ANALYSIS OF RECENT TRENDS IN U.S. COUNTERTRADE

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Under Section 332
of the Tariff Act of 1930

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Preface

On April 21, 1981, in accordance with the provisions of section 322(b) of the Tariff Act of 1930 (19 U.S.C. 1332(b)) the United States International Trade Commission instituted investigation No. 332-125, Analysis of Recent Trends in U.S. Countertrade. The study was to present information on U.S. countertrade and its significance in the world market and examine the increased use of countertrade by nonmarket economies and less developed countries to finance their imports of U.S. products and technology. Notice of the investigation was given by posting copies of the notice at the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and by publication of the notice in the Federal Register (46 F.R. 82, Apr. 29, 1981).

In its study the Commission collected data from various published sources and from interviews with corporate executives representing more than 50 large U.S. multinational corporations--the most important firms currently involved with countertrade--including 35 in-person interviews. In addition, interviews were held with more than 20 representatives of various industry associations, independent trading companies, and large U.S.-based international banks. Where necessary the data in the report have been aggregated in order not to disclose the business operations of individual firms. Unless otherwise indicated, annual data are on a calendar year basis, and dollar amounts are in U.S. dollars, unadjusted for inflation.

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Executive Summary

Countertrade is a means of financing the flow of goods in international trade through the exchange of products for products. It provides a means by which nonmarket economy countries (NME's) and less developed countries (LDC's) can obtain sophisticated technology and industrial goods, often required for developing a domestic manufacturing infrastructure, while at the same time ensuring export sales to help balance trade flows. Generally, countertrade involves full or partial payment for Western products to be in the form of products produced in the importing NME's or LDC's, rather than payment in a hard currency, or a national money with relativity stable value both internally and in international exchange.

Countertrade activities involving U.S. firms expanded during the period 1970-80, coinciding with the growth of trade between the United States and the NME's and LDC's. This was partially the result of the NME's and LDC's push for a more rapid increase in industrialization programs, high levels of NME's financial indebtedness to Western financial institutions, higher energy costs, overvalued currencies resulting from government controls making them unacceptable to Western product suppliers, and higher priced Western goods reflecting continued inflationary pressures.

The following represent major findings based on information collected in the course of the study concerning the importance of U.S. countertrade and its significance in the world market with emphasis on its use by NME's and LDC's.

1. Importance of countertrade is understated

The exact dollar value of trade affected by countertrade cannot be determined because many of the business arrangements between U.S. firms and NME's and LDC's are viewed as proprietary information and never released to the public. Thus, data presented in this study are believed to understate the full dollar importance of U.S. countertrade.

In addition, many of the goods covered by U.S. countertrade agreements are shipped directly to third country markets from the NME's and/or LDC's countries, thus, not captured in the U.S. trade picture.

Nevertheless, data collected for the Commission's study provide an insight into the present extent of U.S. countertrade by industry sector and an evaluation of its current and likely future impact on U.S. trade with NME's and LDC's.

2. U.S. imports resulting from rising countertrade

The economic importance of countertrade as measured by U.S. imports resulting from such arrangements totaled an estimated $279 million in 1980, representing more than a threefold increase over the 1974 estimated level of $98 million. Based on data collected, at least 60 percent or about $170 million of total countertrade

imports in 1980 were from NME's. During recent years, countertrade practices grew in importance in the chemical and mining sectors, with the importation of Western technology, plant, and machinery paid for by a portion of the output of completed facilities.

Countertrade imports of chemicals, valued at $101 million in 1980, represented 36 percent of total U.S. countertrade imports. This sector recorded the largest growth from 1974 when no imports resulting from countertrade were recorded. The 1980 total of countertrade imports of chemicals reflects only two known imports: anhydrous ammonia and potash. The bulk of the growth in chemicals was anhydrous ammonia from the U.S.S.R. which totaled $95 million in 1980 compared with $28 million in 1978. Potash imports from countertrade arrangements totaled $6 million in 1980.

Countertrade imports of minerals and metals were valued at an estimated $108 million in 1980, compared with $71 million in 1974, representing an increase of 52 percent. Bauxite imports resulting from countertrade agreements were the largest import item in 1980, valued at $58 million compared with $20 million in 1974.

Countertrade imports of all other commodities totaled $70 million in 1980, after recording a high of $97 million in 1978. The 1980 figure represents a growth of 159 percent over the 1974 level of $27 million.

3. Compensation arrangements most important form of countertrade

Study results indicate that compensation countertrade arrangements account for the greatest portion of U.S. countertrade activity. Through compensation arrangements, a U.S. company will arrange to supply plant, machinery, or technology to NME's or LDC's and will receive, as full or partial payment, resultant products of the plant, machinery, or technology. The majority of U.S. countertrade imports of chemicals and raw materials was found to be a result of such transactions. Data gathered for this study show that the preponderance of chemical compensation countertrade imports came from NME's, whereas compensation countertrade imports of raw materials came mostly from LDC's. Total countertrade activity, as measured by the reported value of the contracts negotiated in the period 1974-80, is estimated at about $5 billion, of which approximately $4.2 billion represents compensation arrangements. Data collected from many sources indicate that U.S. exports resulting from compensation arrangements during 1974-80 were estimated to total $3 billion. Imports resulting from compensation arrangements were estimated to total $209 million in 1980, or over 70 percent of total imports resulting from all countertrade activity.

4. U.S. firms are organizing for countertrade

U.S. multinationals contacted during the course of the investigation indicated that they have reacted to increased countertrade demands from NME's and LDC's by establishing special in-house trading organizations devoted to satisfying the countertrade commitments of the parent company. The exact nature of the organization depends on the business of the parent company. The evolution of these U.S. trading organizations is an indication of the growing importance of countertrade as a competitive tool in international trade. Organizing for countertrade assumes an important role, on the basis of discussions with businessmen, in doing business with LDC's and NME's with contracts often awarded to the multinational company offering to "take back" the greatest value of products. In 1974, less than 5 major multinational concerns had in-house trading organizations compared with more than 30 in 1980. These in-house units are increasingly serving a full range of commercial activities including market research, market development, importing and exporting, customs documentation, financial arrangements, and distribution.

5. Countertrade exports exceed imports

The value of countertraded exports in most instances exceeds the value of imports since only a portion of the value of total U.S. countertrade exports will be financed through countertrade imports. In addition, a portion of host-country products exported for countertrade will most likely be shipped to markets other than the United States.

6. Countertrade leads to technology transfer

Countertrade is one vehicle for the transfer of Western technology to NME's and LDC's. To date such transfer has been more common in East-West trade than in North-South trade. Between 1970-80, countertrade arrangements have covered 2000 turnkey plants in a variety of industries in Eastern Europe and the U.S.S.R. In chemicals, U.S. companies have already supplied plant, machinery, and technology worth in excess of an estimated $3.5 billion, especially to the U.S.S.R. These arrangements have partially accounted for Eastern Europe's increased chemical exports to the United States, which rose from $48 million in 1975 to $308 million in 1980. Similarly, compensation arrangements and resulting technology transfers are partially responsible for exports of manufactured goods from Eastern Europe rising from $600 million in 1975 to $2 billion in 1980. Again, these exports to the United States, resulting partially from technology transfer, are estimated to represent less than 50 percent of total output.

Instances of North-South technology--particularly United States-South transfers resulting from countertrade have been rare. Such transfers that have taken place were within the mining/mineral processing sectors.

7. U.S. trade laws can affect countertrade

U.S. trade laws do not distinguish between imports resulting from countertrade contracts and imports resulting from "normal" (cash) trade contracts. Petitions for relief from countertrade imports may be brought under the general import relief statutes (anti-dumping, countervailing duty, escape clause) or under section 406 of the Trade Act of 1974, a special provision which allows relief when imports from communist countries are found to be disrupting a U.S. market.

The Commission has conducted investigations involving two countertrade products -- anhydrous ammonia and truck-trailer axles. Imports of anhydrous ammonia from the U.S.S.R. were examined twice under section 406. In 1979 the Commission found that these imports were disrupting the U.S. market for anhydrous ammonia, but the President took no action. In 1980, at the request of the President following the invasion of Afghanistan, a second investigation was conducted. After a second hearing, the Commission, with new membership, made a negative determination and no relief was provided. The truck-trailer axle case was brought under the anti-dumping law. In a preliminary investigation the Commission found that truck-trailer axles from Hungary were injuring the U.S. truck-trailer axle producers. A settlement was reached among the interested parties, however, and no final investigation was conducted.

8. Likely future developments in U.S. countertrade picture

Countertrade arrangements are likely to continue to grow in the 1980's since the underlying reasons for their expansion in the 1970's remain. In fact, the past successes will most likely underpin a growth in the arrangements with the LDC's and NME's. Most LDC's have instituted programs to further encourage countertrade and many NME's have announced plans for increased technological imports through countertrade.

Based on information gained through interviews with executives of several U.S. multinationals, U.S. firms seeking sales to most NME's and many LDC's will most likely experience future countertrade demands in some form. Some companies, because of the products they are attempting to sell, will most likely face more stringent countertrade requirements than others. Generally, the purchase of low-technology products, such as consumer items, will require higher levels of countertrade financing, and conversely, the purchase of high-technology products, especially computers and telecommunication equipment, will require lower levels of countertrade. Staple food items are not usually involved in countertrade.

U.S. imports of countertrade items are likely to continue to increase barring trade embargoes in the 1980's as several large countertrade-financed chemical and mining facilities contracted in the 1970's come on stream. For example, study data indicate that U.S. and Western European chemical facilities supplied to the U.S.S.R. and Eastern bloc countries through countertrade arrangements will result in annual imports of about $1.4 billion to the West during the 1980's. About $400 million annually is destined for the United States during the 1980's.

Technology transfers through countertrade arrangements are expected to show further gains in the 1980's because of the continued or expanded government program of industrial development in many LDC's and NME's. The emphasis will remain on infrastructure development and, thus, countertrade will most likely continue to impact more on multinational concerns rather than small business. However, with increased familiarity of countertrade as an alternative to traditional trade relationships, it is not inconceivable that small-sized and medium-sized U.S. businesses will increasingly enter into such relationships. This is particularly so in consumer-type goods.

Programs adopted by LDC's are likely to lead to technology transfers from the North, specificially the United States, in the 1980's. There likely will be an exponential growth in technology transfers between the North/South area in the 1980's as the drive to speed industrialization is intensified.

Compensation rather than other forms of countertrade is likely to be the most troublesome arrangement vis-a-vis U.S. trade laws, particularly with NME's. The 1980's may see the first U.S. market issues relating to countertrade arrangements raised with LDC's as more and more developing countries institute export development programs providing export incentives to targeted domestic industries.

Introduction

An increasing number of nonmarket economy countries (NME's) 1/ and less developed countries (LDC's) 2/ are attempting to improve economic conditions by raising standards of living, reducing high unemployment, and increasing productivity by adopting programs of "rapid" industrialization. To induce industrialization in key industrial and agricultural sectors, central governments of these countries are resorting to a variety of new methods. Complicating this drive for industrialization, among other things, has been the high cost of imported energy due to the rapid rise in the cost of oil imports. Further, the economic development process in a number of developing and nonmarket economy countries has been hampered by the incompatibility of their economic systems with those of the industrialized West. This incompatibility, according to the literature, results mainly from the application of divergent economic and political theory to the marketplace and greater central-government controls in manufacturing and energy development. New economic mechanisms are being tried with increasing frequency because the economic objectives of these programs of these less-developed countries and nonmarket economies cannot be met by exclusive reliance on domestic natural resources, labor, or technology.

Probably the fastest growing mechanism used to promote economic development is countertrade. The countertrade transaction consists of a parallel set of obligations wherein the parties each undertake to sell goods or technology to the other in separate but related transactions. The "seller" or "first party" (i.e., a United States corporation) agrees to present its goods to the "buyer" or "second party" (i.e., the government of the People's Republic of China) and agrees to separately purchase goods supplied by the second party, often in an amount equal to an agreed-upon percentage of the purchase price of the first contract. The two agreements are generally separate transactions with separate contracts and separate cash payments, yet both agreements are "linked". 3/

The significance of countertrade transactions in the long-range planning of NME's is becoming increasingly apparent. For example, according to the experiences of several companies surveyed in this report, the Polish

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1/ NME's include: Albania, Bulgaria, Cuba, Czechoslovakia, the German Democratic Republic, Estonia, Hungary, People's Republic of China, Poland, Romania, Yugoslavia, those parts of Indochina under Communist control or domination, North Korea, the Kurile Islands, Latvia, Lithuania, Mongolia, and the U.S.S.R.

2/ LDC's, as defined by the United Nations General Assembly, are those oil importing countries with a per capita gross national product (GNP) of $1,895 or less. They include the countries of Africa, East Asia and the Pacific, Latin America and the Caribbean, the Middle East, South Asia, and the more advanced Mediterranean countries.

3/ Mucharski, Dieter E., Nelson, Bruce R., Steps in Contract Negotiations Possibly Involving Countertrade or Barter, American Management Association, December 5, 1980.

Government had plans that called for 30 to 50 percent of its machinery exports to the West to be a result of countertrade. 1/ Romania will reportedly require about 50 percent of all exports to the West to be covered by countertrade in the 1980's. Countertrade arrangements in many NME's as reported by the trade press, sometimes commit Western firms to take counter deliveries valued at more than 100 percent of certain products shipped by the Western firm. Generally, the amount of countertrade is dependent upon the importance and value of Western products as viewed by the importing country. For example, if the import of particular Western high-technology products is essential to the success of the "5-year" plan, common in Eastern Europe, the bargaining position of the country is weakened and the degree of countertrade required will most likely be low, i.e., the major portion of the transaction will be financed with hard currency. If, on the other hand, the import is of low priority to national plans--imports of consumer items usually fall into this category--the countertrade demand might exceed the value of the Western import. If the value of the Western import, no matter what priority the products are given, is large, e.g., more than $1 million for a given transaction, countertrade demands are likely.

Countertrade is also being demanded of developed countries in their trade with LDC's according to corporate executives contacted in the course of the research of this report. Many LDC's are pushing toward faster industrialization in selected industry sectors, and countertrade is seen as a way for Western firms to help those sectors develop. Several LDC's (such as Brazil and Mexico discussed in more detail later in the study) have specific laws permitting import licenses for certain products only against an export sales contract of equal or greater value.

Statements by foreign government officials indicate that countertrade is being used by LDC's and NME's not only as a means to obtain Western technology and capital goods but to create export markets for the products resulting from those inputs. Those countries rely on the marketing expertise of Western firms to develop new markets for countertrade exports with the expectation that the Western countries' international marketing techniques can be learned by domestic organizations in the future. Above all, countertrade is seen by LDC's and NME's as a mechanism used for obtaining industry and technology now in order to develop future exports that earn much needed hard currency.

1/ It was not learned, at the printing of this report, whether or not the recent military imposition of martial law in Poland has affected these requirements.

The Mechanics of Countertrade

The following description of the mechanics of countertrade is based on interviews with more than 50 executives representing the major firms involved with countertrade transactions.

Countertrade transactions are referred to throughout the literature by a variety of terms, e.g., barter, buybacks, clearing agreements, compensation, counterpurchasing, evidence accounts, offsets, parallel trading, and switching. However, these terms are often used interchangeably. Virtually all countertrade negotiations can be described in five basic types of transactions--counterpurchase, compensation, offsets, barter, and switch.

Counterpurchase

Western companies interviewed for this study seeking to sell their products in many NME's or several LDC's, often discover at some point in the negotiation process, that, in order for the LDC's or NME's to agree to the purchase contracts, the Western companies must agree to buy or market products of the LDC or NME, of a value usually less than the original Western purchase contract. Those instances where the products offered by the Eastern country are unrelated to the products being sold by the Western company (i.e., they do not result from the Western export of plant, equipment, technology, or products) are referred to as "counterpurchase" arrangements. Characteristics of counterpurchase arrangements, based on information obtained in the research for this study, are as follows:

- The period for taking back products is rather short term, e.g., 1 to 5 years.
- The value of goods offered by the foreign principal is usually less than 100 percent of the original sales contract value.
- The counterpurchase requirement is contractually agreed upon, either in the original sales contract or as a separate, parallel contract.

In a typical counterpurchase contract, as indicated by several U.S. corporate executives, the Western company will be required to fulfill its contract within a specified period or face some agreed upon penalty. Usually, the penalty is an outright hard-currency payment equal to some percentage of the original Western commitment. Penalties usually range between 5 to 25 percent of the value of the Western company's obligation. Similarly, the other contracting party is also expected to fulfill its part of the agreement to purchase the specified Western product during a finite period or, in the case of default, pay the Western party an agreed-upon hard-currency penalty.

In instances where counterpurchases are required by the Soviets and other Eastern bloc nations, 1/ a Western company most likely will be offered a limited list of products from which it can select. U.S. corporate executives reported that the lists will typically include products that are in over supply in the country of origin or that are not readily marketable in the West. It is not uncommon for Western companies to offer sizable discounts in order to sell these products. For this reason, counterpurchase arrangements are not popular among many Western companies.

To overcome some of the problems associated with counterpurchase requirements, many Western companies have reportedly showed increasing interest in so-called evidence accounts. By means of evidence accounts, usually opened with the foreign trade bank of the Soviet Union or most of the Eastern European countries, a Western company's purchases are automatically credited against its current or future counterpurchase obligations in that country so that no supplementary counterpurchase obligations are imposed. Evidence accounts can also be established with one or more Foreign Trade Organizations (FTO's) 2/ in most of the Eastern bloc countries. Instead of facing an immediate and uncertain counterpurchase demand at the signing of the Western sales contract, the evidence account allows the Western firm time to leisurely "shop around" in a particular Eastern European country for products that can be marketed back home. Further, the Western firm can spend more time assisting the East European party in the development of new or redesigned products that will find a receptive Western market. 3/

Although the actual wording of an evidence account contract varies from one Eastern European country to another, in most cases the contract will stipulate the value of sales and purchases by the Western company and what percent of Western purchases must offset Western sales. The evidence account mechanism also permits the Western company to negotiate a number of sales contracts without having to fulfill a particular counterpurchase obligation for each contract.

On the basis of the more than 50 interviews with U.S. corporate executives, evidence accounts are not required to be in equilibrium each year; however, such agreements often require a Western company's counterpurchase to reach as much as 80 percent of Western company's sales value. Should the Western firm not fulfill the full volume of its annual purchase requirement, the unfilled portion will be added to the following year's purchase obligation. Western companies dealing in raw materials, chemicals, and other basic commodities are more likely to successfully engage in evidence accounts since product demand and sales of such goods can more easily be projected for several years in advance.

1/ Since the Soviet Union and Eastern Europe have the most sophisticated and defined countertrade programs, it is useful to use their experience as illustration.

2/ FTO's perform most trade functions in many nonmarket economy countries.

3/ "Using Evidence Accounts to Rationalize Countertrade," Business Eastern Europe, November 16, 1979.

In Eastern Europe and the U.S.S.R., Western companies willing to enter into long-term evidence agreements are likely to be viewed favorably. However, once a company enters into an evidence agreement, it will be expected to fulfill its end of the commitment. Further, a Western company generally is restricted under evidence accounts, from transferring its counterpurchase obligation to a third party such as an independent trading house. Even in light of the restrictions associated with evidence accounts, most East-West trade experts agree that such transactions are likely to increase.

Compensation

Sometimes referred to as "buy-back," or "take-back," compensation agreements entails the sale of plant, equipment, and/or technology by one party to another party and payment for such sales in the form of products resulting from the plant, equipment, and/or technology. These types of arrangements frequently involve the sale of a "turnkey" facility and specify that payment will consist of output of the plant once it becomes operational. These types of arrangements became extremely popular beginning in the mid-1960's, and most of the earlier compensation deals involved the sale of technology and machinery for large-scale petrochemical facilities and mining operations.

Compensation transactions based on information obtained in this report are characterized by the following:

- The value of the individual transaction is much higher than those of any other form of countertrade, often measuring in the hundreds of millions of dollars.
- The period of product take-back is relatively long, usually in the range of 5 to 20 years.
- The value of product take-back during the contract period usually equals the value of the plant, technology, and/or equipment (minus the initial hard-currency down payment), plus an amount to cover interest expense during the period of take-back.

Compensation arrangements have been used in Eastern Europe, the U.S.S.R., and the P.R.C. as a means to obtain sophisticated Western technology without causing a drain on their scarce hard-currency reserves. These agreements provide the country receiving plant, technology, or equipment with a supply of much needed production capacity of some raw materials or intermediate products and guaranteed exports. In addition to limiting the burdens associated with large capital investments, compensation agreements allow the Eastern partner an opportunity to take advantage of the Western firm's marketing expertise to absorb those products returned. The Western partner benefits from compensation arrangements because it receives a guaranteed supply of products for a period of 5 to 20 years. Further, compensation arrangements provide the supplier of the technology with entry into a market not otherwise accessible.

On the basis of information provided by U.S. corporate executives, in a typical compensation transaction involving an Eastern European country and a Western firm, the two sides negotiate a sale of plant and machinery to be supplied by the Western firm. In turn, the Eastern European organization contractually agrees to supply the Western firm a specified portion of the output of the plant and machinery once the plant becomes operational. Project financing is arranged either through a Western bank, a state bank in the East European country, or a combination of the two, whereupon the plant and machinery are supplied. Once production begins, the Western firm takes title to the agreed upon portion of the plant's output for either captive use or to sell in world markets on its own account.

Barter

The contractual direct exchange of goods or services between two principals without the use of currencies is referred to as barter. In this type of arrangement, the two contracting parties decide the values of the products (or services) to be exchanged. For example, if one side seeks frozen orange juice concentrates at the world price of $1.30 per pound, and in exchange, is willing to offer its sugar at $0.13 per pound, then the agreed upon exchange ratio would be 10 pounds of sugar for one pound of concentrate. When an agreement is reached as to the volume of the exchange and delivery dates, each side fulfills its obligation to the other and the deal is complete.

The literature indicates that barter agreements are frequently consummated in a short time, usually less than 1 year, so that world price fluctuations for the products being traded do not significantly favor one side or the other. Those deals requiring longer periods to complete usually include provisions for adjusting the ratio of exchange to take into account world price fluctuations. Another feature of this type of transaction is that, unlike other forms of countertrade, the transfer of goods is usually accomplished through a single contract. Rarely are third parties involved in marketing the products, since most barter is done government-to-government.

Barter became popular during World War II when international currency systems were in disarray; transactions of this sort were rare except in trade within the Communist bloc, between LDC's, or between LDC's and the Communist bloc. In recent years, however, according to trade press reports, oil barter has become a way for less prominent OPEC countries (such as Algeria and Indonesia) to finance large scale development programs involving the construction of highway, port, and industrial plant production projects. 1/ Until 1979, Iran used barter extensively to help finance its drive for industrialization as well as purchsese of military hardware. 2/ More recently, Mexico financed industrialization projects through this method.

Barter transactions between governments are often accomplished by the use of "clearing agreements." In a clearing agreement, two countries decide on the types and quantities of goods they can obtain from one another. The

1/ "Algeria Tightens its Oil-Barter Deals," Business Week, June 16, 1975, p. 16.

2/ Eric Pace, "Iran Said to Buy Missles From Britian With Payment in Oil," The New York Times, November 19, 1976, p. 1.

agreement specifies the goods to be exchanged, the ratio of exchange, and the period for effecting the exchange. The goods are offered at an agreed ratio as described in the barter explanation. During the period covered by the clearing, each country arranges to receive some portion (or all the goods) offered by the other and at the end of the period (usually one year) an accounting is made and any imbalances are made up in several ways, such as by a hard-currency payment or the issuance of a credit against the next year's clearing account, assuming one is negotiated. Such agreements are often renewed year after year.

When a country involved in a clearing agreement finds that certain internal market conditions have changed and the imported clearing product cannot be absorbed in the home market, the importing country, as indicated by several U.S. corporate executives, has two options. It may suspend the importation of the product, risking an imbalanced account, or it may sell its purchase option to a third party. The purchase option is usually offered at a substantial discount and sold to a third party for hard currency. The third party, however, may have to forfeit part of the discount originally received in order to sell the product internationally for hard currency. Products obtained in this manner are often turned over to international trade specialists called "switch traders"; switching operations and switch traders are described in the following section.

Switch

Switch trading usually comes into the countertrade picture after counter-deliveries of products begins. If the recipient of the countertrade products cannot dispose of the goods, either in its home market or in international markets, a decision may be made to sell the products to a Western trading house specializing in switch trade. A switch operation may involve a series of complicated transactions before a hard-currency buyer is found. Also, sizable discounts, reported in the literature, of up to 40 percent are sometimes needed to sell the products to a trading house. Trade house experts, the so-called switch traders, are connected to a self-developed network of companies and individuals that offer ready markets for discounted countertrade products.

For example, on the basis of the interviews with U.S. corporate executives, in a switch transaction a switch trader is offered products at a substantial discount. The switch trader may find a buyer in a soft-currency country 1/ or in a country in which the central government has imposed hard-currency transfer restrictions. In either case, if the potential buyer is unable to pay for the goods with hard currency, the seller may be offered payment in goods produced in the buyer's home country. If the terms are agreeable to both sides, an exchange is made. Since the products received in payment may not be marketable in a country with surplus hard currency, the switch trader may have to repeat the above scenario several times until goods that the trader obtains can be sold for hard currency. In each step of the transaction, the switcher will usually offer a portion of the original discount

1/ Soft-currency countries are those whose currencies are not freely convertible to those of hard-currency countries (Western Europe, the United States, Japan, and Canada).

in order to make the deal more attractive. The difference between the final hard-currency payment and the cost of the original goods represents the profit margin for the switcher. These deals may take well over a year to complete. Most of the switch-trading organizations are located in Western Europe, especially in Vienna, Amsterdam, London, and Hamburg, and deal primarily in East European goods.

There are advantages and disadvantages in dealing with switch traders. The obvious advantages, reported by U.S. corporate executives, are that companies committed to a counterpurchase can quickly dispose of that obligation to a switch-trading house. Further, by releasing the goods, a company can relieve its own staff from the time-consuming task of marketing goods received in countertrade. On the negative side, a company that transfers its obligation to a trading house will often be looked on unfavorably by the country supplying the countertraded goods because this action is seen as an insincere attempt to establish a long-term trade commitment. This is especially a problem when switching houses dispose of products in markets traditionally served by the supplying country at prices significantly below those charged by the supplying country. East European foreign trade organizations prefer that a Western company use countertrade goods either for internal consumption or to market the products to its subsidiaries or its suppliers. In certain instances, East European foreign trading companies will break off negotiations with a Western firm if it learns of plans by the Western firm to assign its countertrade commitment to a switch-trading house.

Offset

A final type of countertrade, the offset agreement, is mainly used for defense-related sales, sales of commercial aircraft, and other items considered by the buying government as priority items. The principals in an offset arrangement include a firm in a developed country and a foreign government. The foreign country often is not a less developed country or a centrally planned economy (countries such as Canada, Switzerland, and Australia utilize the offset). In an offset, a Western supplier is asked to assist in or to arrange for the marketing of products produced by companies located in the buying country; or the Western supplier may be asked to allow some portion of the exported product to be manufactured by producers located in the country receiving the product. For example, a U.S. aircraft manufacturer might be asked by a foreign government to let a portion of the U.S. aircraft be assembled by the foreign government's domestic industry. This may be presented to the U.S. aircraft manufacturer as a condition for the purchase of the aircraft. Only that portion of offset agreements that includes a counter delivery request is considered countertrade, however, both means of fulfilling offset arrangements discussed above have the same effect--to "offset" the hard-currency drain resulting from the purchase.

The corporate executives interviewed for this study indicated that what separates an offset from other forms of countertrade is that the offset is not contractual. 1/ Rather, it has the components of a contractual arrangement in

1/ The offset agreement is appropriately referred to as a Memorandum of Understanding (MOU).

that it specifies the dollar amount of product to be offset, and the time period in which performance is to be completed. No penalty is assessed the Western company because of nonperformance. 1/

Information provided by U.S. companies involved in offsets indicate that a typical agreement requests that 20 to 50 percent of the invoice value of the original Western product be offset. Often a company's success of winning an international sale for commercial or military aircraft depends on what percentage it is willing to offset and how successful the company has been in the past in fulfilling offset requirements. On these two items, competition may push the offset to more than 100 percent. One of the considerations for a Western company competing for a sale requiring an offset is its ability to market products from the buying country. Sales requiring offset agreements typically range from $10 million to more than $3 billion.

The offset agreement provides an avenue for a country to gain access to new markets for its products in the United States and elsewhere while at the same time purchasing much needed machinery and equipment for its military, its state-owned airlines, or its large-scale industrial projects such as nuclear generating stations. For example, in one agreement reported by corporate officials, Ghana received assistance in selling manganese, timber, and bauxite to offset the purchase of Western-made aircraft. Yugoslavia found buyers for its hams, transmission towers, iron castings, and rubber bumper guards (also to offset the purchase of Western-made aircraft). Chile, Switzerland, Australia, Austria, and Canada also have entered into offsets with firms in the United States.

Western firms entering offsets frequently find it necessary to commit significant resources to market the foreign products. Several major U.S. aerospace companies have setup trading companies just for this purpose (see section on U.S. trading companies, p. 31). Ideally, a U.S. or Western firm will make direct purchases to satisfy the offset. Goods obtained by direct purchase may be those that can be used in the manufacturing process of the Western firm or its subsidiaries. Another method used to satisfy its offset is for the Western firm to develop a demand for products of the foreign government in areas of the world where such a demand does not now exist. However, this is more time consuming and expensive. These methods for satisfying the countertrade portion of the offset are the two most used by Western firms.

1/ "Offsets Expanding In Foreign Aircraft Sales," Industry Week, May 15, 1978, p. 1.

Economic Reasons for Countertrade

The continuing drive toward greater industrialization on the part of most LDC's and NME's has spurred the use of countertrade. Countertrade is becoming a viable and popular means for countries short of hard currency to finance the purchase of increasingly costly Western technology and machinery. There are many factors influencing requests for countertrade; the most prominent of these factors are discussed in the following section.

Western inflation

On the basis of a review of the literature, western inflation is a critical element in the demand for countertrade especially with respect to NME's since international commodity prices are determined in Western markets. State agencies in the NME's typically decide on development, production, and export goals every 5 years. When planned expenditures, denominated in Western currencies, for Western technology and machinery are exceeded because of unforeseen inflationary price increases, State agencies must reallocate hard-currency expenditures or look to alternate forms of financing for planned purchases from the West. The first alternative--reallocation--is difficult when demands on hard-currency reserves are already stretched. Consequently, State planning agencies look to countertrade as an additional resource with which to purchase products.

Although the average rate of inflation 1/ in the industrialized West was about 8.6 percent in 1980, several West European countries that traditionally do significant trade with NME's had inflation rates far in excess of the average (table 1). Those countries, Canada, France, Italy, and the United Kingdom 2/ were particularly affected by the second large increases in oil prices in the 1970's. Germany and Japan were able to adjust their economies to the rapid rise in oil prices and other disruptions with greater success than did other developed countries. The increases in inflation have been followed by large swings in exchange rates causing uncertainty in international trade. Countertrade is seen as a hedge by NME's (as well as by LDC's) against rapidly fluctuating prices for imported commodities due to exchange rate swings. Further, countertrade insures the same stabilization for NME's and LDC's exports.

1/ Inflation is measured as the weighted average of national currency gross domestic product (GDP) deflators.

2/ Beginning in late 1980 the United Kingdom's inflation has eased due to increased domestic oil production, coupled with an economic downturn and low industrial growth rate.

Table 1.--Growth rates, real and inflated, for selected Western industrialized countries, 1977-80

Item and country	Percentage change--			
	1977 from 1976	1978 from 1977	1979 from 1978	1980 from 1979 1/
Real gross domestic product:				
Canada	2.7	3.6	2.8	0.1
United States	5.1	4.4	2.3	-0.2
Japan	5.4	5.9	5.9	4.2
France	2.8	3.8	3.3	1.3
Federal Republic of Germany	2.7	3.2	4.5	1.8
Italy	2.0	2.5	5.0	4.0
United Kingdom	1.3	3.1	1.5	-1.8
Weighted average 2/	3.8	4.0	3.5	1.3
Gross domestic product deflator:				
Canada	7.1	6.5	10.5	10.5
United States	6.0	7.1	8.8	8.9
Japan	5.6	3.9	2.0	3.2
France	9.1	9.3	10.3	11.2
Federal Republic of Germany	3.8	3.9	3.8	5.0
Italy	18.9	13.3	15.2	20.4
United Kingdom	13.7	10.3	14.6	18.8
Weighted average 2/	7.0	6.7	7.5	8.6

1/ Preliminary.
2/ The weighted average in U.S. $GDP of each country divided by the total U.S. $GDP for the industrialized countries.

Source: Based on official statistics of the World Bank as published in World Bank Annual Report 1981.

Current-account 1/ deficits

Disturbances in the international economy because of large increases in oil prices, high rates of inflation, and little economic growth in industrial production and in international trade have resulted in a widening of trade deficits especially in developing countries (except for oil-exporting countries). Oil price increases in 1974 and 1979 are particularly reflected in the current-account balances of both nonoil exporting nations (both developed and developing) and oil-exporting nations as shown in table 2. In 1974, current-account deficits for oil importing developing countries jumped to $33 billion, up from $7.3 billion the previous year. Similarly, the current-account deficit for the same group of countries climbed to $44 billion in 1979 from $26 billion in 1978. Preliminary World Bank data put the 1980

1/ The current account comprises transactions in goods, services, and unrequited (government and private) transfers, and thus excludes transactions in financial assets and liabilities.

deficit at almost $70 billion. The current account of the NME's did not appear to be severely affected by the rapid rises in oil prices. 1/

The consequences of the expanding current-account deficits are significant for countertrade. The literature indicates that hard currency reserves of most developing countries are committed for the purchase of oil imports since oil-exporting nations will rarely accept payment in product. High current-account deficits usually coincide with higher external debts. As debts of most developing and nonmarket economy countries rise, industrialization plans may be slowed, causing planners to seek alternate means of financing the importation of Western technology and machinery. Western firms faced with the prospect of losing sales to developing countries are learning to accommodate countertrade demands.

Table 2.--Current account balance 1/ for developing countries, capital-surplus oil exporting countries, industrial countries, and nonmarket economy countries, 1970-80

(In billions of dollars, at current dollars)

Year	Developing countries		Capital-surplus oil-exporting 2/ countries	Industrial countries	Nonmarket economy countries	Statistical discrepancy
	Oil importers	Oil exporters				
1970	-8.9	-2.2	2.8	12.1	1.7	5.7
1971	-10.7	-2.9	3/	15.5	3/	3/
1972	-5.3	-3.6	1.9	16.0	3/	3/
1973	-7.3	-2.6	6.7	18.9	3/	3/
1974	-33.1	19.3	43.3	-8.5	3/	3/
1975	-38.6	-2.5	30.8	22.0	-7.0	4.7
1976	-27.0	-.3	36.3	3.9	-3.5	9.6
1977	-22.9	-5.5	32.9	-1.5	-1.1	1.9
1978	-25.5	-17.6	18.8	29.9	-.2	5.4
1979	-44.4	5.1	55.7	-9.5	-.8	6.1
1980 4/	-69.6	1.0	102.2	-39.7	-.1	-6.2

1/ Excluding official transfers.
2/ Only Saudi Arabia, Libya, and Iraq are included in 1972.
3/ Not available.
4/ Estimated.

Source: Based on official statistics of the World Bank, as published in World Bank Annual Report 1981.

1/ World Bank Annual Report 1981.

Although the NME's overall account has been nearly in balance in recent years (table 2), the merchandise accounts of nonmarket economies vis-a-vis the United States is far from being in equilibrium. This deficit has grown to almost $5 billion in 1980, compared with slightly more than $1 billion in 1974, as shown in figure 1, appendix A. Contributing most to this deficit is trade in foods, beverages, tobacco, and crude materials in which the United States had a favorable balance of trade of $4.9 billion in 1980 (fig. 1B). Expansion of U.S. exports to NME's of commodities in this area is mostly due to grain sales to the Soviet Union. Priority imports from the United States in this group normally command hard-currency payments. If imports of the items covered in this group exceed planned levels, designated hard- currency outlays will have to be reallocated away from other sector imports. This situation forces countertrade demands with the United States to be increased in the other sectors. In the case of most NME's, countertrade demands on U.S. firms are greatest in manufactured products, and chemicals (fig. 1D and E). In this way, NME's have reduced their trade deficits with the United States in machinery, transport equipment, and other manufactured products. NME's deficits in these items reached almost $700 million in 1975, but fell irregularly to about $140 million in 1980. 1/ Much of the increased imports of this sector from NME's is a result of countertrade arrangements.

The U.S. merchandise trade deficit with LDC's climbed to almost $30 billion in 1980 from the $4 billion in 1974, as shown in figure 2A. The chief cause of the deficit was expenditures for oil imports (included in the mineral fuels, and lubricants sector as shown in fig. 2C). Elimination of oil exporting countries from trade balance calculations results in an overwhelming U.S. trade surplus with the vast majority of LDC's.

An examination of individual sectors, shows that the United States has a favorable balance in its trade with LDC's in the chemicals sector (fig. 2D) and the machinery, transport equipment, and manufactured goods sector (fig. 2E). For the chemical products sector alone (fig. 2D), the trade showed a U.S. surplus of about $8 billion in 1980, up from about $3 billion in 1974. In the machinery, transport equipment, and manufactured goods sector, the U.S. favorable balance of trade with LDC's climbed to about $22 billion in 1980. It is primarily in this sector that U.S. firms are facing increased countertrade demands.

External debt

Purchases of Western goods and services by the NME's and LDC's according to the literature are increasingly being financed through the extension of Western credit. So much so, that the indebtedness to the West among the LDC's and NME's has reached record levels as shown in table 3. Indebtedness of NME's reached an estimated $70 billion in 1980, up from $16.2 billion in 1974, while LDC's debt climbed to an estimated $416 billion in 1980, up from $142 billion in 1974. With their borrowing capabilities restricted by the high level of indebtedness, NME's and LDC's have been forced to resort to countertrade as a means of financing new purchases. Moreover, as a result of

1/ Figures 1 and 2 in appendix A are based on data compiled from U.S. Department of Commerce, U.S. Imports of Merchandise, IM 146, 1974-80.

these rapidly rising debts, Western banks have been advising clients on the use of countertrade as a means of insuring repayment of new and some outstanding loans.

Table 3.--Hard currency debt (official and private) of nonmarket economy countries and less developed countries, 1974-80

(In billions of dollars)

Year	Nonmarket economy countries	Less developed countries
1974	16.2	141.9
1975	28.9	168.1
1976	38.9	211.0
1977	48.2	257.6
1978	58.3	316.9
1979	64.7	369.2
1980	1/ 70.4	416.0

1/ Estimated by the World Bank.

Source: Compiled from data obtained from the World Bank Annual Report 1981, World Development Report, 1979, The World Bank, August 1979, and Annual Report 1981, International Monetary Fund.

Official currency controls in nonmarket countries

General economic theory indicates that when convertible currencies of market economies are determined in foreign exchange markets, there is a tendency for the rate to settle at a level that roughly balances the current account in the long-run. If a deficit develops, the currency tends to decline, leading exporters to increase their sales abroad and consumers to switch from imports to domestic substitutes. In NME's, no such automatic device exists. The exchange rate bears little relation to national costs and is often set for political reasons, e.g., the U.S.S.R. desires one ruble to be worth more than $1. Therefore, to pay for imports, state planning officials in NME's are responsible for seeing to it that exports generate enough hard currency to pay for imports from market economies.

In most NME's, it is illegal to convert domestic currency (e.g., rubles) into foreign exchange (e.g., dollars). In addition, under most circumstances, it is unlawful for foreigners to accumulate the domestic currency. Because of this inconvertibility of nonmarket currency, it is illegal for Western firms to be paid for their products in the currency of the nonmarket countries. Thus, Western firms can pay for their imports from NME's only in hard, convertible currencies.

This necessity of dealing in Western currencies would cause no problem for nonmarket economies as long as exports bring in sufficient amounts of hard currency so that imports could be paid for with the convertible currency. Nonmarket countries, however, have had a chronic shortage of hard-currency

earnings and therefore would have been unable to pay for all their imports without some reliance on the use of countertrade and the extension of Western credits.

Overvalued domestic currency in many LDC's

Many developing countries, as indicated in the literature, tend to support the foreign value of their currencies above market clearing rates. This in turn creates a tendency toward current-account deficits and a need for some bureaucratic method for balancing imports and exports. This tendency to have overvalued inconvertible currencies has led to shortages of hard currencies in many LDC's.

Many LDC's have in the past relied upon elaborate tax rates of exchange, and subsidy systems set up to produce the desired mixture of imports and exports. Therefore, some degree of currency inconvertibility is necessary to prevent the undoing of the efforts of government planners. The central banks of some LDC's collect all foreign currency earnings from exporters in exchange for domestic currency and then dole out this foreign currency to the appropriately licensed importers to help fulfill the goals of the centrally controlled industrialization plan. Rising populations, increasing incomes, and growing industrialization have increased the dependency of LDC's on imports of food, raw materials, and capital goods. Countertrade with developed countries is one device increasingly used by the LDC's to offset losses of hard currency necessary to pay for imports.

Analysis of U.S. Imports Resulting From Countertrade With NME's and LDC's

U.S. imports resulting from countertrade can be verified only to the extent that firms participating in countertrade (identified through various trade reports and government and private research studies) are willing to provide details of the import side of countertrade transactions. 1/ Several firms contacted during the course of research declined to make any public comment on countertrade transactions. Other firms turned over their countertrade commitment to third party trading companies and, therefore, had little or no knowledge of how the commitment was satisfied. Many trading companies either could not identify trade of products obtained in countertrade or they refused to disclose this information.

Data gathered for this study indicate that the majority of countertrade transactions involving U.S. firms did not result in U.S. imports. Rather, the countertrade products were sold directly or indirectly to developing countries or to the developed countries of Western Europe. This was more often the case where products were obtained through counterpurchase agreements from East European countries.

This report attempts to identify a major portion of U.S. imports obtained through countertrade, however, because of the limitations listed above, total verification is impossible. Therefore, the value of imports obtained through countertrade is believed to be understated. However, the degree to which the value of countertrade imports is understated is thought not to be significant in terms of total countertrade imports. This is in part because sources in private industry and the U.S. Government speculate that the most publicized countertrade deals account for preponderance of U.S. import value.

U.S. imports resulting from countertrade reached an estimated $279 million in 1980, up from $98 million in 1974, as shown in table 4. Imports of chemicals, accounting for most of this import growth, reached an estimated value of $101 million in 1980. No chemicals, identified as resulting from countertrade, were imported in 1974. Identified countertrade imports of minerals and metals, all sourced from LDC's, were estimated to be $108 million in 1980. All other countertrade imports increased to an estimated $97 million in 1978, up from $27 million in 1974. In 1980, the latter groups' imports fell to an estimated $70 million.

Countertrade in chemicals

Data gathered here indicate that the industry sector experiencing the most demand for countertrade, particularly compensation agreements, is the chemical sector. These demands are found especially in West European and U.S. export markets of Eastern Europe and Latin America where most countries are encouraging the development and growth of their own chemical industry. Several oil-producing countries are supplying or are proposing to offer oil in exchange for plant, machinery, and training for the production of

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1/ Customs entry documents require no explanation as to whether or not products were obtained through countertrade.

Table 4.--Estimated U.S. imports of chemicals, minerals, and metals, other products, and total from all sources, obtained through countertrade, 1974-80

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	1979	1980
Chemicals	0	1,700	2,071	1,194	29,841	63,438	100,909
Minerals and metals	71,000	104,000	107,000	99,000	109,000	109,000	108,000
Other	27,313	46,739	63,398	64,162	96,804	82,276	69,650
Total	98,313	152,439	172,469	164,356	235,645	254,714	278,559

Source: Data compiled from IM 146, "U.S. Imports of Merchandise" U.S. Department of Commerce, 1974-80, from personal interviews, and from published sources.

Note.--These figures are shown as reported and do not include any adjustments.

petrochemicals. Nonmarket economies have been rapidly establishing their own chemical industries since the mid-1960's, using countertrade mechanisms to finance the chemical technology imports. The loss of export markets due to countertrade arrangements coupled with overcapacity in certain chemical production may result in future overcapacity situations in the chemical industries of the West. Further, chemical exports from Eastern European facilities built through countertrade are expected to compete in domestic markets of the West including the United States, as well as third countries.

The most ambitious programs of chemical industry development occurred in the U.S.S.R. and Eastern Europe. According to published data from the Council for Mutual Economic Assistance (CMEA) 1/, capital investment in the chemical sector, during 1971-77, ranged from 9.2 percent of total industrial investment in the U.S.S.R. to 16.8 percent in Bulgaria. The governments of Eastern Europe targeted their chemical industries for rapid development starting in the mid-1960's and continuing to the present. For example, the U.S.S.R.'s tenth Five Year Plan (1976-80) called for a 60 to 65 percent increase in chemical and petrochemical output. CMEA statistics showed production growth rates in all member countries, except Poland, during 1971-77 in the chemical industry, exceeding those of all other industrial production (table 5). In Hungary, the growth rate of chemical industry development during 1976 and 1977 was almost double gross industrial production. The U.S.S.R.'s chemical industry development grew by more than two percentage points above the growth rate of overall industrial production during 1976 and 1977. Data are not available for the period 1978 to present, however, trade press reports indicate that the chemical industry growth has and is continuing to outpace

1/ CMEA is an economic organization made-up of Soviet-bloc countries.

Table 5.--Percentage growth rates for gross industrial production and chemical industry in Eastern Europe and the U.S.S.R., 1971-77

Country	Gross industrial production		Chemical industry	
	1971-75	1976-77	1971-75	1976-77
Bulgaria	9.1	6.8	11.6	8.5
Hungary	6.4	5.7	10.3	10.9
German Democratic Republic	6.5	5.4	8.4	5.6
Poland	10.4	8.4	12.0	7.9
Romania	12.9	13.0	15.7	14.0
Czechoslovakia	6.7	5.6	9.9	7.6
U.S.S.R.	7.4	5.2	10.4	7.1

Source: Based on official statistics presented in "East-West Trade in Chemicals," Organization for Economic Co-operation and Development, 1980.

all industrial production. 1/ The following table shows the growth rates for gross industrial production and for the chemical industry sector in Eastern Europe and the U.S.S.R. Reasons for this level of investment include the need for fertilizers and pesticides for agriculture, and plastics and rubber for industrial applications and for consumer items.

Much of East European chemical production is a result of compensation agreements with Western companies. Payment for the import of technology, plant, and machinery is in the form of resultant chemicals. Many chemical producing facilities in Eastern Europe, obtained through countertrade, are expected to come on-stream during the first-half of the 1980's. 2/ Chemical industry sources expect that these added facilities will provide Eastern Europe a net chemical trade surplus with the West by the mid-1980's for the first time. It is difficult to determine the chemical export potential of new East European chemical facilities based on trade press reports of the original contracts. The terms of the buy-back portion often are readjusted periodically, and the schedules for project completions are often more flexible than originally negotiated. A list of East-West compensation agreements, resultant chemical exports, and schedules of buy-back periods are listed in appendix B.

On the basis of reported buy-back schedules, it appears that the greater part of Western imports resulting from chemical facilities in Eastern Europe is going to come in the early to mid-1980's. The data provided in appendix B indicate that $16.2 billion of East European chemicals will be exported to Western countries under compensation during the late 1970's through 1997. The U.S.S.R. will account for most ($14.4 billion) of these exports. During 1981-90, annual countertrade exports from NME's are expected to exceed $1.4 billion. Because of construction delays and other unforeseen problems such as

1/ "East-West Trade in Chemicals," Organization for Economic Co-operation and Development, 1980.

2/ See listing of countertrade agreements in appendix B.

trade embargoes, feedstock shortages, low operating rates, and so forth, the value of countertrade exports from reported deals are likely to be overstated. The annual value of chemical exports from Eastern Europe resulting from compensation trade may reach over $1 billion by mid-1980, with much of this total reportedly being exported under the Occidental Petroleum compensation deals.

Identifying some U.S. imports resulting from chemical countertrade is difficult because some chemicals obtained in this manner are sold by U.S. principals to international chemical brokers. Countertrade chemicals sold to such brokers, may be resold eventually in the United States, however, the identity of the chemical as countertrade is lost in the international transfer of ownership. Imports from countertrade deals in which the U.S. principal acts as U.S. importer for the buy-back portion are more easily identified. Such is the case with imports of anhydrous ammonia and potash shown in table 6.

Table 6.--Estimated U.S. imports of chemicals, from all sources, obtained through countertrade, 1974-80

(In thousands of dollars)

Chemical	1974	1975	1976	1977	1978	1979	1980
Anhydrous ammonia--	-	-	-	-	27,760	56,466	94,796
Benzene----------	-	577	-	-	-	-	-
p-Xylene----------	-	-	-	-	-	3,176	-
Potash----------	-	1,123	2,071	1,194	2,081	3,796	6,113
Total----------	-	1,700	2,071	1,194	29,841	63,438	100,909

Source: Data compiled from IM 146 "U.S. Imports of Merchandise," U.S. Department of Commerce, 1974-80, from personal interviews, and from published sources.

It is estimated that imports of these two commodities account for most (100 percent in 1980 of chemical imports identified as countertrade) of the value of chemical imports into the United States resulting from countertrade agreements. Imports of anhydrous ammonia, resulting from technology supplied to the U.S.S.R. by Occidental Petroleum, reached almost $95 million in 1980, up from $28 million in 1978, the first year of imports under countertrade. Imports of countertrade potash reached $6 million in 1980, climbing from $1.1 million in 1975. Imports into the U.S. from chemical countertrade are expected to increase somewhat during the 1980's as several U.S.-supplied plants come on-stream in Eastern Europe. To date no major chemical countertrade deal with developing countries has been identified, however, published sources point to several deals being negotiated between the United States and a few Latin American countries, particularly Mexico.

Countertrade in minerals and metals

Large-scale mining operations in many developing countries are often the result of countertrade arrangements and frequently involve participation by

companies from more than one Western country. In such projects, a consortium of Western mining companies, banks (both Government-owned and private), and other private financial institutions band together in a contractual arrangement to provide the financing, technology, and marketing skills necessary to develop a specific mining project. In a compensation contract, signed with the host government, the Western firms agree to accept some portion of the project's output for a specified period of time, usually in proportion to their original equity investment in the project. A portion of such projects' cost is frequently provided for by government-backed loans with repayment grace periods of 2 to 5 years. This period allows for project construction, procurement of machinery and equipment, and training of host-country workers before repayment is to begin. Such projects often provide the Western principals a position of joint ownership in the mining venture along with the host government. Many corporations involved in countertrade also find it necessary to seek several forms of OPIC (Overseas Private Investment Corporation) insurance for their exposed portion of ownership.

Mining project compensation arrangements are similar to other types of compensation trade that involve the sale of turnkey manufacturing facilities only to the extent that project development debt is to be repaid through the output. Based on interviews with corporate executives representing the major mining companies, mining development projects usually require loans of over $1 billion and repayment periods of 20 to 25 years; both requirements far exceed those of typical compensation agreements for manufacturing facilities. The latter normally involves a one-on-one relationship with the host government, whereas, mining projects may have several principals involved in varying degrees and output is shared in proportion to the principal's original equity investment.

The mining executives pointed out that raw material output from existing mining facilities of NME's find their way into Western markets through counterpurchase agreements. NME's sometimes offer such products against the purchase of Western goods and services. Most nonmarket countries prefer to offer consumer items, mechanical equipment, chemicals, and so forth, as counterpurchase items rather than raw materials. Exports of the former indicate some degree of industrial development exists, whereas, the latter provides little "value added" exports and therefore indicates little internal industrial development.

Contrary to the NME's view of raw materials countertrade, LDC's appear to be using this technique to finance more and more of their trade with developed countries. Indications of this trend are likely to show up in future exports from LDC's resulting from countertrade arrangements. The trade press and sources within mining circles indicate that both the compensation and counterpurchase mechanisms are being applied as a means to finance development of new mining operations and to find new markets for unused capacity of existing mines. 1/ Based on the experiences cited by executives of U.S. multinationals, Japanese and Western European companies were more willing to enter countertrade agreements than U.S. firms in the past. In fact, the catalyst for such arrangements are often the Government of Japan and those of Western Europe.

1/ R. Leeper, "Project Finance - A Term to Conjure with," Banker, August, 1978, p. 67.

On the basis of reports from the OECD and the International Monetary Fund, several of the LDC's have official programs that provide for subsidized loans and credits to their mining companies for development of foreign sources of minerals. These "development-for-import" programs are designed to insure a long-term guaranteed supply of strategic raw and processed materials through the compensation or counterpurchase mechanisms. Such programs reportedly are likely to have a significant effect on the world flow of strategic raw materials in the future as the result of mining and processing operations developed under these programs. 1/

U.S. companies have entered into compensation and counterpurchase raw material agreements either directly or with mining companies of other countries. The estimated level of U.S. imports resulting from these agreements is shown in table 7. Based on estimates of corporate officials and mining industry publications, compensation imports remained rather steady during 1975-80, fluctuating between $99 million (1977) and $109 million (1978, 1979). In 1974, compensation raw material imports were estimated to be $71 million. Most of the increase between 1974 ($71 million) and 1975 ($104 million) can be tied to increased imports of both bauxite and iron reportedly obtained through compensation arrangements. Imports of bauxite and iron, accounted for the majority of raw material imports through compensation arrangements during 1974-80. Data were found only for raw and semiprocessed materials. Some processed metals (e.g. aluminum) exported from LDC's are believed to be the result of facilities constructed under compensation agreements involving U.S. companies. However, because of confidentiality or other concerns, actual or estimated levels and compensation of these imports were not shown in this study. Further, data were not confirmed as to imports of raw materials resulting from countertrade agreements with nonmarket countries. For these reasons, countertrade import data provided in table 7 are somewhat understated.

Countertrade in all other products

There have been a number of other sizable countertrade contracts signed by U.S. firms (app. C). However, only a few of these transactions have resulted in U.S. imports of any significant value. Table 8 (compiled from data gathered in this report) lists the commodities (with the exception of chemicals and raw materials) and the value of imports into the United States during 1974-80 resulting from such transactions. Imports covered in this miscellaneous category were valued at an estimated $70 million in 1980 and $97 million in 1978, up from $27 million in 1974. On the basis of information from many sources, countertrade activity is, however, increasing in virtually all commodity sectors and resulting U.S. imports will continue to increase.

1/ J.E. Tilton, "The Future of NonFuel Minerals," The Brookings Institute, Washington, D.C., 1979, p. 50.

Table 7.--Minerals and metals: Estimated U.S. imports for consumption from less developed countries (LDC's) resulting from countertrade, and total imports from LDC's, 1974-80

(In millions of dollars)

Item	1974	1975	1976	1977	1978	1979	1980
Countertrade imports from LDC's:							
Bauxite	20	37	45	50	57	57	58
Copper	7	9	5	1	1	1	1/
Chromite	2	3	5	5	4	3	4
Iron	24	34	32	18	28	24	18
Lead	2	1	3	4	3	3	2
Manganese	7	12	11	9	5	4	7
Tin	4	4	4	6	4	5	1
Rutile	-	-	-	-	-	2	10
Tungsten	5	4	2	6	7	10	8
Total	71	104	107	99	109	109	108
Total imports from LDC's:							
Bauxite	157	235	304	339	384	376	381
Copper	130	36	50	21	26	48	102
Chromite	29	59	61	66	53	54	57
Iron	696	861	980	957	845	923	773
Lead	15	12	30	40	25	33	24
Manganese	43	77	74	57	37	27	46
Tin	36	44	39	61	44	54	11
Rutile	39	36	43	21	48	31	50
Tungsten	41	32	23	56	68	85	87
Total	1,186	1,392	1,604	1,618	1,530	1,631	1,531

1/ Less than $500,000.

Source: Estimated countertrade import data compiled from publications and personal interviews. Data on total imports compiled from U.S. Department of Commerce, U.S. Imports of Merchandise, IM 146, 1974-80.

Hams and footwear have been the dominant countertrade imports in this "all other" category, accounting for 97 percent ($26.4 million) of the total ($27.3 million) in 1974. The share of the total of these two items fell to 76 percent ($53.1 million) in 1980. Countertrade imports of hams increased each year during 1974 to 1978, reaching $65 million in 1978. In each of the following 2 years, countertrade ham imports dropped, falling to $49 million in 1979, and then to $29 million in 1980. Industry sources indicated that U.S. market conditions were partly responsible for the ham import decline.

It can be seen from table 8 that the composition of countertrade imports in this category has become more diversified since 1974. Imported items other than hams and footwear have increased to $17 million in 1980 from less than $1 million in 1974.

Table 8.--Estimated U.S. imports of products other than chemicals, minerals, and metals obtained through countertrade, from all sources, 1974-80

(In thousands of dollars)

Item	1974	1975	1976	1977	1978	1979	1980
Ale and beer	105	176	124	122	192	527	884
Hams	20,471	35,183	43,697	49,041	65,173	48,937	28,662
Footwear	5,952	11,361	19,559	14,969	28,352	21,659	24,439
Tobacco	-	-	-	-	601	1,171	1,455
Liquor	-	-	1/	1/	1/	1/	2,767
Soybeans	12	19	15	8	39	19	42
Semiconductors	-	-	3	22	62	37	140
Brass-mill products	773	-	-	-	2,354	9,696	6,697
Freight containers	-	-	-	-	31	230	364
Miscellaneous machinery and equipment	-	-	-	-	-	-	4,500
Total	27,313	46,739	63,398	64,162	96,804	82,276	69,950

1/ Not available.

Source: Data compiled from U.S. Department of Commerce, U.S. Imports of Merchandise, IM 146, 1974-80, personal interviews, and from published sources.

Analysis of U.S. Industry Impact From Countertrade

Although the increased use of countertrade by U.S. firms is small in relation to normal trade practices (e.g., cash transactions), U.S. firms and industries have begun to experience the effects of such trade. The transfer of U.S. chemical production and distribution technology is especially noteworthy. U.S. chemical imports resulting from U.S. countertrade transactions reached $101 million in 1980. There were no such imports in 1974. Industry sources have indicated that countertrade imports will most likely increase as several U.S.-supplied chemical facilities come on-stream in Eastern Europe.

Data gathered for this study indicate that countertrade has had a definite effect on U.S. machinery and technology exports. Based on identified U.S. countertrade transactions (apps. B and C), the United States has exported machinery and technology needed to produce chemicals, footwear, machinery, and a variety of other industrial and consumer products.

The burden of fulfilling countertrade commitments has resulted in many U.S. multinationals setting up in-house trading organizations expressly for the purpose of marketing countertrade imports. Some of these organizations appear to be rapidly evolving into self-sustaining corporate profit centers. In-house trading organizations, according to corporate representatives, play a key role in the success of their respective parent companies' competitive bidding on lucrative countertrade projects.

The Commission has conducted import relief investigations on two countertrade products, anhydrous ammonia and truck-trailer axles. In 1979, the Commission found imports of anhydrous ammonia from the Soviet Union were disrupting the U.S. anhydrous ammonia market. The Commission conducted a second investigation of anhydrous ammonia imports early in 1980, that resulted in a negative finding. In a 1980 case involving countertrade imports, truck-trailer axles imported from Hungary were found to be injuring the U.S. truck-trailer axle industry due to dumping.

Exports

The level of U.S. machinery and technology exported through countertrade agreements is difficult to determine. Most corporations contacted during this study chose not to disclose the dollar value of their countertrade exports. Further, corporate officials emphasized that initial published reports of signed countertrade agreements or those under negotiation often unintentionally distort the facts or fail to report renegotiated contract provisions. Rarely do published reports provide data on the portion of the total countertrade transaction value accounting for U.S. exports and the portion sourced in foreign countries. Corporate representatives indicated that the degree of foreign sourcing varies according to each transaction.

On the basis of information gathered for this report, U.S. exports are estimated to exceed the level of U.S. imports received through countertrade during any given period. This is apparent since the value of countertrade financing of a given Western product usually accounts for less than the total

value of that product. The remainder is paid in hard-currency-backed credits. U.S. corporate representatives and published sources, indicate the incidents of U.S. countertrade exports are many. Appendixes B and C identify U.S. countertrade export transaction involving the export of machinery and technology needed to produce a variety of items such as chemicals, footwear, tractor parts, brass products, and truck-trailer axles.

U.S. employment

Information gathered in the course of the study failed to give any clear-cut indication of how countertrade transactions affect employment in U.S. industries. Countertrade imports can be viewed as possibly displacing U.S. production and, thereby reducing employment. Further, through compensation agreements, U.S. companies have indicated that they export technology and machinery to equip production facilities, thus providing employment opportunities in foreign countries at the expense of new positions in the United States.

Conversely, it can be argued that countertrade creates U.S. exports that might not otherwise be accomplished and it follows that U.S. jobs would be created. Further, according to corporate representatives interviewed, many of the products committed to U.S. companies in countertrade do not result in U.S. imports but are shipped to other countries on behalf of the U.S. principle. Therefore, displacement of U.S. production is diminished or nonexistent. To date, countertrade exports are estimated to exceed U.S. countertrade imports.

U.S. industries most likely to experience countertrade demands

On the basis of information from corporate officials and from published sources, it is likely that U.S. companies seeking sales to most NME's and many LDC's will come up against countertrade demands of one sort or another. Although there are no U.S. products insulated from potential countertrade demands, some products are more likely than others to require some form of countertrade financing as a condition of purchase.

Several U.S. corporate executives have indicated that product imports requiring countertrade financing in LDC's vary significantly from country to country depending on central governments' policies. Generally, if an industry sector is targeted for self-sufficiency by an LDC government, foreign companies seeking to sell imported items of a kind produced in the targeted industry will most likely experience countertrade demands. Published statements by foreign planning officials indicate that these measures are expected to induce foreign companies to invest in local targeted industries for the purpose of maintaining a presence in the particular LDC's market. Projects requiring large amounts of Western credits, such as for mining and processing development, also may require countertrade financing. Large-scale industrial projects in several of the oil-exporting developing countries, such as Mexico, Venezuela, and Algeria reportedly are sometimes financed by oil exports. 1/

1/ Bill Paul, "Algeria, Libya Offer to Barter $40-a-Barrel Oil," The Wall Street Journal, August 28, 1981, p. 2.

Countertrade demands in NME's have been the focus of the Western press more so than those of the LDC's. Because of this fact and the fact that countertrade mechanisms have been extensively used by the NME's for over a decade, the criteria used by NME's are more readily identified. The general NME countertrade criteria as developed by the research for this report are as follows:

High likelihood of countertrade financing in NME's

- o low-priority (as ranked by central government) consumer items especially types already domestically produced such as television receivers, washing machines, shoes, etc.,
- o products not destined for import under current 5-year plans,
- o large industrial projects normally requiring massive amounts of Western financing including projects given higher priority in 5-year plan, particularly large-scale basis chemical projects, and
- o industrial projects not employing sophisticated Western technology.

Low likelihood of countertrade financing in NME's

- o grains and other foodstuffs,
- o machinery, equipment, and manufacturing processes employing sophisticated Western technology, e.g., computers,
- o products given high priority under current 5-year plans,
- o products needed for energy development such as oil and gas production and processing equipment, certain types of construction machinery used in the building of pipelines and storage facilities, and
- o mineral fuels, e.g., coal.

On the basis of the above criteria, it can be reasoned that hard-currency payments by both NME's and LDC's are reserved for high-priority and large-scale projects essential to the industrialization of economies, whereas, countertrade financing is applied to lesser priority items where the NME's and LDC's bargaining position is stronger.

Technology transfer through countertrade

North-South technology transfer.--The topic of technology transfer to developing countries (South) from the developed countries (North) in the context of normal international trade and investment is well documented. North-South and especially U.S.-South technology transfer through countertrade is much less analyzed and, for a good reason--based on research data there are too few instances of North-South capital equipment sales and direct investment

through countertrade arrangements to identify any trends and effects. Of those identified in the trade press as North-South technology transfers through countertrade, most have involved European firms and therefore, are not within the breadth of this study.

Data gathered for this study indicate that U.S. companies' technology transfers through countertrade have occurred mainly through the development of rather large-scale mining and/or mineral processing operations in several developing countries. In a typical arrangement, a U.S. mining company (usually in a joint venture with one or more Canadian, West European, or Japanese firms) invests capital, machinery, and training for a mining and or processing operation. This usually involves the sale of turnkey facility including the supply of machinery and equipment needed to make it operative, the design and contracting for the facility's construction, training of personnel, sale of licenses and patents, and continued technical assistance. Most importantly, the U.S. company and its partners arrange project financing, usually through private and governmental sources. Credit is extended directly to the developing country's central bank with a "grace period," typically 2 to 3 years, before repayment is to begin. Repayment of the loan most often begins at the time the venture becomes operational. The countertrade portion of such arrangements commits the Western principals to buy-back a specified portion of the output, usually in proportion to the equity that each originally invested. The remainder of the output is used within the producing country. The buy-back period ranges between 5 to 20 years. With the hard-currency revenues generated from the sale of the output, the country receiving the technology pays back the note to the institutions that extended project credit. 1/

On the basis of reports from U.S. corporate executives, the effect of these large-scale countertrade finances mining and/or processing operations can be significant to the LDC's economy because it brings organizational skills and technology to developing countries as well as making a future positive contribution to their balance of payment account. Because of the outflow of repatriated interest and principal payments (in the form of products) required for these countertrade projects, the break-even point, and therefore the point of a positive contribution to the country's balance of payment account, may not occur for many years. However, the developing countries gain organized mining and/or processing operations that contribute to employment, exports, and domestic growth. Further, some of the resultant products from these operations displace imports of the same type of product and therefore eliminate the need for hard-currency payments for those imports.

In mining and/or processing countertrade operations, developing countries rely on Western companies' expertise to market that portion of the output destined for export. Therefore, there is little or no transfer of international marketing skills to the developing country receiving the technology. Consequently, the developing country has very little control over the pricing and distribution of its commodity exports and little chance of developing that expertise until after the payback period.

1/ S.K.B. Asante, "Restructuring Transnational Mineral Agreements," American Journal of International Law, 335, 1979, p. 341.

Although there are very few documented cases to date of technology transfer through countertrade between the United States and developing countries, according to executives of several U.S. multinationals, industrial development plans in many LDC's certainly will result in an increase in the occurrence of such transfers. Several executives pointed to the fact that many LDC's have adopted countertrade policies that permit imports of certain items only if there is an accompanying agreement providing for the export of goods and services of equal value. Based on trade press reports, these so-called export performance requirements (discussed in the following section), which encourage countertrade are gaining increasing popularity with developing countries. U.S. firms wishing to sell their products to those developing countries will reportedly have to find new markets for existing LDC's products or help those LDC's develop a wide variety of sophisticated products that are more readily marketable in the United States.

Several LDC's have initiated export development programs designed to develop or modernize strategic industries according to official statements of several LDC governments. 1/ These plans call for shifting resources and attracting foreign investment to the targeted industries so that they may become self sufficient and provide a net export situation. The results of those industrialization programs are expected to strengthen the respective national economies as a whole, diminish the negative trade balance, and to provide independence from foreign sources in the targeted industries. U.S. firms seeking to market their products in LDC's with such development programs report that they must now be prepared to purchase goods or services from or to invest in the LDC's as a condition for completing transactions. This situation is expected to result in a significant increase in countertrade demands on U.S. firms doing business in those LDC's.

For example, according to U.S. government sources, Mexico has instituted such a "national development" plan, specifically targeting for development and self-sufficiency in the automobile and electronics industry. In the electronics industry sector, the Mexican Government's recent electronic industry development decree indicates that it is attempting to create an industry that can "satisfy the national demands and modify their image as nonaggressive in the area of technology and technical assistance." Among the items decreed by the Mexican Government are requirements for increased Mexican content for selected electronic components produced in or imported to Mexico and higher tariffs for imports of electronic components. Foreign equity ownership in manufacturing of selected electronic components in Mexico is permitted only if certain compensation requirements are met. Companies selecting this alternative must agree to buy-back or export at least 75 percent of the output from their Mexican manufacturing facility.

1/ A. Cizaukas, "The Changing Nature of Export Credit Finance and its Implications for Developing Countries," World Bank Working Papers, #409, July, 1980, p. 16.

Similarly, the Mexican Government issued a decree in 1977 stating their requirements for the promotion of the Mexican automotive industry. The principal objectives of the 1977 automotive decree are as follows:

- To attain international levels of productivity;
- To generate a positive foreign exchange balance in the medium-term future;
- To maximize the incorporation of local content in order to create employment;
- To substitute locally made products for imports;
- To optimize the use of raw materials and resources through a higher degree of rationalization of vehicle production; and
- To recognize the achievements and strengthen the efforts of Mexican majority owned companies 1/

Several of these objectives require foreign companies to export technology into Mexico through compensation and counterpurchase arrangements. For example, the Mexican decree states that an annual foreign exchange budget is to be prepared by each automobile assembler or parts manufacturer in which all company imports as well as other payments abroad are targeted to be balanced by exports. The transfer of technology as a result of the 1977 decree accomplished in part by countertrade is apparent. Since 1977, both production in and exports from Mexico have increased. Further increases are expected since the three major U.S. automobile manufacturers, according to trade press reports, either have built, or are in the process of building, or have plans to build manufacturing facilities to produce engines and transaxles.

U.S. corporate executives interviewed reported that the Brazilian Government also has instituted an export development program; however, unlike the Mexican plan, Brazil's program is applied across the board to all industries. Generally, the Brazilian plan reportedly calls for an export contract to accompany each import license application. The export contract guarantees that the value of the export will equal or exceed the value of the import. Under this type of countertrade, a U.S. manufacturer seeking to sell its product in Brazil must find Brazilian products of sufficient quality so that they can be readily marketed in the United States or in some third country. U.S. companies, contacted during the research for this study report that Brazilian products often do not meet Western specifications without some modification, or that Brazilian products that have U.S. market potential are committed to other foreign manufacturers. Because of this, U.S. manufacturers have introduced new technology into Brazil so that the resultant product of that technology can be accepted by the U.S. company against the import license application.

1/ Mexico's plan is referred to in official press releases of the Mexican Government as "The National Plan of Industrial Development."

East-West technology transfer.--The literature indicates that technology transfer through countertrade is much more common in East-West trade, than in North-South trade because of Eastern European's longer experience with countertrade in its dealings with the West. The Eastern countries cite countertrade as a major factor in their recent industrial technological advances. In fact, the authority to negotiate counterpurchase and compensation agreements was given high priority in recent 5-year central plans for most of the East European countries. During the past 10 years, according to OECD estimates, the countertrade method has been used in East Europe and the U.S.S.R. to finance the import of more than 2,000 turnkey plants for a wide variety of industries. Appendix C lists many of the recent major deals that U.S. firms have reportedly signed with nonmarket economies including exported machinery and technology for steel mills, chemical complexes, beverage bottling facilies, and machinery for producing shoes.

The transfer of U.S. technology affects Eastern exports to the United States in many ways. The most direct impact occurs in compensation (buy-back) arrangements where the output of U.S.-built production facility is assigned to the U.S. company as partial payment for the cost of the supplied technology and machinery. It was through compensation agreements that helped push Eastern Europe's exports of chemicals to the United States to $308 million in 1980 from $48 million in 1975. The impact of U.S. technology sales through compensation trade to Eastern Europe is not however fully directed at the U.S. market. To date, it is estimated by several U.S. multinational executives that less than half of the output of such U.S. projects ever reaches U.S. markets. The products reportedly are often sold in Western Europe, Latin America, or Africa through the foreign subsidiaries or foreign agents of the U.S. companies entering into these compensation agreements. The main reasons cited by U.S. companies for seeking foreign markets for compensation trade are high U.S. import tariffs for non-most-favored-nation status Eastern countries (such as the U.S.S.R.) and international marketing strategies designed to use the output from Eastern Europe to serve customers in other foreign markets.

In-house Trading Organizations

The burden of fulfilling countertrade obligations is increasingly being handled by "in-house" trading arms of U.S. multinationals. These in-house trading organizations differ in the size and the scope of their operations. They range from fully autonomous profit centers to operations sometimes employing only one executive who is occupied only part-time in the trading function.

The following analysis of in-house trading companies is based on personal interviews with more than 20 representatives of corporations which have established in-house trading organizations.

Most Western firms entering into countertrade cite inexperience in the selection and disposal of unfamiliar products as the major hindrance to these types of arrangements. Corporate executives of some of these firms indicated that if they select the wrong products, a potentially lucrative transaction can turn into a financial disaster. However, it was pointed out that companies wishing repeat business in Eastern Europe, the U.S.S.R., China, or many of the LDC's must be properly organized internally or find a competent third party to handle countertrade goods to avoid such disasters.

Until recently, most U.S. companies, contacted during the research for this study, that were involved in countertrade either sought an experienced trader to dispose of their obligations, or simply refused to deal in anything except hard-currency guarantees in the form of letters of credits. Such refusals resulted in loss of sales to West European or Japanese competitors. U.S. firms realized the incremental loss of business by not dealing with LDC's and centrally planned economies through countertrade and consequently, in the past few years, many medium-sized and large-sized U.S. companies began to organize internally for handling countertrade. In-house trading units have fundamental structural differences as described in this section. There are, however, similarities in the way that each facilitate certain aspects of international countertrades. Common among the various in-house trading organizations is their use of third party specialists to accomplish some of the more complex countertrade arrangements. Most in-house organizations are, however, moving toward the handling of more of the countertrade arrangements from within. Although there are a number of ways in which U.S. companies have structured in-house trading organizations, only the most representative ones are discussed in the following sections.

Profit center trading company.--On the basis of information provided by these U.S. corporate executives, a few U.S. multinationals have turned over their extensive trading operations to affiliated, although autonomous, trading companies. These trading organizations have evolved into self-sustaining companies providing such services as market research, market development, importing and exporting, Customs documentation, financial arrangements, and product distribution. Further, they handle not only the products of the parent company, but those of other smaller U.S. companies seeking international business. They are treated by the parent the same as would any other corporate profit center responsible for sustaining profits.

Profit center trading companies satisfy countertrade obligations of their parent company and those of other clients in many ways. In their most basic function, they act simply as procurers of countertrade goods that are to be consumed by the parent company or other clients. At times they may coordinate with manufacturing organizations in the countries in which a countertrade obligation exists to specify the type and design of products that are to be received as the counter delivery. Products obtained in this manner usually can be used in some stage of the manufacturing operation of the parent firm. For example, one corporation's trading company arranged a consultation between a foreign manufacturer of machine tool and in-house production engineers to modify the foreign machine tool design. When the machine tools were produced, the parent company was able to use them in their own production operations. Thus, the parent company received much needed machine tools and at the same time satisfied a portion of its countertrade commitment with the foreign government in whose country the machine tools were produced.

In addition to affecting the design of countertrade goods for use by the parent, the multifacited profit center trading company often plays an important role by providing specifications of countertrade products to serve other markets. One trading company found that a shortage of oilfield tubular goods existed in the United States. Representatives of this trading company found a potential supplier in Yugoslavia. After an agreement with this supplier as to the design and production of the tubular goods, the trading company's representative found several eager U.S. buyers of the Yugoslavian product, and a deal was concluded. The value of the sale was credited against the countertrade obligations of the trading company's parent company.

On the basis of extensive interviews with U.S. corporate executives, profit center trading companies also seek to arrange international trade deals independent of any countertrade obligation. They will use their trading expertise in locating foreign products for which there is a market in the United States or other Western countries. When buyers are found for these products, the trading company is paid some negotiated fee or a commission. In this respect, these trading companies function similar to "foreign trade management companies" located throughout the United States and Western Europe. 1/ Further evidence of the independent nature of in-house profit center trading companies is the fact that these organizations frequently facilitate trade among LDC's and between LDC's and Eastern-bloc countries.

Profit center trading companies are beginning to establish their own identification separate from the parent company. For example, one such trading organization has at times purchased goods on its own account for resale. By doing this, the trading company controls the price and terms of purchase more effectively than they can by selling on commission. Several corporate executives expect that this practice will lead their company to establishing its own brand on some products. Another profit center trading company has begun negotiations with foreign producers, in a joint venture proposal, to manufacture products to be purchased and marketed by that trading company.

1/ Foreign trade management companies are usually independent firms handling a variety of import and export functions for small and medium U.S. companies.

The wide range of possibilities for profit center trading companies are too numerous for a complete discussion here. It is apparent, however, based on the information gathered for this study that such trading companies will become more innovative in handling international trade in general as well as handling the countertrade obligations of its parent and other clients.

Direct countertrading organization (DCO).--Unlike the profit center trading company, the in-house DCO serves only to satisfy the countertrade obligation of its parent company. These organizations are not self-sustaining as their operation expenses are considered part of the cost of doing international business. The expense of operating a DCO is often built into the product prices charged to the foreign buyer.

Typically, DCO's employ less than 10 persons, and all or most are devoted to finding buyers worldwide for countertrade goods to be supplied by foreign countries. DCO's executives of these trading organizations work closely with the parent company's negotiators when they are attempting to make a sale in a country that is likely to ask for countertrade. The DCO executives' presence in the bargaining process helps guide the negotiators to select the best available countertrade products. Once the contract is signed, the task of marketing countertrade products rest with the DCO. In the disposal of the counter deliveries, the DCO employs much of the same techniques used by profit center trading companies.

Indirect countertrade organization (ICO).--As its name implies, the ICO does not directly involve itself in the marketing or distribution of countertrade products. Rather, on the basis of interviews with U.S. corporate executives, the ICO acts as an information broker to third parties by supplying details on foreign products and services that are available in those foreign countries with whom the ICO's parent company has a countertrade commitment. Further, the ICO executives work closely with third-party agents and buyers located in the United States and many other countries. At the time an international trade transaction results from the information and consultation provided by the ICO, the value of the transaction is credited to a countertrade commitment of the ICO's parent company with the country supplying products or services.

Unlike the profit center trading company or the DCO, the ICO deals only with the products offered to it by foreign governments; the ICO typically provides no specifications for the products tendered for countertrade. Those products often are not in demand in Western countries because of the considerations of quality, style, or technology. Because of this, third party agents and buyers connected with ICO's deal predominantly with less developed countries where the demand is greater for the kinds of products obtained in countertrade.

Like the DCO, the ICO's expense is funded usually out of the general operating budget of its parent company and is included in the cost of goods sold. Typically, an ICO staff consist of less than five persons, some of whom devote full time to selecting agents, distributors, and buyers worldwide that are capable of disposing countertrade products. The remaining staff usually divides its time between the ICO's operation and that of market research or other general trading functions.

Countertrade purchasing organization (CPO).--The simplest form of in-house trading arrangement, the countertrade purchasing organization, is not in the true sense a trading organization. Although, this type employs some of the techniques used by the other forms of in-house trading arms, it does so only to fulfill its mission as a purchasing agent for the parent company. Its primary function is to seek countertrade products suitable for use by the various divisions or subsidiaries of its parent and not for resale. For example, one CPO, contacted in the research for this report, attempted to reduce its countertrade obligation by purchasing from a foreign country work gloves, uniforms, simple tools, and other disposable items used regularly by employees in the corporate manufacturing facilities. The CPO arrangement is particularly well suited to very large manufacturing conglomerates, since such organizations require massive quantities of raw materials, intermediate and finished goods in their manufacturing process. With these product requirements, the CPO can readily select alternate sources of supplies of products in foreign countries that have negotiated countertrade agreements with the CPO's parent company.

Executives of corporations with in-house trading organizations pointed out that one of the main problems facing the CPO is that of coordinating the purchase and delivery of countertrade products to match production runs in the various corporate manufacturing facilities. This requires working with existing in-house corporate buyers and production and design engineering staffs so that products received from foreign sources meet the specified quality requirements. Further, the CPO oversees the delivery of such products so that they reach the factories at the specified time. This task can be considerable, in view of the delivery problems often associated with countertrade products especially from NME sources.

The CPO operations is usually handled by either only one party or by a few staff members on a full-time basis; however, consultation between the CPO staff and the staffs of the marketing production and the procurement divisions are often required before countertrade deliveries can be accepted. Like the direct countertrade and the indirect countertrade organizations, the CPO's operating expenses must be built into the cost-of-goods sold.

In-house trading units have fundamental structural differences as described in this section. There are, however, similarities in the way that each facilitate certain aspects of international countertrades. Common among the various in-house trading organizations is their use of third party specialists to accomplish some of the more complex countertrade arrangements. In countertrade deals involving CEMA countries, 1/ in-house trading companies are likely to use agents located in the United States and Western Europe that have a long and valued association with CEMA countries. Further, outside specialists or independent trading houses are sometime brought in to dispose of basic mineral and agricultural commodities because these third parties are expert in worldwide pricing and distribution of such items. In-house trading companies frequently retain specialists in international law, international banking, and freight forwarding. Most in-house organizations are moving toward the handling of more of the countertrade arrangements from within.

1/ The Council for Mutual Economic Assistance (CEMA) refers to the Communist countries of East Europe and the U.S.S.R., Cuba, Mongolia, and Vietnam.

Possible types of trade conflicts arising from countertrade imports

U.S. trade laws do not distinguish between imports resulting from countertrade contracts and imports resulting from "normal" (e.g., cash sale) trade contracts. Petitions for relief from countertrade imports may be brought under the general import relief statutes (antidumping, countervailing duty and escape clause 1/). Section 406 of the Trade Act of 1974 (19 U.S.C. 2436) indirectly addresses countertrade by addressing imports from Communist countries. A high proportion of countertrade contracts involve trade with Communist countries, and much of the trade with Communist countries is pursuant to countertrade agreements.

Section 406 provides for relief in the form of higher tariffs or import quotas when imports from Communist countries are found to be disrupting a U.S. market. "Market disruption" is defined as occurring when imports from a Communist country are increasing rapidly so as to be a significant cause of material injury or threat to a U.S. industry. The market disruption determinations are made by the Commission and relief is provided by the President (assuming an affirmative Commission determination).

Two of the seven investigations that the Commission has conducted under section 406 have involved a countertrade agreement. Both involved imports of anhydrous ammonia from the U.S.S.R. The Commission made an affirmative determination in the first investigation, No. TA-406-5 (October 1979), but the President took no action. The Commission conducted the second investigation in early 1980 at the request of the President following the Soviet invasion of Afghanistan. After a second hearing, the Commission, with new membership, made a negative determination in the second case and no relief was provided.

The ammonia imports were committed under a 20-year agreement covering the period 1978-97 between Occidental Petroleum Corp., a large U.S.-based producer of oil and gas, fertilizer, and chemical products, and the Ministry of Foreign Trade of the U.S.S.R. Under the agreement (actually a series of agreements), Occidental is to buy about 4 million metric tons of ammonia and related fertilizer products from the Soviets annually in exchange for 1 million metric tons of super phosphoric acid (a phosphate fertilizer) annually. Part of the revenues from the sale of the Soviet ammonia are to be used to repay the $900 million borrrowed by the Soviet Government from the U.S. Export-Import Bank and a group of U.S. and foreign banks to build the ammonia plants and certain related port and transportation facilities. The agreement also involved the transfer by Occidental to the Soviets of certain technology and design services and equipment in connection with the construction of the Soviet plants. Prices are to be set periodically and are not based on a

1/ The provisions of the trade statutes are as follows: antidumping statute [Subtitle B of title VII of the Tariff Act of 1930, as added by the Trade Agreements Act of 1979 (U.S.C. 1673)]; countervailing duty statute [Subtitle A of title VII of the Tariff Act of 1930, as added by the Trade Agreements Act of 1979 (19 U.S.C. 1671), or section 303 of the Tariff Act of 1930 (19 U.S.C. 1303), as amended by the Trade Agreements Act of 1979]; and escape clause statute [section 201(b) of the Trade Act of 1974 (19 U.S.C. 2251(b))].

long-term fixed price agreement. Occidental expects to sell much of the Soviet product in non-U.S. markets. 1/

The antidumping law has also been utilized in one case for imports subject to a countertrade arrangement. The antidumping law provides for the imposition of an antidumping duty in an amount equal to the margin of dumping (i.e., underselling). Section 773(c) of the Tariff Act (19 U.S.C. 1673b(c)) sets forth a special procedure for calculating the foreign market value of merchandise when the merchandise is the product of a "State-controlled-economy." Dumping investigations are conducted jointly by the Department of Commerce and by this Commission. Commerce determines whether there is dumping and, if so, the margin of dumping; the Commission determines whether a domestic industry is materially injured by reason of such dumping.

Several dumping investigations in recent years have involved imports from a communist country, but only one, truck-trailer axles, involved a countertrade contract. In a preliminary investigation the Commission found that truck-trailer axles from Hungary were materially injuring U.S. truck-trailer axle producers. A settlement was reached between the interested parties, however. As a result, there was no final investigation and no dumping duties were assessed.

1/ For further discussion of the Occidental-U.S.S.R. Agreement, see Anhydrous Ammonia from the U.S.S.R.: Report to the President on investigation No. TA-406-6 . . ., USITC Publication 1051, April 1980, pp. 104-12.

Appendix A

Figures

Figure 1.--U.S. trade balance with nonmarket economies, 1974-80.

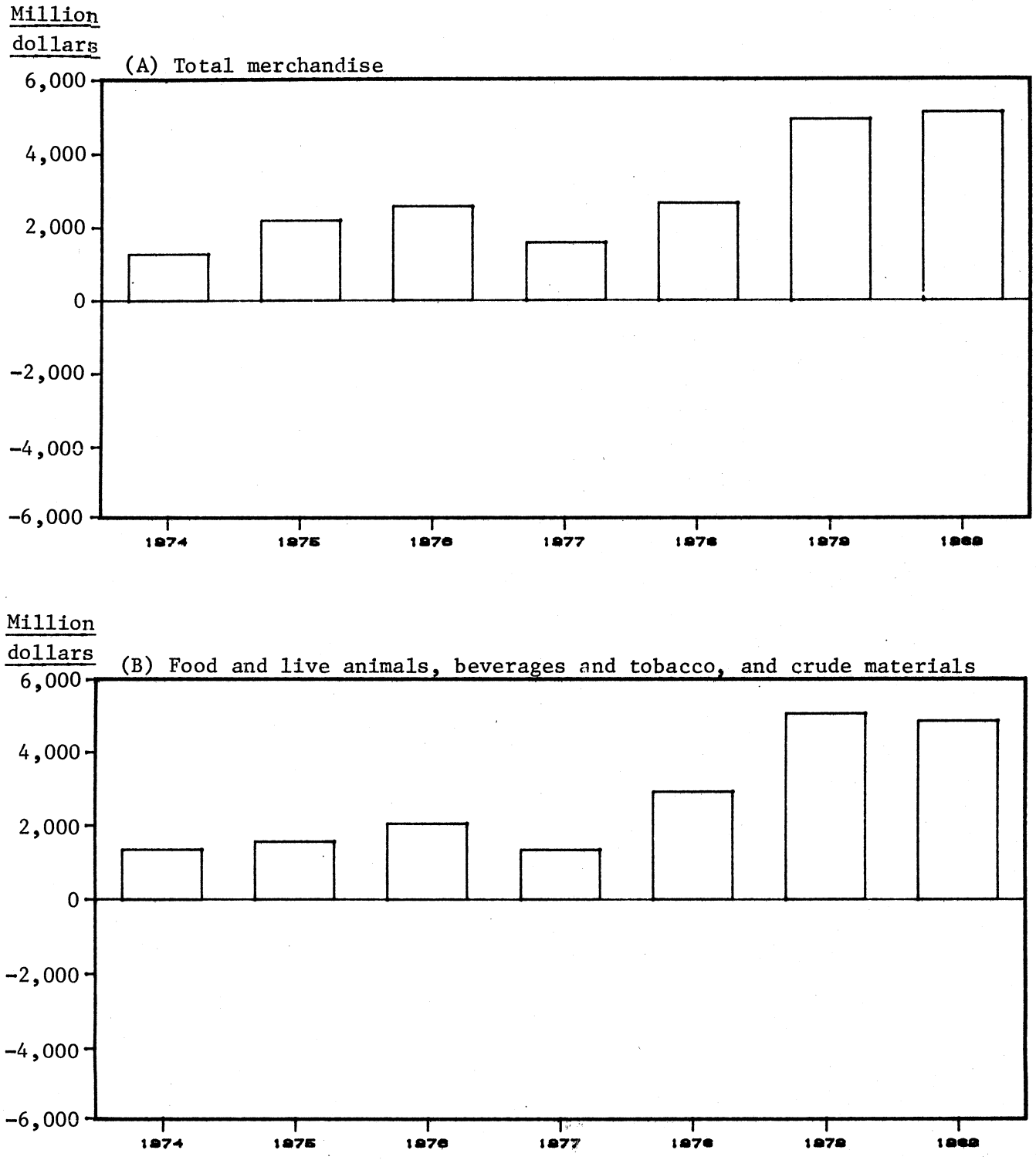
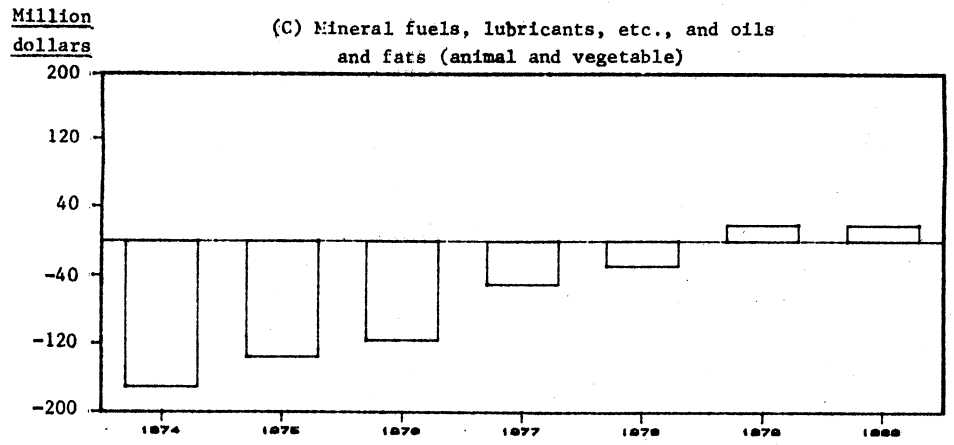
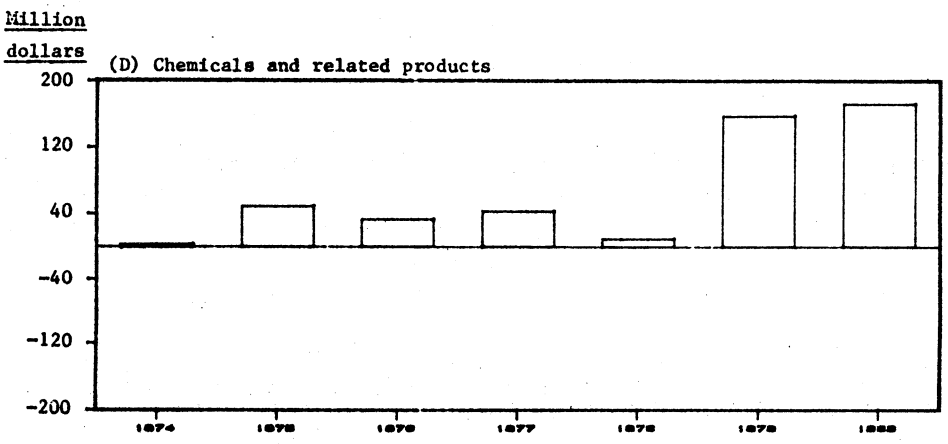
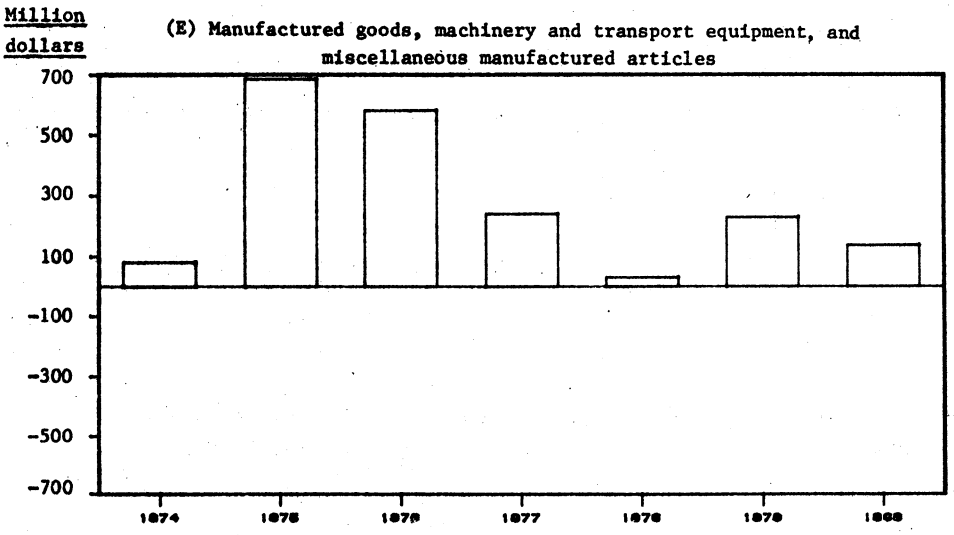


Figure 1.--U.S. trade balance with nonmarket economies, 1974-80--Continued

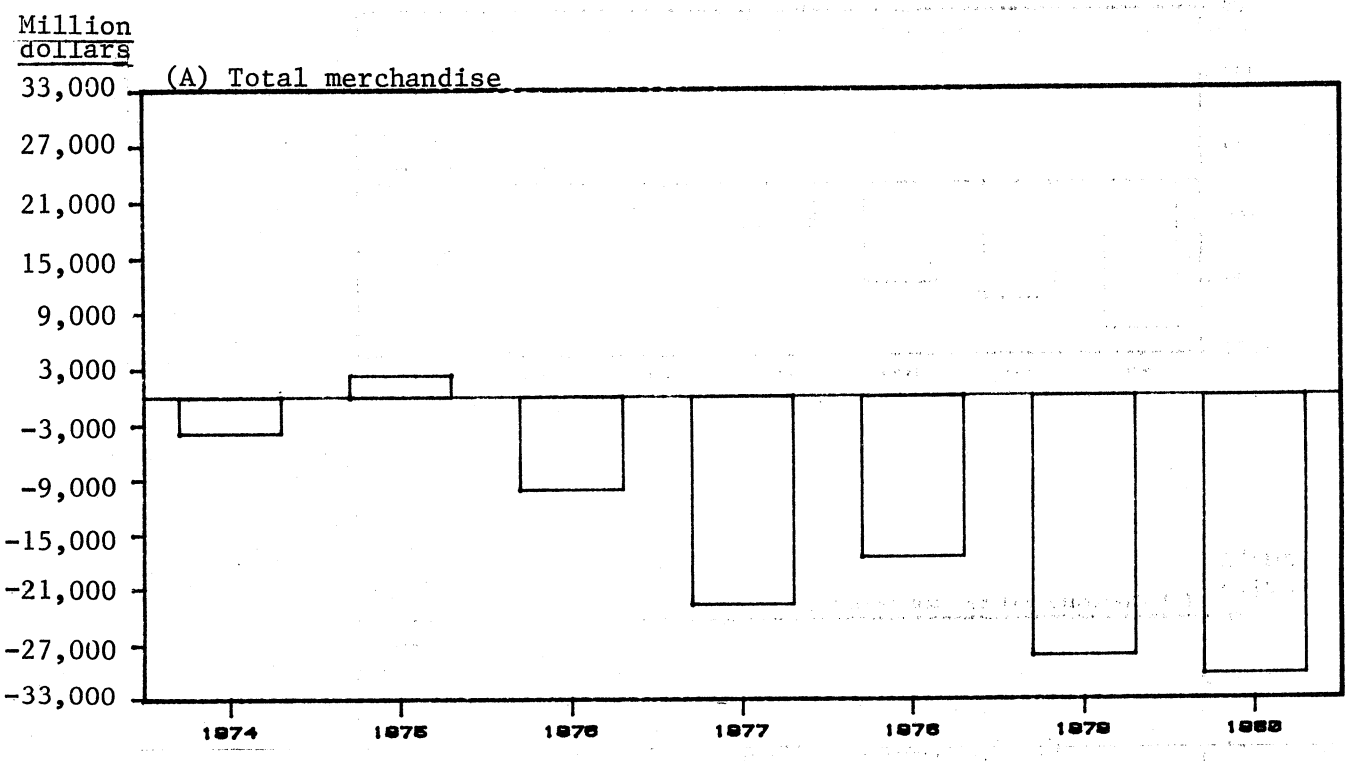






Source: U.S. Imports for Consumption, IM 146, U.S. Department of Commerce, 1974-80.

Figure 2.--U.S. trade balance with less developed countries, 1974-80.



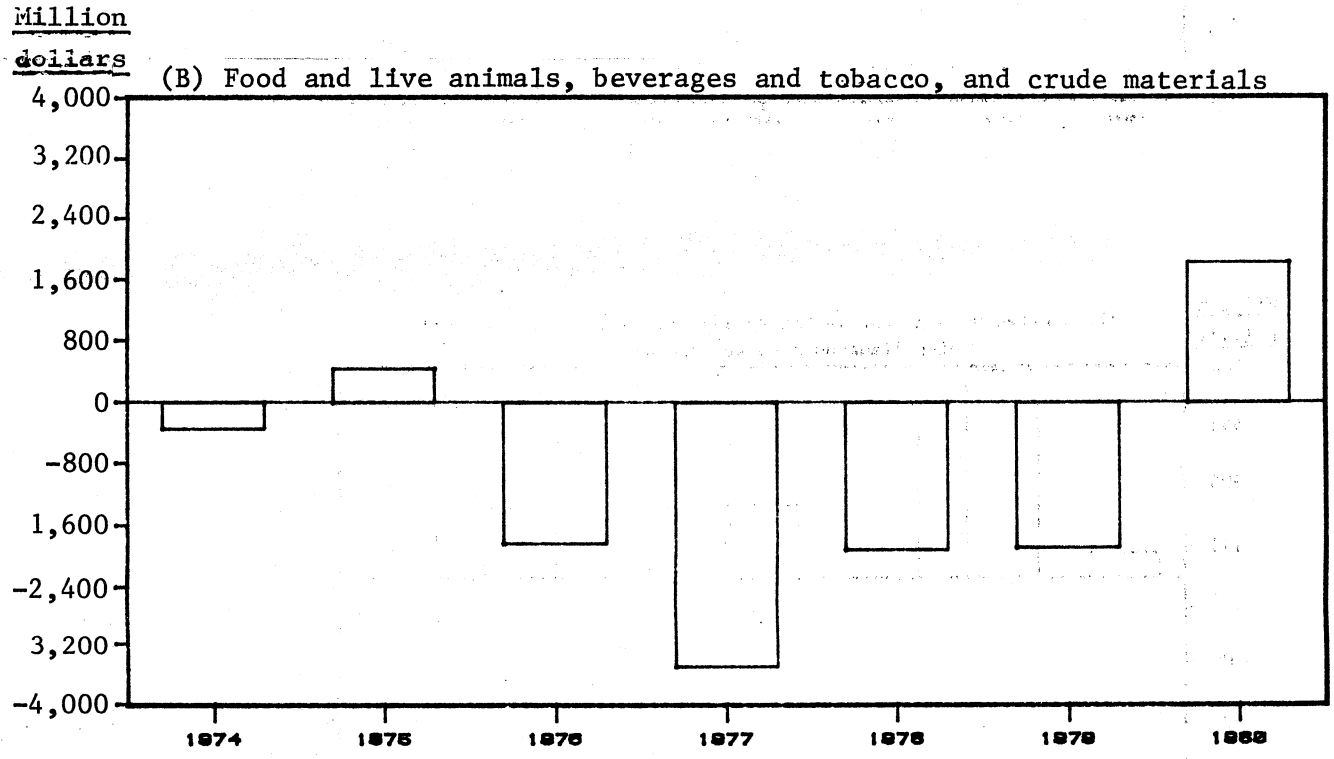
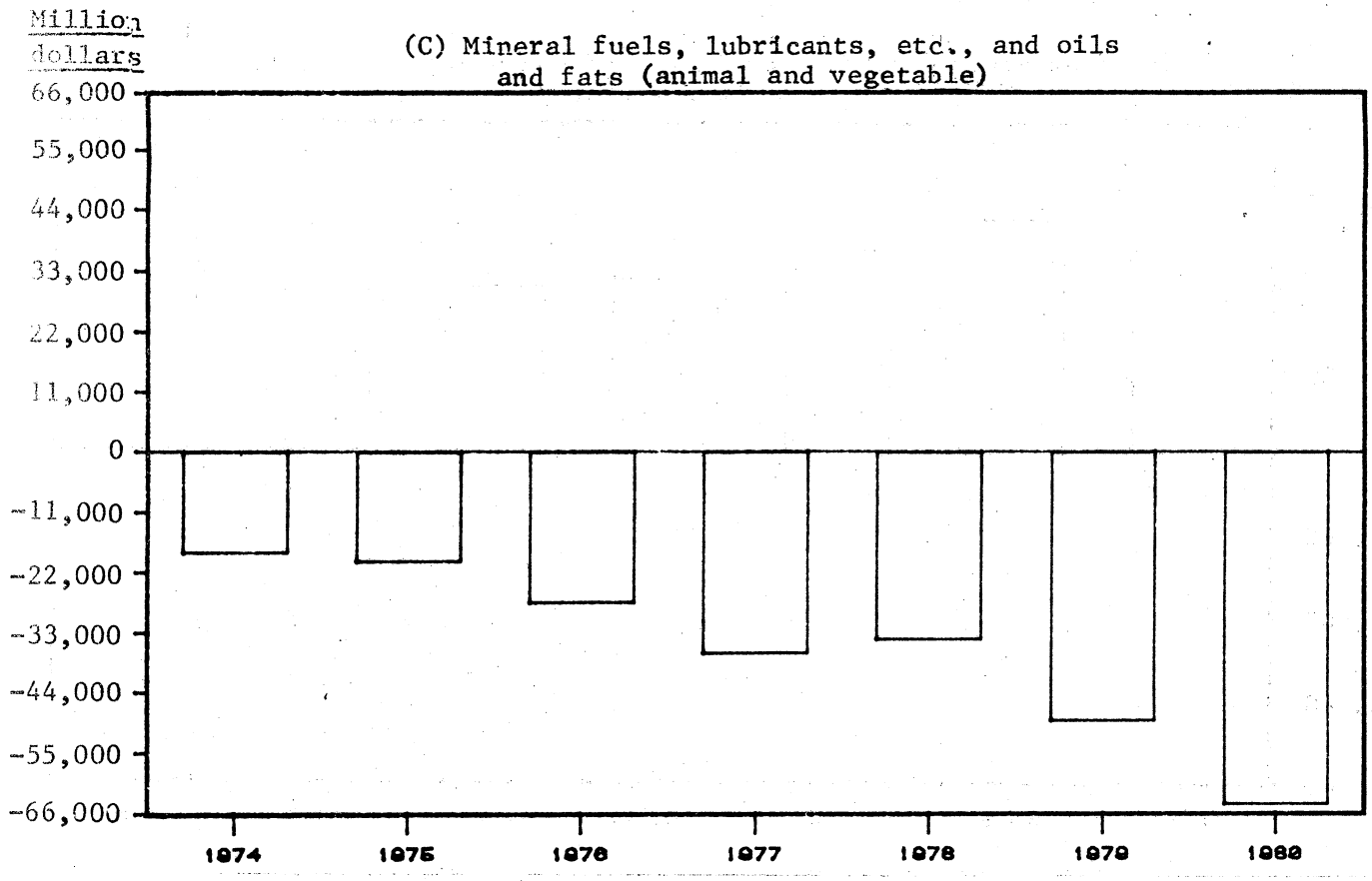


Figure 2.--U.S. trade balance with less developed countries--Continued.



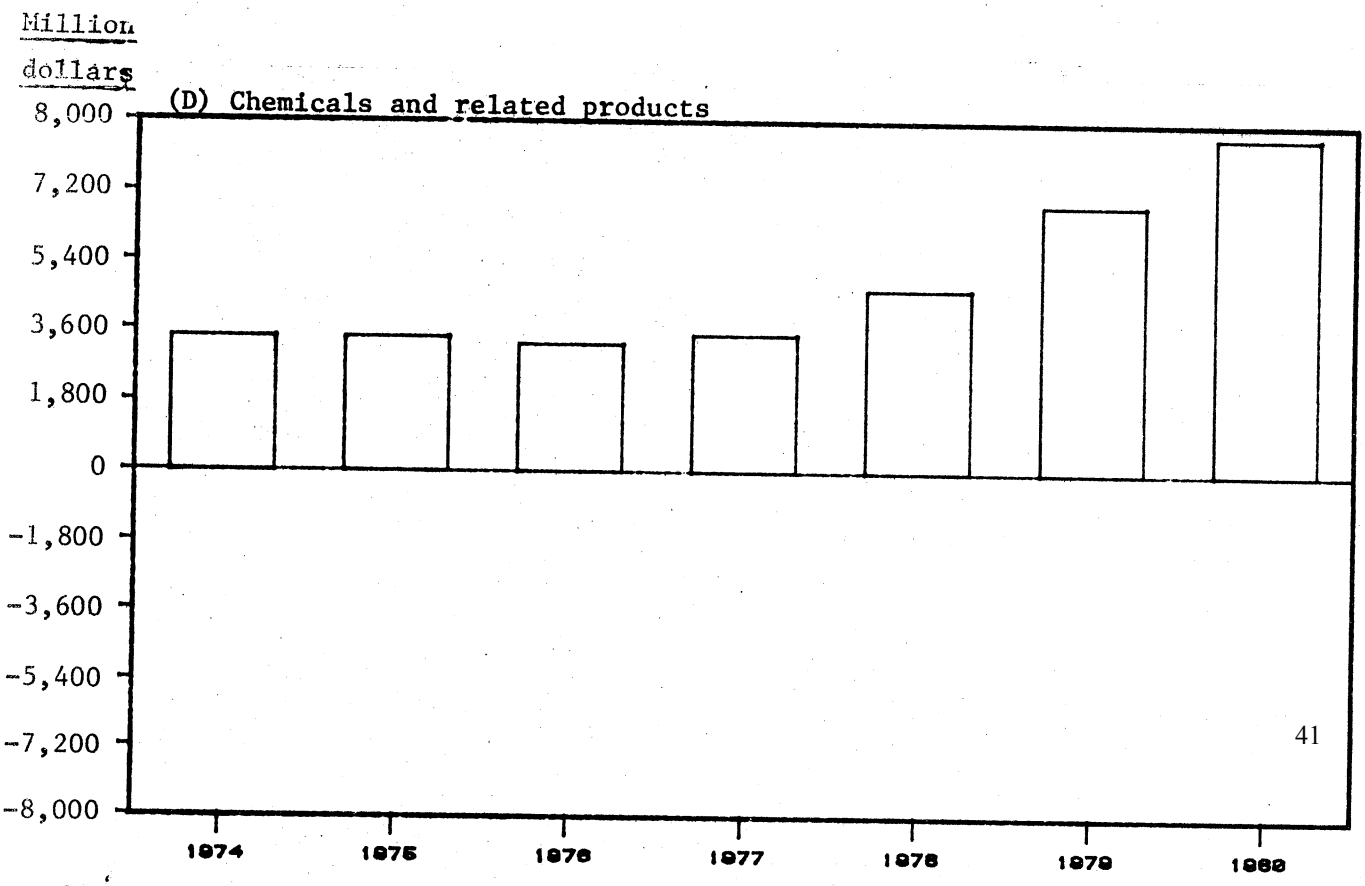
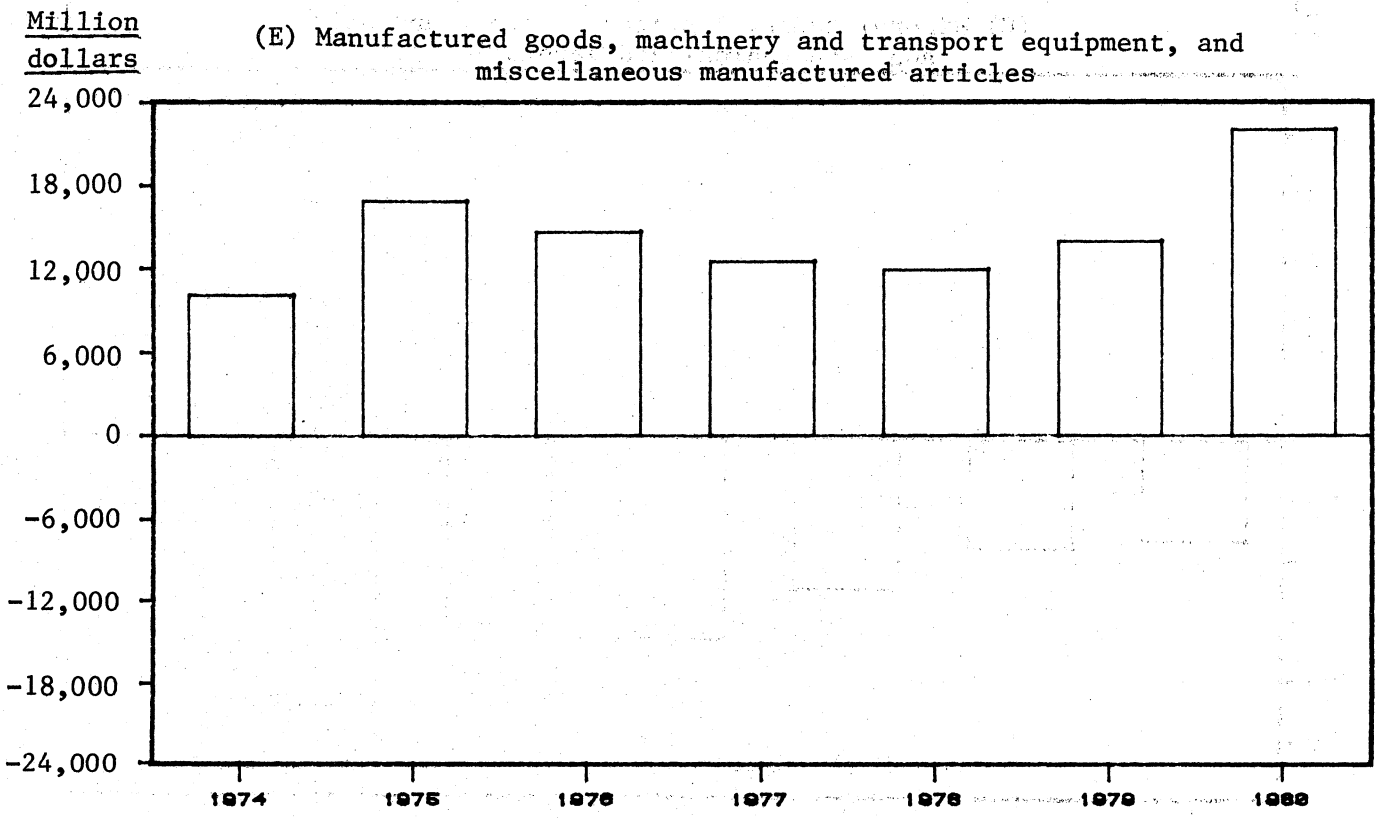


Figure 2.--U.S. trade balance with less developed countries--Continued.



Source: U.S. Imports for Consumption, IM 146, U.S. Department of Commerce, 1974-80.

Appendix B

Identified Chemical Compensation Agreements with Eastern Europe

Identified chemical compensation agreements with Eastern Europe

Western company	Year contract signed	Eastern country	Equipment supplied	Total value of Eastern export	Planned yearly value of exports	Time span of buy-back deliveries
				Million dollars	Million dollars	
Occidental Petroleum (USA)	1978	Poland	Phosphate rock	670	33.5	1978-1997
Rhone Poulenc/Institut Francais du Petrole (France)	1975	do	Chemicals and textile fibres.	1/	1/	1/
Ugine Kuhlmann (France)	1976	do	Unspecified cooperation in chemical production.	1/	1/	1/
Uhde/Hoechst (Germany)	1976	East Germany	Complex of 4 plants including 1 for producing caustic soda.	32	4	1980-1987
Catalytic (United Kingdom)	1977	East Germany	Chlorine plant	11.5	2.3	1/
Petrocarbon Developments (United Kingdom).	1975	Poland	Chlorine plant (part of larger deal).	1/	1/	1980-1989
Krebs, Klockner (France and Germany).	1975	Poland	Soda ash plant	180	30	1980-1985
De Nora (Italy)	1978	Romania	2 chlorine plants	1/	1/	1/
Chemie Linz (Austria)	1976	East Germany	Pesticides, herbicide agents and fertilizers.	58.58	1/	1/
Vereinigte Edelstahlwerke (Austria).	1977	East Germany	Fine steel products.	1/	1/	1/
Haldor Topsöe (Denmark)	1978	Bulgaria	Ammonia plant	7	1	1978-1984
Creusot Loire (France)	1976	Poland	2 ammonia plants	520	52	1983-1992
Creusot Loire (France)	1974	U.S.S.R.	4 ammonia plants	270	27	1980-1989
Occidental Petroleum (USA)	1974	do	Building facilities for storing and handling fertilizers, including ammonia and deliveries of super phosphoric acid.	10,000	441	1978-1997
Klockner-Davy Powergas (West Germany).	1977	do	Phthalic anhydride plant and maleic anhydride plant.	20	2	1980-1989
Snamprogetti/Anic (Italy)	1975	do	3 urea plants	115	11.5	1979-1988
Montedison (Italy)	1973	do	3 urea plants	287	28.7 (ammonia)	1978-1987
				78	7.8 (urea)	1976-1985
Mitsui/Toyo (Japan)	1976	do	4 ammonia plants	240	11	1977-1997
Klockner-Davy Powergas (Germany).	1976	do	Phthalic anhydride plant, fumaric acid unit.	20	2	1980-1989
Krupp led consortium (Germany).	1976	Poland	Coal gasification plants.	1/	1/	1/
ENI (Italy)	1975	U.S.S.R.	2 urea plants	1/	1/	1/
Lurgi (Germany)	1976	Bulgaria	Polypropylene plant.	1/	1/	1/
Mitsui (Japan)	1977	East Germany	Benzene plant (part of aromatics complex).	150	25	1983-1988
Technip (France)	1976	U.S.S.R.	2 aromatics complexes.	950	95	1980-1989
Krupp-Koppers (Germany)	1976	do	Dimethyltere-phthalate plant.	100	10	1981-1990
Uhde/Hoechst (Germany)	1977	do	Polyester staple fiber plant	1/	9	1981-1987
Rhone-Poulenc (France)	1976	do	Complex deal including supply of equipment and chemicals.	1/	1/	1984-1993
Chisso (Japan)	1972	Czechoslovakia	Polypropylene plant	1/	5	1/
Salzgitter (Germany)	1972	U.S.S.R.	Polyethylene plant	170	13	1971-1983
Do	1973	do	do	225	25	1978-1986
CJB/Union Carbide (United Kingdom).	1974	do	do	70	7	1980-1989

See footnote at end of table.

Identified chemical compensation agreements with Eastern Europe--Continued

Western company	Year contract signed	Eastern country	Equipment supplied	Total value of Eastern export	Planned yearly value of exports	Time span of buy-back deliveries
				Million dollars	Million dollars	
CJB/Union Carbide (United Kingdom).	1977	U.S.S.R.	Polyethylene plant	162	16	1983-1993
Litwin (France)	1973	do	Plants to produce styrene and polystyrene.	160	19	1979-1987
Marubeni (Japan)	1975	do	Extension of plant to 75,000 t/yr. of acrylonitrile.	30	6	1978-1982
Montedison (Italy)	1973	do	Acrylonitrile plant	150	15	1980-1990
Krupp-Koppers (Germany)	1976	do	2 DMT plants	100	10	1981-1990
Do	1978	do		150	15	
Uhde-Hoechst (Germany)	1977	do	Polyester staple fiber plant.	1/	9	1981-
Technip/Technipetrol (France-Italy).	1972	Bulgaria	Ethylene plant	10	2.2	1979-1983
Salzgitter (Germany)	1976	U.S.S.R.	Ethylene oxide plant	100	10	1979-1988
Lummus-Monsanto (USA)	1975	do	Acetic acid plant	1/	1/	1/
Snia Viscosa (Italy)	1975	do	Caprolactam plant	224	28	1/
Klockner-Davy Powergas (Germany).	1976	do	Phthalic anhydride plant and fumaric acid unit.	50	7	1980-1989
Do	1977	do	Phthalic anhydride plant and maleic anhydride plant.	50	7	1980-1989
Hoechst-Uhde-Wacker (Germany)	1974	do	VCM plant	66	16.5	1976-1979
Klockner-Hols (Germany)	1974	do	PVC plant	33	3.30	1/
Do	1974	Bulgaria	PVC plant	25	3.5	1980-1988
Do	1974	U.S.S.R.	PVC plant	54	5.4	1978-1987
Uhde/Hoechst (Germany)	1976	East Germany	PVC plant in complex	80	10	1980-1987
Kommerling (Germany)	1977	Hungary	License and equipment for making windows from synthetic materials.	1/	1/	1/
Chemie Linz/Voest Alpine (Austria).	1974	Poland	Melamine resin plant	1/	1/	1/
Dow Chemical Europe (West Germany).	1977	East Germany	Propylene oxide	85	1/	1979-1988
Montedison (Italy)	1973	U.S.S.R.	11 chemical plants	57.5	5.75	1980-1990
Rhone-Poulenc (France)	1976	do	Complex deals including supply of equipments and chemicals.	34.5	3.45	1981-1990
Krupp-Koppers (Germany)	1976	do	Dimethylterephthalate plant.	100	10	1981-1990
Davy-Powergas/ICI/Klockner (United Kingdom-Germany).	1977	do	2 methanol plants	345	34.5	1981-1990
Uhde-Hoechst (Germany)	1977	do	Polyester staple fiber plant.	1/	9	1981-1987

1/ Not available.

Sources: Compiled from various published sources including "Soviet Chemical Equipment Purchases From the West: Impact on Production and Foreign Trade," Central Intelligence Agency, October 1978, and "East-West Trade In Chemicals," Organization for Economic Co-operation and Development, 1980.

Appendix C

Examples Of Countertrade Transactions Involving U.S. Companies

Examples of countertrade transactions involving U.S. companies

U.S. company	Product sold	Product returned	Date of contract	Country
Airco, Inc	1,500 tons/yr. steel mill	Chromium	1971	U.S.S.R.
Ashland Oil, Inc. and General Dynamics.	F-16 Fighter jets	Oil	1/	Iran.
China Trade Corp. (U.S.) Konrad Hornschuch AG (FGR).	2 plants for the production of PVC foils.	Artificial leather	Nov. 1978	China.
Clarke Equipment Credit	Machinery, know-how	Rear axles	2/	China.
Clark Equipment	License for manufacture of construction equipment.	Axles	1972	Poland.
Container Transport Int'l (U.S.) and Givet (HK).	Container plants (2) Guangdong, Tianjin	Marine containers used in int'l shipping.	Feb. 1979	China.
Coca-Cola	Syrup/technology	Krakus beer	1/	Poland.
DeKalb Agresearch (U.S.)/ Nichimen (Japan).	Technical advice, agricultural training.	Soybeans	2/	China.
Do All	Machinery, know-how	Saws	2/	China.
Dow Chemical	Propylene oxide	Propylene	1/	East Germany.
FMC	300 mt./yr. powdered pectin plant.	1/	1973	Poland.
General Electric	License and machines for production of medical equipment.	Electrocardiogram meters.	1976	Poland.
General Motors	Technology for building vans.	Lightweight vans	1975	Poland.
General Motors	Earth-moving trucks	Timber	1/	U.S.S.R.
General Tire and Rubber Co.	Equipment and technology to build truck tires.	Truck tires	1/	Romania.
Gettys Inc	Technology and gear box components.	Electrical motors and drive systems for incorporation into machine tools.	1978	Hungary.
Goodyear	Materials, equipment training for printing plant.	Labels, packing material, etc.	1979	China.

See footnotes at end of table.

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Examples of countertrade transactions involving U.S. companies--Continued

U.S. company	Product sold	Product returned	Date of contract	Country
Hesston	Harvesters and hay-handling.	Heads and gear boxes for harvesters.	1977	Hungary.
International Harvester	Design and technology for tractor production.	Tractor components	1/	Poland.
International Harvester	License for manufacture of tractors and accessories	Tractors and accessories.	1972	Poland.
Katy Industries	Machinery and technology for shoe production.	Shoes	1976	Poland.
Katy Industries	Technology for manufacturing women's shoes.	Women's shoes	1976	Hungary.
Levi Strauss	Technology for producing jeans.	Jeans	1/	Hungary.
Marathon Mfg. Co	Offshore drilling rigs	Petroleum	1/	China.
McDonnell Douglas Aircraft Co.	DC 9 aircraft	Hams and other products	1/	Yugoslavia.
McGraw-Edison	Power system electronics plants.	Electronic goods	2/	China.
Mego Corp	Industrial sewing machines.	Doll costumes	2/	China.
Norton	Supply of machines and equipment for production of abrasive discs.	1/	1975	Poland.
Occidental Petroleum	Ammonia, urea complex	Ammonia, urea, potash	1/	U.S.S.R.
Occidental Petroleum	Phosphate rock	Sulphur	1978	Poland.
Oxford Industries	Apparel finishing equipment.	Suits	1978	China.
Pepsico	Cola concentrate bottling facilities.	Soviet Vodka	1/	U.S.S.R.
Pepsico	Bottling plant and cola syrup.	Vodka	1/	U.S.S.R.

See footnotes at end of table.

Examples of countertrade transactions involving U.S. companies--Continued

U.S. company	Product sold	Product returned	Date of contract	Country
Philip-Morris (via European subsidiaries).	Tobacco production machinery.	Tobacco	1978	U.S.S.R.
Prestige	Textile machines	Resultant product	Nov. 1978	China.
Pullman Kellogg (U.S.) DAYY Int'l (U.K.).	Technology for aromatics plant.	Chemicals	1/	East Germany.
Steiger Tractor, Division of International Harvester.	Component technology	Tractor axles	1/	Hungary.
Textron	Supply of plant for brass and copper strip mill.	Copper and brass mill products.	1973	Poland.
Thyssen, Inc.(U.S.)	U.S. scrap	Steel (Korean)	1/	Korea, et al.
Union Carbide	Chemical technology	Polyethylene	1/	U.S.S.R.
Union Carbide, et al.	Technology	Unspecified chemicals	1977	U.S.S.R.
Universal Machinery Equipment Co.	Technology for producers' electrical furnaces.	Electrical furnaces	1977	Hungary.
Waterbury Farrell	Steel rolling mill	Surface-grinding machinery.	1973	Poland.
Waterbury Farrell	Brass and copper strip mill.	Miscellaneous products, including copper and brass.	1975	Poland.
Westinghouse	License, equipment	Semiconductors	1974	Poland.

1/ Unknown.
2/ Under negotiations.

Sources: Compiled from data obtained from personal interviews, and published sources including Pompiliu Verzariu, "Countertrade Practices in East Europe, the Soviet Union, and China: An Introductory Guide to Business," U.S. Department of Commerce, 1980.

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Appendix D

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