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ECONOMIC

PERSPECTIVES

Foreign currency futures: reducing
foreign exchange risk

Small-issue Industrial Revenue Bonds in the
Seventh Federal Reserve District

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Economic stagnation and the resurgence
of trade restrictions

New Year, New Look

A newly designed **Economic Perspectives** will return to its customary bimonthly schedule with the next issue, January-February 1983.

The editors have been studying the results of the May 1982 survey of **Economic Perspectives** readers. Comments were very largely favorable and suggest that only minor modifications in the magazine's article mix are required to satisfy the needs and interests of the readership.

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Foreign currency futures: reducing foreign exchange risk

Karel V. Chalupa

The wide fluctuations in foreign exchange rates since the 1971 breakdown of the Bretton Woods System of fixed exchange rates have introduced a new element of risk into international transactions. The possibility of large losses has forced most corporations to turn to the forward market to limit the adverse effects of exchange rate movements. Major international banks have traditionally provided forward cover to their international customers as a means of hedging foreign exchange exposures. In recent years, however, the International Monetary Market in Chicago has emerged as a significant alternative facility for reducing foreign exchange risk by offering contracts in foreign currencies for future delivery.

A hypothetical transaction is helpful in demonstrating the nature of this risk. Suppose that a U.S. firm, through its foreign subsidiary, had contracted at the beginning of 1982 to sell machine tools to a Japanese firm for 200 million yen, the tools to be delivered and paid for at the end of June. At the yen/dollar exchange rate prevailing in early January, the total revenue received by the U.S. firm, after selling the yen for dollars in the foreign exchange market, would have been 200 million yen divided by 218.45 yen/dollar, or \$915,541.31. Assuming production and transportation cost of \$800,000, the sale would have yielded a profit of \$115,541.31. However, at the exchange rate prevailing at the end of June when payment in yen was actually made, 254.95 yen/dollar, the revenue received by the U.S. firm would have been only \$784,467.54 turning what otherwise would have been a substantial profit into a not inconsiderable net loss of \$15,532.46.

To have specified that the payment be

fixed in dollars would not have eliminated the risk, but would only have transferred it from the U.S. firm to the Japanese firm. Clearly, the risks associated with movements in exchange rates are too large to be ignored in business decision making. An overview of foreign exchange market trading in general and of currency futures in particular illustrates how these contracts can help reduce such risks.

Fixed and floating exchange rates

An exchange rate is simply the price of one country's currency in terms of another. Like the prices of other goods and commodities, exchange rates are determined by market forces of supply and demand. Unlike other goods and commodities, however, foreign currencies are not generally purchased for their own sake; they are used as a medium of exchange for foreign goods, services, and securities.

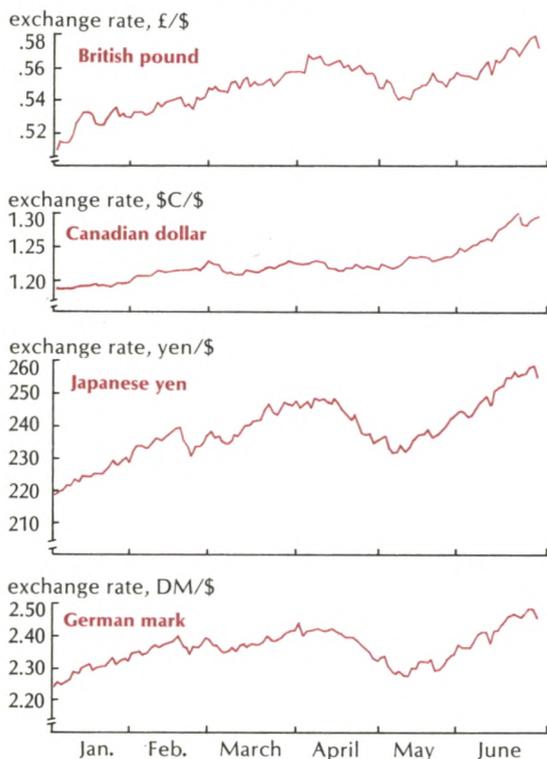
The quantity of foreign goods and services demanded varies over time due to changes in prices and tastes. These changes alter the demand and supply of foreign currencies and thus their prices. Because exchange rates reflect basic economic forces, they are inherently unstable in a world of unexpected economic changes.

Instability of exchange rates traditionally has been viewed as an important deterrent to international commerce. Varying exchange rates cause the effective prices of foreign goods and services to fluctuate, introducing an element of uncertainty and risk into international transactions. The desire to reduce this uncertainty led to the adoption of the Bretton Woods International Monetary System of relatively fixed exchange rates in 1945.

While the fixed exchange rate system may have been desirable from a commercial viewpoint, its rigid exchange rates failed to reflect the divergent economic trends in the postwar world. The resulting pressures brought the system down in 1971. After a period of turmoil that lasted from 1971 to 1973, an international monetary system based on relatively freely fluctuating exchange rates emerged.

The exchange rate volatility that characterized the resulting system increased the need for foreign exchange facilities capable of protecting operating capital from the risks of adverse exchange rate movements. That need was met by the expansion of the forward market in foreign currencies.

Figure 1: The dollar rose sharply against other major currencies in the first half of 1982



The forward market

The interbank forward market developed as a medium for hedging foreign exchange risks incurred by banks. Trading takes place on a 24-hour worldwide market with participants linked by telecommunications. Access to the market is generally limited to financial concerns dealing in very large quantities of foreign exchange at a “wholesale” level. Major banks in the United States and other countries, along with some multinational corporations and wholesale brokers, form the core of the interbank market.

The two basic types of foreign exchange operations on the interbank market are “spot” and “forward” transactions. In a typical spot transaction, a bank’s customer may require one million Deutsche marks to settle an import bill. He requests Bank A in Chicago to purchase the marks for him. The bank purchases the marks from Bank B in Frankfurt, West Germany, at a rate of \$.5000/DM. Bank A credits \$500,000 to Bank B’s account on its books (DM1,000,000 × \$.5000/DM) while Bank B credits one million Deutsche marks to Bank A’s account in Frankfurt. Bank A then settles its customer’s bill by transferring the balance from its DM account at Bank B to the account of the German exporter at Bank C in Bonn, Germany. This transaction typically takes two days to complete.

A forward transaction differs from a spot transaction in that the delivery date of a particular amount of foreign currency takes place at a specified date in the future. The maturity of a forward contract can be days, weeks, or months in the future, with the size and delivery date of the contract tailored to the individual needs of the customer. The ability to contract future delivery of a currency eliminates foreign exchange risk.

Consider for example, an importer in the United States who wants to purchase 500 motorcycles from a German manufacturer. He places an order on June 1 with payment in marks due September 1. He is faced with the possibility that the German mark may appreciate against the U.S. dollar between June and

September, raising the importer's costs in terms of dollars.

To avoid the risk, the importer can enter into a contract in June to have the marks delivered in September at an exchange rate that is fixed at the time the contract is made. The importer's bank would either use its own resources or arrange with another bank for the delivery of marks on September 1. On the maturity date of the contract, the U.S. bank accepts delivery of the marks at a German bank and makes the balance available to the importer who then settles his import bill. By hedging his exchange exposure through a forward transaction, the importer locks in an exchange rate and frees himself from the risk of an adverse exchange rate movement.

Forward contracts created by banks traditionally provided good protection against foreign exchange risk at minimal cost for many corporations involved in international transactions.¹ Access to the forward market, however, was limited to those customers who maintained regular banking relationships with banks writing the forward contracts. Smaller companies involved in international transactions and those wishing to take a position in foreign currencies for speculative and other nontrade purposes were largely excluded from the market.

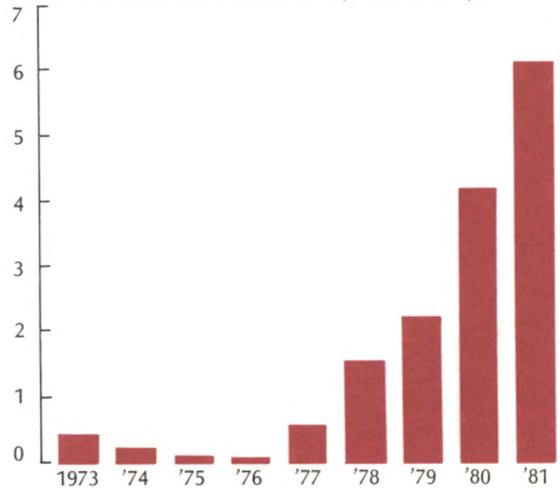
An alternative: futures in foreign exchange

Futures trading in foreign currencies was introduced by the Chicago Mercantile Exchange through the establishment of the International Monetary Market (IMM) as an alternative to the regular forward contracts offered by commercial banks. The IMM was conceived as an extension of the already well-

¹A currency may be sold for future delivery at a rate that may be either higher or lower than the spot rate of that currency, depending mostly on the relative interest rates on assets denominated in the two relevant currencies. For example, if interest rates were higher in Germany than in the United States at the time the forward contract is executed, the German mark for delivery in three months would most likely be sold at a discount from the spot rate, say, at \$.4980/DM rather than at the spot rate of \$.5000/DM.

Figure 2: Currency futures trading has grown rapidly on the IMM

millions of contracts traded, 1981 (one side only)



SOURCE: IMM Division of Chicago Mercantile Exchange.

established commodity futures markets in which specific quantities of corn, wheat, soybeans, and other commodities were bought and sold for delivery at specified future dates. Trading in futures contracts in foreign exchange began in May 1972.

Trading on the IMM has grown rapidly, particularly since the system of freely floating exchange rates of major currencies was adopted in early 1973. The number of currency contracts traded on the IMM reached 436,000 in 1973 and grew to more than 6 million by 1981.

The growth in foreign currency futures trading indicates that the IMM has fulfilled a market need that was not fully met by major foreign exchange trading banks. The IMM has grown by catering to individuals, businesses, and financial concerns that find the interbank market impractical or unsuitable for their needs.

The structure of IMM

The International Monetary Market is a division of the Chicago Mercantile Exchange (CME). Futures contracts traded on the CME

include major agricultural commodities such as pork bellies and cattle. The IMM division provides trading facilities for the purchase and sale for future delivery of precious metals such as gold, and financial instruments such as foreign currencies and U.S. Treasury bills.

The IMM operates within the organizational structure of the CME. The CME itself is composed of the Exchange administration, members, clearing members, and the Clearing House. Each plays a specific role in the operation of the markets.

The Exchange administration is responsible for the day-to-day operation of trading facilities. Professional staff and employees in its five major departments collect and distribute data on the various markets, ensure the technical operation of trading facilities, and enforce regulations necessary to maintain orderly markets and preserve the financial integrity of the Exchange.

There are approximately 600 CME members and 700 IMM members who act as floor brokers in the execution of trades. Members have trading floor privileges and voting rights, may serve on Exchange committees, and, as associate brokers of member firms, receive a percentage of trading commissions. Members who trade for accounts other than their own must be licensed by the Commodity Futures Trading Commission (CFTC). All members must carry accounts with clearing members in order to conduct personal transactions.

A clearing member is one of approximately 85 firms that have qualified for membership in the CME or IMM Clearing House. Clearing members represent major securities and commodities firms, subsidiaries of bank holding companies, and commercial trading organizations. Clearing firms play a central role in the operation of the market since all trades must be carried on the books of a clearing member. The CME does not deal directly with public customers. All trading activity is conducted through clearing members. They, in turn, deal directly with the Exchange.

The Clearing House is an important regulatory body of the CME and a guarantor of the Exchange's financial integrity. The Clearing

House is party to all trades, and guarantees performance on all contracts by assuming the opposite side of each transaction in an intermediary role. At the conclusion of each trading session, clearing firms (which the Clearing House regards as the actual buyers and sellers of contracts since all public transactions are ultimately carried on the books of clearing members) settle their accounts with the Clearing House.

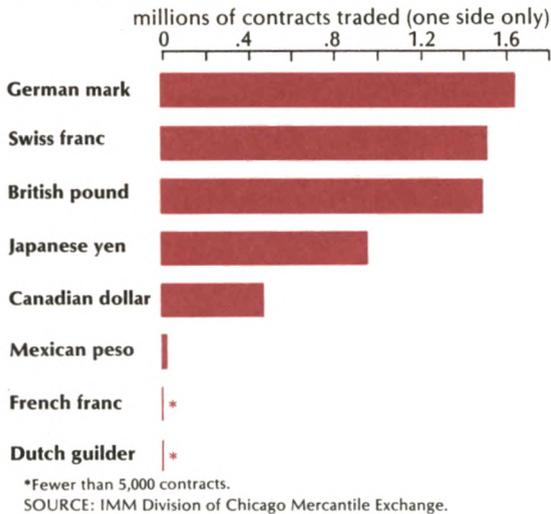
The Clearing House verifies and matches all transactions by assuring that clearing firms on both sides agree. It then redistributes money from "losers" to "winners." Customers' accounts are settled daily in cash to reflect real profits or losses, thereby limiting debt exposure to one day's market fluctuations. Since the Clearing House becomes, in effect, buyer for every seller, and seller for every buyer, customers need not concern themselves with the identity of the party assuming the opposite side of a transaction. Each party may liquidate its position without contact with the individual with whom the original trade was made.

The currency futures contracts

The basic unit of foreign exchange on the IMM is the currency futures contract. The futures contract provides for the future delivery of a specified amount of a foreign currency at a particular date, time, and place. Fulfillment of a contract, depending on whether one is a buyer or seller, is satisfied by accepting or by making delivery of the specified currency on the value date of the contract. A buy or sell position can also be closed out by making an offsetting purchase or sale of an equivalent contract prior to the expiration of trading for the contract.

Every futures contract must be backed by a margin deposit. Margin is simply a security deposit that guarantees performance on one's side of a contract. The exchange sets initial margin requirements and subsequent maintenance levels based on the price volatility of the various commodities. An adverse price movement greater than the difference be-

Figure 3: Trading on the IMM is heaviest in German mark, Swiss franc, and British pound



tween the initial margin and the maintenance margin would require the trader to bring his account balance up to the initial margin level.

Foreign exchange trading on the IMM is limited to eight major currencies, with contract sizes and minimum and maximum daily price fluctuations specified by the Exchange. Contracts are set for delivery on the third Wednesday of March, June, September, and December. Price quotations are in terms of U.S. dollars per unit of foreign currency.

Hedgers and speculators

Participants in futures trading are divided between hedgers and speculators. Foreign exchange hedgers include banks, brokers, multinational corporations, and other commercial and financial concerns that require protection against adverse exchange rate movements. The hedger expects his profits to come from managerial skill in conducting his business activities, not from incidental fluctuations in exchange rates. The hedger uses the futures market as a management tool for fixing the exchange rates that affect his business activities. For the hedger, the currency futures contract works as an insurance policy.

A hedger may place his contract with another hedger who wishes to cover his currency needs in the opposite direction. Typically, however, the other party to the contract is a speculator. The speculator plays a vital role in the futures market by assuming the risk of the hedger. His presence gives the market liquidity and continuity and eases entry and exit. The speculator buys and sells currency contracts in the hope of profiting from exchange rate movements.

Speculation offers potentially large profits due to the highly leveraged nature of futures trading. Since margin requirements are typically about 5 percent of the value of a contract, it is possible to control large amounts of currencies with relatively little capital. For example, a contract for delivery of 125,000 German marks may be controlled for \$1,500. If a speculator bought a German mark contract at a price of \$.5000/DM, a rise in the value of the DM of 2 percent would result in a profit to the speculator of \$1,250. However, the same leverage could lead to equally substantial losses.

Futures trading

Like a forward contract, a currency futures contract can be used to fix the level of an exchange rate for some time in the future. For example, consider the IMM contract in Deutsche marks (DM). The contract is for DM125,000. At a rate of \$.5000/DM the contract's current value would be \$.5000/DM x DM125,000, or \$62,500. An import company needing DM125,000 three months from now would purchase a contract through a broker after depositing an initial margin of \$1,500.² The value of the contract would fluctuate daily based on the movement of the exchange rate as determined in the market.

Suppose the German mark begins to rise in value relative to the dollar on the world's foreign exchange markets. The futures price

²Brokers may require account levels significantly higher than the minimum margin levels set by the Exchange.

on the IMM would typically move in sympathy with the movement of the spot exchange rate. Suppose that the price of the German mark for delivery in March rises from \$.5000/DM to \$.5060/DM, the maximum daily fluctuation permitted under the rules of the Exchange. As a result of the appreciation, the value of the DM125,000 contract is now \$63,250, \$750 higher than the initial price of \$62,500.

If the price of the German mark remains at that level until March, the individual who sold the contract to the importer must spend \$63,250 to purchase the amount of marks he contracted to deliver. The clearing member through which the contract was sold will require him to add \$750 (the amount by which the value of the contract has increased) to his account. The money is then channeled through the Clearing House to the broker who arranged the contract for the import company. Such settlements take place daily based on price fluctuations that occur as the contract progresses to maturity.

Suppose that, at the time the contract matures, German marks can be purchased on the world's spot foreign exchange market at an exchange rate of \$.6000/DM. The import company has two options: (1) it can ask the seller of the contract to deliver DM125,000 to the company for \$62,500 as contracted; (2) it can liquidate the contract on the last trading day. Choosing the latter option, the company would "sell back" or liquidate the contract by obtaining from the broker the deposit (less some agreed-upon commission) plus the \$12,500 that the broker collected from the seller as the value of the contract appreciated.³

The company then enters the spot market and purchases the DM125,000 it needs at a cost of \$75,000. This is \$12,500 more than the same amount of marks cost three months ago when the rate was at \$.5000/DM. The increase in cost exactly matches the amount that the company received from the resale of the contract ($\$75,000 - \$62,500 = \$12,500$). By using a

³Accrued profits are available at any time, not exclusively at the time the contract is offset.

futures contract, the company has achieved its goal of protecting itself against a possible loss arising from a fluctuation in the exchange rate in essentially the same way as if it had purchased the currency for future delivery in the forward market.

While the principle of protection against currency price fluctuations is the same in the future and forward markets, there are two major features that differentiate the two markets.⁴ First, the forward market offers contracts for specific amounts of currencies tailored to particular needs, while the futures market offers only standardized contracts in the predetermined amounts noted in the table above. As a result, a customer wanting to protect his account payable of, for example, DM200,000 could only cover a portion of the risk (DM125,000) in the futures market but could arrange for full coverage in a single contract in the forward market.

The second difference concerns the maturities of forward and futures contracts. A forward contract can be written for the exact date when the foreign currency is needed or is to be disposed of. The futures contract has a standardized delivery date. If a user wishes to lift his hedge before the expiration date of the futures contract, he must be prepared to assume some risk of a currency price fluctua-

⁴Several other differences arise from the particular structural features of the futures and forward markets. First, most forward contracts are settled by actual delivery of a specific currency on the value date of a contract. In contrast, since the futures market offers only four major delivery dates each year, most futures contracts are liquidated prior to their expiration dates. Second, the futures market, unlike the forward market, has a central clearing body. Customer's accounts are settled daily upon the conclusion of trading to reflect real profits or losses. Debt exposure is limited to one day's market fluctuations. Moreover, the Exchange guarantees performance on all contracts. Performance on a forward contract, in contrast, is contingent upon the financial integrity of the party assuming the opposite side of the contract. Third, information costs may be lower in the futures market than in the forward market. For example, if a bank is asked to write a forward contract for a customer, it might contact several different banks and brokers in search of the best exchange rate. In the futures market, however, a customer need not search for the best rate since the market rate on the most recent futures transaction is the best rate available to the customer at that time.

tion between the time when the foreign currency is actually needed for the settlement of the transaction and the delivery date of the contract. However, since prices in the spot and futures markets generally move in the same direction by similar amounts due to arbitraging between the two markets, this risk can be minimized in a properly structured hedge, as the following examples illustrate.

Forward pricing hedge

On December 1, a firm in the United States is considering importing 5,000 Swiss watches at a cost of SF125,000 with payment and delivery due on March 1. The Swiss currency is presently selling for \$.5395/SF in the spot market and \$.5417/SF in the futures market for delivery next March 15. Given the other costs of marketing the watches, the importer decides that the futures exchange rate is low enough for him to purchase the watches and make a profit on the transaction. However, the importer must pay for the watches on March 1, though the expiration date of the futures contract is March 15. He can hedge most of his exposure by purchasing a March Swiss franc contract on December 1 with the intention of lifting the hedge on March 1.

December 1

	Spot market	Futures market (for March 15 delivery)
Exchange rate:	\$.5395/SF	\$.5417/SF
Cost of SF125,000:	\$67,437.50	\$67,712.50
Action taken:	None	Purchase March 15 contract

At the existing futures market price of \$.5417/SF, the importer has now assured himself that the cost of SF125,000 will be \$67,712 (SF125,000 x \$.5417/SF) on March 15. He has locked in the approximate cost of the watches that he is importing. The only risk he still faces arises from the difference in the value of the contract on March 1 when he must liquidate it, and its value on its March 15 maturity date.

How this risk is covered is illustrated below.

Suppose that by March 1 the Swiss franc has appreciated and is selling in the spot foreign exchange market at a rate of \$.6442/SF. On the futures market, the price of the Swiss franc for delivery on March 15 has risen to \$.6450/SF so that the contract for delivery of 125,000 Swiss francs now trades for \$80,625. The importer takes the following actions:

March 1

	Spot market	Futures market (for March 15 delivery)
Exchange rate:	\$.6442/SF	\$.6450/SF
Cost of SF125,000:	\$80,525	\$80,625
Action taken:	Buy SF125,000	Sell March 15 contract

On March 1, the importer purchases SF125,000 in the spot market and settles his import bill. The \$80,525 expenditure for spot francs, however, is higher than the \$67,712.50 approximate anticipated cost based on the futures contract he purchased on December 1 (\$80,525 - \$67,712.50). However, the value of the futures contract he sold on March 1 is \$12,912.50 higher than its original value on December 1. The \$12,912.50 gain from the futures transaction more than offsets the difference between his anticipated cost and his actual cost. The risk that the importer assumed on December 1 by purchasing a contract whose maturity did not coincide with the March 1 usage date of the currency resulted in a windfall gain of \$100. The gain arose from the difference between the spot rate and the futures rate (the "basis") prevailing on the day the contract was liquidated (SF125,000 x \$.0008/SF).

The basis, unlike the spot exchange rate itself, is relatively stable and narrows toward zero as the contract moves toward maturity. For example, the basis on December 1 was \$.0022/SF (\$.5417/SF - \$.5395/SF) while by March 1 it had shrunk to \$.0008/SF (\$.6450/SF - \$.6442/SF). The degree of uncertainty about the futures price diminishes further as the contract approaches its March 15 expiration

date. On that date, the futures price coincides with and, in effect, becomes the spot exchange rate.

In the preceding example the \$.0008/SF basis on March 1 accounted for the windfall gain of \$100. This gain might easily have been a loss of a similar magnitude had the exchange rate of the Swiss franc depreciated during the period in which the contract was outstanding. The important point, however, is that the importer was protected from any major loss regardless of exchange rate movements. For example, if the importer had not purchased the futures contract and instead waited to buy the necessary SF125,000 on the day he needed them (March 1) the watches would have cost an additional \$12,812.50.⁵ Aside from the relatively minor risk associated with changes in the basis, the futures contract protected the importer just as a purchase of forward currency in the foreign exchange market would have done.

Selling hedge

Another use to which the forward and futures markets in foreign currencies may be put is in hedging a future sale of currency. Suppose that on December 15 a Chicago investor decides to invest \$1 million in excess funds in a three-month British sterling certificate of deposit (CD) presently yielding 20 percent at an annual rate. He expects to realize a \$50,000 return on his investment, more than he could have realized by investing in the domestic market. The investor buys British pounds in the spot market and purchases the CD from a British bank. At the same time, he sells enough British pounds in the futures market to cover the principal and accrued interest at the time of maturity of the CD. By hedging his exposure, he effectively locks in an exchange rate for three months in the future and assures that the income from the deposit will not be lost in reconvertng back to U.S. dollars even if the British pound sub-

⁵Of course, had the Swiss franc depreciated, his profits would have been higher than anticipated.

sequently falls in value. The following table summarizes the transaction:

December 1

	Spot market	Futures market (for March 15 delivery)
Exchange rate:	\$2.0000/£	\$2.0050/£
Cost of £500,000:	\$1,000,000	\$1,052,625
Action taken:	Bought £500,000	Sold March contracts for £525,000*

*£500,000 principal plus £25,000 anticipated interest earnings.

Suppose that by March 15 the British pound has depreciated so that on the day the investor's contract matures the exchange rate is \$1.8500/£. The investor undertakes the following transactions:

March 15

	Spot market	Futures market (for March 15 delivery)
Exchange rate:	\$1.8500/£	\$1.8500/£
Cost of £525,000:	\$971,250	\$971,250
Action taken:	Sold £525,000	Bought matured contracts for £525,000* (offset)

The \$81,375 difference between the cost of the contract when it was sold in December and the cost at which it was liquidated in March (\$1,052,625 - \$971,250) is more than enough to compensate the investor for the lower-than-expected receipt from his spot transaction. Had the investor not hedged his investment, he would have suffered a loss of \$28,750 on the transaction (\$1,000,000 - \$971,250). By locking in the higher \$2.0050/£ exchange rate on the future British pound in December, he realized the anticipated return of \$50,000 on his investment and also obtained a windfall profit of \$2,625 (\$81,375 gain on futures transaction minus \$50,000 accrued interest minus \$28,750 loss on spot transaction).

Conclusion

The establishment of the International Money Market by the Chicago Mercantile Exchange some ten years ago has proved to be a milestone in the evolution of futures markets. The introduction of futures trading in foreign currencies represented a dramatic departure from the traditional use of futures markets as mechanisms for hedging the price risk of transactions in commodities such as wheat, corn, and soybeans.

Futures trading in foreign exchange marked the beginning of futures markets in a wide range of financial instruments, includ-

ing Treasury Bills, government notes and bonds, Eurodollars, bank certificates of deposit, and stock market indexes. The rapid growth of trading on these markets indicates that the innovation of financial futures satisfied a real and growing need.

The development of foreign currencies futures trading has provided a valuable supplement to the forward market by offering a lower-cost hedging facility to users who find the forward market impractical or unsuitable for their needs. Accordingly, the IMM has contributed to the expansion of international commerce and, in doing this, has benefited consumers.

MIDWEST UPDATE

An ongoing review of economic conditions in the Midwest and the issues that face the region is provided in **Midwest Update**, published monthly by the Federal Reserve Bank of Chicago. **Midwest Update** emphasizes developments in manufacturing, trade, construction, agriculture, and finance in the five state area served by the Bank: Illinois, Indiana, Iowa, Michigan, and Wisconsin. The newsletter includes a table of selected economic indicators.

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Small-issue Industrial Revenue Bonds in the Seventh Federal Reserve District

David R. Allardice

On September 3, 1982 the Tax Equity and Fiscal Responsibility Act of 1982 was signed into law. In part, the act repealed the tax exemption that had been available for small-issue industrial revenue bonds (IRBs), effective for obligations issued after 1986. Other provisions of the act were intended to limit the use of IRBs issued prior to 1986.

For years the Congress, the Internal Revenue Service, and others have expressed growing concern over the economic inefficiencies, resource misallocation, and potential loss of tax revenue to the U.S. Treasury that were considered to be the direct result of the rapidly expanding use and growing level of IRB financing. While these concerns have been the basis for the recent legislation limiting the use of IRBs, interest groups with strong views concerning the merits of IRB financing have prevented the passage of legislation that would totally abolish the use of this method of raising capital.

With these legislative changes and public concerns in mind, the Federal Reserve Bank of Chicago examined the background and use of industrial revenue bond financing. The use of these obligations within the five states (Illinois, Indiana, Iowa, Michigan, and Wisconsin) of the Seventh Federal Reserve District may shed some light on the overall national utility and desirability of IRBs.

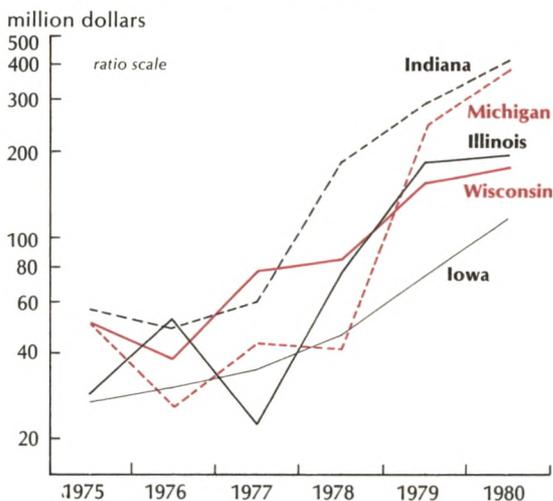
IRB financing—the background

Forty-seven states currently permit local governmental units to sell tax-exempt revenue bonds and channel the funds derived from such sales into private and quasi-public endeavors. Commonly referred to as industrial revenue bonds, these obligations have

become a significant source of nonconventional financing, especially for small businesses. Since small-issue IRBs are tax-exempt, businesses have been able to use the obligations to finance projects at rates below conventional commercial loan rates. Annual sales of IRBs have grown from about \$24 million in 1969 to \$8.4 billion in 1980. This dramatic growth partly reflects the subsidy that financing through IRBs offers. In recent years IRBs have financed businesses at interest rates between 4 and 7 percentage points below the cost of conventional financing.

Since most IRBs are placed privately with local banks, it is difficult to obtain reliable data at state and local levels. Because of this, the Federal Reserve Bank of Chicago undertook a study to determine the amount of IRB

Figure 1: Annual industrial revenue bond sales in the District States



financing in the District states from 1975 through 1980.¹

Based on data from various state agencies and surveys of local municipalities, the study found that IRBs issued in the five District states between 1975 and 1980 approximated \$3.3 billion.² Moreover, the annual amount of IRBs issued in all District states rose rapidly during this period. Indiana issued the largest number and dollar volume of IRBs, amounting to 1,059 obligations worth \$1.04 billion.

History of IRB financing

Depletion of certain natural resources, changes in the cotton industry, and the impact of the Depression left southern states with little industry and a surplus of agricultural labor by the mid-1930s. In 1936, the state of Mississippi established the "Balance Agriculture with Industry Program." Launched on the idea that industrial employment and development were in the public interest, this program authorized cities and counties in the state to incur general obligation indebtedness to construct buildings for leasing to private enterprise. In 1938 the city of Durant, Mississippi, issued the first such obligation in the amount of \$85,000 for the construction of the Realsilk Hosiery Mill.³

The use of local government bonds to finance industrial expansion grew modestly for two decades. Through the mid-1950s the annual volume of new IRB issues never exceeded \$10 million. But growth accelerated in the 1960s. In 1962, new IRB issues approximated \$84 million, or 0.10 percent of all tax-

exempt bonds issued. By 1968 the volume reached \$1.6 billion, or 10 percent of all tax-exempt bonds issued.⁴ The rapid growth in the 1960s has been attributed to interstate competitive pressures to attract industry and to increases in the cost of raising funds in the capital market.

This growth led to increasing concern about the potential abuses of such financing and the loss of tax revenues resulting from the increased use of IRBs. The Congress responded by passing the Revenue Expenditure and Control Act of 1968. This act removed the tax-exempt status of all IRBs, except those used to finance "exempt activities," "industrial parks," and those sold under a "small-issue" exemption.

This act significantly curtailed the expansion in IRB financing for several years. However, IRB use began to increase again as the small-issue exemption was modified. Initially, the small-issue exemption pertained to IRBs of \$1 million or less. Several months later, the act was amended. The amendment permitted IRB issues of \$1 to \$5 million to retain the tax-exempt status, provided the funds were used to finance a firm that limited its capital expenditures in the local area to no more than \$5 million during a six-year period centered on the date the IRBs were issued. Unless the firm complied with the capital expenditure limitation, the small-issue exemption was lost.

A decade later the Congress, responding to arguments that inflation had reduced the value of the ceilings, raised the \$5 million small-issue exemption to \$10 million. The Tax Reform Act of 1978 also established a special capital expenditure rule for small-issue IRBs used in connection with Urban Development Action Grants. On such issues the six-year capital expenditure limit was increased to \$20 million.

The higher small-issue exemption and the rising cost of capital triggered renewed

¹For a more detailed discussion of the study's findings see: David R. Allardice, *Industrial Revenue Bond Financing in the Seventh Federal Reserve District*, Working Paper 82-2, June 1982, Federal Reserve Bank of Chicago.

²This represents the minimum dollar amount of IRBs that have been issued, since not all municipalities were surveyed and not all of those responded.

³Olin S. Pugh, *Industrial-Aid Bonds as a Source of Capital for Developing Regions*, (University of South Carolina: Bureau of Business and Economic Research, 1971), p. 1.

⁴Alan Rabinowitz, *Municipal Bond Finance and Administration* (New York: Wiley-Interscience, 1969), p. 103.

growth of IRB financing and heightened concern about alleged IRB abuses. The abuses that attracted the most attention were the use of industrial revenue bonds to finance such nonpublic ventures as massage parlors, country clubs, and race tracks.

The Internal Revenue Service published guidelines in August 1981 for determining whether a pooled offering of IRBs would be treated as a multiple or single bond issue, for purposes of applying the small-issue exemption. In general, the obligations were to be considered a single issue if they were sold under a common plan of marketing, at about the same time and interest rate, and a common or pooled security was available to service the debt. Treatment of the pooled offering as one issue often reduced the availability of tax-exempt IRB financing for many firms and squelched the rapidly building interest shown by many states in using IRB issues backed by pooled real estate assets to finance young farmers.

Congressional concern over IRB financing is reflected in the Tax Equity and Fiscal Responsibility Act of 1982. In addition to eliminating the tax-exempt status of small-issue obligations issued after 1986, the act removes the tax-exempt status of obligations, effective year-end 1982, when more than 25 percent of the bond proceeds are used for a facility primarily providing retail food and beverage services, automobile sales or service, or for the provision of recreation or entertainment. In addition, the small-issue exemption does not apply to about 12 specific types of entertainment and recreation projects, such as country clubs, tennis clubs, racquet sports facilities, and racetracks.

The new law in effect overrides the 1981 Internal Revenue Service ruling with respect to pooled securities. Pooled issues of IRBs will now be treated as separate issues (and thus tax-exempt) unless the obligations are used to finance two or more facilities that are (1) located in more than one state or (2) have the same person or related persons as the principal user.

The new law also establishes require-

ments for the reporting and public approval of IRB issues. Effective December 31, 1982, IRB sales will be reported quarterly to the Internal Revenue Service and public approval of such financing must be obtained. The public approval requirement may be satisfied by either (1) a public hearing followed by approval by the issuer's elected official or (2) a voter referendum.

IRB financing: pro and con

Studies and opinions vary widely as to the advantages and disadvantages of industrial revenue bond financing. No consensus exists on whether the one outweighs the other.

Advantages

Most studies agree that the bulk of the benefits from IRB financing go to the firms that receive the interest rate subsidy from tax-exempt IRB financing. IRBs aid firms in the construction of plant and equipment by serving as a supplemental source of capital and by lowering the average cost of capital to the firm. The difference between conventional loan rates and rates on IRB financing has been significant, particularly in recent years. The difference has typically ranged from 2 to 3½ percentage points, but widened to a range of 4 to 7 percentage points in the early 1980s.⁵

Local government officials cite numerous advantages in IRB financing. They argue that IRBs can attract new industry, thereby improving—at little cost to the local government—the economic base of the community. This advantage is frequently cited as a useful tool to stimulate development in economically depressed communities. It is also argued that on a dollar-for-dollar basis IRB financing is less costly to local governments than other community development options. If IRBs do attract industry to a local community, then the community may well benefit by increases

⁵*Small Issue Industrial Revenue Bonds*. Congress of the United States, Budget Office, April 1981, p. 18.

in employment, income, and local economic growth. These improvements, in turn, may strengthen the local government by broadening the tax base and by promoting labor use in areas where labor may be relatively immobile, unemployed, or underemployed.

If such benefits to the community are, in fact, produced by IRB financing, then there are obvious political advantages to be gained from these programs. At very little explicit cost to the local community, local government officials can cite newly attracted firms, increased employment, and an expanded tax base as examples of their public management skills.

Bondholders, especially those in upper income tax brackets, benefit from the tax-exempt status of IRBs. And the expanded use of IRBs may drive up interest rates on all tax-exempt securities, thus increasing returns to all holders.

Disadvantages

The expanded use of IRBs has generated an increasing number of arguments and objections against this form of financing. In general, opponents argue that IRB financing results in a misallocation of labor and capital. They contend that a firm requiring a subsidized loan is by that fact shown to be less efficient than those not requiring a subsidy.⁶ It is further argued that firms not receiving IRB financing are placed at a cost disadvantage relative to those receiving the subsidy from IRB financing.⁷

Others oppose IRB financing because of the federal tax revenues that are foregone

⁶Ralph Gray, "An Economic View of Municipal Subsidies to Industry," *Municipal Finance*, vol. 36 (May 1964), p. 156.

⁷This disadvantage raises questions other than those related to equity. The United States Supreme Court has held that local governments are not automatically exempt from the operation of antitrust laws. *City of Lafayette, Louisiana and City of Plaquemine, Louisiana v. Louisiana Power and Light Company*, 435 U.S. 389, 55 L. Ed.2d 364, 98 S. Ct. 1123 (1978). Thus, refusal to provide IRB financing to a competitor of a municipally owned utility might provide a basis for an antitrust suit.

due to the bonds' tax-exempt status. That loss may be substantial. The Congressional Budget Office (CBO) estimated that the federal tax revenue loss due to IRB financing amounted to \$700 million in fiscal 1980.⁸ However, some contend that the revenue loss was only one-sixth the CBO estimate; still others hold that the economic activity generated by IRBs has produced net increases in tax revenues for all levels of government, including the federal government.⁹

Another possible disadvantage is the impact of IRB financing on cost and the ability of local governments to raise funds for more traditional public purposes. If the demand for tax-exempt securities is downward sloping, an increase in the supply of these obligations will lower the price—raise the interest rate—of the bonds issued. If the higher interest rates on IRBs attract funds that would otherwise have gone into other municipal obligations, it may become more costly to raise funds for public investments that are considered to be of a higher priority and of greater social value.

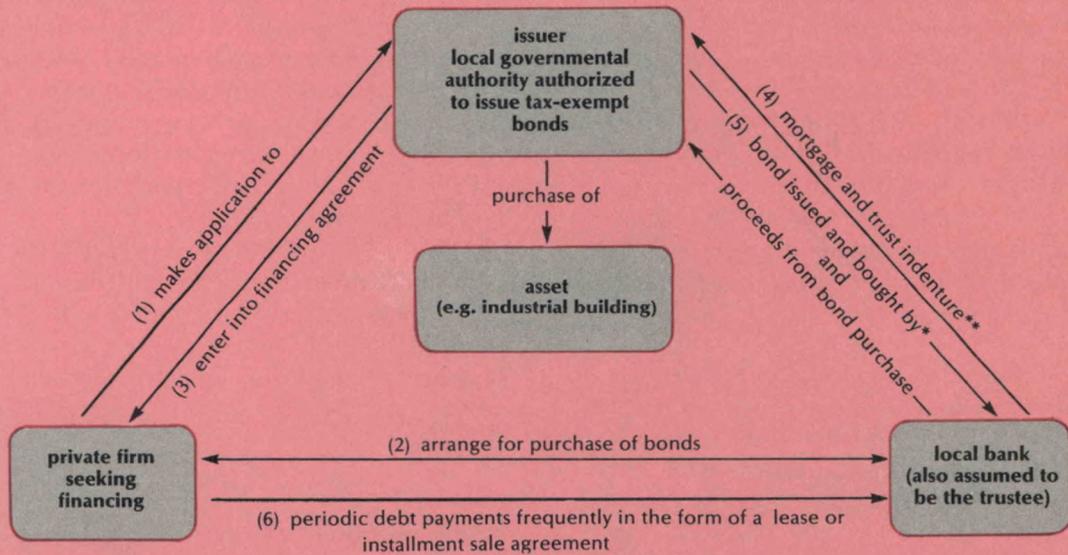
While IRBs are intended to attract and retain industry in a local community, some observers argue that IRB financing is an ineffective tool. Studies of factors affecting the location decisions of larger firms show that such factors as energy costs and proximity to raw materials, customers, and labor tend to outweigh financing costs in most business location decisions. To the extent that local authorities everywhere use IRBs to compete against one another in attracting or retaining business firms, any regional benefits to private businesses are eliminated and such financing functions simply as a conduit to the tax-exempt market.

Questions about the appropriateness of local governments subsidizing private industry have surfaced since the inception of IRBs. Opponents of IRB financing increasingly raise this issue as the scope of projects that are

⁸*Small Issue Industrial Revenue Bonds*, p. 40.

⁹*Report on Tax-Exempt "Small Issue" Industrial Revenue Bonds*, Committee Print WMCP: 97-12, 97 Cong. 1 Sess., July 9, 1981, pp. 5-6.

Figure 2:
Typical industrial revenue bond transaction



*Issuing authority typically assigns to bank all the rights and interest in the financing agreement or other security.

**An agreement between user and corporate trustee to insure adequate administration of the bond issue. Insures that trustee receives payments from company and pays principal and interest on the bonds to the bondholders.

deemed to serve a “public purpose” grows ever wider.¹⁰

Opponents of IRB financing also point to the issue of “plant pirating.” Firms induced to relocate by IRB financing leave behind unemployment, reduced purchasing power, higher costs for certain social services, and a lower tax base. From the perspective of the national economy, the benefits to the acquiring community must be weighed against the costs to the community losing the firm before a conclusion can be reached that the public was better served by the relocation.

¹⁰A landmark court decision in 1937 addressing the question of public purpose held that “the states, by their constitutions and laws, may set their own limits upon their spending power—but the requirements of due process leave full scope for the exercise of a wide legislative discretion in determining what expenditures will serve the public interest.” *Carmichael v. Southern Coal and Coke Co.*, 301 U.S. 495, 81 L.Ed. 1245 (1937).

State enabling acts

Each state must pass enabling legislation before IRBs can be issued. The laws vary, but they frequently specify the type and/or location of business or activity that can be financed by such bonds, the total dollar size (maximum or minimum) of each issue, reporting requirements, controls, and any other provisions desired. All but three states (Hawaii, Idaho, and Washington) have passed legislation authorizing the issuance of industrial revenue bonds.¹¹

The states vary greatly in the details of their enabling legislation. In some states, (Rhode Island, for example) the issuance of IRBs is under the control of a state agency. In

¹¹Background Information for Hearings on Tax-exempt “Small Issue” Industrial Revenue Bonds, Committee Print 97-6, 97 Cong. 1 Sess., April 7, 1981, p. 4.

most states—43—control rests with local levels of government and industrial development authorities. Some states require “proof of net economic benefit” arising out of the issuance of IRBs.

IRBs in the District states

According to recent studies, in 1980 the five Seventh District states accounted for about 12 percent of all small-issue IRB sales in the United States. However, the same data show that from 1975 through 1980 the growth in IRB financing in the District states has been at about a 70 percent annual rate. This was below the national average of almost 90 percent per year. The following reviews the status of IRB financing in each of the District states.

Illinois

Industrial revenue bond sales in Illinois are not reported to any central body, nor does their issuance require the explicit approval of any state agency prior to their sale. The following information on IRB sales in Illinois is therefore based on a survey of all municipalities in the state with a population in excess of 500 persons, based on 1980 census data.

Of the 1,274 municipal governments in Illinois, 881 were surveyed. About 88 percent

Dollar volume of industrial revenue bond sales in Illinois by municipal size class

Municipal size class <i>(number of persons)</i>	Dollar volume of reported IRB sales <i>(\$ millions)</i>	Percent
1- 1,000	\$ 46.98	8
1,001- 2,500	17.43	3
2,501- 5,000	32.83	6
5,001-15,000	62.26	11
15,001-25,000	73.37	13
25,001-50,000	141.35	25
50,001 and over	192.74	34
Total	\$566.96	100

of those contacted responded to the survey. Of the 779 respondents, only 128 municipalities—16 percent—indicated that they had issued one or more IRBs between 1975 and 1980. Overall, these municipalities issued 340 IRBs between 1975 and 1980 with an aggregate dollar volume of \$567 million.

In 1975, only 19 municipalities issued IRBs. By 1980 the number of municipalities that had issued such obligations had risen to 128. The annual dollar volume of IRBs issued in Illinois ranged from less than \$29 million in 1975 to a high of \$196 million in 1980.

In terms of both dollar volume and number of issues, the city of Chicago has been the largest municipal issuer of IRBs in Illinois since 1975, although Chicago did not begin to issue IRBs in any meaningful amount until 1977. From 1977 through 1980 Chicago issued 39 IRBs worth \$66 million.

Municipalities with populations in excess of 5,000 persons were the major issuers of IRBs in Illinois. Of the 128 responding municipalities in Illinois that had issued IRBs, 71 percent had populations exceeding 5,000. These municipalities accounted for 83 percent of the IRBs issued in Illinois from 1977-80. It is noteworthy that only 20 percent of all municipalities in Illinois have populations in excess of 5,000 persons.

IRB sales were concentrated in the major metropolitan areas within Illinois. The 128 municipalities that issued IRBs were located

Population of Illinois municipalities issuing industrial revenue bonds, 1975-1980

Municipal size class <i>(number of persons)</i>	Municipalities issuing IRBs	
	Number	Percent
1- 1,000	8	6
1,001- 2,500	14	11
2,501- 5,000	15	12
5,001-15,000	32	25
15,001-25,000	20	16
25,001-50,000	23	18
50,001 and over	16	12
Total	128	100

in just 50 of the 102 counties in Illinois. Cook County dominated, with 24 municipalities selling 100 IRBs worth over \$170 million.

Of the 50 counties having municipalities that issued IRBs, 36 percent are located in Standard Metropolitan Statistical Areas (SMSAs)—major metropolitan centers within the state. Municipalities located in the state's 18 SMSA counties sold \$459.8 million, or 81 percent, of all IRBs reported sold in Illinois from 1975 to 1980.

Indiana

Cities, towns, and counties in Indiana have the authority to establish economic development corporations (EDCs), which can issue industrial revenue bonds to finance industrial, commercial, and manufacturing facilities. Once established, EDCs must report annually to the Indiana Department of Commerce the volume of IRBs issued.

Data from the Department of Commerce show that 133 municipalities and four counties had issued industrial revenue bonds between 1975 and 1980. This represented only about 20 percent of the county and municipal governments in Indiana.

Some 1,060 IRBs were issued in Indiana between 1975 and 1980. The aggregate dollar volume of these bonds amounted to just over

Indiana EDCs issuing industrial revenue bonds by municipal size class 1975-1980

Municipal size class <i>(number of persons)</i>	EDCs issuing IRBs	
	Number	Percent*
1- 1,000	6	5
1,001- 2,500	26	20
2,501- 5,000	13	10
5,001-15,000	47	35
15,001-25,000	19	14
25,001-50,000	13	10
50,001 and over	9	7
Total	133	100

*Does not sum due to rounding.

Indiana industrial revenue bond sales by municipal size class 1975-1980

Municipal size class <i>(number of persons)</i>	Dollar volume of IRB sales <i>(\$ millions)</i>	Percent*
1- 1,000	4.616	1
1,001- 2,500	44.084	4
2,501- 5,000	32.772	3
5,001-15,000	184.100	18
15,001-25,000	137.176	13
25,001-50,000	209.696	20
50,001 and over	414.140	40
Total	\$1,026.584	100

*Does not sum due to rounding.

\$1 billion, making Indiana the largest IRB issuer of the District states. The average dollar size of IRBs issued in Indiana from 1975 through 1980 was slightly less than \$1 million (\$983,000) per obligation.

The largest issuer of IRBs in Indiana has been South Bend, which issued a total of 136 obligations worth \$113.3 million between 1975 and 1980. Other larger issuers include Fort Wayne (\$82.2 million), Indianapolis (\$71.7 million), Evansville (\$75.6 million), and Elkhart (\$45.0 million). These five municipalities accounted for 37 percent of the dollar volume of IRBs issued in Indiana from 1975 through 1980.

As in Illinois, municipalities that issued IRBs in Indiana from 1975 through 1980 tended to be the larger municipalities. Of the 563 municipalities in Indiana only 18 percent have populations greater than 5,000. But the 66 percent of IRB-issuing municipalities that were of this size accounted for 91 percent of all IRBs issued by municipalities in Indiana.

IRB issues—in terms of both the number and the dollar volume—were concentrated most heavily in Indiana's urban counties. About 75 percent of the number and the dollar volume of all IRBs issued in Indiana in 1975-80 came from local governments located in the 12 SMSAs in Indiana. Thus, only about one-fourth of the total number and

dollar volume of IRBs sold by municipalities in Indiana were issued by municipalities located in rural (non-SMSA) counties, although non-SMSA counties in Indiana account for 33 percent of the population of that state.

Iowa

State law permits incorporated cities and counties to issue industrial revenue bonds. These obligations may be issued to finance manufacturing, processing, or assembling facilities for agricultural and manufactured products. They may also be issued for commercial enterprises engaged in storing, warehousing, or distributing products of agriculture, mining, or industry.

Issuers of IRBs in Iowa are required to report their sales annually to the state of Iowa. These data reveal that from 1975 through 1980 a total of 125 Iowa cities or counties, out of a total of 1,054 cities and counties in the state, had issued IRBs. In the aggregate, these entities issued \$330.8 million of IRBs. County entities accounted for \$26.3 million of the total.

The largest individual municipal issuer of IRBs in Iowa was the city of Davenport, which issued 11 obligations amounting to \$20.0 million. The next largest municipal issuers were Mason City (\$16.2 million), Cedar Rapids (\$14.8 million), and Des Moines (\$13.7 million). Combined, these four cities accounted

Industrial revenue bond sales in Iowa by city size class

City size class (number of persons)	Dollar volume of IRB sales (\$ millions)	Percent*
1- 1,000	14.31	5
1,001- 2,500	42.46	14
2,501- 5,000	43.54	14
5,001-15,000	77.56	25
15,001-25,000	25.24	8
25,001-50,000	30.32	10
50,001 and over	71.10	23
Total	\$304.53	100

*Does not sum due to rounding.

for approximately one-fifth of the dollar volume of all IRBs sold in Iowa between 1975 and 1980.

Most of the Iowa cities issuing IRBs between 1975 and 1980 were small. About 80 percent of the 115 cities issuing IRBs had populations of less than 15,000 persons. These cities accounted for 58 percent of the IRBs issued. These figures reflect the small size of Iowa municipalities, 92 percent of which have populations of less than 15,000 persons. IRBs were issued—either by cities or county entities—in 77 of Iowa's 99 counties from 1975 through 1980. Three counties (Polk, Scott, and Cerro Gordo) accounted for approximately 28 percent of all the IRBs sold in Iowa.

Iowa is the only District state in which rural (non-SMSA) counties accounted for the majority of IRBs issued. Cities or counties in SMSAs issued only 39 percent of the dollar volume and 41 percent of the number of IRBs.

Michigan

Analysis of industrial revenue bond sales in Michigan from 1975 through 1980 is complicated by the fact that the IRBs were issued under three separate statutes. Moreover, economic development corporations (EDCs) in Michigan were not required until recently to report their annual sales of IRBs to any state authority. While some data were available,

Population of Iowa cities issuing industrial revenue bonds, 1975-1980

City size class (number of persons)	Cities issuing IRBs	
	Number	Percent*
1- 1,000	20	17
1,001- 2,500	23	20
2,501- 5,000	22	19
5,001-15,000	28	24
15,001-25,000	6	5
25,001-50,000	8	7
50,001 and over	8	7
Total	115	100

*Does not sum due to rounding.

they were not considered complete. As a result, a mail survey of the 312 Michigan EDCs was necessary to determine the dollar volume and number of IRBs sold by the EDCs from 1975 through 1980.

The survey found that IRB sales in Michigan grew very rapidly in 1979 and 1980. From 1975 through 1978, the annual volume of IRBs issued in Michigan averaged about \$39 million. Then, IRB issues jumped to \$249 million in 1979 and \$374 million in 1980, due in part to rising interest rates and a greater reliance on EDCs. The dollar volume of IRBs issued in 1980 was more than seven times the 1975 volume. Over the six-year period under study, some \$781 million in IRBs were issued in Michigan.

Most of Michigan's IRBs were issued in the Lower Peninsula and in the state's major metropolitan areas.¹² The largest dollar volume of IRBs was issued in Wayne County (\$112.8 million), followed by Kent (\$97.5 million), Oakland (\$61.0 million), and St. Clair (\$56.8 million) Counties. These four counties accounted for 42 percent of the dollar volume of all IRBs issued in Michigan.

Counties in SMSAs accounted for 81 percent of the IRBs issued in Michigan during the six-year period. The Michigan experience provides added evidence that IRB financing in the District states, except for Iowa, is mainly an urban phenomenon.

Wisconsin

Cities, villages, and towns in Wisconsin are authorized to sell industrial revenue bonds.

Issuers of IRBs in Wisconsin must report their sales to the Wisconsin Department of Business Development. The data reveal that 191 municipalities in Wisconsin issued a total of 590 IRB obligations amounting to \$571.3

¹²Data on IRB sales by municipal size class are not presented because the sale of IRBs in Michigan is spread across county, township, and municipal governments. As such, the data are not comparable with the four other District states.

million for industrial, commercial, and recreational purposes from 1975 through 1980.

The largest single municipal issuer of IRBs in Wisconsin, both in number of bonds and dollar volume, was the city of Milwaukee. Milwaukee issued 47 IRBs amounting to \$66.8 million. Other major municipal issuers included the cities of Sheboygan (\$26.5 million), Janesville (\$20.8 million), Appleton (\$18.4 million), and Oshkosh (\$16.1 million). These five municipalities accounted for 26 percent of the dollar volume and 22 percent of the number of IRBs issued in Wisconsin during the six years under study.

Over half (57 percent) of the municipalities issuing IRBs from 1975 through 1980 had populations of less than 5,000 persons. However, 83 percent of Wisconsin's 576 municipalities have less than 5,000 persons, which indicates that this municipal size class is underrepresented in IRB sales. Large municipalities—those with populations in excess of 50,000 persons—accounted for 6 percent of the municipalities issuing IRBs during the period under study. However, municipalities with over 50,000 persons make up only about 1 percent of all Wisconsin municipalities.

While Wisconsin municipalities with less than 5,000 persons made up the majority of municipalities issuing bonds in terms of number of bonds issued, these same municipalities accounted for only about one-fifth (22

Population of Wisconsin municipalities issuing industrial revenue bonds, 1975-1980

Municipal size class (number of persons)	Municipalities issuing IRBs	
	Number	Percent
1- 1,000	22	12
1,001- 2,500	45	24
2,501- 5,000	40	21
5,001-15,000	50	26
15,001-25,000	13	7
25,001-50,000	10	5
50,001 and over	11	6
Total	191	100

*Does not sum due to rounding.

**Wisconsin industrial revenue bond sales
by municipal size class
1975-1980**

Municipal size class <i>(number of persons)</i>	Dollar volume of IRB sales <i>(\$ millions)</i>	Percent*
1- 1,000	\$ 24.31	4
1,001- 2,500	44.91	8
2,501- 5,000	56.04	10
5,001-15,000	155.73	27
15,001-25,000	63.61	11
25,001-50,000	64.08	11
50,001 and over	162.58	28
Total	\$571.26	100

*Does not sum due to rounding.

percent) of the dollar volume of IRBs sold. Municipalities with over 50,000 persons accounted for 28 percent of the dollar volume of IRBs sold from 1975 through 1980.

From 1975 through 1980 IRBs were issued in 50 of Wisconsin's 72 counties. Eighteen of these 50 counties make up all or part of an SMSA. Municipalities within SMSA counties accounted for 73 percent of the dollar volume of all IRBs sold in the state during this period. IRB financing in Wisconsin is tied more to the urban and less to the rural economy.

Wisconsin's experience

Wisconsin is the only District state in which various state agencies have studied the growth and impact of the state's IRB financing program.¹³ These studies found that approximately 86 percent of the dollar amount of IRBs sold in Wisconsin were issued for industrial purposes. The remaining 14 percent were issued to assist the financing of national or regional business headquarters; recreational, hotel, and convention facilities; service, warehouse, and distribution facilities;

¹³Richard Kottenbeutel, *Economic Impact of Industrial Revenue Bond Usage in Wisconsin*, (Madison: Wisconsin Department of Business Development, May 1980), and *Industrial Revenue Bonds: An Evaluation by the State of Wisconsin Legislative Audit Bureau*, Madison, May 1981, processed.

and commercial enterprises located in re-development areas.

Eight out of every 10 dollars in funds generated from IRB sales in Wisconsin were used by firms already located in the state. Only 12 projects using IRB financing attracted out-of-state firms. These findings tend to support other studies that have concluded that financing costs are not one of the primary factors influencing a firm's location decision. They also weaken the argument of those that consider IRBs to be an effective tool in the interstate "pirating" of new industry.

Studies of the Wisconsin IRB program also found that 40 percent of the firms using IRB financing had fewer than 50 employees and only about 26 percent of the firms using such financing were subsidiaries of larger corporations. Thus, there is a basis upon which to conclude—at least in Wisconsin—that IRBs are often used as a tool to finance small, local business in major urban areas.

From the Wisconsin studies it is also known that commercial banks have been the major purchasers of IRBs in Wisconsin. About 75 percent of all the IRBs issued in that state were purchased by banks. Most of these banks were headquartered in Wisconsin.

Conclusion

The dramatic growth in industrial revenue bond financing in the Seventh Federal Reserve District may be attributed to the high cost of conventional business financing and attempts on the part of states and municipalities to attract or retain business.

The study of this financing technique reveals widespread use and diversity within the District states. IRBs are primarily used by municipalities located within major metropolitan areas, except in Iowa where their use is centered in the rural communities. This exception is best explained by Iowa's predominantly rural makeup rather than by any difference in policy.

The study also found a lack of central reporting of IRB sales in certain District states. The lack of adequate data can result in inac-

curate conclusions being drawn about the use and trends of such financing. Centralized reporting is desirable if lawmakers are to establish sound public policies on the use of such obligations.

The combined effect of the recent decline in interest rates and the passage of the Tax Equity and Fiscal Responsibility Act of 1982, with the provision to eliminate the

small-issue exemption after 1986, will be to reduce the future volume of IRB sales in the District and nationwide. However, public financing of private projects remains an option for certain borrowers for certain types of projects. Furthermore, the history of such financing shows that their use tends to ebb and flow with political and economic currents.

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Economic stagnation and the resurgence of trade restrictions

Jack L. Hervey

The recession that has plagued the global economy during the past three years has given rise to a worldwide wave of protectionism. Confronted with stagnant economic activity and high and rising unemployment, many countries have turned increasingly to restrictions on imports, or to special subsidies that increase the price competitiveness of their products in international markets. The immediate concerns of policy makers about depressed output and high unemployment have contributed to the diversion of their attention toward trade-distorting policies. These policies are perceived by some as remedies for the economic ills of unemployment and under-utilization of plant and equipment, but at best such policies only mask the symptoms and are likely to be met by offsetting distortions by another country's government.

Meanwhile, the underlying rationale for why countries engage in international trade is lost. The economic basis for trade is that by specializing in the production and export of goods for which a country has a comparative advantage and importing those goods for which it does not have a comparative advantage, the trading countries may each increase their total income.

A view of the world that supports the restriction of trade has a long history and in fact was a basic tenet of economic thought during the mercantilist period of the 16th-18th centuries. Governments sought to acquire wealth (gold and silver) through the export of high value goods and through restrictions on imports. In more recent history, protectionism became an important component of trade policy in the early 1900s and reached a peak in 1930 with the Smoot-Hawley tariff.

Smoot-Hawley was initially conceived prior to the Great Depression as a means of protecting U.S. agriculture, which during the 1920s had become depressed relative to the rest of the economy. With the onset of the Depression, the narrowly conceived legislation became a "Christmas tree" on which to hang greatly increased tariff rates to protect the domestic employment and output of other industries. Foreign competitors responded with increased protectionism of their own. Widespread unilateral attempts to stimulate employment and income by restrictions on trade failed and contributed to a marked deterioration in world trade, thus exacerbating the effects of the Depression worldwide.

Current economic conditions and pressures for protection do not compare with those of the late 1920s and early 1930s. However, the prolonged economic stagnation currently being experienced by the world's economies and the resulting consequences for employment and income have brought to a standstill, and threaten to reverse, the post-World War II trend toward freer trade. Recent examples of trade-restrictive actions include: Japan's imposition of import duties on U.S. aluminum allegedly "dumped" in the Japanese market; imposition of "voluntary" limits on car exports from Japan to Canada, the United States, and several European countries; restrictions on imports of steel by the European Common Market (EC); tightening of restrictions on textile exports from the developing countries to the industrial countries under the provisions of a recent revision in the international textile agreement; increases in export subsidies on surplus agricultural commodities by the EC; a marked increase in non-tariff trade barriers within the

EC; and many others.

The United States has not been immune to these pressures. In the recent past, numerous bills calling for restrictions on imports have been introduced in the Congress. Where administrative actions are permitted by existing legislation, pressures for using them have intensified. In several instances, these pressures have resulted in action. Of particular note are three measures taken by the U.S. government in recent months.

U.S. quotas on sugar imports

In May 1982, the President ordered quotas on imports of sugar into the United States. Under this quota system, the administration determines the total amount of sugar to be admitted into the country. Each foreign country exporting sugar to the United States is allocated a share of that total based on the average annual shipments into the United States for the years 1975 through 1981.

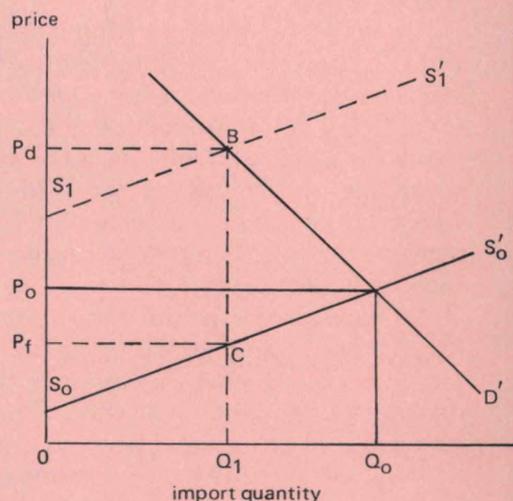
The quota system is in addition to existing import duties that, at the President's discretion, can range up to 2.81 cents per pound on raw sugar, and fees, set by the Secretary of Agriculture. The administration's decision to impose sugar quotas was triggered by a series of domestic events, combined with the developments in the world's sugar markets in late 1981 and early 1982.

The Agriculture and Food Act of 1981 established a price support program for U.S.-produced sugar that set a floor under the price received by U.S. producers. The government set the floor by agreeing to purchase raw sugar through the Commodity Credit Corporation (CCC) at a price of 16.75 cents per pound from December 22, 1981, through the first quarter of 1982. The legislation also directed the CCC to extend nonrecourse loans to cover sugar production during the 4-year period from October 1982 through September 1986. Loans to sugar producers were to be secured by the commodity and based on a support price for sugar that would increase gradually from 17 cents per pound in the first year of the program to 18 cents per

Tariff and quota restrictions on trade

Import restrictions fall into two categories: 1) tariffs and 2) nontariff barriers to trade, which are divided into a) quantitative restrictions, typically quotas, and b) other non-tariff barriers to trade. Since World War II a series of seven multilateral trade negotiations have reduced tariff rates to such a degree that they are comparatively minor impediments to trade. Partly as a result of the reduced protection afforded by tariffs, more of the pressure for protection from imports has been applied in the area of nontariff barriers—quotas and other nontariff barriers such as “buy domestic” legislation and domestic content requirements.

Theoretically, for every quota there is a tariff that would provide the same degree of protection. (As a matter of practice, it is difficult to ascertain precisely the level of the tariff that would achieve this result.) In a simple case, the figure below shows what happens when import restrictions are imposed on a product. The relationship be-



tween the quantity of the product imported and its price (demand) is represented by the curve DD' and the relationship between the quantity supplied by the exporting country and price (supply) is shown by curve $S_0'S_0$. The quantity demanded equals the quantity supplied at the equilibrium point A, resulting in a market price of P_0 and a quantity of Q_0 .

Assume now that it is desired to reduce the quantity of the product imported from Q_0 to Q_1 . This could be achieved either by setting an import quota of Q_1 —i.e., forbidding imports greater than that amount—or by imposing a tariff, BC, which raises the price to domestic consumers to P_d and reduces the price received by exporters to P_f . In effect, imposition of the tariff would shift the supply curve up from S_0S_0 to S_1S_1 .

A major difference between a tariff and a quota providing equivalent protection is the beneficiary of the “rent” represented by the area BCP_fP_d . (It should also be recognized that the trade restriction results in a net loss to the system, shared by exporters and domestic consumers represented by the area ACB .)

If the restriction is a tariff, the government imposing the restriction gains the revenue BCP_fP_d . If the reduction in imports is attributable to a quota, the distribution of the rent depends on how the government imposing the quota chooses to implement it. If the government sells importers the right to buy abroad, the government either will capture all of the rent itself or will share it with the importers, depending on the price at which the right was sold. If the government gives the import licenses away, the importers will obtain all of the rent. Finally, if the government gives export

licenses to foreign governments or exporters, then they will capture the rent.

The negotiated or “voluntary” quotas favored by governments in recent years do not allow the importing country to capture the rent resulting from the restriction. Rather, the foreign government, which in this case controls the licensing of exports, reaps all or a portion of the rent by selling export licenses to exporters. It can, alternatively, give the licenses to exporters, allowing them to capture all of the rent. Thus, under quotas, consumers in the importing country face the worst of several possible worlds. They not only pay higher prices, but are prevented from increasing their consumption of the imported goods regardless of their willingness to pay. Still worse, they may actually be subsidizing foreign exporters.

Quotas possess several other characteristics that are particularly distasteful to most economists. Effective quotas eliminate the impact of market forces on the output of the product. An upward shift in demand or an increase in efficiency in supply would affect only the price of the product—the quantity is fixed by quota. Thus, only the comparatively inefficient protected firms reap the benefits of an increase in domestic demand. Finally, quotas insulate domestic producers from world market forces and tend to promote the continuation of inefficient operations.

Offsetting these negative factors somewhat, at least from the importing country's perspective, are the short-term gains that may occur in domestic employment in the affected and related industries. The use of import quotas clearly involves political as well as economic considerations.

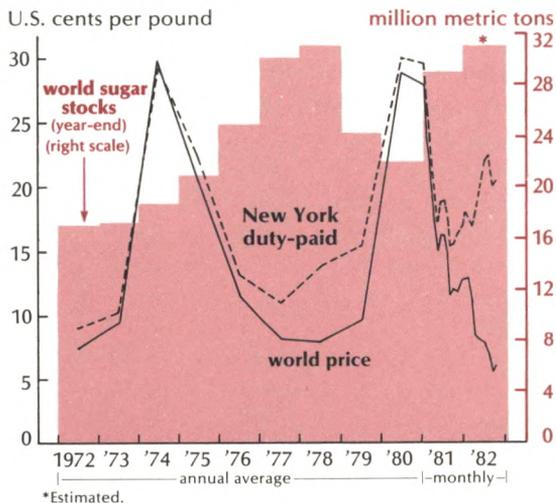
pound in fiscal year 1985-86.¹ However, because the Congress failed to appropriate funds for the program in the 1982 federal budget, the Office of Management and Budget directed the CCC not to purchase surplus sugar.

The failure of the government to implement the floor price for domestically produced sugar left the price of U.S.-produced sugar to be determined in the world market. In the meantime, world sugar production soared to a record 105.6 million short tons in 1981 and year-end stocks increased 32 percent from 1980 to 1981. As a result, the world price of raw sugar fell from a high of 41 cents per pound in October 1980 to 6 cents per pound in October 1982. The landed New York price (including duties, fees, and freight) declined from 41½ cents per pound in October 1980 to 15½ cents in September 1981. In an attempt to protect comparatively high cost domestic sugar producers from falling prices, the President raised import duties on raw sugar in December 1981 to their legal maximum of 2.81 cents per pound. The import duties and fees brought the total import tax on raw sugar up to 4.95 cents per pound, and the New York duty-paid price stabilized around 17-18 cents per pound.² Fees were raised further and in April 1982 the total import tax was 6.88 cents per pound. Given the state of the world's sugar markets in early 1982, the tariff was not high enough to main-

¹With a nonrecourse loan, the sugar producer acquires a loan from the CCC based on the loan rate per pound of sugar. The sugar is held as collateral for the loan. If, during the course of the year, the market price of the sugar under loan sufficiently exceeds the loan rate, the farmer may pay off the loan and sell the sugar on the open market. If, by the end of the year, the market price remains below the loan price, the farmer may choose to turn over the title to the sugar to the CCC, thus canceling his obligation to repay the loan. The CCC must then assume storage costs of the sugar and may not sell its holdings in the open market unless the market price exceeds the loan rate by a specified percentage.

²In 1981 one-quarter of the nearly 5 million short tons of sugar imported were eligible for duty free treatment under the Generalized System of Preferences (GSP) applicable to U.S. imports from developing countries. During the first half of 1982 nearly 60 percent of the 1.2 million tons imported were eligible for GSP treatment.

Figure 1: U.S. and world sugar prices diverge in 1981, as protectionist policies take hold



tain the U.S. price of sugar above the legislated floor price in the absence of a viable, well-funded purchase program.

The administration was left with three choices: 1) abandon the price support program; 2) obtain a budgetary allocation to fund it; or 3) impose additional restrictions on foreign suppliers as a means of raising domestic prices. The first course was deemed undesirable for political reasons—the termination of the price support program would alienate the powerful sugar producers' lobby in the Congress. The second choice would have been difficult to implement because of the tight budget. So the administration chose the last alternative and imposed import quotas.

The quota increases the price that U.S. consumers will pay for sugar. In effect, it transfers the cost of the sugar support program from the taxpayer to the sugar consumer. Early estimates by the U.S. Department of Agriculture indicated that the quotas would add 2 to 4 cents per pound to the price of sugar. Assuming domestic consumption holds at the 1981 level of 9.8 million tons, the additional cost to consumers would be \$400 million to \$800 million per year. In addition to

higher sugar prices, the prices of nonsugar sweeteners are expected to increase, further boosting the consumer's costs.

In addition to the consequences for domestic prices of sweeteners, the imposition of the quota system may have important international repercussions. Approximately 50 percent of the sugar consumed in the United States came from foreign sources in 1981. Except for Australia, the major supplier countries are low- or middle-income developing countries.

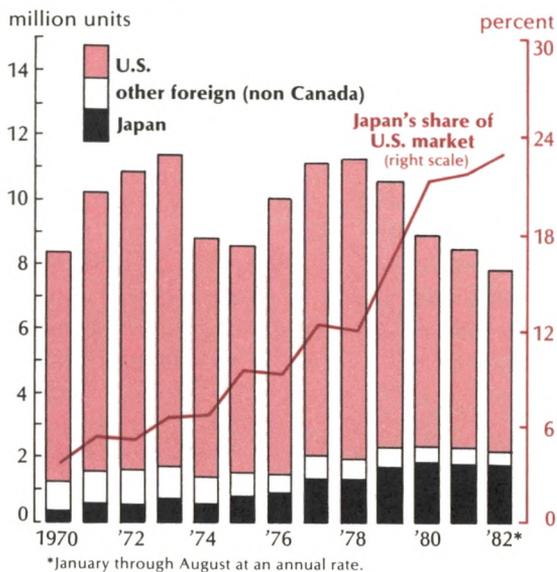
Brazil and Argentina, among the more advanced developing countries, provided nearly 30 percent of U.S. sugar imports in 1981. Lower-income developing countries in Central America and the Caribbean islands, where sugar is a major export commodity, provided nearly one-third of U.S. sugar imports. In 1980, sugar accounted for nearly 40 percent of the Dominican Republic's and nearly 30 percent of Panama's exports to the United States. The quota system may create severe problems for these countries.

“Voluntary” restraint on exports of Japanese cars to the United States

For one year beginning April 1, 1981, the Japanese government limited exports of automobiles (including vans and station wagons) to the United States to 1.76 million units. In light of the continued depressed state of the U.S. auto market in 1982, the restraint was extended at the same level for a second year. In October 1982 the U.S. government requested that the limits be extended for a third year.

The decision of the Japanese government to reduce car exports (from 1.91 million units in 1980) to the United States came after months of growing political pressure within the United States to temporarily restrict auto imports as a means of providing some support to the industry. It was assumed that such temporary protection would assist the industry as it went through a transition phase of production reallocation towards smaller and more fuel-efficient cars and attempted to adjust its production to a more efficient mix of labor

Figure 2: Japanese imports increase their share of a declining U.S. auto market



and capital, better enabling the U.S. auto industry to compete.³

The restraint would give the U.S. auto industry a “breathing spell” from foreign competition during which it could restore profitability and reduce its unemployment. It was estimated that a restriction-induced increase in sales of U.S.-produced autos would increase before-tax revenues for U.S. auto companies by about \$1.9 billion per year, thus generating additional funds to aid the recovery and long-term viability of the industry.⁴

Employment in the auto industry was expected to increase over what it otherwise

³Although the U.S. International Trade Commission (ITC) had previously issued a ruling that growing auto imports were not the principal cause of the plight of the U.S. auto industry, the movement toward restraining imports gained considerable momentum.

⁴“CEA Calculations of the Impact on the Economy of a Japanese Automobile Import Restraint,” *The Effect of Expanding Japanese Automobile Imports on the Domestic Economy*, Hearings before the Subcommittee on Economic Stabilization of the Committee on Banking, Housing, and Urban Affairs, United States Senate, April, 1980, 96th Congress, 2nd Session (Government Printing Office, 1980), p. 83.

would be in the absence of the import cut-back. According to studies conducted by the U.S. Department of Labor and the United Auto Workers (UAW), an increase in auto production by five units adds one employee to the work force, directly and indirectly. The anticipated 150,000 unit reduction in Japanese imports (assuming that it translated into a one-for-one increase in U.S. auto production) was expected to reduce U.S. automotive unemployment by about 30,000 workers.

On the other hand, the restraint was expected to impose costs on U.S. consumers. In principle, the "voluntary" export restraint imposed by the Japanese government would have the same impact as legislated import quotas by the U.S. government: a restriction on the number of autos allowed to enter the U.S. market tends to increase the prices of autos bought by U.S. consumers and to limit their choice of available models.

Furthermore, economists generally expected that the Japanese producers would change their product mix and increasingly concentrate their shipments to the U.S. market in the higher-priced, higher-profit models at the expense of less expensive models, thereby limiting U.S. consumers' choices and raising the average price of landed imports. Moreover, the limited supply of imported cars, especially the lower-priced models, was expected to make it possible for dealers to increase the delivered price of these autos.

The available statistics tend to bear out those expectations. During the first year of restrictions, Japanese car makers sold 1.81 million units in the U.S. (versus 1.91 million units in 1980). The excess over 1.76 million primarily reflected a drawdown in inventories built up in anticipation of the imposition of restrictions. During the first six months of 1982, sales ran at an annual rate of 1.77 million units, only marginally above the restriction ceiling.

Japanese manufacturers have sought to maintain sales revenues by raising prices and by increasing the proportion of higher-priced cars in their export mix, confirming the predictions of many economists when the re-

strictions were introduced. The average unit value of Japanese cars at U.S. ports of entry was about \$4,700 in 1980, about \$5,300 during the first six months of 1981, and almost \$5,600 during the first half of 1982.⁵

Sales reports by the major Japanese auto companies confirm the shift toward more expensive models. During the first six months of 1982, the number of cars priced at \$6,500 or less sold by the two largest Japanese manufacturers declined 30 percent from the same period in 1981. During the same period the number of cars priced between \$6,500 and \$11,000 increased 15 percent. Sales of cars priced at more than \$11,000 rose by 60 percent.⁶

Despite the export restrictions and the shift in the export mix toward more expensive cars, Japanese car makers have continued to hold their own in the depressed U.S. market. Japanese cars accounted for about 22 percent of all cars sold in the United States in both the first half of 1981 and the first half of 1982. In the April-August 1982 period, they had a 26 percent share.

A much more severe restriction on trade in cars would occur if some form of domestic content requirement legislation such as that introduced in the 97th Congress were to become law. In its most restrictive form, the proposed legislation would require that by 1985 companies selling cars in the United States have a minimum of 25 percent local content if annual sales ranged between 100,000

⁵From April 1981 to mid-October 1982, the dollar appreciated by about 18 percent in terms of the yen. Together with an increase of about 6 percent in the average U.S. price of a Japanese car, this exchange-rate change has meant that the average yen price of a representative Japanese car exported to the United States has risen more than 24 percent since April 1981. Clearly, this increase has materially aided profit margins of Japanese manufacturers.

⁶According to *Ward's Automotive Reports*, during the period in question, sales by these two manufacturers of cars priced at \$6,500 or less declined from about 349,650 units to 213,450 units; sales of those priced between \$6,500 and \$11,000 increased from about 164,680 units to 189,320 units; and sales of those priced in excess of \$11,000 increased from about 53,650 to 85,770. Total sales by these manufacturers declined from about 567,980 to 488,540 units.

and 150,000 units. Local content requirements would range up to 90 percent for car manufacturers with annual sales of 500,000 units or more.

Such legislation would effectively preclude major foreign auto makers from selling in the U.S. market. Foreign auto makers that establish plants in the United States typically do not produce all models in their U.S. facilities and it is unlikely that they would be willing to source such a high proportion of auto components domestically. Even U.S. auto companies commonly source major components such as engines and transmissions abroad and sell foreign-assembled cars under U.S. nameplates.

Such restrictions are bound to limit consumers' choices and raise car prices. Auto makers would be forced to accept the higher domestic production costs that have 1) led U.S. firms to foreign sources for components in the first place and 2) discouraged foreign firms from locating facilities in the United States. U.S. Trade Representative William Brock has condemned the bill as a serious threat to the international trading system and to the well-being of the U.S. economy. Nevertheless, the bill gained strong support in the Congress during 1982 as the U.S. economy remained stagnant and the expected recovery of the depressed auto industry was pushed further into the future. More importantly, the strong support for such legislation reflects a widespread mood that protecting domestic industry from import competition is necessary to generate more jobs in this country.

Restrictions on steel imports and the U.S. steel industry

On October 21, 1982, officials of the United States government and the European Economic Community reached an agreement limiting EC steel producers' exports to the United States of carbon and alloy steel and steel pipe and tube to 5.46 percent and 5.90 percent, respectively, of the projected U.S. market for these products. The quotas went into effect November 1, 1982, and extend

through 1985. The agreement by the EC to accept "voluntary" export quotas short-circuited by only one day the U.S. government's imposition of countervailing duties on steel imports from the EC and may have forestalled the imposition of anti-dumping duties later in the year. The imposition of these quotas is the latest development in a troublesome controversy over "unfair trade practices" in the world steel market.

Foreign competition in the steel industry has long been a sensitive issue worldwide. During most of the period 1969 through 1974 agreements to restrict steel shipments "voluntarily" were negotiated between the U.S. and Japan, the U.S. and the EC, and the EC and Japan. These agreements protected the U.S. industry from Japanese and European steel and the European industry from Japanese steel. When world steel demand soared in the mid-1970s the agreements were allowed to lapse except for the import quotas imposed by the U.S. on specialty steel imports from the EC in 1976. At the same time, Japan agreed to a voluntary restriction on shipments of specialty steel to the United States.

World demand for steel slowed later in the 1970s. Rates of capacity utilization fell, employment declined, and new pressures for restrictions on trade began to appear. In June 1977, the U.S. Steel Corporation filed a countervailing duty petition against European steel producers charging that the Europeans were providing illegal export subsidies. In September 1977 anti-dumping charges were filed against Japanese steel exporters. That same month, the U.S. government granted trade adjustment assistance to about 15,000 steel workers who were certified as having lost their jobs because of increased imports. Additional dumping charges were filed later in the year. In 1977 steel imports surged to 19.3 million short tons from 14.3 million tons in 1976.

The trigger price mechanism

In December 1977 the administration announced plans for a "trigger price mechanism" (TPM) which provided a schedule of

Price for hot rolled sheet by source, 1981*

	<u>Germany</u>	<u>France</u>	<u>Italy</u>	<u>Netherlands</u>	<u>Other areas</u>	<u>United States</u>
	<i>dollars per ton</i>					
Average f.a.s. import price	\$313	301	296	313	325	—
Estimated c.i.f. price (cost, insurance and freight)	343	330	325	343	357	—
General import tariff at 7.1 percent on f.a.s. price	22	21	21	22	23	—
Estimated price in New York	365	351	346	365	380	416**

*Price comparisons for steel products are open to question because of a lack of publicly available data for comparable products. Industry sources indicate that hot rolled sheet comes close to being a uniform product although even in this category quality and size variations occur that make price comparisons tenuous.

**Mill base price at midwestern locations—price does not include discounts or premiums.

minimum prices at which steel imports would be admitted into the United States.⁷ The U.S. industry received the TPM coolly, primarily because the trigger prices were tied to the estimated costs of production in the more efficient Japanese industry. Consequently, the level of protection was low. Nevertheless, the U.S. industry agreed to withdraw dumping charges. Dissatisfaction with the TPM continued to build, however, and came to a head in March 1980 when domestic steel producers filed antidumping petitions against European

producers once again.⁸ The Commerce Department responded by suspending the TPM.

Under an agreement with the domestic industry reached in October 1980 the U.S. government reinstated the TPM, at somewhat higher minimum prices, with the stipulation that the dumping petitions be withdrawn. At about the same time the EC imposed production quotas on its steel industry, which suffered from excess capacity, in an attempt to restructure the industry and weed out inefficient capacity. The EC also took action to re-

⁷These minimum prices were based on the dollar cost of steel production by the Japanese steel industry—the world's most efficient steel producers. So long as foreign steel met the trigger price level, according to the TPM, the domestic industry would refrain from making dumping charges. If imports came in at a price below the trigger price, the U.S. authorities would initiate a dumping investigation. The TPM went into operation in early 1978. Despite the trigger prices, steel imports increased to a record 20.8 million tons in 1978. From the beginning, the U.S. steel industry was unhappy with the TPM. Because trigger prices were based on Japanese costs of production, it was asserted that the less efficient European producers could sell steel in the U.S. market at a price above the trigger price, thereby being in compliance with the TPM, and still be in technical violation of antidumping laws—that is, foreigners selling in the U.S. market at less than their costs of production.

⁸Dumping is defined in U.S. statutes as the practice by a foreign exporter of selling goods in the U.S. market at less than "fair value." This means that the goods must not be sold in the export market at a price lower than in the home market. The statutes also state that if the home market price does not realistically reflect the cost of production, plus a reasonable profit margin, the home market price may be disregarded and a cost of production plus profit figure may be constructed and used in place of the home market price to determine whether dumping is taking place. The Commerce Department has responsibility for determining whether dumping is taking place. Before antidumping duties can be imposed, providing dumping is found, the dumping must be shown to be causing "material injury" to the U.S. industry. The investigation and determination of injury are the responsibility of the U.S. International Trade Commission (ITC).

strict steel imports in 1981, renewed these restrictions for 1982, and recently extended the restrictions through 1983.

Nonetheless, by the end of 1981 the U.S. industry was again complaining about rising imports and administration of the TPM. Steel imports increased to 20 million tons in 1981, only about 1 million tons less than the 1978 record. The strength of the dollar in foreign exchange markets tended to nullify the protectionist effects of the TPM.⁹ In an attempt to forestall a broad-scale “unfair trade practices” petition by the steel industry, the Commerce Department in November 1981 began an investigation of steel imports from Romania, Belgium, Brazil, France, and South Africa.

Nonetheless, in January 1982 several U.S. steel companies brought an “unfair trade practices” suit against 14 countries. In response to the petition the Commerce Department again suspended the TPM on the affected products. During the next several months domestic producers filed additional charges covering a broader range of products and expanded the country list to 15—Austria, Belgium, Brazil, France, West Germany, Italy, Japan, Luxembourg, the Netherlands, Romania, South Africa, South Korea, Spain, Sweden, and the United Kingdom.

The June 1982 countervailing duty decision

On June 11, 1982, the U.S. Department of Commerce announced that nine foreign governments—Belgium, Brazil, France, West Germany, Italy, Luxembourg, the Netherlands, South Africa, and the United Kingdom—were

⁹In October 1980 the average trigger price for steel imports was about \$400 per ton. This was equivalent to about 1,700 French francs per ton at the then prevailing exchange rate. The average price of French steel at that time was about 1,800 francs per short ton or about \$420—well above the trigger price. The French franc price of steel increased about 27 percent to 2,300 francs per ton between October 1980 and the end of 1981. However, because of the more than 30 percent appreciation of the dollar during the year, the average dollar price of French steel had declined to about \$400 per ton at the end of 1981—just at the threshold of the trigger price.

subsidizing their steel exports. Pending a final determination of whether the U.S. steel industry had suffered “material injury” as a result of the subsidies, Commerce announced countervailing duties on the appropriate steel imports to offset the subsidies.¹⁰ In the final determination reported in August the Commerce Department substantially reduced its estimates of the export subsidies. The countervailing duties were correspondingly reduced to marginal levels for German steel and from a maximum of 40 percent for U.K. steel to 20 percent. Further complicating the issue, the Commerce Department ruled in August that EC steel was being “dumped” in the U.S. market.

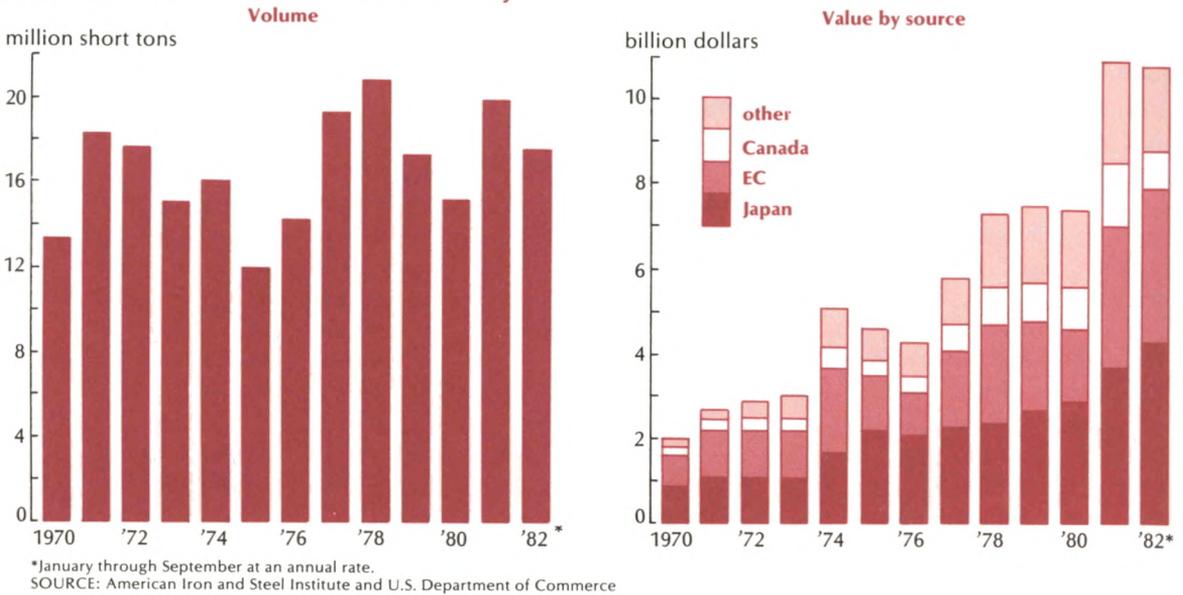
In October 1982, the International Trade Commission ruled that the EC’s subsidies to steel producers caused “material injury” to the U.S. steel industry. Consequently, the countervailing duties determined by the Commerce Department investigation were scheduled to be imposed beginning October 22, 1982. The ITC’s ruling on injury due to dumping was scheduled for December.

Response by the steel exporting governments

The initial response of the EC’s top trade officials to the countervailing duty decision was to announce that the EC would develop a list of imports of industrial goods from the United States that benefit from U.S. tax breaks and other subsidies, such as the Domestic International Sales Corporations (DISCs), so that the EC could retaliate against the United States by imposing its own set of countervail-

¹⁰The Tariff Act of 1930, as amended, is the basic legislation governing the imposition of countervailing duties (the Trade Agreement Act of 1979 contains the most recent revisions of the provisions). Countervailing duties may be imposed to offset a foreign government’s subsidy on exports that result in “material injury” to the comparable U.S. industry. The U.S. Department of Commerce is responsible for determining whether an export is subsidized and by how much. The International Trade Commission determines whether U.S. industry suffers “material injury” as a consequence of the subsidized exports.

Figure 3: The volume of imported iron and steel products declines in 1982, while their value holds steady



ing duties.¹¹ Alternatively, officials indicated that such a list might be used to help convince the U.S. government that it too has much to lose in a trade war.

On July 22 the EC countries offered to reduce steel exports to the U.S. voluntarily, but the U.S. rejected the proposal. In mid-August U.S. and EC officials reached agreement on quotas limiting EC carbon steel to an average of 5.75 percent of the U.S. market for the covered products. However, U.S. steel producers refused to drop their unfair trade practice suits and, consequently, the agreement did not go into effect.

Negotiations resumed and on October 21, the day before the U.S. countervailing duties were to be imposed, U.S. and EC officials reached an agreement on quotas that was acceptable to the U.S. steel industry. The

Europeans agreed to limit shipments of carbon and alloy steel and steel pipe and tube products to 5.46 percent and 5.90 percent, respectively, of the projected U.S. market. That the U.S. steel industry accepted the revised agreement and agreed to withdraw the unfair trade practice charges was, in part, the result of the EC's acceptance of a slightly smaller market share for carbon steel (5.46 percent versus 5.75 percent in the August 1982 agreement) and the inclusion of quotas on tube and pipe, which had been excluded from the earlier agreement.

In addition, from the U.S. steel industry's viewpoint the quotas apparently provide greater relief from imports than would the increase in import duties, especially considering the downward revised countervailing duties. Consider, for example, Germany, the largest European exporter of steel to the United States. Quotas will be more effective than countervailing duties in reducing German steel shipments to the U.S. because government subsidies to the German steel industry are negligible and, consequently, the countervailing duties would have been only marginal.

¹¹Domestic International Sales Corporations (DISCs) are special corporate entities whose sole purpose is to channel goods into the export market. Their establishment was authorized by the Revenue Act of 1971 in the hope of stimulating U.S. exports. The act gives DISCs certain tax advantages that make it attractive for U.S. companies engaged in exporting to establish such corporations and use them as conduits for foreign sales.

The situation in the U.S. steel industry

During the first nine months of 1982 the U.S. capacity utilization in the production of raw steel averaged 51 percent. This compares with an average of 82 percent during the same period in 1981. Current demand is low by historical standards and inventories are being worked down. Imports (which were at high levels during the first two months of the year) have declined about 9 percent from a year ago. Raw steel production, which totaled 120 million short tons in calendar 1981, was down to an annual rate of 75 to 80 million tons during the first nine months of 1982. Total blast furnace and foundry employment, which averaged 710,000 in 1981, declined from 714,000 in January 1981 to less than 550,000 in July 1982.

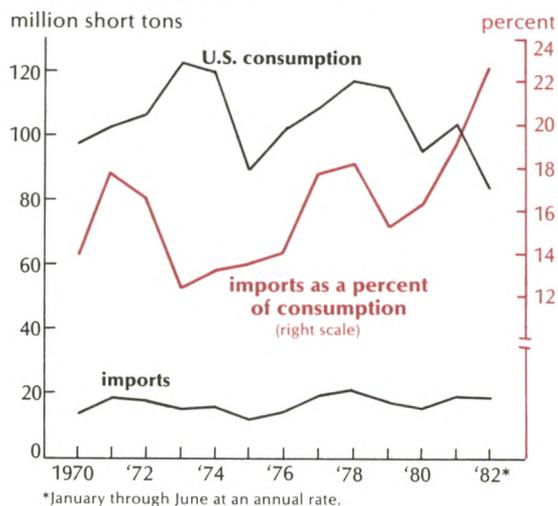
Impact of the quotas

In 1981, EC countries shipped about 6.4 million tons of steel to the United States and supplied 6.1 percent of U.S. steel consumption. At a comparable level of consumption, the new agreement would limit EC shipments to about 5.7 million tons.

The state of steel in the Seventh District

Seventh Federal Reserve District states accounted for an estimated 34 percent of U.S. steel production, or about 41 million short tons, in calendar 1981. Employment in District states is in about the same proportion. Thus, current steel industry employment in District states is estimated to be about 190,000—down about 50,000 workers from January 1981. Despite the substantial decline in steel output and employment in the District states, these states appear to have been hit less hard by plant closings than some other areas. As a result, the District's share of output and employment has risen several percentage points during the past two or three years.

Figure 4: As U.S. steel consumption dropped, import share rose



Despite the weak steel market, the quota restrictions will put some upward pressure on prices paid by U.S. steel consumers. Imported steel will continue to enter the U.S. market under the umbrella of higher U.S. prices. The restrictions on shipments from the EC will tend to push the foreign steel supply curve back so as to “slide up” the U.S. demand curve for foreign steel, thereby producing higher steel prices. Prices for non-EC imported steel as well as for U.S. steel might be expected to strengthen as a result of the quotas. Alternatively, given the large amount of unused capacity in the steel industry worldwide, non-EC steel producers might choose to increase production to fill the void left by reduced EC shipments, holding prices near current levels, or they could opt for a combination of higher prices and somewhat higher production. In the United States higher prices will probably take the form of smaller discounts from the list price than are currently in force. Higher list prices are not expected until there is a marked improvement in the overall demand for steel.

The increased prices paid by consumers of steel will be transferred, in the form of

increased revenues, primarily to steel producers, both foreign and domestic. The overall cost of the quota restrictions to the residents of the U.S. can be expected to be somewhat higher than if the same degree of protection for the industry had been achieved by increasing duties. Higher prices for imports resulting from higher duties would have produced increased tax revenues to the U.S. government. Under quotas, in particular those imposed by exporting nations, higher prices for imported steel typically result in a transfer of revenue from U.S. consumers to foreigners.

The negotiated settlement has tempered a potentially explosive trade conflict between the United States and its major trading partners. Nonetheless, protectionist pressure, fostered by worldwide economic stagnation and growing unemployment, continues to build.

Whether unilaterally imposed or negotiated, import/export quotas still constitute restrictions on trade and result in higher prices to consumers and misallocation of resources. It appears, moreover, that the U.S.-EC agreement is not the end of the steel controversy. After the argument was concluded, the EC announced that it will restrict its own imports of steel in 1983 by an additional 10 percent, or more, in order to help its domestic producers whose sales will be reduced by lower shipments to the United States. In addition, U.S. steel industry representatives have indicated that they will press for restrictions on imports of steel from both Japan and third-world countries. These countries have increased their penetration of the U.S. market substantially during the past decade and are in a position to fill the gap left by reduced EC shipments.

To the degree that increased trade tensions might result in a succession of trade restrictions, Seventh District states would suffer from the secondary effects of these restrictions. EC retaliation against industrial and capital goods and agricultural shipments would potentially have an adverse impact on a much broader segment of the Midwest

economy than is encompassed by the steel industry. Exports are a major factor in the economic output of the area. About 8½ percent of the District's industrial production is estimated to have been exported in 1980 and exports of agricultural products accounted for one-third of the cash receipts from farm marketings in 1980.

U.S. measures in perspective

Trade barriers to "protect" domestic interests from foreign competition exist in all countries. Indeed, an assertion often encountered in the current drive to protect the U.S. steel industry from European competition is that the U.S. industry is simply retaliating against foreign governments' alleged subsidizing of their domestic steel industries. Nonetheless, the quotas on exports by the Europeans serve to distort the market by masking the economic signals necessary to enable the U.S. steel industry to adjust to underlying market conditions so as to compete in the world market.

Other governments have a long history of protectionism with respect to agriculture, an industry where the United States, on the whole, is highly competitive. Japan, for example, sharply limits imports of U.S. produced beef and citrus products. These restrictions have been a persistent source of conflict between the two governments.

The European Economic Community, through its common agricultural policy, supports the prices received by its domestic grain and livestock farmers at levels well above world market levels. Imports of competing farm commodities are taxed at the border to prevent them from undercutting domestic prices. In turn, excess domestic production encouraged by the EC's high price supports is sold on the world market with the aid of government subsidies, which enable EC producers to compete with the other more efficient foreign agricultural producers, such as those in the United States, Canada, and Australia. The EC's export subsidies on farm products have recently provoked increasing pres-

asures by U.S. agricultural interests for retaliation in kind.

Measures restricting trade are often presented as reasonable and necessary actions taken to protect certain domestic industries that are, for whatever reason, experiencing hardship. Restricting imports that compete with such industries appears to be a simple solution. But, as shown in the three examples analyzed above, such solutions have distinct costs attached to them, costs that must be borne by the society as a whole.

The question then arises whether another means of aiding the depressed industry, perhaps less costly than trade restrictions, may be a more efficient way of dealing with the problem of an industry having difficulty adjusting to foreign competition. Such a question is especially relevant when other indirect but very real costs are taken into consideration. These costs may arise from retaliation by the affected countries abroad.

The likelihood of such retaliation increases in direct proportion to the degree of distress being experienced by the world economy: the more depressed the economic conditions abroad are, the greater is the chance that countries that lose markets because of restrictions imposed on their exports, will attempt to redress the setback by imposing restrictions on the offending country's goods. When that happens, the benefits gained (at some cost) from trade restriction in one segment of the economy, may be more than offset by losses suffered by other segments whose exports are restricted by retaliation. In the end everybody loses as international trade diminishes and economic efficiency deteriorates under the impact of restrictions.

In recent years international trade has become increasingly important to the U.S. economy. In 1981 U.S. exports of merchandise as a proportion of the production of goods (measured by final sales adjusted for changes in inventories) stood at 18 percent, compared with less than 10 percent in 1970. Imports were equivalent to 20 percent of final goods sales in 1981, compared with less than 10 percent in 1970. While these figures are

well below those for the trade-intensive countries of Western Europe, where the proportions are 50 percent or more, they are nonetheless substantial.

A more dramatic picture of the importance of international trade to the overall economy emerges when changes in net exports—that is, exports minus imports—are related to changes in GNP. In any given year, international trade will tend to either stimulate or retard overall economic activity, depending on whether net exports are in surplus (assuming less than full employment) or deficit, respectively. Moreover, year-to-year changes in net exports affect GNP, regardless of whether the overall trade balance is in surplus or deficit. It is the marginal impact that is important.¹²

In 1981, for example, real net merchandise exports (i.e., exports valued in constant 1972 dollars) declined \$7.9 billion from the 1980 level. Real GNP increased \$28.6 billion. Various econometric studies have indicated that the impact on GNP, or multiplier effect, of a change in net exports may range from plus two to plus three. Thus, at the margin, the impact of a \$7.9 billion decline in real net exports may have reduced real GNP growth in 1981 by \$16 billion to as much as \$24 billion.

Had net merchandise exports in 1981 remained unchanged from the 1980 level, real GNP would have increased between \$45 billion and \$53 billion, rather than by the less than \$30 billion actually recorded. Instead of a real GNP growth rate of 1.9 percent, as recorded, GNP would have increased by 3 to 3.7 percent.

Clearly, the impact of international trade on U.S. GNP is of potentially great significance. Government policies which reduce trade flows and affect net exports may, at the margin, induce substantial secondary changes in the nation's output, employment, and growth.

¹²If there is no change in the size of the balance from one period to the next then clearly there is no marginal impact on GNP. Even in this case, however, there may be economic efficiency gains as a result of an increase in trade or losses due to a reduction in trade.

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