristics) on the U.S. international trade.

**0531 Multinational Corporations Viewed in a National Security Perspective.**

*Army War College, Carlisle Barracks, Pa. M. C. Teschendorf. June 7, 1974. 25pp.*

The author studies the fast-growing, high-technology multinational corporations, which are central in facilitating the pace and quality of worldwide socioeconomic and industrial development. He maintains and proves that such corporations possess certain inherent characteristics which run counter to present concepts of national security.

**0556 An Exploratory Study Concerning Published Information Available on Channels Used by U.S.-Based Multinational Enterprises to Transfer Technology Internationally.**

*National Science Foundation, Office of National R&D Assessment, Washington, D.C. Joan P. Curhan and Robert B. Stobaugh. Dec. 1974.*

This report is an exploratory study to develop a conceptual framework and determine the availability of data from public sources, in order to assess the determinants and consequences of the selection of various channels of marketing technology by multiproduct-multinational firms. Transactions of three multinational firms are examined between 1946 and 1973. The report provides a detailed method for collecting information, sources of data, and available information on technology sales or transfer by product for each firm. It provides preliminary insights into the complementarity and substitutability of various channels for technology sales by firms.

**0839 An Evaluation of the Options of the U.S. Government in Its Relationship to U.S. Firms in International Petroleum Affairs.**

*Nossaman, Waters, Krueger, Marsh and Riordan, Los Angeles, Calif. Robert B. Krueger, Bruce G. Merritt, et al. Jan. 1975. 124pp.*

The results of an investigation of the historical, legal, political and economic aspects

of the existing international system of petroleum supply and the probable effects of other options are presented. National policy options available to the U.S. for use in its national energy policy include removal or modification of federally created incentives and disincentives to international petroleum production, regulation of oil companies as public utilities, establishment of a national system to limit petroleum imports, regulation of all significant foreign supply arrangements, and the creation of a petroleum corporation (fully or partially owned by the Federal Government) to engage in international activities. Bilateral and multilateral options include coordination of international supply arrangements through an industry-wide association of consumer country companies, bilateral arrangements between the U.S. and the producer governments, and the establishment of an international organization or multilateral negotiations.

**0965 The Relationship of Oil Companies and Foreign Governments.**

*Federal Energy Administration, Washington, D.C. Office of International Energy Affairs. June 1975. 195pp.*

This report analyzes the relationships between private oil companies and governments in both producing and consuming countries. Thirty countries were selected to provide a comprehensive view of foreign nations, both producers and consumers. All members of OPEC are included as are most members of the international Energy Agency. The report covers the period from the mid-1950's, when a handful of major international companies dominated the international petroleum system to early 1975, when OPEC governments unilaterally seized control of international oil pricing and escalated demands to virtually complete nationalization of the petroleum industry's crude production facilities within OPEC.

## Reel II

### MULTINATIONAL CORPORATIONS (Cont.)

**0001 U.S. Multinational Corporations and National Security Policy.**

*Stanford Research Inst., Arlington, Va. Strategic Studies Center. N. R. Danielian. Aug. 1975. 87pp.*

This report presents a survey of the literature on the security aspects of multinational corporations' activities. It identifies those aspects which have been previously researched and those requiring further study.

**0088 Bibliography on Technology and Trade.**

*National Bureau of Economic Research, Inc., New York. Aug. 1975. 347pp.*

An annotated bibliography is presented of the literature relating to the economic impacts and causes of international technology transactions in a number of industries.

**0435 Impact of Foreign Investment on National Security.**

*Army War College, Carlisle Barracks, Pa. Ronald E. Snyder. Oct. 17, 1975. 24pp.*

The basic question regards the impact of foreign investment on our national security and the role of the Department of Defense in ensuring that the economic interests in the U.S. do not degrade our national security. An examination of recent testimony before various Congressional committees investigating foreign investment in the U.S. revealed a lack of adequate information upon which to establish foreign economic policy. Although national security was mentioned the agencies providing information were motivated by economic and political factors rather than military. Recent investment patterns of OPEC indicate a possible desire to seek further economic and political power through acquisitions in energy, raw material, and aerospace industries. The impact of the U.S. industrial base on the military preparedness and ultimate national security is the responsibility of the Department of Defense;

therefore, it should closely review the analysis being made by the departments of Commerce and Treasury on foreign investment in the U.S.

- 0459 **The International Transfer of Semiconductor Technology through U.S.-Based Firms.**  
*National Bureau of Economic Research, Inc., New York. William F. Finan. Dec. 1975. 153pp.*

This study analyzes the international pattern of exports, licensing, and foreign investments of the U.S. semiconductor industry, which has been dominant in technological innovations. It examines the different transfer channels and factors which determine a firm's selection of these channels to supply foreign markets. It also investigates the characteristics of the American firms most responsible for the transfer of technology off-shore and the impact of foreign direct investment on trade patterns.

- 0612 **An Analysis of Export Control of U.S. Technology—A DOD Perspective. A Report of the Defense Science Board Task Force on Export of U.S. Technology.**

*Office of the Director of Defense Research and Engineering, Washington, D.C. Feb. 4, 1976. 58pp.*

The assessment of selected technologies, their impact on U.S. strategic requirements, transfer mechanisms, and current effectiveness of export control restrictions reinforce the need for export controls and the CoCom agreement as a defense necessity. The effectiveness of these controls for the more critical technologies needs to be improved through definition of policy objectives, simplified criteria, and a more pragmatic approach to the review and approval of license applications. Products of technology not directly of significance to the Department of Defense should be eliminated from controls to enable more effective control of significant items. The findings and principal recommendations of the Task Force are discussed in this report.

- 0670 **Impact of Multinational Firms on Technology and Trade Flows. Summary Report.**

*National Bureau of Economic Research, Inc., New York. Robert E. Lipsey and Irving B. Kravis. July 1973. 22pp.*

This project applies the publicly collected data base of U.S. firms and foreign industry toward three objectives. First, the study examines the factors that determine a firm's share of foreign markets and its choice among exports, licensing, and overseas production as ways of supplying that share. Second, the project assesses the effects of these choices on the location of production, and the composition and level of U.S. exports and imports. Third, the research assesses the extent to which multinational firms, when they do manufacture abroad, transfer the technology used in the United States to their foreign operations.

- 0692 **Exports and Foreign Investment in Manufacturing Industries.**

*National Bureau of Economic Research, Inc., New York. Robert E. Lipsey and Merle Yahr Weiss. March 1976. 68pp.*

This study investigates the relationship between direct investment by U.S. firms and the export trade of the United States. It examines exports across countries (destinations for exports from the U.S. and other countries) within 14 manufacturing industries, taking account of factors such as market size, distance of each market from major suppliers, and membership in the EEC.

- 0760 **Beyond the Nation State: Managing the Transnational Political, Social and Cultural Roles of the Multinationals.**

*Army War College, Carlisle Barracks, Pa. John P. Caruso and Charles E. Schmidt. May 31, 1976. 238pp.*

This document seeks to determine what extraeconomic functions multinational corporations are performing. Additional questions proceeding from the basic one address a future political role for the multinational corporations in the international system and the implications posed by the multinationals for management and the nation-states. The proliferation of the multinational corporations, on the one hand,

and the nation states on the other gives rise to serious dilemmas when multinational corporations and host-nation goals are in conflict. The extra-economic functions performed by multinational corporations in developed, developing and under-developed nation-states have serious and far-reaching implications for multinational corporations management and governments. The authors conclude that the extra-economic functions warrant serious attention from political scientists and sociologists to determine serious attention from political scientists and sociologists to determine appropriate roles and responsibilities for both actors. Multinational corporations management and nation-state leadership must each become more aware of the other and learn to deal with the very real problems and dilemmas in a non-adversary environment.

## Reel III

### MULTINATIONAL CORPORATIONS (Cont.)

- 0001 **Commodity Supply Restrictions Study: A Framework for Analyzing Commodity Supply Restrictions.**  
*Charles River Associates, Inc., Cambridge, Mass. Aug. 1976. 23pp.*  
The study addresses commodity supply crises due to producer country export policies, and considers the issue of resource exhaustion only as it relates to this problem. The primary concern is with economic impacts and policies. Crises in commodity supplies may well have political impacts, but detailed treatment of such effects is beyond the scope of the study. Possible political and diplomatic constraints on U.S. policies are considered, but the primary concern is with economic impacts. The basic analytical approach is that of the applied microeconomist working in a supply and demand framework. This framework allows the use of available qualitative economic, econometric and engineering information. There has been no use of mathematical programming or input-output techniques as it is believed that the techniques employed are sufficient.
- 0239 **U.S. Foreign Relations and Multinational Corporations: What's the Connection.**  
*General Accounting Office, Washington, D.C. Program Analysis Div. Aug. 23, 1978. 89pp.*  
The report analyzes the impact of U.S.-based multinational corporations on the conduct of U.S. foreign relations and predicts some future issues which the Congress may face. The authors feel the report provides a concise, but comprehensive overview of this very important subject. Officials of the Department of State have reviewed the report and their comments have been incorporated in the final report.
- 0328 **Multinational Activities of Major U.S. Automotive Producers. Volume I. Summary.**  
*Ronstadt (Robert C.) Associates, Inc., Dover, MA. Robert C. Ronstadt, William Casey, J.P., Jeannot, John Marthinsen, and Robert Whorf. Sept. 1978. 18pp.*  
The multinational activities of General Motors, Ford, Chrysler, and American Motors are documented and analyzed. The study contains a compilation of data related to multinational operations; specifically it addresses research, development, engineering, production, marketing, and sales activities performed abroad. A preliminary assessment of the technology transfers within each U.S. multinational producer is provided. The study also examines the diffusion of production and sales operations abroad; the timing and location of these investments are shown consistent with the Product Life Cycle Theory of International Trade and Investment.
- 0346 **Multinational Activities of Major U.S. Automotive Producers. Volume II. Data on Foreign Facilities and Operations.**  
*Ronstadt (Robert C.) Associates, Inc., Dover, MA. Robert C. Ronstadt, William Casey, J.P., Jeannot, John Marthinsen, and Robert Whorf. Sept. 1978. 232pp.*

The objective of Volume II is to present data gathered from several sources, public and private, on three aspects of multinational involvement for General Motors Corporation, Ford Motor Company, Chrysler Corporation, and American Motors Corporation. The three aspects are: (1) research, development, and engineering activities abroad; (2) production activities abroad; and (3) sales activities abroad. For all three activities the data focus primarily on automotive operations related to passenger vehicles. In some instances the data include other business activities abroad besides passenger vehicles because it was not feasible or possible to separate them. (Portions of this document are not fully legible)

**0578 Multinational Activities of Major U.S. Automotive Producers. Volume III. Research, Development, and Engineering Abroad.**

*Ronstadt (Robert C.) Associates, Inc., Dover, MA. Robert C. Ronstadt, William Casey, J.P., Jeannet, John Marthinsen, and Robert Whorf. Sept. 1978. 53pp.*

This is Volume III of the report on the multinational activities of the four major U.S. automotive producers. The primary objective of Volume III is to evaluate the RD&E activities performed abroad by the U.S. automotive multinationals in order to determine: (a) which foreign subsidiaries participate in RD&E efforts; (b) the magnitude of RD&E efforts made by these foreign subsidiaries; (c) the particular location and capabilities of RD&E efforts performed abroad; and, (d) the particular type of RD&E performed at different locations abroad. In addition, the report assesses; (e) the factors which cause the establishment and evolution of RD&E activities abroad by the U.S. automotive multinationals; and, (f) the significance and probable future of RD&E performed abroad by the U.S. automotive multinationals.

**0631 Multinational Activities of Major U.S. Automotive Producers. Volume IV. A Preliminary Evaluation of Technology Innovation and Transfer.**

*Ronstadt (Robert C.) Associates, Inc., Dover, MA. Robert C. Ronstadt, William Casey, J.P., Jeannet, John Marthinsen, and Robert Whorf. Sept. 1978. 23pp.*

While the major focus of the present study, as reflected in Volume II, III, and V, has been upon the overseas activities of the four U.S. automobile manufacturers, a supplementary concern has been to develop insights into the flows or transfers of technology between each U.S. parent corporation and its subsidiaries and affiliates overseas. Volume IV presents some observations and a preliminary assessment of these technology flows. The examination is far from comprehensive and only peripherally considers the issues of technology transfers between a U.S. manufacturer and independent foreign automobile manufacturers or other independent firms.

**0654 Multinational Activities of Major U.S. Automotive Producers. Volume V. Diffusion of Production and Sales Operations Abroad.**

*Ronstadt (Robert C.) Associates, Inc., Dover, MA. Robert C. Ronstadt, William Casey, J.P., Jeannet, John Marthinsen, and Robert Whorf. Sept. 1978. 115pp.*

This is Volume V on the multi-national activities of the major U.S. automotive producers. The purpose of this Volume is to evaluate the foreign manufacturing and sales activities of the General Motors Corporation, Ford Motor Company, and Chrysler Corporation. In the following pages, data, accessed from the databank of the Harvard Business School's Multinational Enterprise Project, are presented, summarized and analyzed. Special programs were written to access the data from General Motors, Ford, and Chrysler Corporation and to format the data for variables related to principal activity, location, size, ownership, and markets.

**0769 Foreign Production of Technology-Intensive Products by U.S.-Based Multinational Enterprises.**

*Harvard Univ., Boston, MA. Graduate School of Business Administration. Raymond Vernon and W. H. Davidson. Jan. 15, 1979. 155pp.*

The project examined the transfer of production of 400 U.S. product innovations to overseas affiliates by U.S. multinationals in the post-World War II period. The objective was to assess the rate, direction, and determinants of technology transfer and diffusion through foreign direct investment and foreign subsidiaries of U.S.-based firms.

**0924 Models and Variables for Explaining the Location of Production by U.S. Multinational Enterprises.**

*National Bureau of Economic Research, Inc., New York. Robert E. Lipsey, Irving B. Kravis, and J. Weinblatt. June 1, 1979. 93pp.*

The study was the first part of a project to investigate the interaction between domestic and foreign investment of U.S. firms. The study constructed a formal model of location decisions by U.S. multinational firms which showed how these decisions were affected by quality differences in labor and capital, among countries, differences in levels of taxation, differences in the degree of protection of local markets for both raw materials and capital goods, and differences in the size and growth of local markets.

## Reel IV

### MULTINATIONAL CORPORATIONS (Cont.)

**0001 Taxation and Multinational Firm Behavior: Some Evidence from Puerto Rico.**

*Rochester University, New York College of Arts and Science. Eric W. Bond. April 17, 1980. 117pp.*

The purpose of the research was to develop a model to evaluate the importance of tax rates as a factor in the location decision to multinational firms, and to study the specific effects of the tax exemption program in Puerto Rico. The conclusion from this model was that foreign countries could use low foreign tax rates to attract investments by multinationals and that the potential to use tax rates to attract investment was much greater for Puerto Rico because of its special relationship with the United States.

**0118 Benefits and Costs of Tax Deferral on Retained Earnings of Controlled Foreign Corporations.**

*Bureau of International Labor Affairs, Washington, D.C. Office of Foreign Economic Research. Don Rousslang. Aug. 1980. 27pp.*

The purpose of this study was to examine the argument in favor of deferral of U.S. taxes on non-repatriated income of foreign subsidiaries. The analysis was done by measuring the contribution of deferral to two different types of tax neutrality; capital export neutrality and national neutrality. Taxes have capital export neutrality if they do not discourage U.S. firms from locating their productive facilities wherever the pre-tax rate of return is highest. Taxes have national neutrality if they cause firms to be indifferent between new domestic and foreign investment when before-tax return on the new domestic investment is equal to the return on the new foreign investment after foreign taxes, less any reduction the new foreign investment would cause for the returns after foreign taxes on the U.S. foreign investment stock already in place.

## OPEC

**0145 The PIMS U.S.—OPEC Petroleum Report, 1973.**

*Federal Energy Administration, Washington, D.C. Office of Energy Statistics. July 1, 1974. 30pp.*

The Petroleum Industry Monitoring System (PIMS) collects and analyzes statistics on petroleum imports from OPEC countries in conjunction with its regular responsibilities of monitoring prices and supplies of crude petroleum and petroleum products. This report includes information on all members of OPEC with tables and charts prepared in such a manner as to permit the reader to readily distinguish between the Arab and non-Arab members of OPEC. It is a special section dedicated to the Arab

- embargo to permit the reader to appraise the initial effects of this action as they manifested themselves in the two months of 1973.
- 0175 OPEC and the Experience of Previous International Commodity Cartels.**  
*Massachusetts Inst. of Tech., Cambridge. Energy Lab. Aug. 1975. 42pp.*  
 A review was made on the efficiency and longevity of international cartel agreements using 51 cartels in 18 industries for analysis. Cartel success or efficiency was defined in terms of the ability of the organization to raise prices at least 200% above the unit costs of production and distribution.
- 0217 OPEC and the Monopoly Price of World Oil (World Oil Project).**  
*Massachusetts Inst. of Tech., Cambridge. Energy Lab. Jacques Cremer and Martin L. Weitzman. April 1976. 18pp.*  
 The report presents a dynamic model of the behavior of OPEC viewed as a monopolist sharing the world oil market with a competitive sector. In order to study the influence of long term considerations on the price of oil, a dynamic model of the capital theoretic type was built.
- 0235 The International Implications of the Vertical Divestiture of U.S. Oil Companies.**  
*George Washington Univ., Washington, D.C. Energy Policy Research Project. William A. Johnson and Richard E. Messick. May 25, 1976. 37pp.*  
 This report examines the structure of OPEC and the performance of the international oil companies during the 1973-74 embargo with reference to proposals to divest U.S. oil companies from their foreign sources of oil.
- 0272 The Petrodollar Problem.**  
*George Washington Univ., Washington, D.C. Energy Policy Research Project. Robert M. Dunn and Sara Krulwich. July 1976. 64pp.*  
 This paper examines the 'petrodollar' problem. It concludes that, while initial concerns over the financial impact of recent OPEC prices hikes were exaggerated, they are, nonetheless, real. In particular, some of the poorer non-oil producing countries are faced with the prospect of substantially lessened rates of economic growth and bankruptcy. The alternative is a weakened U.S. banking system.
- 0336 Petrodollar Recycling: The Problem That Seemed to Go Away.**  
*George Washington Univ., Washington, D.C. Energy Policy Research Project. Robert M. Dunn and Sara Krulwich. January 1977. 32pp.*  
 This report examines the petrodollar problem, focusing on why the problem has not disappeared, but continues to pose potential difficulties for the world's economy. Of key importance are potential difficulties for the less developed countries and the world's monetary system.
- 0368 An Analysis of the Relationship Between OPEC Oil Revenues and Sales of United States Arms.**  
*Air Force Inst. of Technology. Wright-Patterson AFB, Ohio. School of Systems and Logistics. Thomas P. Gardner and Joseph L. Reuwer, Jr. Sept. 1978. 139pp.*  
 This research suggests a positive relationship between U.S. arms deliveries to OPEC and OPEC oil sales to the U.S. The thesis demonstrates that the constant dollar price of OPEC oil has essentially only doubled since 1970. The dominance of OPEC purchases in total U.S. arms sales is shown to have begun as early as 1971. The authors have examined and presented, in 1975 constant dollar terms, arms deliveries, arms agreements, all other U.S. exports and oil imports between the United States and OPEC countries. Difficulties in identifying original sources of oil imported into the U.S., particularly through U.S. possessions such as the Virgin Islands, have been highlighted. (Author)
- 0507 An Attempt to Explain the Pricing of OPEC Exports.**  
*Harvard Univ., Cambridge, MA. Energy and Environmental Policy Center. R. Fry. Aug. 8, 1980. 11pp.*  
 A macroeconomic model which can be used to measure the macroeconomic costs of

an oil import supply description is being developed. The model allows some insight into the benefits (or costs) of imposing an oil import tariff in the event of a disruption. Most of the impact of a disruption is on the price of the oil. An OPEC supply function is described which can determine the extent of the price rise resulting from a disruption. (ERA citation 06:013383)

**0518 Current Developments Affecting Future Availability of Oil and Gas in the Free World.**

*Lawrence Livermore National Lab., CA. I. Y. Borg, March 17, 1981. 26pp.*

This review focuses on developments during the last 18 months likely to affect the availability of oil and gas in coming decades. These developments include new discoveries (Hibernia, Beaufort Sea, Ivory Coast, the Western and Eastern Overthrust Belts, and the Gulf of Suez). They also include new energy policies of both producer and consumer nations that will ultimately affect supply. New policies and a rapidly increasing domestic demand may stabilize Mexico's exports at their present level, even if production reaches 4 to 5 million barrels per day (b/d). Canada's new policy toward foreign oil companies operating within her borders may well stifle exploration and investment in both oil and tar sand deposits. OPEC contract and pricing schemes are profoundly altering distribution systems and markets. OPEC plans to allocate oil arbitrarily in times of shortage could disrupt the industrial world. Inability to reassign oil contracted for from OPEC nations is forcing buyers to increase storage capacity. The oil inventories reported are not equivalent to availability, since 50 to 90% is essentially unavailable. Thus, stock equivalent to 110 days of imports may include only a few weeks of primary usable stocks. Only Sweden and South Africa have federally owned oil reserves that could meet demand for periods of months or years. Natural gas from the U.S.S.R. will probably comprise 30% of Western Europe's total supply in the 1990s, if plans to import gas from the Yamal Peninsula come to fruition. Soviet gas is seen as an acceptable alternative to undependable OPEC oil supplies and similarly unreliable gas supplies from North Africa. However, the proposed, increased dependency on the U.S.S.R. may add a new dimension to Soviet and Western European politics. (ERA citation 06:023129)

## CARTELS

**0544 Commodity Supply Restrictions Study: Cartelization in the World Cobalt Market: Economic Analysis and Policy Implications.**

*Charles River Associates, Inc., Cambridge, Mass. August 1976. 91pp.*

This volume applies the analytical framework to study supply, demand, and price formation in the cobalt market as a background for policy formation. It also analyzes the effects and likelihood of a producer country cartel or supply disruption. Finally, it presents policy and technological strategies in response to cartel formations or supply cutoffs.

**0635 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Platinum and Palladium Markets.**

*Charles River Associates, Inc., Cambridge, Mass. August 1976. 148pp.*

An analysis is made of the supply and demand conditions in the world markets for platinum and palladium and the nature of the U.S. dependence on foreign supplies. The objective is to evaluate the probability and consequences of disruptions in the supply of new platinum metals to the United States or of cartel sponsored increases in the prices of these metals. The analysis of the consequences of supply disruptions and cartelization of the platinum and palladium markets is based on both qualitative assessment of the characteristics of those industries and a theoretical model of firm behavior applied to the industries which use platinum metals as a capital good.

**0783 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Copper Market.**

*Charles River Associates, Inc., Cambridge, Mass. August 1976. 117pp.*

This volume examines the likelihood of future crises in copper supply and the policy

alternatives available to the United States. The major conclusion is that supply crises are fairly unlikely and that the potential damage to the U.S. economy from such crises would be minimal. Even when very pessimistic assumptions are made about the ability of the United States and other countries to adapt to disruptive export policies of CIPEC (the organization of foreign copper producers), it appears that CIPEC does not have enough market power to cause severe economic damage to the principal consuming countries. The analysis addresses the likelihood of a number of potential supply crises.

**0900 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Chromite Market.**

*Charles River Associates, Inc., Cambridge, Mass. August 1976. 242pp.*

This volume presents an analysis of the likelihood and the consequences for the United States of disruptions in our foreign supplies of chromium, a material which we do not mine domestically. Information about foreign producers is studied for indications of the probability and nature of potential supply disruptions, whether caused by cartels formed for economic gain or by actions of individual supplying countries. Considerable attention is given to assessing the market behavior of U.S. consumers of chromium, from which can be inferred the economic cost which higher chromium prices would inflict. Finally, economic policy options, particularly the standard tools of stockpiles and tariffs, are investigated in terms of minimizing the total expected welfare loss for the economy. Investments in technological projects which would ameliorate U.S. vulnerability to chromium supply disruptions are subjected to general analysis, assuming a coordinated stockpile and tariff policy. Finally, in a brief historical review, potential past crises in the chromite market are assessed for lessons relevant to possible future supply disruptions.

## Reel V

### CARTELS (Cont.)

**0001 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Manganese Market.**

*Charles River Associates, Inc., Cambridge, Mass. Sept. 1976. 207pp.*

This volume analyzes the likelihood and the consequences for the United States of non-military disruptions in foreign supplies of higher grade manganese ores, materials which the U.S. does not mine domestically. Information about foreign producers is studied for indications of the probability and nature of potential non-military supply disruptions which would result either from formal cartels explicitly formed for economic gain, or from more tacit forms of collusion. Considerable attention is given to the demand of U.S. steelmakers for manganese at various prices, from which the economic cost which higher manganese prices would inflict can be inferred. Finally, economic policy options are investigated in terms of minimizing the total expected welfare loss for the economy. Stockpiling policy is investigated in detail both because it is a fundamental policy response, and because the most relevant analysis of other policy options, such as investment in technological projects, generally assumes a coordinated stockpile policy. A coordinated tariff policy is also considered.

**0208 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Energy Market.**

*Charles River Associates, Inc., Cambridge, Mass. Nov. 1976. 377pp.*

A number of policies have been proposed to reduce U.S. dependence on imported oil or to reduce U.S. vulnerability in some other way. Among the policies proposed are stockpiling, quotas and tariffs, subsidies to domestic oil producers, accelerated development of nuclear power, and conversion of oil fired generating plants to coal. Of special concern is the proposal that U.S. government subsidize or offer other incentives to the development of synthetic fuels, since these technologies have not

yet been significantly developed on a commercial scale in the United States. This study examines these different policies, their benefits and costs, and compares them as instruments to reduce the impact of future supply disruptions. The policy measures chosen for analysis are representative of types of actions currently under consideration to mitigate the effects of OPEC.

**0585 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: Overview and Summary.**

*Charles River Associates, Inc., Cambridge, Mass. Feb. 1977. 258pp.*

This volume summarizes the other eight volumes of the study which seeks to evaluate alternative federal policies which deal with restrictions initiated by producer countries on supplies of major imported materials. A major premise of CRA's effort was that rational policy analysis must proceed from a realistic and market specific analysis of risks to a similarly concrete evaluation of potential damage, and then to consideration of a range of policy instruments including not only government encouragement of technological change, but also stockpiling, tariffs and quotas, subsidies, and other measures. The analytical approach combined an assessment of real dangers to the U.S. economy in various materials markets with an analysis of the costs of different policies designed to reduce the impacts of foreign supply restrictions.

**0843 Commodity Supply Restrictions Study: Policy Implications of Producer Country Supply Restrictions: The World Aluminum/Bauxite Market.**

*Charles River Associates, Inc., Cambridge, Mass. March 1977. 272pp.*

The report analyzes the impact of the world bauxite and aluminum markets of the recently formed International Bauxite Association (IBA), a cartel organized by the bauxite producing and exporting nations. It examines the probable price and output policies of the IBA and the potential effect of these policies on the U.S. economy. The resource loss to the United States resulting from the cartel's actions is estimated, and alternate U.S. government policies for modifying the IBA's behavior and reducing the resource loss resulting from cartel pricing and possible supply cutoffs are analyzed. Particular emphasis is given to the role of innovative technology.

## Reel VI

### FOREIGN INVESTMENT

**0001 U.S. Direct Investments Abroad—1966. Part II. Investment Position, Financial and Operating Data. Group 1. Preliminary Report on Foreign Affiliates of the U.S. Petroleum Industry.**

*Office of Business Economics, Washington, D.C. Dec. 1971. 110pp.*

The publication covers the direct investment position of U.S. petroleum reporters and their affiliates' balance sheets, statements of income and sources and uses of funds. Data are also given on employment of the affiliates, their sales, and U.S. exports by petroleum reporters. The data are for 1966 and cover 130 U.S. parents and 2,278 foreign affiliates.

**0111 U.S. Direct Investments Abroad—1966. Part II. Investment Position, Financial and Operating Data. Group 2. Preliminary Report on Foreign Affiliates of U.S. Manufacturing Industries.**

*Bureau of Economic Analysis, Washington, D.C. Jan. 1972. 132pp.*

The publication covers the direct investment position of U.S. manufacturing reporters and their affiliates' balance sheets, statements of income, and sources and uses of funds. Data are also given on employment of the affiliates, their sales, and U.S. exports by manufacturing reporters. The data are for 1966 and cover 1,750 U.S. parents and 13,400 foreign affiliates.

- 0243 U.S. Direct Investments Abroad—1966. Part II. Investment Position, Financial and Operating Data. Group 3. Preliminary Report on Foreign Affiliates of U.S. Reporters in U.S. Industries other than Manufacturing and Petroleum.**

*Bureau of Economic Analysis, Washington, D.C. April 1972. 129pp.*

The report covers the direct investment position of U.S. reporting companies in U.S. industries other than manufacturing and petroleum and gives their affiliates' balance sheets, statements of income, and sources and uses of funds. Considerable data are given on employment of the affiliates, their sales, and U.S. exports of their parent companies. The data cover 1,460 U.S. parent companies and about 7,830 foreign affiliates.

- 0372 Foreign Ownership Control and Influence on Domestic Energy Sources and Supply.**

*Federal Energy Administration, Washington, D.C. Office of Internal Energy Affairs. Arthur J. Warner. Dec. 1974. 93pp.*

This report reviews the foreign ownership of, influence on, and control of domestic energy supplies and sources and makes recommendations that will permit the monitoring of such foreign ownership. The study identifies 27 foreign companies, or subsidiaries of such companies, which control some segment of U.S. petroleum and natural gas supply. The analysis of foreign ownership of U.S. energy activity indicates that direct foreign influence over U.S. energy ranges from 2.4 to 12 percent, with the greatest influence found in petroleum downstream operations. Improved reliability in monitoring foreign control and influence will require systematic identification of foreign interest investments in specific sectors of U.S. energy activities and coordinated effort between all government data systems which collect pertinent energy data, corporation equity interests, and foreign investments. Further monitoring recommendations should be forthcoming from a study conducted by the Department of Commerce and Treasury pursuant to Public Law 93-479, to be completed in 1976.

- 0465 Innovation and Foreign Investment Behavior of the U.S. Pharmaceutical Industry.**

*National Bureau of Economic Research, Inc., New York. Benjamin I. Cohen, William T. Beck, and Jorge Katz. Aug. 1975. 72pp.*

This study analyzes the relationship between the development of new drugs (distinguished between 'Innovative' and 'Imitative' new drugs) and international activities of U.S. drug companies. It examines the causes and consequences of innovation; trends in the rate of drug innovation and factors influencing these trends; and characteristics of drug firms in terms of size, research investment, and innovativeness; the relation of innovativeness to the foreign activities of individual firms; and the diffusion of the use of a sample of 7 new drugs and the effect of the presence of manufacturing plants on the rate of diffusion.

- 0537 Technology Transfer from Foreign Direct Investment in the United States. Report of a Seminar Series.**

*National Academy of Sciences, Washington, D.C. 1976. 74pp.*

The most important conclusion reached in four seminars is that foreign direct investment has not led to significant net technology outflow in the four sectors of U.S. industry that were examined. Very few instances were identified in which foreign direct investment resulted in any appreciable net outflow of technology. If such investment did yield a technology outflow, it had been expected that this would be observed in the industries selected for examination. The participants in these seminars believe that no important cases of direct investment leading to technology transfer were omitted.

- 0611 Exports and Foreign Investment in the Pharmaceutical Industry.**

*National Bureau of Economic Research, Inc., New York. Robert E. Lipsey, Merle Yahr Weiss, and Linda Quandt. Jan. 1976. 97pp.*

This study examines the relationship between exports from the U.S. and other countries (13) and overseas production by U.S. and foreign companies in the pharmaceutical industry.

**0708 Selected Data on U.S. Direct Investment Abroad, 1966-78.**

*Bureau of Economic Analysis, Washington, D.C. 1979. 108pp.*

This report contains estimates for 1966-78 for the following series related to U.S. direct investment abroad; U.S. direct investment position abroad; equity and inter-company account outflows; reinvested earnings; interest, dividends, and earnings of unincorporated affiliates; income, earnings; fees and royalties; and royalties and license fees.

**0816 Technology Transfer as a Motivation for United States Direct Investment by European Firms.**

*Battelle Columbus Labs., Ohio. W. Halder Fisher. Dec. 31, 1977. 131pp.*

The project develops a methodology (1) to assess technology transfer into and/or out of the U.S. involving a U.S. subsidiary of a foreign enterprise, and (2) to evaluate the significance of technology transfer as an explanation for growing direct investment of foreign corporations in the U.S. It examines seven retrospective case studies of selected investments by foreign enterprises to provide an indication of transfers of manufacturing technology. These case studies examine in- and out-flow of know-how in terms of patent acquisitions; capital, procedural, and output changes; personnel transfers and exchange. The senders or recipients of this know-how include the U.S. subsidiary, home country facilities of European firms, and subsidiaries in third countries.

## Reel VII

### FOREIGN INVESTMENT (Cont.)

**0001 The Role of Foreign Governments in the Energy Industries.**

*Federal Energy Administration, Washington, D.C. Office of International Energy Affairs. Oct. 1977. 383pp.*

This study brings together a summary statement of how governments' relationships with the energy industries have evolved in 36 of the world's most important energy producing or consuming nations and through the various international institutions which these countries have established. It provides a useful, extensive information background for those who are concerned with the direction and the political and economic consequences of a growing governmental concern with, and participation in, commercial energy activities.

**0384 Domestic Policy Issues Stemming from U.S. Direct Investment Abroad.**

*General Accounting Office, Washington, D.C. International Div. Jan. 16, 1978. 93pp.*

The impact of U.S. business investment abroad on the U.S. economy and security is subject to considerable speculation and debate. This report discusses some investment issues confronting U.S. policymakers, such as job creation or loss, capital and technology outflows and raw materials costs and availability. It also offers observations concerning the need for new data and analyses and comments on new trends in overseas investment and profitability.

**0477 Incentives and Performance Requirements for Foreign Direct Investments in Selected Countries.**

*U.S. Department of Commerce, Industry and Trade Administration, Office of International Finance, Investment & Service, Investment Policy Division. 288pp.*

The 285-page study covers foreign direct investment incentives and performance requirements used in 24 industrialized and 15 leading developing countries. The information, which includes legal requirements, regulatory measures and administrative actions, was gathered from U.S. posts abroad, published sources and, in a few instances, foreign embassy staffs in Washington or foreign investment offices in New York. The study shows that countries offer incentives primarily to promote priority

industries, develop economically backward or depressed areas, create jobs and/or improve their balance-of-payments position. Most incentives focus on manufacturing industries; many are directed toward export-oriented industries. The paper also lists performance requirements, i.e., measures governments employ to ensure that investments serve particular national objectives.

- 0765 Foreign Direct Investment in U.S. Energy Sources and Supplies, 1976 and 1977.**  
*Department of Energy, Washington, D.C. Office of International Affairs. April 1978. 29pp.*

For abstract, see ERA citation 04:046768.

- 0794 Foreign Ownership of U.S. Farmland—Much Concern, Little Data.**  
*General Accounting Office, Washington, D.C. Community and Economic Development Div. June 12, 1978. 81pp.*

The report is in response to a request from the Senate Committee on Agriculture, Nutrition, and Forestry for information on (1) state laws on foreign investment in U.S. farmland, (2) availability of data on this subject at state and county levels, and (3) alternatives for a nationwide data collection system. Twenty-five states had laws that placed some constraints on foreign ownership of land; 25 states did not. In the aggregate, state laws do not significantly inhibit foreign ownership. Information indicates that at least 44,700 acres (0.3 percent) of total county farmland in 25 counties in 5 states GAO visited were owned by nonresident alien interests. Reliable data is difficult to obtain. Current or planned Federal data collection efforts are not encouraging. Of the alternatives considered, GAO believes a Federal registration system, similar to the current resident alien registration system, may be the simplest and best means for obtaining nationwide data.

- 0875 Sources and Uses of Funds of Majority-Owned Foreign Affiliates of U.S. Companies, 1973-76.**

*Bureau of Economic Analysis, Washington, D.C. Ida May Mantel. May 1979. 59pp.*

Sources and uses of funds in 1973-76 are analyzed for a sample of majority-owned foreign affiliates of U.S. companies. Emphasized are nonfinancial industries: petroleum, manufacturing, and other. In general, uses of funds are changes in affiliates' assets, and sources of funds are changes in their liabilities and capital accounts.

- 0934 Are Organization of Petroleum Exporting Countries (OPEC) Financial Holdings a Danger to U.S. Banks or the Economy.**

*General Accounting Office, Washington, D.C. Energy and Minerals Div. June 11, 1979. 61pp.*

Possible liquidation of OPEC assets does not appear to be an immediate threat to U.S. financial markets or its banking system. The long-term effects of a lack of direct access to OPEC funds are likely to include increased funding costs for U.S. banks and impaired profitability. GAO found no evidence of large unreported OPEC surplus holdings which are being invested in the United States.

## Reel VIII

### FOREIGN INVESTMENT (Cont.)

- 0001 Foreign Investment in U.S. Agricultural Land—How It Shapes Up.**  
*General Accounting Office, Washington, D.C. Community and Economic Development Div. July 30, 1979. 119pp.*

The report, requested by the Senate Committee on Agriculture, Nutrition, and Forestry, provides an indepth perspective on foreign investment in U.S. agricultural land. Foreign buyers from at least 30 countries bought about 8 percent (248,146 acres) of

the 3 million acres of agricultural land that changed hands in a sample of 148 counties in 10 states during 18 months ended June 30, 1978.

**0120 Foreign Investments in the Pacific Northwest, 1979: An Inventory of Nondomestic Investments Made in the Pacific Northwest.**

*Martech Associates. Jan. 1980. 84pp.*

The 1979 "Inventory of Nondomestic Investments Made in the Pacific Northwest" was initiated by the Pacific Northwest Regional Commission to provide an inventory of manufacturing, nonmanufacturing, resource acquisition, including real estate, and financial corporations funded by foreign capital in the states of Idaho, Oregon, and Washington. The study task was to identify foreign investors in the Pacific Northwest and to gather selected economic data relative to the investments so that their roll in Northwest economic development can be better evaluated.

The Pacific Northwest Regional Commission is a unique federal/state partnership formed under the authority of the Public Works and Economic Act of 1965. The commission's primary purpose is to initiate, coordinate, and implement plans and programs to improve the overall economic well being of the Pacific Northwest.

**0204 Foreign Ownership of U.S. Agricultural Land.**

*Economics, Statistics, and Cooperatives Service, Washington, D.C. Natural Resource Economics Div. Feb. 1980. 38pp.*

Foreigners owned 5.2 million acres of U.S. agricultural land as of October 31, 1979. This is less than 0.5 percent of all privately held agricultural land, and less than 0.25 percent of all land in the United States. This share is unlikely to have any aggregate impact on agriculture, positive or negative. However, some communities could be locally affected in areas of heaviest concentration. These conclusions are based on an analysis of reports submitted in compliance with the Agricultural Foreign Investment Disclosure Act of 1978.

**0242 Foreign Investment in the U.S. Food and Agricultural System: An Overview.**

*Economics, Statistics, and Cooperatives Service, Washington, D.C. National Economics Div. Kenneth R. Krause. May 1980. 91pp.*

Foreign direct investment in U.S. firms and real estate about doubled between 1973 and 1978. In response, several studies were commissioned by the Executive Branch to ascertain the level and influence of foreign investment and to require reporting of foreign investment in U.S. agricultural land. Most of the increase in direct investment came from Western Europe and Canada, not from oil-exporting countries. Foreign investors do not have dominant control of firms throughout the input, production, marketing, and processing of any one food item.

**0333 Foreign Direct Investment in the United States—The Federal Role.**

*General Accounting Office, Washington, D.C. International Div. June 3, 1980. 94pp.*

The report discusses the growth of the concerns over foreign direct investment in the United States, the Federal Government's efforts to assist the States in attracting foreign investment, and the interstate and international competition for investment. The review was made to assess the role of the Federal Government because these matters have received considerable congressional attention.

**0427 Monitoring Foreign Ownership of U.S. Real Estate: A Report to the Congress. Volume 1.**

*Economics and Statistics Service. Washington, D.C. Nov. 1980. 470pp.*

The report presents the first 6 chapters of a study evaluating the feasibility of four methods to obtain information on foreign ownership of U.S. real estate: introduction; the real estate industry and the foreign investor; State controls and reporting requirements; regulations and reporting requirements abroad; technical, economic, administrative and legal feasibility of single-purpose monitoring systems; and legal aspects of single-purpose monitoring systems.

# Reel IX

## FOREIGN INVESTMENT (Cont.)

- 0001 Monitoring Foreign Ownership of U.S. Real Estate: A Report to the Congress. Volume 2.**

*Economics and Statistics Service, Washington, D.C. Nov. 1980. 412pp.*

The report presents Chapters 7 through 12 of a study evaluating the feasibility of four methods to obtain information on foreign ownership of U.S. real estate: multiple-purpose land data systems; current land record systems in the U.S.; land information systems abroad; technical, economic and administrative feasibility of multiple-purpose land data systems; legal feasibility of multiple-purpose land data systems; politics of information.

- 0413 Monitoring Foreign Ownership of U.S. Real Estate: A Report to the Congress. Volume 3.**

*Economics and Statistics Service, Washington, D.C. Nov. 1980. 268pp.*

The report presents Chapters 13 through 20 of a study evaluating the feasibility of four methods to obtain information on foreign ownership of U.S. real estate: economic effects of foreign farmland investments on farms and rural communities; foreign real estate practices and the economy; general economic consequences; transnational conveyancing and disclosure of ownership; federal taxes and foreign held real estate; intergovernmental exchange of foreign investment information; available data: a critical review; the foreign investor as absentee owner.

- 0681 Monitoring Foreign Ownership of U.S. Real Estate: A Report to the Congress (Summary).**

*Economics and Statistics Service, Washington, D.C. Nov. 1980. 41pp.*

The technical and legal feasibility of four methods to obtain information on foreign ownership of U.S. real estate are analyzed and evaluated: (1) A centralized compulsory Federal registration system exclusively devoted to reports by foreign owners of U.S. real estate, (2) A compilation of data on foreign holdings of U.S. real estate from Federal offices already requiring reports on investment, income, or other related matters, (3) Foreign holdings data from a multipurpose land information system using information collected at the local level and serving a wide range of local, State, and national information needs, and (4) Foreign holdings data from nationwide periodic surveys of all landownership.

- 0722 Foreign Ownership of U.S. Agricultural Land, February 1, 1979, Through February 1, 1980.**

*Economics and Statistics Service, Washington, D.C. Natural Resource Economics Div. Agriculture information bulletin. J. Peter DeBaal. Nov. 1980. 44pp.*

Foreigners owned 5.6 million acres of U.S. agricultural land as of February 1, 1980. This is slightly less than 0.5 percent of all privately held agricultural land, and less than 0.25 percent of all land in the United States. This share is unlikely to have any aggregate impact on agriculture, either positive or negative. However, some communities could be locally affected in areas of heaviest concentration. These conclusions are based on an analysis of reports submitted in compliance with the Agricultural Foreign Investment Disclosure Act of 1978.

- 0766 Foreign Investment In U.S. Seafood Processing Industry Difficult to Assess.**

*General Accounting Office, Washington, D.C. Community and Economic Development Div. March 30, 1981. 83pp.*

Foreign investment in the U.S. seafood processing industry has increased in recent years, but its extent and impact are uncertain. Some industry and public officials are concerned that dependency on foreign sources of capital is causing U.S. processors to lose control of the industry. Complete and actual disclosure of investment data is

lacking, making analyses difficult. GAO raises significant questions concerning the effect of this investment.

**0849 Foreign Ownership of U.S. Agricultural Land-Highlights.**

*Economics and Statistics Service, Washington, D.C. Natural Resource Economics Div. Agriculture information bulletin. Peter DeBraal. April 1981. 6pp.*

Foreign entities and individuals reported by December 31, 1980, that they owned 7.8 million acres (3.2 million hectares) or 0.6 percent of U.S. agricultural land. The 2.2-million-acre (0.9 million hectares) rise since the U.S. Department of Agriculture's last report does not necessarily mean that all of the increase in foreign landownership occurred since the closing date of the previous report-February 1, 1980. The increase is partially due to the inclusion of 1979 reports filed after last year's cutoff date.

**0855 Foreign Ownership of U.S. Agricultural Land.**

*Economics and Statistics Service, Washington, D.C. Natural Resource Economics Div. Agriculture information bulletin. J. Peter DeBraal and T. Alexander Majchrowicz. July 1981. 69pp.*

Foreigners owned 7.8 million acres of U.S. agricultural land as of December 31, 1980. This is 0.6 percent of all privately held agricultural land and 0.35 percent of all land in the United States. This share is too small to measure the impact on agriculture at the national level. However, some communities in areas of heaviest concentration could be adversely affected. These findings are based on an analysis of reports submitted in compliance with the Agricultural Foreign Investment Disclosure Act of 1978.

## Reel X

### TECHNOLOGY TRANSFER

**0001 The Sale of Technology Through Licensing.**

*Yale Univ., New Haven. Dept. of Economics. Robert W. Wilson and Merton J. Peck. May 1975. 219pp.*

The study investigates the sale of technology by business firms through licensing. Three questions are examined: the magnitude of technology sales relative to the stock of new technology; the returns from technology sales relative to internal use of technology by the firm; and differences and similarities between domestic and international sales of technology. A theoretical framework of technology sales is developed and is empirically evaluated, using U.S. and Japanese data. Publicly available data are used in the statistical analysis.

**0220 KamAZ: U.S. Technology Transfer to the Soviet Union.**

*George Washington Univ., Washington, D.C. Graduate Program in Science, Technology and Public Policy. Harlan S. Finer and Howard J. Gobstein. Nov. 1975. 39pp.*

The participation of U.S. firms in the construction of the Soviet Kama River Truck Plant (KamAZ) was selected as a case study to illustrate U.S. technology transfer to the Soviet Union. Important political, strategic, and economic issues are highlighted. The changing political and economic relationship between the two superpowers, the practical problems involved in the interaction between U.S. firms and Soviet officials, and the project's implications for future U.S.-Soviet commercial relations are discussed. The central theme of the study is that, although military and strategic considerations still weigh heavily on U.S. Government decision-making in this area, the improved political relationship between the United States and the Soviet Union has resulted in a shift of emphasis toward the economic and commercial implications of technology transfer.

**0279 Technology Transfer and U.S. Foreign Policy: General Report.**

*George Washington Univ., Washington, D.C. Graduate Program in Science, Technology and Public Policy. Henry R. Nau. Dec. 1975. 209pp.*

Post-World War II policies of the United States concerning the export of U.S. technology are studied: related issues and trends are identified and assessed. The study reviews the mechanisms and institutions by which technology has been transferred in the contexts of strategic-military security, foreign assistance programs, and private, corporate industrial activities. It is found that the issues and mechanisms appear to differ widely in these settings, with little overall coordination. Four case studies provide insight into some economic uncertainties, as well as various political pressures on governments and corporations, involving technology exports.

- 0488 **U.S. Technology and International Trade. Proceedings of the Technical Session at the Annual Meeting (11th) April 23-24, 1975.**

*National Academy of Engineering, Washington, D.C. 1976. 107pp.*

A series of papers was presented at a public meeting and dealing with some major issues underlying the relationship of U.S. technology and international trade. Following presentations included: Introduction; Technology and Trade—Public Policy Issues; Technology and Trade—The High Technology Company; The Chemical Process Industries in International Investment and Trade; Case Studies—Electronics—Japan, and Export-Import Bank; Panel Presentations—Mechanism for Policy Concerning Industrial Technology; Summation.

- 0595 **Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.**

*Pennsylvania Univ., Philadelphia. Edwin Mansfield. 1978. 104pp.*

The final report is composed of three main parts. A paper entitled 'Foreign Trade and U.S. Research and Development', considers questions concerning (1) the percentage of the total returns from U.S. firms' research and development projects stemming from foreign markets or foreign utilization; (2) the extent U.S. research and development expenditures would decline if U.S. firms could not utilize various channels to transfer and exploit their technology abroad; (3) the relation of characteristics of a firm's research and development portfolio to the extent of its foreign sales; and (4) the extent U.S. research and development firms actually do use various channels (foreign subsidiaries, exports, licensing, joint ventures) to transfer their technology abroad. A paper entitled 'Overseas Research and Development by U.S.-Based Firms' examines the minimum economic scale for an overseas laboratory, the types and value of laboratory work performed overseas by U.S. firms, the amount of overseas expenditures in the past, present, and future, and a cost comparison of performing research and development work in the U.S. and overseas. Sample questionnaires provide an example of how the basic data were obtained in these studies.

- 0699 **The Department of Defense Statement on Critical Technologies for Export Control by Dr. Ruth M. Davis Deputy Under Secretary of Defense for Research and Advanced Technology Before the Subcommittee on International Economic Policy and Trade Committee on Foreign Affairs of the United States House of Representatives 96th Congress, First Session.**

*Office of the Deputy Under Secretary of Defense for Research and Engineering (R/AT), Washington, D.C. Ruth M. Davis. March 1979. 36pp.*

Contents: Describe the genesis of what has become known as the Critical Technology Approach to the control of exports of U.S. technology; Discuss some of the actions taken by DoD in the past few years to provide for more effective controls on the export of technology with significant military value; Discuss the present status of our work in developing the Critical Technology Approach to controlling the export of U.S. technology; and Provide a prognosis of the next steps in the implementation of the Critical Technology Approach which will highlight some of the relevant issues.

- 0735 **Technology and East-West Trade.**

*Office of Technology Assessment, Washington, D.C. Nov. 1979. 290pp.*

This study identifies and, where possible, evaluates the economic, political, and military costs and benefits that accrue to the United States in its trade with the Soviet Union, Eastern Europe, and the People's Republic of China, taking account of the

complex ways in which these factors interrelate: It sets forth a spectrum of policy options which could potentially affect these relationships, and explains the difficulties in projecting their consequences. The report also provides background information on the functioning and the implications of U.S. trade policy vis-à-vis the Communist world, including the areas of tariff and credit policy and export control, both in the United States and in selected allied nations. Finally, it surveys the past and potential contributions of Western technology to the economies of the Soviet Union and the People's Republic of China.

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