FRB CHICAGO ECONOMIC PERSPECTIVES

A review from
the Federal Reserve Bank
of Chicago

NOVEMBER / DECEMBER 1983

Foreign currency futures:
some further aspects
Index for 1983
Through the seventies and beyond

ECONOMIC PERSPECTIVES
November-December 1983
Volume VIII, Issue 6

Economic Perspectives is published by the Research Department of the Federal Reserve Bank of Chicago. The views expressed are the authors' and do not necessarily reflect the views of the management of the Federal Reserve Bank of Chicago or the Federal Reserve System.

Single-copy subscriptions are available free of charge. Please send requests for single- and multiple-copy subscriptions, back issues, and address changes to Public Information Center, Federal Reserve Bank of Chicago, P.O. Box 834, Chicago, Illinois 60690, or telephone (312) 322-5111.

ISSN 0164-0682

Contents

Foreign currency futures: some further aspects

Henry N. Goldstein

> ... it is not the case that the Japanese monetary authorities have enough influence to control exchange rates. What they have been doing is, at most, mitigating fluctuations in currency markets which are caused largely by Chicago speculators.
>
> Oxford T. Matsumoto
>
> From a letter in *The Economist*, March 5, 1983, p. 4.

The basic mechanics of buying and selling foreign currency futures on the International Monetary Market (IMM, the division of the Chicago Mercantile Exchange on which financial futures are traded) were described in an earlier article in this review.[1] That article explained the nature of currency futures contracts and showed how such contracts could be used to hedge exchange rate risks arising from commitments to receive or pay foreign currencies at future dates. It also explained how such contracts typically provide enormous leverage for transactors who deliberately seek to assume exchange rate risk, i.e., to speculate on a change in the dollar price of one or more leading foreign currencies, including British pounds, Canadian dollars, Deutsche marks, Japanese yen, Mexican pesos, and Swiss francs.

This article describes the evolution of trading activity in these different currency futures since 1977. It also examines the links between the currency futures market and the broader interbank market for spot and forward exchange in which major banks in financial centers around the world act as the main dealers. Finally, it considers a number of special issues: (1) the impact of IMM currency transactions on the broader U.S. and world-wide interbank markets; (2) the chances that trading in currency futures in other centers will come to rival trading on the IMM; (3) some contrasting aspects of the newly introduced market for *options* on currencies; and (4) the relative concentration of open positions among "large traders."

Market growth, 1977-1982

Although futures contracts in eight currencies are traded on the IMM (see Table 1), in recent years active trading has been largely confined to only five—the British pound, the Canadian dollar, the Deutsche mark, the Japanese yen, and the Swiss franc. The combined trading volume in the other three traded currencies—Mexican pesos, Dutch guilders, and French francs—amounted to less than two percent of total trading in all currency contracts on the IMM during 1982.[2] For all five currencies actively traded on the IMM, an enormous growth in both trading volume and the level of open positions has occurred since 1977. The growth in trading volume is shown in Figure 1; the growth in open-interest positions in Figure 2.

As Figure 2 shows, the average month-end open interest in Canadian dollars during 1981

Henry N. Goldstein was on the staff of the Research Department of the Federal Reserve Bank of Chicago when this article was written. On leave from the University of Oregon, he is currently an adviser to the Central Bank of Papua-New Guinea in Port Moresby. For useful information and criticism, he is indebted to Scott Gordon, Paul L. Kasriel, David A. Kass, Patricia Kuwayama, James D. Leatherberry, John Mahan, and John W. McPartland, Jr.

[1]Karl V. Chalupa, "Foreign currency futures: reducing foreign exchange risk," *Economic Perspectives*, Winter 1982, Federal Reserve Bank of Chicago, 3-11.

[2]Different reasons account for the negligible volume of trading in these three currencies. Trading in Mexican pesos has been dampened by the very high initial margin requirement imposed by the Exchange, amounting at recent exchange rates to something like two-thirds of the dollar value of each Mexican peso contract. At recent exchange rates, margins required for the other currencies range from about 1.1 percent for Canadian dollar contracts to 4.1 percent for British pound contracts. (These are minimums; brokers may require customers to post higher margins.) Inactivity in trading in guilder futures seems to reflect the closeness with which the dollar price of the guilder varies with the DM: traders prefer the German currency as a speculative and hedging vehicle because the DM market has much greater depth in interbank trading. Reasons for inactivity in French franc futures are less apparent.

Table 1

IMM contract sizes and U.S. dollar value per contract (for June contracts at rates prevailing on March 22, 1983)

Currency	Contract size		Dollar value per contract (June delivery)
Swiss franc	SF	125,000	$60,800
Mexican peso	MP	1,000,000	5,260
Deutsche mark	DM	125,000	52,238
Canadian dollar	CD	100,000	81,710
British pound	BP	25,000	36,750
French franc	FF	250,000	33,888
Dutch guilder	DG	125,000	47,625
Japanese yen	JY	12,500,000	52,150

and 1982 was somewhat less than the open interest in any of the other four actively traded currencies, when measured by the number of outstanding contracts. This measure is somewhat misleading, however, because the U.S. dollar value of the standard Canadian dollar contract (100,000 Canadian dollars) substantially exceeded the U.S. dollar value of a contract in any of the other currencies. As a consequence, when measured in U.S. dollar value terms, the open position in Canadian dollars on the IMM actually exceeded that in any of the other actively traded currencies during 1981 and 1982. Table 2 gives the U.S. dollar values of open positions in the five currencies as of the fourth quarter of 1982.

Over the six years 1977-1982, the rise in average daily volume of trading has been much more substantial than the rise in open interest in all currencies except the Canadian dollar.[3] This development suggests that the growth of "day-trading" (in-and-out trading on the same day) has accounted for a significant part of the rise in trading volume.

Interestingly, the Swiss franc, the most actively traded currency on the IMM in 1982, is a currency in which U.S. residents have slight foreign exchange exposure as a result of ordinary trade flows—U.S. trade with Switzerland is minuscule relative to its trade with Germany, Japan,

[3]This differential increase was particularly great for the Swiss franc: in 1977, average daily trading volume in Swiss francs amounted to 21 percent of the average open interest in that currency; by 1982, this figure had reached nearly 70 percent.

Figure 1

Led by the Swiss franc, futures for the five major trading currencies hit major highs on the International Money Market in mid 1982.

Figure 2

Open-interest levels grew less rapidly than daily trading volume, suggesting an increase of in-and-out "day trading."

Table 2

Approximate U.S. dollar value of open positions in five currencies on the IMM during 4th quarter 1982

Canadian dollars	$1.2 billion
British pounds	$0.6 billion
Japanese yen	$0.8 billion
German marks	$0.8 billion
Swiss francs	$1.0 billion

Britain, or Canada. The recent rapid growth of trading in Swiss franc futures thus seems to reflect mainly speculative motives.

The relative importance of IMM transactions

Activity in IMM currency futures, whether measured by trading volume or by open-position

Some differences in the two markets

The interbank market involves spot and forward transactions among the major dealer banks and among these banks and their corporate customers. Smaller business firms and individuals who seek to buy and sell currencies at favorable rates for forward delivery in relatively small amounts—i.e., less than $500,000 for leading currencies—have only limited access to the interbank market. In contrast, the IMM produces ready hedging and speculative opportunities to the small trader.

In the interbank market, contracts are tailored to specific customer requirements both as to amount and maturity date. In contrast, delivery dates on IMM contracts are standardized on a regular cycle with delivery generally on the third Wednesday of March, June, September, and December. Contracts for each traded currency are also standardized by size, although contract values in terms of U.S. dollars differ substantially across currencies. Table 1 shows the set of standard IMM contract sizes and the U.S. dollar value of June-delivery contracts as of March 22, 1983.

Trading is done by telephone or telex in the interbank markets and, at any given moment, buy-and-sell quotations by different dealer banks may vary slightly from one another. On the IMM, in contrast, trading is through "open outcry" of bids, offers, and amounts in a single arena. Thus, finding the most favorable price at which to buy or sell may sometimes prove more difficult in the interbank market than in the futures market where bids and offers are continuously revealed at a central place.

Trading is on a principal-to-principal basis in the interbank market; participants always know the party on the other side of the trade. On the IMM, transactors deal through exchange members authorized to do business on the floor; they neither know nor care about the identity of the party on the other side because the Exchange Clearing House guarantees contract performance. Some slight risk of non-performance thus exists in the interbank market but not in the futures market (assuming a zero probability that the Exchange itself would "fail").

All participants on the IMM must post initial cash margins but no such requirement is usually made in the interbank market. Gains and losses on position values are accrued to settlement date on forward trades in the interbank market but are settled daily ("marked to market") on the IMM.*

To transact on the IMM, customers pay a negotiated "round-trip" commission to broker firms. This fee covers both the purchase of a contract and its subsequent sale (or the sale of a contract and its subsequent liquidation). Except for dealings through foreign exchange brokers, no explicit commission is charged on the interbank market, although dealers obtain an implicit commission through the spread between their buying and selling rates.

No limit exists on the range of daily price movements in the interbank market, but such limits do exist for IMM contracts. This creates the possibility that, on occasion, traders in futures contracts may be unable to reverse their positions readily, except by recourse to the interbank market, which many traders may not possess.

*For example, on February 8, 1983, Mr. Jones sells one IMM futures contract for delivery of 25,000 British pounds for value September 21, 1983 at the closing price of $1.5270 per pound. On February 9, this contract settles at the higher dollar price of $1.5340 per pound, giving Jones a loss of $175 on his contract (equal to 25,000 times (1.5340 - 1,5270)). Jones must post this additional sum with his broker who in turn will have to post the same amount with the Clearing House on the Exchange. Simultaneously, some trader with an opposite position will be entitled to have $175 paid *into* his account by his broker who will be receiving funds from the Clearing House.

levels, has mushroomed in recent years. But has it become large enough to have a significant independent impact on the level of exchange rates in the broader interbank market? In a short-run sense, the answer would appear to be yes. Although Mr. Matsumoto's judgement, cited at the beginning of this article, that "fluctuations in currency markets . . . are caused largely by Chicago speculators" seems an exaggeration, it is indeed apparent that during the afternoon in the United States—when trading in Europe has ended—surges of net buying or selling pressure on a given currency on the IMM do occasionally occur. And as this pressure is transmitted to the interbank market, rates there can be pushed appreciably higher or lower in the immediate short run. In a broader sense, however, the available volume figures suggest that the IMM plays a generally subordinate role to the interbank market. Table 3 shows comparative measures of the volume of gross trading on the IMM relative to gross trading in the U.S. interbank market during March 1980, using special survey data for that month collected by the Federal Reserve Bank of New York from 90 banks. This Federal Reserve survey also included data on outright forward transactions by the 90 banks with arbitrage members of the IMM. Table 4 shows some relevant ratios.

Table 3

Relative trading volume in five currencies: IMM vs. U.S.interbank

Currency	IMM volume relative to turnover by 90 banks in the interbank market*
British pounds	8.0%
Canadian dollars	16.5
Deutsche marks	3.8
Japanese yen	4.6
Swiss francs	10.0
All five currencies	7.5

SOURCES: Federal Reserve Bank of New York, Public Information Release No. 1371 of June 23, 1980, Table C; IMM Statistical Department, Monthly Information Bulletin for March 1980.

*Turnover of the 90 banks includes the volume of their outright spot and forward transactions—thus it excluded their swap transactions, which are matched offsetting spot and forward trades. The dollar value of IMM was estimated by multiplying foreign currency contract values by the daily average spot exchange rate for the month.

Table 3 suggests that IMM transactions during March 1980, measured in gross volume terms, were small compared with gross U.S. interbank trading inclusive of spot transactions. However, Table 4 suggests that the share of outright forward transactions in the U.S. market done with IMM arbitragers was fairly substantial, particularly in Swiss francs where it amounted to 43 percent.

Because they exclude interbank trading outside the United States, the percentage figures in Tables 3 and 4 undoubtedly exaggerate the importance of IMM transactions in the determination of exchange rates. Trade and capital transactions between U.S. and foreign residents are more likely to require "settlement" in dollars than in non-dollar currencies.[4] As a consequence, the task of currency conversion more often rests with foreign residents than U.S. residents. But foreign residents needing to convert currencies are more likely to deal with banks located in their own financial centers than with banks located in the United States. Thus foreign exchange trading in centers abroad, and in particular trading which affects the dollar price of the five currencies most actively traded on the IMM, is likely to exceed trading in the U.S. interbank market by a wide margin.

One rough clue to the world-wide role played by the IMM is provided by comparing monthly open positions on the IMM for the five actively traded currencies with the values of exports-plus-imports of goods and services for the countries in question. Table 5 shows the ratio of month-end IMM positions (in dollar-value terms) to average *monthly* exports plus imports (also in dollar-value terms) of the rele-

[4]Trade between non-U.S. residents may also call for payment in dollars. And even when, for example, a German importer is paying sterling into the account of a British exporter, the banks handling the arrangements are likely to exchange marks for dollars and dollars for sterling because of the dollar's special role as an intermediary currency.

Table 4

IMM arbitrage as share of U.S. interbank forward trades

Currency	As percent of outright transactions with customers	As percent of all outright forward transactions (including interbank transactions)*
Deutsche marks	38.1	18.1
British pounds	39.1	24.4
Swiss francs	62.5	42.8
Japanese yen	37.8	24.2
Canadian dollars	30.3	25.6
All five currencies	39.3	24.8

SOURCES: Federal Reserve Bank of New York, Public Information Release No. 1371 of June 23, 1980, Table C; IMM Statistical Department, Monthly Information Bulletin for March 1980.

*Outright forward transactions by the banks were only about one-fifth as large as their forward transactions matched with offsetting spot trades in so-called "swap transactions."

vant five countries for 1981.[5]

These percentages are relatively small. Moreover, enormous amounts of speculative and interest-sensitive capital also generate currency transactions in the interbank market. If anything, therefore, the figures in Table 5 almost certainly exaggerate the impact of IMM transactions on the balance of supply and demand for the currencies of these five countries. Despite their impressive recent growth, IMM transactions as yet amount to only a small fraction of total demand and supply in the worldwide foreign exchange markets.

Table 5

IMM open positions in national currencies as fraction of national average monthly trade flows

Canadian	4.6%
United Kingdom	2.7
Japan	1.7
Germany	1.8
Switzerland	9.6

More fundamentally, it may be misleading even to ask whether the IMM market ever "drives" the interbank market, or vice-versa. Traders in both markets have access to essentially the same information about the economic fundamentals that presumably determine exchange-rate levels; accordingly, "news" that makes them more optimistic or pessimistic about a given currency should have a roughly equivalent impact on their net positioning decisions—regardless of whether these decisions are effected through one channel or another.

How the futures market is linked to the interbank market

Both the futures market and the interbank market deal in contracts to receive or deliver bank balances denominated in foreign currencies at specified dates in the future. Hence, prices in the two markets should move in close tandem with each other through some arbitrage mechanism whereby changes in the net demand or supply pressure in one market are transmitted almost instantaneously to the other market.[6]

[5]Dividing the level of IMM positions by *monthly* trade figures may substantially overstate the influence of IMM positions. The level of open positions at any given time, insofar as it is generated by hedging or speculative transactions linked to trade payments, presumably relates to trade flows scheduled for the coming three to 12 months. Accordingly, it might be more reasonable to compare the level of outstanding contracts with gross trade flows for the coming three months or the coming year. Such comparisons would, of course, generate percentages roughly 1/3rd to 1/12th as large as those shown in Table 5.

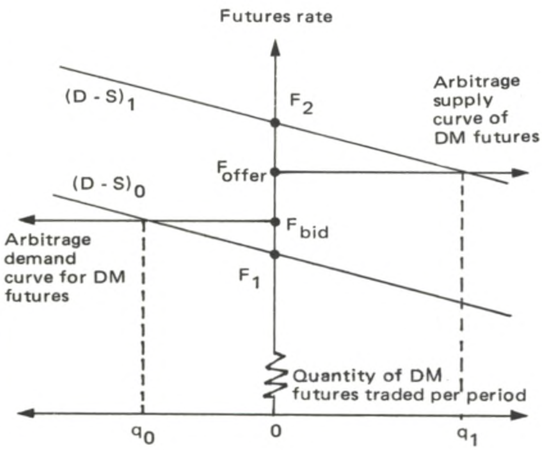
[6]*Arbitrage* refers to the simultaneous buying and selling of an identical or similar good to take advantage of *known* price discrepancies. In contrast, *speculation* refers to the buying and selling of a commodity to profit from anticipated but uncertain price differences. Arbitrage is a sure thing; speculation a gamble.

In fact, soon after its inception in 1972, the IMM took deliberate steps to create an effective arbitrage mechanism by authorizing regular Class A Clearing Members of the Exchange to create special affiliates, known as "Class B Clearing Firms." Each such Class B affiliate is permitted to deal with one specific commercial bank engaged in active foreign exchange trading and with no one else. The counterparty bank agrees to buy and sell forward exchange with the Class B firm on a continuous basis during the trading day—and a direct telephone tieline promotes rapid and repeated transactions whenever justified by rate differentials in the two markets.

Every morning the Exchange provides each counterparty bank with a "hard copy" of the long or short position in currency futures of each Class B trader with whom it deals. Because the

How arbitrage links the two markets

The vertical axis in the figure below plots the current futures rate on the Exchange for a specific DM futures contract; the horizontal axis the quantity of such futures demanded and supplied per period. Distances on the horizontal axis to the right of the origin denote a net demand for DM futures by *non-arbitrageurs*; distances to the left, a net supply.



For a given state of expectations regarding the future level of spot exchange rates, the net excess demand curve for DM futures demanded will be greater at lower prices. Suppose, now, that the initial net demand curve by non-arbitrageurs corresponds to the curve $(D - S)_0$. If no arbitrage mechanism existed, the futures market would have to clear "on its own." In this event, the market-clearing rate would be F_1, where net excess demand by non-arbitrageurs is zero. Now introduce arbitrageurs, willing to absorb a large amount of DM futures at a price just barely below F_{bid}, the prevailing bid in the interbank forward market, and to sell a large amount of DM futures at a price just barely above F_{offer}, the interbank offer rate. This amounts to assuming that the interbank market has much greater "depth" than the IMM market so that—to a close approximation—the relevant aggregate supply and demand curves are infinitely elastic. (Relaxing this assumption would not change the argument significantly.)

Given that the initial non-arbitrage excess demand curve is $(D - S)_0$, the relevant market clearing price will be F_{bid}. At this price, non-arbitrageurs will sell Oq_0 of DM futures to arbitrageurs who, in turn, will sell Oq_0 of DMs, either spot or forward, on the interbank market. Now suppose that the net demand curve for DM futures shifts upward to $(D - S)_1$. In the absence of arbitrage possibilities, the market clearing rate would rise to F_2. But if arbitrageurs are ready to sell a very large amount of futures at F_{offer}, the futures rate cannot exceed that level. Now, non-arbitrageurs buy Oq_1 of DM futures from arbitrageurs who, in turn, buy an equivalent amount of spot or forward DMs from the interbank market.

This example assumes a significant increase in non-arbitrage demand for DM futures (i.e., a rightward shift in the net demand curve) even though the forward rate in the interbank market remains unchanged. In reality, the same political and economic developments that increase non-arbitrage demand for DM futures are also likely to stimulate demand for spot and forward DMs in the broader interbank market. As regards the figure, any significant shift in the (D - S) curve would thus generally be accompanied by a roughly corresponding change in both F_{bid} and F_{offer}. In this event, a general rise (or fall) in the dollar price of the DM over all maturities in both the interbank and futures markets would not necessarily lead to any increase in arbitrage transactions.

bank has its own record of forward contracts with each trader, it can readily verify that the firms it deals with are fully hedged (at least as of the end of each day's trading). Thus the bank runs virtually no risk that a sharp exchange rate fluctuation would affect the ability of its Class B customers to honor their forward contracts.

The hedge achieved by the Class B arbitrageurs is, however, subject to one interesting qualification. Suppose that a given currency persistently rises or falls in value over a series of days and that the net flow of non-arbitrage orders on the Exchange is of a "trendriding" nature. For example, assume that the Swiss franc rises in price over a given period and that IMM traders, exclusive of Class B arbitrageurs, are cumulative net buyers of Swiss franc futures. In this event, the Class B firms would, of necessity, be net sellers of Swiss franc futures while buying a like amount of forward Swiss francs from the interbank market. As the Swiss franc rose in price, the Class B firms would show ever-growing cumulative gains on their forward contracts. But because the Class B firms must "mark to market" daily, they would have to settle their losses with the Exchange day by day. Normally, they would finance these payments by borrowing from the counterparty banks at the prime rate or higher.

Such patterns have frequently occurred during various periods since the IMM's inception in May 1972. Exposure to such interest costs introduces a certain amount of uncertainty into the Class B dealer operations. To some extent, these firms are forced to make educated guesses (1) as to how far the exchange rate movement might go (providing a projection of how much additional "variation settlement" must be paid) and (2) of the relevant prime rate over the period during which their contracts are likely to be outstanding. When their projections indicate an increase in the probable cost of maintaining arbitraged positions, Class B arbitrageurs can respond by widening the spread between the prevailing quotes in the interbank market and their offers to buy or sell futures on the Exchange. In this rather subtle way, expectations of exchange rate and interest rate movements in the future may affect the ruling spread needed to induce arbitrage between the two markets.[7]

In the early days of currency futures trading on the IMM, the large foreign exchange banks avoided active participation in the operations of the Exchange (aside from agreeing to enter into arrangements with Class B arbitrageurs). For one thing, the low volume of trading did not suggest that such participation would be especially profitable. For another, many banks were reluctant to promote trading on the Exchange which, after all, might eat into their own market share and foreign exchange profits, should the volume in fact become significant. Most important, perhaps, was the banks' aversion to engaging openly in a market that had such a speculative aura.

Indeed, it appears that considerable persuasion was required by representatives of the Exchange to induce banks to participate in the Class B trading arrangments, although the large foreign exchange banks in Chicago were relatively willing to enter into such arrangements. The Chicago banks had a long standing tradition of financing transactions on the commodity exchanges on behalf of commodity firms that were now branching out into currency futures, and they were quick to appreciate that they could earn fees from issuing letters of credit to Class B firms, and interest on loans that Class B firms might need to finance cumulative margin calls.

The banks' reluctance to play more than a relatively passive role in the arbitrage process

[7]Conceivably, the alternative scenario might occur. For example, the Swiss franc might experience a rising trend while the net flow of non-arbitrage transactions on the Exchange is such as to resist this trend. In this situation, the Class B arbitrageurs would tend to be buyers of Swiss franc futures on the Exchange and sellers of Swiss franc forwards in the interbank market. Arbitrageurs would then be getting daily "mark-to-market" payments from the Exchange but would not have to settle the accumulating losses on their offsetting forward contracts until they matured or were reversed. In addition to obtaining their normal point spread on discrepancies between contract rates in the two markets, the arbitrageurs could now also earn interest on their interim payments from the Exchange prior to the expiration or reversal of their outstanding contracts. By and large, however, net buying and selling pressure on the Exchange (from all non-arbitrageurs) has tended to be of the "trendriding" type. Accordingly, Class B arbitrageurs have seldom been able to obtain extra returns from taking their profits earlier than their losses.

has recently disappeared. As the volume of trading on the Exchange has increased, the banks have perceived that it would be profitable for them to set up direct telephone facilities linking their foreign exchange trading desks to their own representatives on the floor of the exchange. Their foreign exchange trading desks can then on their own initiative take advantage of rate discrepancies between rates in the futures and interbank markets. Brokerage firms that were members of the Exchange were willing to accommodate the banks with special phone facilities, phone clerks, and other aids to efficient trading because of the large volume of business (and hence fees) likely to result from such customers. Since mid-1980, direct arbitrage participation by the banks has markedly reduced the amount of arbitrage done by Class B firms. And this trend is expected to continue, with many banks likely to become clearing members of the IMM.

Class B arbitrage has also been reduced through the growing arbitrage business conducted by certain nonbank Class A firms. Much of this activity stemmed from large dealers in precious metals whose conventional international operations generated a frequent need to buy and sell foreign currencies. These firms acquired seats on the IMM to facilitate their own currency transactions and, at a fairly early stage after the market's inception, found it profitable to take advantage of rate differences between the IMM and interbank market, often in more flexible ways than the "same-date arbitrage" permitted to Class B firms.

As just noted, Class B firms are limited to buying futures and selling forwards, or selling futures and buying forwards, for exactly matching delivery dates—namely the quarterly settlement dates on outstanding futures contracts. Banks arbitraging at their own initiative through Class A firms, and Class A firms acting as arbitrageurs, are not confined to such simple "same-date" arbitrage. One leading type of "different date" or indirect arbitrage occurs when a bank (or Class A arbitrageur) buys the foreign currency *spot* as an offset to a sale of foreign currency futures or sells the foreign currency *spot* as an offset to a purchase of foreign currency futures. Known as "spot-to-future" arbitrage, this practice is also referred to as "basis trading," where the "basis" refers to the difference between the spot and future rates. On average, the bank will find it profitable to arbitrage in this way whenever the interbank spot rate and IMM futures rate differ by more than the amount indicated by an algebraic formula that has, as a critical input, the spread between the relevant short-term interest rates in the Euro-currency markets.

Rival markets

The enormous growth in the volume of trading in currency futures on the IMM has stimulated efforts by other exchanges to offer similar contracts. In the past few years, similar contracts have become available for trading in New York, London, Canada, and Australia. The New York Futures Exchange (NYFE, pronounced "knife") opened as a subsidiary of the New York Stock Exchange in 1980. The London International Financial Futures Exchange (LIFFE, pronounced "life") opened in September 1982. So far the volume of trading in currency futures on the rival exchanges appears to have disappointed their promoters. (In fact, trading in currency futures in New York appears to have virtually ceased.) And, indeed, doubts have been expressed whether activity in currency futures on any of these competing exchanges will ever approach activity in currency futures on the IMM.[8]

A principal reason advanced for the IMM's expected continued dominance in currency futures trading is the presence in Chicago of a broad group of "locals" or "scalpers"—traders with a background in conventional commodities—willing to buy and sell currency futures in response to small, short-term price movements in a way that contributes greatly to the market's depth and pricing continuity. Futures markets in other centers currently appear to suffer from relative scarcity of such traders.[9]

---

[8]See "Markets in tomorrows," *The Economist*, September 25, 1982, pp. 99-100.

[9]Over time, of course, a larger body of such traders may develop in these centers. Indeed, because the competition there is less keen, some traders may move to these centers from Chicago. And, in fact, a number of leading trading firms with seats on the IMM have bought seats on LIFFE, in part to exploit arbitrage opportunities between the two markets.

Moreover, Chicago's head start in trading currency futures probably tends to restrain the growth of rival markets. Brokers who accept orders to buy or sell currency futures seek to obtain the best price and quickest execution for their customers. The IMM's established reputation for efficient order execution is bound to inhibit their going through other exchanges. Some observers believe that other exchanges would have a better chance of attracting more business in currency futures if they offered contracts that differ significantly from those on the IMM. So far this has not happened. However, the London and Australian exchanges do provide one special feature: time-zone differences permit their markets to be open when the IMM is closed. Eventually, this feature alone may lead to substantial currency trading on these exchanges—but perhaps more as a complement to trading on the IMM than as a substitute.

Options on currencies

One interesting new vehicle for speculation and hedging in foreign currencies was introduced on the Philadelphia Stock Exchange in late 1982—namely, options on foreign currencies. Put and call options on three-, six-, and nine-month cycles are available on British pounds, Deutsche marks, Canadian dollars, Swiss francs, and Japanese yen. (The put option gives the owners the right to sell a given amount of the specified foreign currency at a given price per unit in U.S. dollars on or before a certain date; the call option gives him the right to buy a given amount at a specified price on or before a certain date). Contract sizes in the Philadelphia options market are one half the size of corresponding futures contracts on the IMM.

The options vehicle should appeal to the small transactor who wants to speculate on a longer-run exchange-rate movement but limit his downside risk should the spot exchange rate move the "wrong way" in the interim. In combination with a forward or futures contract, an option contract also provides a near perfect hedge against exchange risk to a business firm which must place a competitive bid to perform a specific service abroad. If the bid is successful, the dollar value of the firm's foreign currency receipts is fixed by the futures contract; if the bid is unsuccessful, any loss on the futures contract is largely cancelled out by a corresponding gain on the option contract. As yet, however, it is much too early to judge whether the Philadelphia market in foreign currency options will attract anything like the investor interest that has emerged for currency futures in Chicago.

Concentration of open positions among large traders

All clearing members of the IMM are required to make daily reports to the Commodity Futures Trading Commission (CFTC), the U.S. government agency charged with regulating all futures markets. These reports show the open futures positions of each "large trader," defined as someone holding 25 or more contracts in any one currency future.[10] The CFTC has recently begun publishing a summary of these open position reports as of month-end dates. In these reports, trader positions are classified as either "commercial" (implying that they are used for hedging pre-existing exchange rate risks) or as "noncommercial" (implying that they are speculative in nature).[11] Examination of data in the report for January 31, 1983 reveal the following:

- The number of large traders in the five active currencies ranged from 85 large traders in Canadian dollars to 159 large traders in Swiss francs.
- Depending on the currency, large traders held between 58 and 85 percent of all long positions and between 60 and 85 percent of all short positions.
- Across the five actively traded currencies, the *four largest holders* held between 18 and 44 percent of total long positions and between 11

[10] As of January 31, 1983, the approximate dollar value of 25 futures contracts in each of the five main currencies traded was as follows: Swiss francs ($1.53 million); Japanese yen ($1.29 million); Canadian dollars ($2.02 million); British pounds ($.95 million); DMs ($1.26 million). Thus, at a minimum, large traders had positions ranging from about one to two million dollars, although only a small fraction of these amounts needed to be put up as cash.

[11] Positions held by Class B arbitrageurs are classified as "commercial."

and 56 percent of total short positions while the *eight largest holders* held between 25 and 61 percent of total long positions and between 19 and 70 percent of total short positions.

• Among reporting large traders, speculators held very unbalanced positions in the different currencies as of January 31, 1983. By currency, the ratios of speculative long to short positions on that date were roughly as follows:[12]

Swiss francs	4:1
Japanese yen	5:1
Canadian dollars	1:3
British pounds	1:2
German marks	1:2

Estimates of the average dollar values of the positions taken by the four largest traders on the side of market where speculation was predominant are instructive. These estimates, obtained for January 31, 1983, were on the long side in Swiss francs and yen and the short side in Canadian dollars, British pounds, and German marks. They presumably *exclude* positions of Class B arbitrageurs who are likely to be the opposite side of the market from the predominant speculative interest:

Contract currency	Estimated dollar value
Swiss francs	$100.4 million
Japanese yen	63.9 million
Canadian dollars	107.3 million
British pounds	22.4 million
German marks	60.8 million

These estimates imply that some rather large "players" take speculative positions through the IMM. Such traders might be wealthy individuals, narrowly held trading firms, or foreign or domestic banks. But is is likely that many are commodity funds which place some part of their pooled shareholders funds in speculative positions through the IMM.

Conclusions

Along with Chicago markets in a variety of other financial futures, the markets for foreign currency futures on the IMM, at least in five out of the eight currencies traded, have experienced impressive growth since 1977. Other financial centers in the United States and elsewhere have recently established markets with similar contracts but the IMM will probably remain the leading market in currency futures for some years to come. Through both direct and indirect arbitrage, price movements on IMM currency futures are tightly linked with corresponding movements in the world-wide interbank market. Despite their recent rapid growth, open positions taken through the IMM are probably small relative to those assumed through the worldwide interbank market.

Therefore, it seems unlikely that the IMM is a significant independent source of supply or demand in the worldwide currency markets, although on occasion, a bunching of one-way orders—particularly in the afternoon after the European interbank market has closed—can cause a significant movement in interbank exchange rates. Smaller speculators in exchange markets may be increasingly attracted to the new options market in foreign currencies, which limits the maximum loss that might be incurred.

Even though the IMM offers small- and medium-sized traders in foreign currencies more

---

[12]Although their validity is difficult to assess, explanations for these divergent ratios are readily available. Thus, as of January 1983, market commentaries suggested that the yen and the Swiss franc—based on "economic fundamentals"—were undervalued relative to the dollar; that the Canadian dollar was vulnerable to some further weakening during 1983 in the light of Canada's persisting inflation, weak markets for commodity exports and uninviting prospects for direct foreign investment; that sterling was weak because of concerns over the impact of a prospective fall in oil prices; and that the DM was under pressure because of uncertainty over the outcome of scheduled general elections. In the absence of exchange market intervention by the central banks, none of these explanations would have been very convincing. For then, the exchange rate would itself presumably move to prevent any massive *net* speculative positioning (much as the price of a common stock "immediately" adjusts to reflect new information, thereby preventing any "obvious" bargain price from materializing). But with the monetary authorities intervening to "lean against the wind." *net* private speculative positioning might well become very large, with speculators, on balance, holding positions just opposite to those of the central banks.

favorable terms than does the larger interbank market, the share of total open positions assumed by "large traders" on the IMM is considerably larger than that assumed by traders holding less than 25 contracts. It is possible, however, that some significant part of such large positions represent the pooled investments of "small traders"—the doctors, dentists, and lawyers from Des Moines and Peoria who are often alleged to play a key role in this market.

ECONOMIC PERSPECTIVES—Index for 1982

Through the seventies and beyond

Early in 1974, *Business Conditions*, the predecessor of *Economic Perspectives*, published a chronology of the economic events of 1973. The Federal Reserve Bank of Chicago has published a similar listing each year since. In this issue we present an abridged account of the decade from 1973 to 1982. The next issue will contain the annual chronology for 1983, selected as usual by the Chicago Fed's longtime business economist and vice president, George Cloos.

Technically, the 1970s began on January 1, 1971, and ended on December 31, 1980. But the historical notion we call the "seventies" probably began later. The political, military, and social upheavals of the "sixties" spilled over into the early years of the next decade, as a war ended and a president resigned. In 1973, a balance tipped and the big news began to come on the economic front—more so than in any decade since the thirties.

Short of war and catastrophic depression, no event in modern times so quickly and thoroughly rewrote the rules of trade, finance, and economy as the Arab oil embargo of 1973 and OPEC's subsequent assumption of control over the price of the world's energy. Some of the impact of these events can be followed in the chronology as the United States struggled with an economy hit hard by the end of cheap energy that had helped nurture the prosperous sixties.

On a less cosmic scale, the seventies saw a drawn-out dance of deregulation in the financial services industry. Sometimes leap-frogging each other, sometimes advancing in sidling crab-like fashion, the regulated—banks, S&Ls, and other financial institutions—and their federal and state regulators brought about the greatest set of changes in the industry in half a century. Those changes, keyed in color, can also be traced in the chronology.

If the seventies began with an embargo, and the sixties with a presidential assassination, and the forties with Pearl Harbor—all defensible cocktail party assertions—when did the eighties begin? We don't know, or at least, we can't agree on a particular event. Perhaps the decade is not yet sufficiently far along to focus our hindsight. Or perhaps the eighties began when nobody was noticing, like the fifties.

1973

Jan 1 European Economic Community is expanded to include Britain, Denmark, and Ireland.

Jan 11 The Dow industrial index closes at a record 1052.

Jan 12 Phase III liberalizes wage and price controls.

Jan 29 Peace in Vietnam announced.

— Officials see prospects for reduced inflation as "exceedingly favorable."

Feb 5 Purchasing Managers Association reports shortages of many materials and components.

Feb 12 The dollar is devalued by 10% relative to other major currencies.

Mar 2 Foreign exchange markets closed because of massive sales of dollars.

Mar 19 European exchange markets reopen with EC currencies in "joint float."

— Atomic Energy Commission says nuclear power is needed to avoid dependence on Middle East oil.

Mar 26 The Joint Economic Committee recommends return to stricter wage/price controls.

Mar 29 Ceilings established on prices of beef, pork, and lamb.

Apr 5 Mississippi floods worst in 30 years.

May 1 Treasury revises prospective deficit downward because of higher receipts.

— U.S. oil import quotas ended.

May 16 Fed's Regulation Q ceilings suspended for all large CDs.

May 17 "Watergate Committee" begins hearings.

Jun 4 July soybean futures hit $12 per bushel, up from $3.50 a year earlier.

Jun 13 Sixty-day price freeze announced, called "Phase 3½."

Jun 28 Export restrictions placed on soybeans, oilseeds.

Jun 29 German mark is revalued by 5.5%.

Jul 5 Interest rate ceilings raised for savings and small-denomination time deposits, and suspended for four-year, $1,000 minimum accounts.

Jul 13 Federal Reserve "swap lines" with foreign central banks reactivated and expanded.

Aug 12 General price freeze ends and Phase IV begins.

Aug 17 Chicago branches of foreign banks authorized by the Illinois Foreign Banking Office Act (effective Oct 1).

Sep 10 Thirteen-week Treasury bills sold at 9.02%, for an investment yield of 9.35%.

Oct 2 Mandatory allocations ordered on oil products.

Oct 6 Egypt and Syria attack Israel.

Oct 15 New law requires interest ceilings on time deposits of less than $100,000.

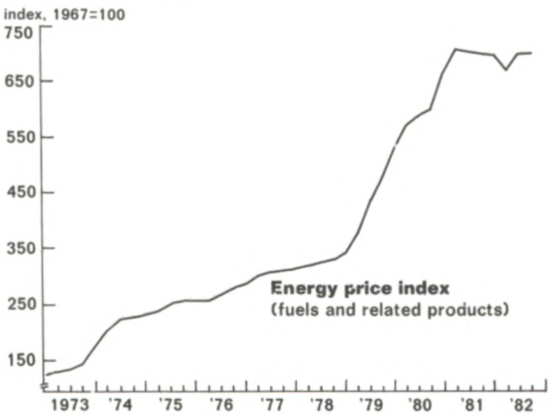
Oct 16 Posted price of Arab crude oil raised 70%.

Oct 17 Arab nations announce reductions in oil shipments.

Oct 22 Cease fire arranged in Arab-Israeli war.

Oct 25 Fertilizer industry exempted from price controls.

Energy prices doubled in 1973-1974, then more than doubled again from late 1978 by early 1981.



Oct 26 International trade surplus for the third quarter was the largest since 1965.

Nov 1 Airlines reduce scheduled flights.

Nov 7 President outlines steps for fuel conserva-ion.

Nov 16 Alaskan pipeline bill signed.

Dec 5 The Dow industrials close at 788, low for the year. (See Jan 11.)

Dec 10 Rates on U.S. savings bonds raised from 5.5 to 6.0%.

Dec 12 Federal Energy Office announces regulations for oil usage.

Dec 24 Arab nations announce an additional 100% increase in posted prices for crude oil.

Dec 29 Large layoffs planned by auto firms, airlines.

1974

Jan 2 Nixon signs bill to reduce speed limit to 55 mph.

Jan 3 Federal Reserve Board reduces margin requirements on stock purchases from 65 to 50%.

Jan 18 The Federal Energy Office says that the Arab oil embargo is fully effective.

Jan 31 Independent truckers begin 11-day strike to protest high fuel prices and reduced speed limit.

Feb 28 Nixon says "no gas rationing" despite lines at gas stations.

Mar 13 The Dow industrials close at 892, the high for the year. (See Dec 6.)

Mar 18 Arab oil embargo is lifted.

Apr 4 Shortages ranging from "abrasives to zinc" are reported.

Apr 12 The United Steel Workers agree to a pattern-setting three-year pact providing for a 40% increase in wages and benefits.

Apr 15 Thrift institutions report savings losses as "disintermediation" returns.

Apr 30 The Economic Stabilization Act expires, ending general price and wage control authority; the Committee on Interest and Dividends expires.

Jun 4 Various electric utilities are reported to be deferring expansion projects.

Jun 26 Germany's Bankhaus Herstatt collapses with worldwide repercussions.

Jul 3 Major banks raise their prime rates to a record 12%.

Jul 12 Usury ceiling on Illinois home mortgages is raised from 8 to 9.5% until Jul 1, 1975.

— Congressional Budget and Impoundment Control Act of 1974 becomes law. (See Dec 11, 1974.)

Jul 16 The Labor Department reports more strikes than at any time since World War II.

Jul 24 Citicorp sells $850 million of innovative variable rate notes.

Aug 9 Gerald Ford becomes President as Nixon resigns.

Aug 12 The Department of Agriculture says drought will hurt the crops.

Aug 26 The Treasury sells 3-month bills at a record 9.91% yield. (See Dec 20.)

Aug 28 The Bell System sells 40-year bonds at a record 10%.

Sep 4 The Federal Reserve Board eliminates marginal reserve requirements on longer-term CDs.

Sep 9 Purchasing managers report no rise in new orders in Aug, first time since Jan 1971.

Sep 10 FNMA auction of commitments produces a record 10.6% yield.

Sep 18 Natural gas suppliers announce sharp cutbacks to industrial users.

Sep 19 Builders report funds for residential and commercial construction all but dried up.

Sep 23 A very early frost hits crops in the northern Cornbelt.

Oct 6 President Ford obtains cancellation of large grain sales to USSR.

Oct 7 Voluntary export controls are placed on grains and soybeans.

Oct 8 The Comptroller of the Currency declares the Franklin National Bank insolvent.

— President Ford's program to fight inflation includes a 5% tax surcharge.

Nov 5 Elections give Democrats large majorities in Congress.

Nov 12 The coal strike begins. (See Dec 9.)

Nov 13 Federal Reserve Board approves a restructuring of reserve requirements to encourage longer-term time deposits.

Nov 20 Auto makers announce layoffs and capital outlay reductions as sales slump.

Nov 27 FDIC insurance coverage is raised from $20,000 to $40,000.

Dec 6 The Dow industrials close at 578, lowest since Oct 1962. (See Mar 13.)

— The Federal Reserve Board authorizes banks to issue six-year investment certificates yielding up to 7.5%.

Dec 9 The Comptroller of the Currency says 150 banks are under scrutiny.

Dec 9 Coal production resumes at some mines. (See Nov 12.)

Dec 11 Congress exercises its new power over Presidential impoundment of funds by rejecting most proposed spending cuts.

Dec 19 Oil companies are reported to be cancelling plans to expand refining capacity.

Dec 20 The Treasury sells 3-month bills to yield 6.96%. (See Aug 26.)

— Congress approves the Trade Reform Act permitting new international trade negotiations.

Dec 31 American citizens can buy gold, first time in 40 years.

1975

Jan 2 The Dow industrials close at 632, low for the year. (See Jul 15.)

Jan 7 Chrysler offers rebates to new car buyers—other makers follow.

Jan 8 New claims for unemployment compensation reach record level.

Jan 17 Major countries propose a fund to aid participating countries in financial difficulties caused by high oil prices.

Jan 19 Chemical Bank acquires troubled Security National Bank of Long Island.

Jan 24 Prime rate is reduced to 9.5%.

Jan 30 Fidelity Mortgage Investors files under Chapter 11, second sizable REIT to do so.

Feb 3 Administration budget shows fiscal 1975 deficit at $35 billion and fiscal 1976 deficit at $52 billion. (See May 30.)

Feb 5 Federal Reserve Board reduces discount rate to 6.75%.

Feb 14 Multilateral Trade Negotiations to reduce barriers to international trade begin.

Mar 7 Federal Reserve Board submits draft legislation to establish federal chartering and control of foreign banks operating in United States.

Mar 10 Federal Reserve Board reduces discount rate to 6.25%.

Mar 29 Bill is approved to cut individual and corporate income taxes by $22.8 billion.

Apr 7 Federal Reserve Board authorizes member banks to permit phoned withdrawals or transfers from savings accounts.

Apr 9 Federal Reserve Board announces a reduction from 8 to 4% in the reserve requirement on foreign borrowings.

Apr 29 Saigon surrenders to Viet Cong, ending 30-year war.

May 1 Trading under SEC-ordered negotiated broker fees begins on NYSE.

— Federal Reserve Board reports money-growth targets for the coming 12 months to the Senate for the first time.

May 5 Ford requests additional $1 billion for the rapidly expanding food stamp program.

May 14 Congress adopts first concurrent resolution specifying budget targets under the Congressional Budget Act of 1974.

May 16 Federal Reserve reduces discount rate to 6%.

May 30 Midyear budget review projects fiscal 1975 deficit at $43 billion and fiscal 1976 deficit at $60 billion. (See Feb 3.)

Jun 4 Ford signs Securities Reform Act expanding powers of the SEC.

Jun 5 Suez Canal is opened to traffic for the first time since the 1967 war.

Jun 6 U.S. unemployment rate hits 9.2% in May, highest since 1941, but employment rose substantially.

The CPI more than doubled from 1973 to 1982. Major inflationary pressures came from the big energy price jumps in 1973-74 and 1979-80.

— Usury rate of 9.5% on Illinois home mortgages is extended to Jan 1, 1977.

Jun 9 A New York bank reduces prime rate to 6.75% —low for the year.

Jul 1 Social security payments are boosted 8% in cost-of-living adjustment.

Jul 15 The Dow industrials close at 882, high for the year. (See Jan 2.)

Jul 17 U.S. grain companies announce large sales to Russia.

Jul 18 "Dumping" charges are filed with the U.S. Treasury against foreign auto producers.

Aug 11 Moratorium is placed on further grain sales to Russia.

Sep 2 Federal Reserve Board permits preauthorized transfers from savings accounts for any bill payments.

Sep 5 The IMF announces agreement on steps to eliminate the role of gold in international finance.

Sep 12 New Illinois law permits NOW accounts (Negotiable Orders of Withdrawal) at state S&Ls effective Jan 1, 1976.

Oct 2 W.T. Grant Co. files bankruptcy proceedings under Chapter 11.

Oct 15 Federal Reserve Board announces reduction in reserve requirements on deposits with original maturities of four years or more.

Oct 22 American City National Bank (Milwaukee) is declared insolvent.

Oct 28 Equal credit opportunity regulations become effective.

Nov 10 The Federal Reserve Board permits member banks to offer business corporations savings acounts up to $150,000.

Dec 8 Federal Home Loan Bank Board permits S&Ls to offer variable rate mortgages on multifamily and commercial properties.

Dec 12 Second concurrent Congressional resolution on the budget targets a deficit of $74 billion for fiscal 1976.

Dec 15 Industrial Production Index rises in Nov for the seventh straight month.

Dec 23 Last minute compromise bill extends 1975 tax cuts for six months.

Dec 26 Federal Reserve Board lowers reserve requirements on time deposits with original maturities of 180 days to four years.

1976

Jan 1 Minimum wage raised from $2.10 to $2.30 per hour; maximum income for Social Security taxes raised from $14,100 to $15,300.

— State S&Ls in Illinois allowed to offer noninterest-bearing negotiable orders of withdrawal (NOW accounts).

Jan 2 Dow industrial stock average closes at 859—proves to be low for the year. (See Sep 21.)

— Futures trading in Treasury bills begins on the Chicago Mercantile Exchange.

Jan 19 Federal Reserve System reduces discount rate from 6.0 to 5.5%.

Jan 21 Major banks reduce prime rate to 6.75%, lowest in three years.

Jan 26 Council of Economic Advisers predicts 6% inflation for 1976, 6 to 6.5% rise in real GNP, unemployment to average 7.7%.

Feb 12 Court authorizes W. T. Grant to liquidate.

Mar 1 Federal Reserve Board amends Regulation Q to allow member banks in New England states to offer NOW accounts, implementing new federal law.

Mar 16 France withdraws franc from Economic Community (EC) "joint float," following sharp drop in the British pound.

May 14 Federal Trade Commission issues revision of the holder-in-due-course doctrine relating to consumer credit.

May 20 New York State permits S&Ls and mutual savings banks to offer checking accounts.

May 26 New York Mercantile Exchange reports heavy defaults on potato futures contracts.

Jun 1 Prime rate raised to 7%, reversing downtrend.

Jun 2 International Monetary Fund auctions gold at $126 per ounce, first of a series.

Jun 7 Prime rate raised to 7.25%.

Jun 23 Marcor shareholders approve merger with Mobil Corp.

Jun 28 Federal Reserve Board issues major revision of its Index of Industrial Production.

Jun 29 General Electric agrees to labor pact to raise wages 33% over three years, assuming 6% annual rise in consumer prices.

Jul 1 Social Security payments raised 6.4%.

Jul 20 London gold price drops to $105.50 per ounce, 31-month low.

Jul 27 Treasury announces budget deficit was $65.6 billion for fiscal 1976.

Aug 2 Prime rate reduced to 7% as downtrend resumes.

Aug 9 New Illinois law sets usury rate on home mortgages at 2½% above yield on long-term federal bonds.

Sep 1 Mexican peso drops sharply after government withdraws support.

Sep 8 Chairman Mao Tse-tung of China dies at 82.

Sep 15 UAW strike begins at Ford Motor Co. (See Oct 14.)

Sep 16 Congress agrees on federal spending target of $413.1 billion for fiscal year beginning Oct 1, 1976.

Sep 21 Dow industrial average closes at 1015, highest since Jan 1973—proves to be high for the year. (See Jan 2.)

Oct 4 Prime rate reduced to 6.75%.

— Supreme Court upholds ruling that electronic terminals established by banks are branches; illegal in Illinois.

Oct 7 The Bank of England raises its minimum lending rate to a record 15%.

Oct 14 Milton Friedman awarded Nobel prize for economics.

— Ford Motor Co. begins to reopen plants after 30-day strike. Compensation per hour to rise 13% in first year. (See Sep 15.)

Oct 16 Currency values in EC joint float are realigned.

Nov 1 Prime rate reduced to 6.5%.

Nov 2 Carter elected President; Democrats retain large majorities in Congress.

Nov 5 Russia announces big grain crop.

Nov 10 Department of Agriculture estimates 1976 corn crop at record 6.06 billion bushels.

Nov 19 Federal Reserve reduces discount rate from 5.5 to 5.25%.

Nov 28 Australian dollar devalued.

Dec 1 Major steel companies raise prices of flat-rolled products by 6%.

Dec 2 New Aaa bond yields 7.9%, lowest in three years.

Dec 3 Employment rose in Nov, but jobless rate is estimated at 8.1%.

Dec 5 Conference Board panel unanimously predicts uninterrupted economic growth in 1977.

Dec 10 Large New York bank reduces its prime rate to 6%, lowest since Feb 1973.

Dec 16 Most OPEC nations announce a 10% rise in crude oil price effective Jan 1; Saudi Arabia announces a 5% increase.

Dec 17 Federal Reserve Board reduces reserve requirements on demand deposits of member banks.

— 91-day Treasury bills yield 4.38%, lowest in four years.

Dec 20 Richard J. Daley dies at 74; mayor of Chicago for 21 years.

Dec 29 Federal Reserve Board issues rules against credit discrimination based on age, race, color, religion, or receipt of welfare—extension of rules on sex and marital status.

1977

Jan 3 Dow industrial stock average closes at 1,000, high for the year.

Jan 4 President Ford proposes tax cut, $10 billion for individuals and $2.5 billion for business.

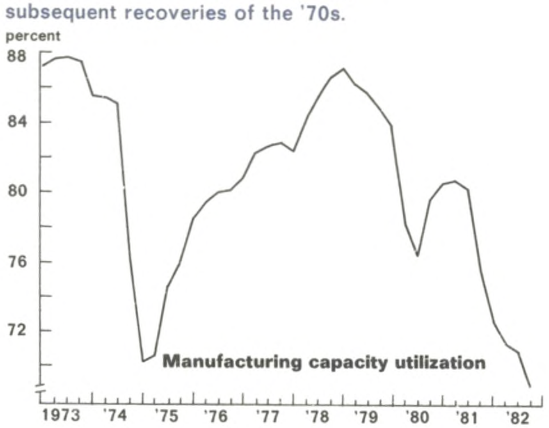
Jan 10 Prolonged cold requires sharp emergency curtailments of natural gas to industrial users.

Jan 16 Chicago has its coldest day of the century (to date), low of minus 19 and high of minus 7.

Feb 2 Carter addresses nation on energy problems after signing emergency law to allocate natural gas.

Feb 9 Chicago ends record string of 43 subfreezing days.

Manufacturing capacity utilization reflected the business declines and subsequent recoveries of the '70s.



Feb 14 Electronic banking system begins operation in Iowa, nation's first statewide system.

Feb 22 Carter proposes fiscal 1977 budget changes raising deficit from $57 billion to $68 billion.

— Federal Reserve Board rules that bank holding companies cannot acquire savings and loan associations.

Mar 23 Revised Regulation B to implement 1976 Amendments to Equal Credit Opportunity Act becomes effective.

Apr 4 Carter terminates natural gas emergency.

Apr 6 Federal Home Loan Bank Board lifts ban on S&Ls having savings accounts at banks.

Apr 11 United Steelworkers agree to pact raising compensation more than 30 percent in three years.

Apr 19 Act gives federal credit unions broader lending powers, including authority to make 30-year mortgage loans.

Apr 29 Carter unveils detailed proposed National Energy Plan.

May 7 Officials of major industrialized nations meet in London to discuss mutual problems—sluggish growth and high unemployment.

May 13 Major bank raises prime rate from 6.25 to 6.5%.

May 27 Major bank raises prime rate from 6.5 to 6.75%.

Jun 20 Oil starts flowing into the Alaskan pipeline, completed after four years at cost of $7.7 billion.

Jul 1 Social Security and welfare payments are increased 5.9%, based on escalation formula.

Jul 15 Commonwealth Edison reports record load of 13.9 million kilowatts as temperature hits 99 degrees in Chicago.

Aug 3 Strip mining law requiring restoration of excavations approved.

Aug 4 Act establishes Department of Energy.

Aug 19 Major steel companies announce layoffs and plant shutdowns.

— Major bank increases prime rate from 6.75 to 7 %.

Aug 29 Administration announces 20% set-aside of wheat acreage for 1978.

— Sweden withdraws from the "snake" (international arrangement for maintaining currency values) because of its growing payments deficit.

Sep 13 Major bank raises prime rate from 7 to 7.25%.

Sep 14 Congress approves revised fiscal 1978 budget targets with spending at $458 billion and deficit at $61 billion.

Sep 26 Trading in 90-day commercial paper futures begins on the Chicago Board of Trade.

Sep 29 Food and Agricultural Act of 1977 approved, boosting commodity support prices.

Oct 1 General pay increases boosts pay of federal, civilian, and military personnel by 7.05%.

Oct 4 Prime rate raised from 7.25 to 7.5%.

Oct 13 Carter pledges federal action to curb "dumping" of foreign steel.

Oct 21 Major bank raises prime rate from 7.5 to 7.75%.

Oct 24 Department of Energy expects no natural gas shortage if winter is no more than 10 % colder than normal.

Oct 26 Federal Reserve raises discount rate from 5.75 to 6%.

Oct 27 Treasury reports fiscal 1977 spending at $402 billion and deficit of $45 billion, down from $61 billion in fiscal 1976.

Oct 28 National Commission on Electronic Funds Transfer issues final report recommending implementation with user safeguards.

Nov 1 Law approved raising minimum wage from $2.30 to $2.65 on Jan 1, 1978, and to $3.35 by 1981.

Nov 2 Dow industrial stock average closes at 801, low for the year.

Nov 11 Government reports record corn and soybean crops.

Nov 16 Single-family home starts reported at 1.6 million rate for Oct, highest on record.

Nov 19 Egyptian president Sadat becomes first head of an Arab state to visit Israel.

— Major auto producers announce reduction in output schedules as sales lag.

Nov 29 East and Gulf Coast dockworkers end two-month strike against container ships.

Dec 6 Soft coal strike begins idling 130,000 miners, mainly in Eastern underground mines.

Dec 15 Most iron ore miners end strike that began Aug 1.

Dec 19 Milwaukee Road files for bankruptcy under Section 77.

Dec 20 Act approved raising Social Security tax sharply starting in 1979.

Dec 21 Consumer Price Index reported up 0.5% in Nov, 6.7% above year ago.

— OPEC semiannual meeting adjourns without changing oil price.

Dec 29 U.S. dollar hits historic low relative to mark, yen, and other major foreign currencies.

Dec 31 U.S. ends year with trade deficit estimated at $25 billion, a record (to that time).

1978

Jan 1 Minimum wage rises from $2.30 to $2.65.

— Pay base for Social Security rises from $16,500 to $17,700, and tax rate rises from 5.85 to 6.05 %.

Jan 4 Treasury and Federal Reserve intervene in foreign exchange markets to moderate fluctuations in the dollar.

Jan 6 Prime rate rises from 7.75 to 8%.

Jan 23 President Carter proposes $34 billion tax cut.

Jan 27 Blizzard hampers industry and trade in Midwest.

Feb 6 Major blizzard hits Midwest and East.

Feb 20 Indiana orders cutback in electricity usage to conserve coal supplies depleted by strike in eastern mines.

Feb 27 ICC orders railroads to allocate freight cars to speed grain shipments.

Feb 28 Dow stock average closes at 742, low for the year.

Mar 13 Treasury and Federal Reserve announce commitment of additional resources to stabilize the dollar.

Mar 27 Coal strike ends after 111 days with three-year pact boosting compensation 39%.

Apr 1 Majority of member nations ratify changes in the articles of agreement of the IMF.

Apr 11 President urges 5.5% ceiling for price and wage hikes.

— Volkswagen produces its first U.S.-built car at New Stanton, Pennsylvania.

Apr 14 Federal Home Loan Bank Board (FHLBB) reduces liquidity requirement for S&Ls from 7 to 6.5%

Apr 18 Senate approves treaty transferring Panama Canal to Panama by year 2000.

Apr 20 Treasury announces additional sale of gold to stabilize the dollar.

May 1 Federal Reserve Board approves plan to allow automatic transfers from savings to checking accounts (ATS), starting Nov 1.

May 5 Prime rate rises to 8.25%.

May 7 Saudi Arabia and Iran overrule other OPEC nations that want to boost oil prices.

May 25 Prime rate rises to 8.5%.

Jun 1 Change in Regulation Q permits banks and S&Ls to tie rates paid on CDs to Treasury Bill rates.

Jun 7 California voters overwhelmingly approve Proposition 13, sharply limiting property taxes.

Jun 16 Prime rate rises to 8.75%.

Jun 30 Prime rate rises to 9%.

Jul 7 Federal Reserve Board sends Congress proposed changes in rules for membership in the System.

Jul 16 Economic summit meeting convenes in Bonn to discuss measures for dealing with world economic problems.

Aug 24 Treasury announces increased gold sales.

Aug 28 Federal Reserve Board eliminates reserve requirements on foreign borrowings.

Aug 30 Prime rate rises to 9.25%.

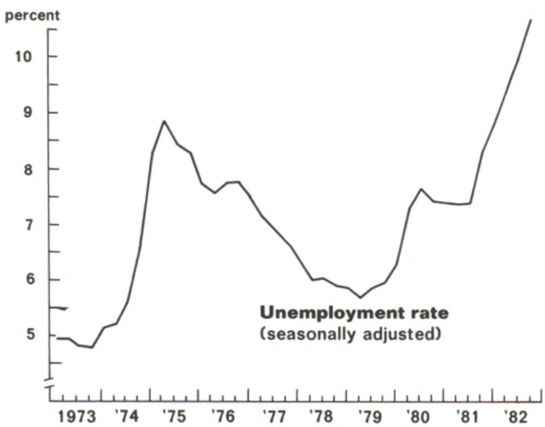
Sep 7 House upholds President's veto of $37 billion arms bill.

Sep 8 Dow industrial average closes at 908, high for year. (Identical peak is reached again on Sep 11.)

Sep 15 Prime rate rises to 9.5%.

Sep 17 International Banking Act provides for federal regulation and supervision of foreign banks in the United States.

The unemployment rate began 1973 below 5%. Ten years and three recessions later, it was near 11%.



Sep 20 Energy Department officials report adequate natural gas supplies for winter.

— Congress adopts Second Budget Resolution setting fiscal 1979 outlays at $487.5 billion and deficit at $38.8 billion.

Sep 28 Prime rate rises to 9.75%.

Oct 1 General pay increase boosts pay of federal workers by 5.5% in addition to usual "step" increases.

Oct 4 Council on Wage and Price Stability (CWPS) says underlying inflation rate is 7% against 6% in 1977.

Oct 12 Prime rate rises to 10%.

Oct 23 Prime rate rises to 10.25%.

Oct 24 President announces voluntary guidelines for wage and price boosts.

Oct 27 Full Employment and Balanced Growth Act ("Humphrey-Hawkins") calls for achievement of 4% unemployment and 3% inflation by 1983.

Oct 30 Treasury sells notes yielding a record 9.25%.

Nov 1 Commercial banks begin offering ATS accounts.

— President announces plan to support sagging dollar. Plan includes larger gold sales and increased market intervention through acquisition of foreign currencies. In coordinating actions, Federal Reserve raises discount rate from 8.5 to 9.5% and increases reserve requirements on large CDs.

— Prime rate rises to 10.5 percent.

Nov 2 Under Treasury tax and loan investment program banks pay interest on Treasury note balances and receive fees for services.

Nov 3 Prime rate rises to 10.75%.

Nov 5 Iranian prime minister resigns as riots and strikes disrupt economy and reduce oil output.

Nov 6 Community Reinvestment Act regulations become effective, requiring financial institutions to meet neighborhood credit needs.

Nov 7 Elections somewhat reduce large Democratic majorities in Congress.

Nov 9 Department of Agriculture reports record corn and soybean harvests.

Nov 10 Financial Institutions Regulatory Act increases supervisory power over financial institutions.

Nov 13 Prime rate rises to 11%.

Nov 17 Federal Reserve Board issues tentative schedule for pricing check collection, clearing, and settlement services.

Nov 24 Prime rate rises to 11.5%.

Dec 1 Shell announces plan to ration gasoline to dealers.

Dec. 11 Supreme Court affirms Federal Reserve Board's power to set capital requirements for bank subsidiaries of bank holding companies.

Dec 12 FHLBB reduces liquidity requirement for S&Ls from 6.5 to 6%.

Dec 15 President announces formal recognition of China, effective Jan 1, 1979.

Dec 16 Cleveland defaults on bank loans.

Dec 17 OPEC announces three-stage 14.5% boost in crude oil prices for 1979.

Dec 20 Prime rate rises to 11.75%.

Dec 22 Consumer price index for Nov reported 9% above year-earlier level.

Dec 27 FNMA auctions commitments to buy government-backed mortgages at record 10.6%.

Dec 31 Heavy snows hit Midwest, followed by severe cold.

— Year ends with widespread forecasts of a recession, but with employment, output, and retail trade still vigorous.

1979

Jan 1 Minimum wage rises from $2.65 to $2.90.

— Social Security tax rate rises from 6.05 to 6.13% and taxable income rises from $17,700 to $22,900.

— Mandatory private retirement age rises to 70.

Jan 3 Secretary Schlesinger urges energy conservation because of the cutoff of oil from Iran.

Jan 15 Chicago temperature falls to a record low of minus 19 degrees; heavy snows in Midwest snarl transportation.

Jan 16 The Shah leaves Iran.

Jan 24 Department of Energy (DOE) urges states to encourage natural gas hookups to save oil.

Jan 31 Religious leader Khomeini returns to Iran.

Feb 5 Farmers in Washington, protest low farm prices.

— Gold jumps to a record $246.50.

Feb 13 Iranians attack U.S. embassy in Tehran.

Feb 18 China invades Vietnam border area.

Feb 22 DOE predicts serious gasoline shortage.

Feb 26 Airlines reduce flights because of fuel shortages.

Feb 28 Major oil companies curtail fuel allocations.

Mar 13 Nuclear Regulatory Commission orders five large East Coast nuclear power plants closed.

— European Monetary System goes into effect.

Mar 21 Rail transport of fresh foods deregulated.

Mar 22 Iran cancels $700 million in contracts with U.S.

Mar 26 Egypt and Israel sign peace treaty in Washington.

Mar 27 OPEC votes 9% rise in base price for crude oil.

Mar 28 Accident closes nuclear plant at Three Mile Island.

Apr 5 Carter proposes phase out of oil price controls, along with a "windfall" profits tax.

Apr 20 Federal court declares bank ATS accounts illegal and sets Jan 1, 1980, deadline for Congressional action.

Apr 30 Israeli ship passes through Suez Canal, first since Israel was founded in 1948.

May 4 Margaret Thatcher becomes Britain's Prime Minister.

— Long lines develop at California gas stations.

May 23 Crude oil sells in spot markets abroad at over $30.

May 24 Strike ends at United Airlines after 55 days.

— Diesel fuel shortages slow truck traffic.

May 25 DC-10 crashes after takeoff at O'Hare—274 die in worst air disaster in U.S. history.

Jun 1 Long lines reported at gas stations on the East Coast.

Jun 4 Independent truck drivers halt traffic, protesting price and availability of diesel fuel.

Jun 15 United States and Russia sign SALT pact in Vienna.

Jun 17 United Nations projects world population at 4.3 billion in 1980 and 6 billion in 2000.

Jun 27 OPEC raises basic oil price to $18, plus surcharges.

Jul 1 Social Security and welfare payments rise 9.9%.

— Passbook savings rate ceiling raised to 5.5% at thrifts and 5.25% at banks, four-year floating rate certificate authorized, and other regulations are eased.

Jul 2 Circulation of Susan B. Anthony dollar coins begins.

Jul 16 Thermostats in nonresidential buildings ordered set at 78 in summer, 65 in winter.

Jul 17 Treasury auctions gold at a record $296.

Jul 19 G. William Miller, Federal Reserve Board Chairman, named to replace Blumenthal as Secretary of the Treasury.

— Federal Reserve announces increase in discount rate from 9.5 to 10%.

Jul 25 Paul Volcker named to succeed Miller as Chairman of Federal Reserve Board.

Jul 26 Legislation implements Multilateral Trade Negotiations.

Aug 1 Chrysler reports large operating losses and asks federal financial aid.

— RPs of less than $100,000, maturing in 90 days or more, made subject to Regulation Q interest rate ceilings.

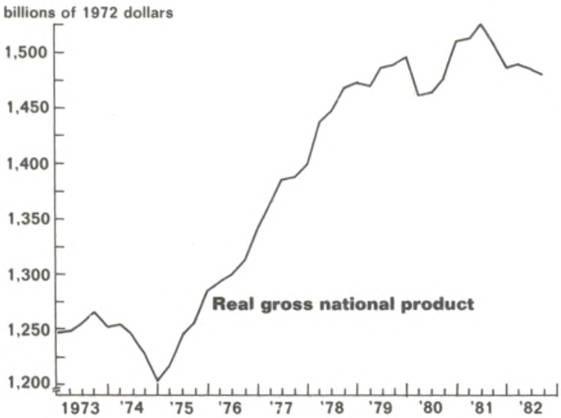
Aug 16 Federal Reserve announces increase in discount rate to a record 10.5%.

Aug 17 Price controls end for "heavy" crude oil.

Sep 12 Major bank raises prime rate to 13%.

Sep 14 General Motors agrees to boost compensation 34% over three years, assuming 8% annual inflation.

Real GNP ended the decade 23% above its 1975 low, even after two more recessions.



Sep 18 Gold rises to $382 and silver rises to $16.

— Federal Reserve announces increase in discount rate to 11%.

Sep 25 HUD raises ceiling on government-backed residential mortgages to 10.5%.

Sep 27 Auto manufacturers again reduce assembly schedules to cut inventories.

Oct 1 Federal workers receive general pay boost of 7%, in addition to annual step increases.

— Panama's sovereignty extended over the Canal.

— Gold jumps to $416, double year-earlier price.

Oct 5 Dow industrial stock index closes at 898, high for the year. (Low of 797 reached on Nov 7.)

Oct 6 Federal Reserve takes strong actions to slow inflation: discount rate rises to 12%, marginal reserve requirements are established on increases in "managed liabilities," and monetary policy emphasis is shifted to control of member bank reserves.

Oct 15 Libya raises oil price to $26.27, exceeding OPEC's $23.50 ceiling.

Oct 22 Treasury 90-day bills hit record 12.93%.

Oct 23 Major banks raise prime rate to 15%.

— Britain terminates long-standing exchange controls.

Nov 1 Britain's Conservative government announces sharp cuts in welfare outlays.

Nov 4 Iranian "students" invade U.S. embassy in Tehran and seize hostages.

Nov 5 Iranian Premier Bazargan resigns.

Nov 7 Prime rate rises to 15.5%.

Nov 8 Big Three auto makers announce further layoffs.

— Illinois law suspends mortgage usury rate.

Nov 12 Carter bans oil imports from Iran; Iran halts shipments to U.S.

Nov 14 U.S. freezes Iranian financial assets.

Nov 16 Prime rate rises to 15.75%.

Nov 19 Lane Kirkland is elected president of the AFL/CIO, succeeding George Meany.

Nov 26 FNMA auctions conventional mortgage funds at a record 13.35%.

— Major bank cuts prime rate to 15.5%.

Dec 5 IMF auctions gold at $426.

Dec 9 Brazil devalues cruzeiro by 30 percent.

Dec 13 Venezuela and Saudi Arabia raise basic oil price from $18 to $24. (Spot price is $40.)

Dec 14 Financial authorities authorize banks and S&Ls to issue 2½-year certificates with rates tied to yields on Treasury bonds, and no minimum balance, effective Jan 1.

— Major bank cuts prime rate to 15%.

Dec 20 Congress passes bill providing for a $1.5 billion loan guarantee for Chrysler, conditional on other steps.

— OPEC nations adjourn meeting at Caracas without agreement on a price for crude oil.

Dec 26 Gold closes in New York at $506, first time over $500.

Dec 28 Legislation temporarily overrides court decision banning ATS accounts at banks, and suspends state mortgage usury ceilings, etc.

Dec 30 Soviet troops invade Afghanistan.

Dec 31 Silver hits $35, up from $6 a year earlier.

1980

Jan 1 Minimum wage rises from $2.90 to $3.10.

— Social Security wage base rises from $22,900 to $25,900. Tax rate stays at 6.13%.

— Regulatory authorities replace four-year floating rate CD (established Jul 1, 1979) with 2½-year "small saver" CD.

— Treasury Department starts issuing double-E bonds yielding 7% over 11 years.

Jan 4 President Carter denounces Russian invasion of Afghanistan. He embargoes shipments of agricultural products to Russia.

Jan 23 State of Union message calls for draft registration and 5% boost in real defense spending.

Jan 28 Saudi Arabia raises its basic oil price to $26.

Feb 1 Trade agreement between the U.S. and the Peoples Republic of China goes into effect.

Feb 6 IMF auctions 444,000 ounces of gold at $712 per ounce, up from record $563 on Jan 2.

Feb 15 Algeria boosts oil price $3.00 per barrel to $37.21.

— Federal Reserve raises discount rate from 12% to a record 13%.

Feb 19 Federal Reserve announces money and credit growth targets for 1980: M-1A, 3½-6%; M-1B, 4-6½%; M-2, 6-9%; M-3, 6½-9½%; total bank credit, 6-9%.

Feb 27 One-year Treasury bills sell at 15.3% bond-equivalent yield, highest ever for any U.S. security.

Feb 28 Nuclear Regulatory Commission lifts moratorium on new nuclear plants imposed after Three Mile Island accident.

Mar 1 Regulatory authorities impose temporary ceilings on "small saver" CDs, 11¾% for banks, 12% for thrifts.

Mar 12 Chicago bank raises its mortgage rate to 16.25%.

Mar 13 President Carter endorses 7.5-9.5% wage rise guidelines for 1980, up from 7% in 1979.

Mar 14 President Carter announces new anti-inflation program, and activates Credit Control Act of 1969.

— Federal Reserve Board announces 15% "special deposit" on growth of money market funds and some types of consumer credit, a voluntary "Special Credit Restraint Program" to restrict business credit, an increase in marginal reserves on managed liabilities from 8 to 10%, and a 3-point "surcharge" on frequent borrowings from Federal Reserve by large banks. Banks are urged to limit loan growth to 6 to 9%.

Mar 21 Administration suspends "trigger price mechanism" intended to curb steel imports. (Mechanism is reinstated Oct 21.)

Mar 24 Bond-equivalent yield on three-month Treasury bills jumps sharply to 17.5%.

Mar 25 Large Chicago S&L increases mortgage rate to 17%.

Mar 27 Spot price of silver drops $5 to $10.80 per ounce. (Peak of $50 was reached in Jan.)

Mar 29 FmHA's Economic Emergency Loan Program to aid financially distressed farmers is extended and expanded.

Mar 31 Depository Institutions Deregulation and Monetary Control Act (Monetary Control Act) is approved. Among its many provisions: all depository institutions, member and nonmember, will be phased in to the same new reserve requirements over a period of years; Federal Reserve member banks can no longer avoid reserve requirements by withdrawing from the system; all institutions will have full access to the Federal Reserve's discount window and services; Federal Reserve will establish a pricing schedule for its services; all institutions will be able to offer NOW accounts beginning Dec 31, 1980; interest rate ceilings on savings and time deposits will be phased out in six years; thrift institutions will have expanded asset powers; state usury ceilings for mortgages and certain other loans are overridden; FDIC/FSLIC insurance limits are boosted from $40,000 to $100,000.

Apr 2 Major bank boosts prime rate to 20%.

— Act imposing "windfall profits" (excise) tax on domestic crude oil output is approved. Tax is retroactive to Mar 1.

Apr 7 U.S. breaks diplomatic relations with Iran, and cuts off all trade.

Apr 16 Major bank cuts its prime rate from 20 to 19.75%.

Apr 17 China replaces Taiwan as a member of the International Monetary Fund.

Apr 21 Dow Jones industrial average closes at 759, low for the year. (See Nov 20.)

Apr 25 President Carter announces failure of airborne attempt to rescue U.S. hostages held in Iran.

Apr 28 Secretary of State Vance is succeeded by Senator Muskie.

May 14 Saudi Arabia raises its basic oil price from $26 to $28.

May 17 Unemployment compensation claims reach a new high.

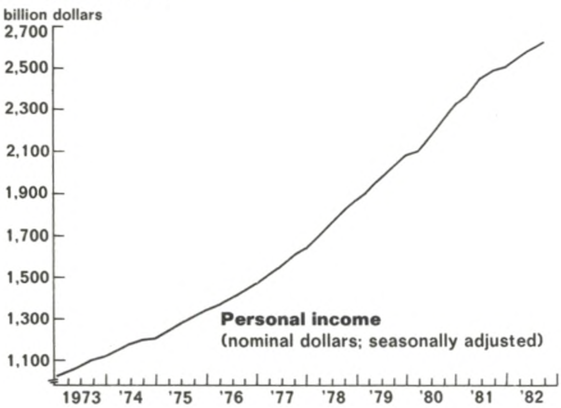
May 18 Mt. St. Helens erupts violently causing extensive damage.

— National Guard moves to control rioting in Miami.

May 22 National Association of Purchasing Agents survey shows business "dropped like a rock" in Apr and May.

— Federal Reserve eases credit restraint program.

Personal income rose rapidly, partly in response to inflation, moving from an annual rate of about $1 trillion to nearly $3 trillion.



May 29 Federal Reserve reduces discount rate from 13 to 12%.

May 30 Aluminum workers win 42% boost over three years, assuming 11% inflation rate.

Jun 13 Federal Reserve reduces discount rate from 12 to 11%.

— Many banks reduce prime rate to 12%.

Jun 24 Chrysler obtains $500 million loan after government board approves federal guarantee.

Jun 30 Synfuel act creates Synthetic Fuel Corporation.

Jul 1 Checks to 35.2 million Social Security recipients rise 14.3% based on Cost of Living Adjustment (COLA) formula.

— Motor Carrier Reform Act partially deregulates trucking.

— Department of Labor reports white-collar salaries rose 9.1% on average in 12 months ending in Mar.

Jul 3 Federal Reserve Board announces complete phaseout of credit restraint program.

— Federal Home Loan Bank Board authorizes S&Ls to issue credit cards and offer unsecured loans.

Jul 7 Indefinite layoffs at Big Four auto makers hit a record 246,000.

Jul 21 Major bank cuts prime rate from 11.5 to 11%.

Jul 27 The Shah of Iran dies in Cairo.

Aug 11 AT&T three-year labor contract gives 34.5% pay boost over three years, assuming 9.5% rise in CPI.

Aug 17 Polish factory workers strike demanding pay hike, shorter week, more food, free speech, and free church.

Aug 21 Import duty on small trucks rises from 4 to 25%.

Aug 22 Major banks boost prime rate to 11.25%, first of a series of increases.

Aug 28 Federal Reserve publishes proposed pricing schedule and pricing principles for its services.

Sep 1 Revised Regulation A, as required by Monetary Control Act, gives all depository institutions access to the discount window.

Sep 12 Military coup seizes power in Turkey.

Sep 17 Saudi Arabia boosts its oil price $2 to $30 per bbl.

Sep 22 Iran-Iraq war begins over disputed border waterway.

Sep 26 Federal Reserve raises discount rate from 10 to 11%. Major banks boost prime rate to 13%.

Sep 29 Bond-equivalent yield on three-month Treasury bills jumps a full point to 12%.

Oct 1 Federal employees receive a 9.1% general pay boost, in addition to annual step increases.

Oct 2 Major bank leads boost in prime rate to 14%.

Oct 9 Regulatory authorities set 5¼% ceiling on NOW accounts, effective Dec 31.

Oct 14 Staggers Rail Act provides for gradual deregulation.

— Lawrence Klein wins Nobel prize in economics.

Oct 20 Agriculture Department announces that drought cut major crops—peanuts, 37%; soybeans, 23%; corn, 17%.

Oct 22 Agriculture Department announces four-year agreement committing China to substantial purchases of wheat and corn.

Nov 4 Spot oil prices on world market increase to $37-40 range, $6-9 over official prices.

— Reagan wins the Presidency. GOP wins control of the Senate, and makes gains in the House.

Nov 6 Major banks raise prime rate from 14.5 to 15.5%.

Nov 10 International Trade Commission turns down request by Ford and UAW for quotas on imports of cars and light trucks.

Nov 13 First phase of reserve requirement provisions of Monetary Control Act becomes effective.

Nov 17 Federal Reserve raises discount rate from 11 to 12%, with 2 points added for $500 million institutions that borrow frequently.

Nov 20 The Dow Jones index closes at 1000, high for the year. (See Apr 21.)

Nov 24 New York legislature eliminates usury ceilings on most loans.

Dec 5 Federal Reserve raises discount rate to 13%, equaling high of last spring, and raises surcharge to 3%.

Dec 10 Auto makers extend holiday closings to cut inventories.

— Major banks raise prime rate from 19 to 20%.

Dec 15 Bond-equivalent yield on three-month Treasury bills hits 17.64%, passing 17.5% high on Mar 24, 1980.

— Saudi Arabia raises its basic oil price from $30 to $32. Maximum OPEC price will be $41.

Dec 19 Most major banks raise prime rate to record 21.5%

Dec 21 Iran demands $24 billion ransom to release hostages.

Dec 22 Major banks reduce prime rate from 21 to 20.5%.

— Yields on Treasury bills drop sharply.

Dec 23 Labor Department announces that Nov Consumer Price Index was 12.7% above the level of a year earlier.

Dec 29 Libya raises its oil price from $37 to $41, OPEC maximum.

Dec 30 Agriculture Department calls Commodity Credit Corporation loans on all corn in reserve program.

Dec 31 Major S&L says high interest rates have virtually shut down Chicago area residential real estate markets.

1981

Jan 1 Minimum wage rises from $3.10 to $3.35. (It remains unchanged on Jan 1, 1982.)

— Social Security wage base rises from $25,900 to $29,700, and tax rate rises from 6.13% to 6.65%.

Jan 9 Bank prime lending rate reduced from 20.5 to 20%.

Jan 20 President Reagan inaugurated. He freezes federal hiring.

— Iran releases 52 U.S. hostages held 444 days.

Jan 27 Remaining price controls on domestic crude oil and allocation regulations on gasoline lifted.

Jan 29 President Reagan announces 60-day freeze on new regulations.

— Federal Reserve begins charging for wire transfers. Fees for other services are phased in over subsequent months.

Feb 2 Chrysler workers agree to forego increases in compensation.

Feb 10 Western coal miners accept 37% raise over three years.

Feb 25 Federal Reserve announces money growth targets for 1981.

Feb 27 Federal loan guarantee for Chrysler raised to $1.2 billion.

Mar 14 Ford's steel workers agree to cut incentive pay to prevent plant closing.

Mar 15 Two Chicago-area banks closed by examiners.

Mar 26 Treasury Secretary Regan elected chairman of Depository Institutions Deregulation Committee (DIDC). (Volcker elected vice chairman Jun 25.)

Mar 30 President Reagan and three others wounded in assassination attempt.

Apr 9 Some exporters reduce posted prices for crude oil.

Apr 10 Ford rejects merger offer from Chrysler.

Apr 14 Space shuttle lands after three-day orbit.

Apr 23 Federal Home Loan Bank Board (FHLBB) gives federal S&Ls broad discretion on variable rate mortgages (VRMs).

Apr 24 Prime rate rises from 17 to 17.5%.

Apr 27 Dow Jones industrial average closes at 1024, high for the year. (See Sep 25.)

May 1 Japan agrees to limit car exports to the United States during the period Apr 1981 to Mar 1983.

— Rate on EE bonds rises from 8 to 9%.

May 5 Federal Reserve raises discount rate from 13 to 14%, and surcharge on frequent, large borrowers from 3 to 4%.

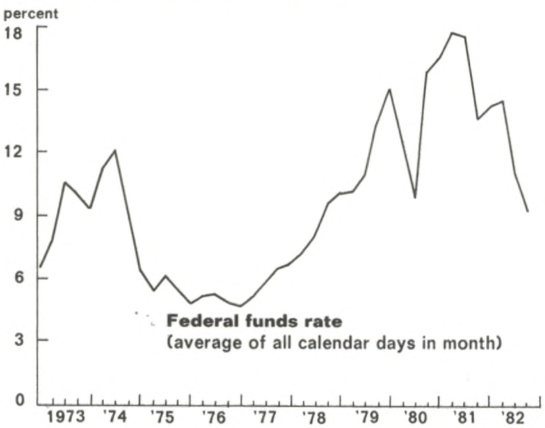
May 7 Treasury 30-year bonds yield a record 14%.

May 10 Socialist Mitterand elected French president. (See Jun 21.)

May 13 Pope John Paul II is wounded in assassination attempt.

May 19 FSLIC finances merger of troubled Chicago S&L.

The Fed funds rate— the interest rate at which banks lend overnight funds to each other—show the historic high cost of credit in 1979 and 1980.



May 22 Prime rate rises to 20.5%. Investment rate at three-month Treasury bill auction rises to record 17.7%.

May 26 OPEC extends price freeze. (See Oct 29.)

Jun 3 Prime rate reduced from 20.5 to 20%.

Jun 6 Coal miners ratify 40-month contract raising compensation 38%, ending 72-day strike.

Jun 8 Israeli jets bomb nuclear reactors in Iraq.

Jun 21 French Socialists win a solid majority in assembly for five years. (See May 10.)

Jun 30 Plan to trade bank CD futures approved by Commodity Futures Trading Commission (CFTC).

Jul 1 Social security checks increase by 11.2%.

Jul 2 Supreme Court upholds Montana's severance taxes on coal.

Jul 3 Law signed permitting multibank holding companies in Illinois beginning Jan 1, 1982.

Jul 6 DuPont offers to purchase Conoco, biggest merger ever.

— U.S. dollar hits new highs against European currencies.

Jul 7 Sandra O'Connor is first woman named to Supreme Court.

Jul 8 Prime rate rises from 20 to 20.5%.

— DIDC adopts schedule for elimination of interest rate ceilings. (See Jul 31.)

Jul 14 FHLBB allows federal S&Ls to issue graduated payment adjustable mortgage loans.

Jul 15 Midyear budget review projects deficits of $56 billion for fiscal 1981 and $43 billion for fiscal 1982. (See Oct 28.)

Jul 21 Federal Reserve announces lower money growth targets for 1982.

Jul 23 Chairman Pratt of FHLBB says S&L losses are at record pace.

Jul 31 Judge blocks DIDC's plan to lift ceiling on CDs with maturities of four years or more.

— Canadian dollar closes at 80.9 U.S. cents, lowest since 1931.

Aug 1 Below-market cap on 2½-year Small Saver Certificates removed.

Aug 3 Air controllers (PATCO) begin strike. (They are terminated Aug 5.)

Aug 4 Warsaw populace protests food shortages.

Aug 5 Ten-year Treasury notes yield a record 15%.

Aug 13 Economic Recovery Tax Act of 1981 signed into law, cutting personal income tax rates and providing investment incentives. Spending cuts also become law.

Aug 20 Federal Reserve makes discount window available to thrifts and all banks with severe liquidity problems.

Aug 24 Six-month Treasury bills auctioned at a record 17.5% investment yield.

Aug 25 Postal workers ratify three-year pact raising wages about 11% in first year.

Sep 1 Indiana Bell's AAA debentures yield record 17.1%.

— FNMA conventional commitment yields jump to record 18.7%.

Sep 8 FHLBB approves merger of two failing S&Ls in the East with a California S&L.

Sep 15 Prime rate declines from 20.5 to 20%.

Sep 16 Federal Reserve reports that industrial production declined in Aug, start of an extended downturn.

Sep 24 Ceiling rate on Federal credit union deposits rises to 12% effective Oct 1.

Sep 25 Illinois law removes usury ceilings on all loans to consumers.

— Dow Jones index closes at 824, low for the year. (See Apr 27.)

Sep 30 FHLBB permits S&Ls to amortize losses on sales of mortgages.

Oct 1 All Savers Certificates, with tax-exempt yields tied to market rates, become available.

— Federal employees receive 4.8% general pay boost, in addition to annual step increases. Military pay rises 14.3%.

Oct 5 Sears Roebuck announces agreement to buy Coldwell Banker. (Sears announces plan to buy Dean Witter Reynolds on Oct 8.)

Oct 6 Egyptian president Sadat assassinated.

Oct 8 Two Chicago-area S&Ls merged by FSLIC.

Oct 14 James Tobin wins Nobel prize in economics.

Oct 16 President Reagan says a "light" recession is underway.

Oct 19 DIDC postpones one-half percentage point increase in passbook savings ceiling previously scheduled for Nov 1.

Oct 28 Treasury announces fiscal 1981 budget deficit was $57.9 billion. (See Jul 15.)

Oct 29 OPEC agrees on unified oil base price of $34 per barrel.

Nov 1 Ceiling on six-month money market certificates tied to higher of most recent bill auction or four-week average.

Nov 2 Federal Reserve discount rate reduced to 13%.

Nov 5 Mergers of two large New York mutual savings banks arranged by FDIC.

Nov 12 USDA forecasts a record crop harvest, with corn up 22% from the drought-reduced outturn in 1980.

Nov 13 FHLBB reports that commitment rates on conventional mortgages reached a record 18.2% in Oct.

Nov 16 Flood of corporate issues hits bond market as rates ease.

Nov 18 Housing starts in Oct reported at 15-year low.

Dec 1 Ceiling-free IRA and Keogh accounts become available. (Eligibility for these accounts is broadened Jan 1, 1982.)

— Prime rate reduced to 15.75%.

Dec 3 U.S. banks authorized to establish International Banking Facilities.

Dec 4 Federal Reserve reduces discount rate to 12%.

— Jobless rate of 8.4% in Nov was highest since 1975. (It rises further in Dec.)

Dec 7 Press reports indicate that administration projects $109 billion deficit in fiscal 1982, without tax or spending changes.

Dec 9 Chicago Mercantile Exchange begins trade in Euro-dollar futures.

— Saudi Arabia says $34 unified OPEC oil price will continue through 1982.

Dec 10 Business Council expects recession to end early in 1982, with interest rates lower and inflation reduced.

Dec 13 Polish government institutes martial law to quell political unrest.

Dec 14 Treasury bill yields increase sharply, reversing downtrend.

— Mortgage bankers report mortgage delinquencies at record rate.

Dec 19 General Motors, following Ford, announces benefit cuts for salaried workers.

Dec 21 UAW bargaining councils agree to discuss concessions on contracts with Ford and GM.

Dec 23 President Reagan announces economic sanctions against Poland's government to protest imposition of martial law.

Dec 24 Many durable goods producers will extend holiday shutdowns into Jan.

Dec 29 President Reagan announces sanctions against Russia for its role in Polish crisis.

Dec 31 Purchasing managers report that orders, output, and employment continued to decline in Dec.

1982

Jan 1 Social Security wage base rises from $29,700 to $32,400. Tax rate rises from 6.65 to 6.7%.

Jan 8 Justice Dept. drops 13-year antitrust suit against IBM.

Jan 10 Severe cold and heavy snows hit the Midwest, disrupting activity. Chicago reports record low 26 degrees below zero. (Jan 17 pattern is similar.)

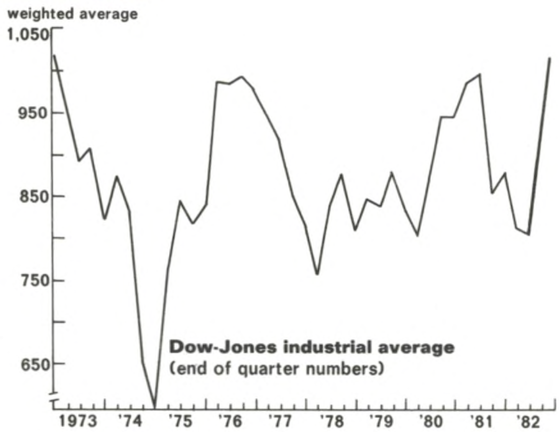
Jan 13 Commerce Dept. estimates real plant and equipment spending by business will fall 0.5% in 1982. (See Dec 10.)

Jan 20 UAW halts contract concession talks with Ford and GM.

Jan 26 State of the Union address calls for no tax increases, higher defense spending, and transferring 40 social programs to the states.

Feb 1 Auto companies offer rebates to spur lagging sales.

The DJIA began the decade above 1,000, and crossed that line twice again before decisively surpassing it in late 1982.



Feb 6 President Reagan's fiscal 1983 budget projects decline in deficit to $92 billion from $99 billion, 5% rise in total outlays to $758 billion, led by increased defense spending. (See Oct 26.)

Feb 9 20-year Treasury bonds (constant maturity) yield 15.06%, high for the year. (See Nov 19.)

Feb 10 Council of Economic Advisers projects 5% growth rate in the second half of 1982.

— Federal Reserve Chairman Volcker announces monetary growth targets for 1982: M1, 2.5-5.5%; M2, 6-9%; and M3, 6.5-9.5%. (See Jul 20.)

Feb 18 Mexico floats peso; it drops by 28% in dollar terms.

Feb 22 Spot market price of Saudi light crude oil reported below $30 per barrel, depressed by oil glut. Official price is $34.

Feb 23 Most major banks reduce prime rates from 1982 high of 17 to 16.5%.

Feb 25 Congressional Budget Office projects deficit at $111 billion in fiscal 1982 and $121 billion in fiscal 1983. (See Sep 1.)

Feb 28 Ford workers approve new labor contract containing some concessions. (GM workers approve similar pact Apr 9.)

Mar 1 Teamsters approve 37-month national labor contract with some concessions on wages and work rules.

Mar 2 FHA and VA mortgage rates lowered to 15.5% from 1982 high of 16.5%. (See Nov 12.)

Mar 31 United States Gold Commission rejects gold as basis for domestic or international monetary systems.

Apr 1 Japan renews its ceiling of 1.68 million auto exports to U.S.

Apr 2 Argentine forces seize Falkland Islands. (See Jun 14.)

Apr 3 UK imposes economic sanctions on Argentina in wake of seizure of the Falkland Islands. Limited sanctions by other Western countries follow.

Apr 8 SEC finds "nonperforming" loans up sharply at large banks.

May 1 Banks and thrifts begin to offer 91-day CDs with ceiling rates tied to Treasury bills, and 3½-year CDs with no ceiling.

May 2 Exxon halts huge shale oil development in Colorado.

May 31 Hughes Tool Co. reports the number of active oil and gas drilling rigs in steepest decline ever from record high in Dec.

Jun 2 Sales of new one-family homes in Apr reported at lowest level ever in series starting in 1963.

Jun 5 Raw steel plant operating rate at 42.5% is lowest since 1938. (It falls below 30% at year-end.)

Jun 6 Israeli troops invade Southern Lebanon to attack PLO guerillas.

Jun 11 Commerce Dept. determines that imported foreign steel receives government subsidies.

Jun 14 French franc devalued by 6% and Italian lira by 3%.

Jun 14 Argentine forces in Falkland Islands surrender to British. (See Apr 2.)

Jun 21 Initial estimate of second quarter GNP shows small rise. Improvement in other statistics raises hopes that recession may be ending. (See Dec 21.)

Jun 25 George P. Shultz succeeds Alexander Haig as Secretary of State.

Jun 28 Supreme Court upholds due-on-sale clauses in mortgages.

— Federal Reserve Board votes in principle to require contemporaneous reserve accounting for banks and thrifts. (On Oct 5 the Board votes to implement change starting Feb 1984.)

Jun 29 DIDC authorizes $20,000 minimum CD with 7-31 day maturity and ceiling rates tied to 91-day T-bills, starting Sep 1.

Jul 1 Ten percent personal income tax cut becomes effective. Social security checks rise by 7.4%.

Jul 5 Penn Square Bank of Oklahoma City, large-scale originator of energy loans, closes after examiners find it to be insolvent.

Jul 7 General Electric union settlement provides estimated 28% pay increase over 3 years, assuming 7% inflation.

Jul 20 Federal Reserve reduces discount rate from 12 to 11.5%, first of seven cuts in 1982. (See Dec 14.)

— Federal Reserve retains the 2.5-5.5% growth target for M1 in 1982, but faster growth will be tolerated "for a time." (See Feb 10.)

Jul 27 Federal court temporarily enjoins proposed change in method of calculating "prevailing wages" paid on federal construction under Davis-Bacon Act. (Change later goes into effect.)

Jul 30 United Steelworkers conference rejects industry-requested changes in existing labor contract.

Aug 2 Federal Reserve reduces discount rate to 11%. Major banks cut prime rates to 15%.

Aug 4 Federal Reserve requests comments on planned priced services changes, including "noon presentment," originally scheduled for Aug implementation. (Revised plan announced Dec 27.)

Aug 5 Mexico controls foreign currency accounts.

Aug 11 Dow Jones industrial stock index closes at 777, low for the year. (See Dec 27.)

— Agriculture Dept. forecasts record corn, soybean crops.

Aug 12 Lombard-Wall, government securities dealer, files for bankruptcy.

Aug 16 Federal Reserve reduces discount rate to 10.5%. Treasury bill rates drop sharply to lowest level in 2 years. Major banks reduce prime rates to 14.5%.

Aug 19 Tax Equity and Fiscal Responsibility Act (TEFRA) raises taxes by cutting loopholes, eliminates about one-third of 1981 corporate tax cuts.

Aug 20 New York Stock Exchange ends week with record volume and record rise in stock prices.

Aug 22 Private bankers agree to 90-day rollover of Mexican debt.

Aug 24 Federal court approves AT&T plan dividing system into regional companies.

Aug 27 Federal Reserve cuts discount rate to 10%.

Sep 1 Mexico nationalizes banks, broadens exchange controls.

— Congressional Budget Office expects deficit in fiscal 1982 of $112 billion, rising to $155 billion in 1983. (See Feb 25.)

— Aluminum companies report primary output in Jul fell below lowest rate of 1975 recession.

Sep 13 ICC approves merger of Union Pacific, Missouri Pacific, and Western Pacific. (Final legal barrier lifted Dec 22.)

Sep 17 Commodity Credit Corporation authorizes up to $1 billion in loan guarantees for sales of agricultural commodities to Mexico.

Sep 19 Railway engineers begin 4-day national strike to keep pay differential over other railway workers.

Sep 28 Federal Reserve Board approves acquisition of Fidelity S&L in Oakland, Calif., by Citicorp.

Oct 1 Federal employees receive 4% general pay boost, in addition to annual step increases. Military pay also rises 4%.

— House rejects balanced budget amendment urged by President Reagan and passed by the Senate.

— UAW begins strike at Caterpillar Tractor, after rejecting concessions.

— New one-year extension of U.S.-USSR grain pact begins.

Oct 8 Sept unemployment rate is estimated at 10.1%, highest since 1941. (Rate reaches 10.8% in Dec.)

— Export Trading Company (ETC) legislation signed into law.

Oct 9 Chairman Volcker says Fed will temporarily place less emphasis on M1 in monetary policy, because of distortions.

Oct 10 Sweden devalues krona by 16%.

Oct 12 Federal Reserve reduces discount rate to 9.5%.

Oct 13 Major banks cut prime rate from 13 to 12%.

Oct 15 Social Security will borrow in Nov for first time.

— Far-reaching Garn-St Germain Depository Institutions Act widens lending powers of S&Ls, etc.

Oct 26 Treasury reports budget deficit for fiscal 1982 reached $111 billion, exceeding 1976 record of $66 billion. (See Feb 6.)

Nov 1 "Voluntary" restrictions on steel exports from the European Community to the U.S. go into effect.

Nov 3 Dow Jones industrial stock index closes at 1065, exceeding record set in Jan 1973.

Nov 12 Yuri Andropov becomes Soviet leader, succeeding Leonid Brezhnev who died Nov 10.

— FHA-VA ceiling mortgage rate cut to 12%, lowest in over 2 years. (See Mar 2.)

Nov 15 DIDC authorizes banks and thrifts to offer Money Market Deposit Account with no interest ceiling, minimum balance of $2,500, and limited checking, beginning Dec 14.

Nov 18 Ford plans to shut California auto assembly operations due to import competition, virtually ending West Coast auto output.

Nov 19 20-year Treasury bonds (constant maturity) yield 10.42%, low for the year. (See Feb 9.)

Nov 22 Federal Reserve cuts discount rate to 9%. Prime rate falls to 11.5%, the prevailing rate at year-end.

Nov 29 GATT meetings end without resolving U.S. protests on Common Market's subsidization of agricultural exports.

Dec 5 FHA reports record number of mortgage loan applications in Nov. (Uptrend continues through year-end.)

Dec 6 DIDC authorizes Super NOW accounts, removes 7-31 day CD rate ceiling, and reduces minimum for short-term CDs to $2,500, effective Jan 5, 1983.

Dec 10 Commerce Dept. estimate shows 4.8% decline in real plant and equipment spending in 1982. (See Jan 13.)

Dec 14 Federal Reserve cuts discount rate to 8.5%, lowest since Oct 1978.

Dec 15 Industrial production estimated to have dropped again in Nov to 12% below Jul 1981 peak.

Dec 16 Housing starts estimated at 1.4 million annual rate in Nov, highest since Jan 1981.

Dec 20 Mexico devalues peso again.

Dec 21 OPEC officials meeting in Vienna fail to agree on oil production quotas for member nations.

— Commerce Dept. estimates real GNP decline in fourth quarter. (See Jun 21.)

Dec 23 Congress passes 5 cent per gallon gas tax hike to fund construction and repairs of highways, bridges, and transit systems.

Dec 27 Bethelem plans to end most steelmaking at Lackawanna, New York, plant.

— Dow Jones industrial stock index closes at 1071, all-time high. (See Aug 11.)

Dec 29 Administration predicts 3% rise in real GNP to fourth quarter of 1983, following 1.2% decline in past four quarters.

FRB CHICAGO ECONOMIC
PERSPECTIVES

Public Information Center
Federal Reserve Bank
of Chicago
P.O. Box 834
Chicago, Illinois 60690

Please attach address label to correspondence
regarding your subscription.