# Interest Rate Futures: A Challenge for Bankers

*By Howard Keen, Jr.**

Contracts for future delivery of commodities have been around for what seems time immemorial. For the most part, these have been contracts for agricultural goods such as grains and livestock. Recently, however, markets have been organized to trade contracts for future delivery of debt securities—contracts whose price goes up and down with changes in the interest rate on the underlying securities.

These interest rate futures contracts debuted in October 1975 when trading in Government National Mortgage Association (GNMA) certificates began at the Chicago Board of Trade. Since that time, futures contracts have been developed for Treasury securities (bills, notes, and bonds) and commercial paper as well. Trading volume has grown rapidly. By year-end 1979, interest rate futures were being traded at four organized exchanges in the U.S., and the New York Stock Exchange opened its own futures floor in August of this year.

Interest rate futures contracts provide an opportunity to protect against changes in market interest rates, and so they may be attractive for commercial banks. They are not without pitfalls, however, and the challenge to bankers is to get the gains they offer while avoiding the pitfalls. At the same time, bank regulators face the challenge of adopting a regulatory stance that both provides appropriate safeguards and lets banks get the most mileage out of this financial innovation.

## NEW TWIST ON AN OLD IDEA

Trading in contracts for future delivery has a long history. It's reported that a futures market in rice was operating in Japan as early as 1697, and a futures transaction was recorded in England in 1826. In the United States, trading in futures first took place at the Chicago Board of Trade in the 1860s. By 1880, futures contracts were being traded in wheat, corn, oats, and cotton, and as time went by,

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contracts for other commodities came into use. Futures trading in sugar, oats, rye, barley, eggs, and butter started about the time of World War I. Contracts for soybeans, potatoes, and copper and silver began to be traded in the 1930s, for turkeys in the 1940s, and for platinum in the 1950s. Cattle, hogs, lumber, and frozen orange juice concentrate were added to the list in the 1960s.[1]

Like contracts for other commodities, interest rate futures contracts are traded on commodity exchanges—nonprofit organizations that provide facilities for trading. An integral part of each exchange is a clearing agency or corporation. All futures contracts and related financial settlements are handled through the clearinghouse.

The exchanges and clearinghouses together establish rules governing the operations of futures markets. (Futures trading is regulated also by the Federal government through the Commodity Futures Trading Commission.) These rules standardize the contracts traded on a given exchange by stipulating precise descriptions of commodities traded, delivery methods, delivery times, requirements for security deposits (margins), frequencies of adjusting the value of contracts, and limits on daily price fluctuations. These standards are roughly similar across the several exchanges, though they differ according to the kind of security for which the contract is being traded (see Appendix).

Besides regulating futures trades, the clearinghouse plays a central role in every futures transaction. While futures are bought and sold by traders on the floor of the exchange (in the trading pits), the resulting contracts have the clearinghouse on one side and a trader on the other rather than traders on both sides as buyers and sellers. Buyers of futures contracts are obliged to make payment to the clearinghouse while sellers are entitled to receive payment from it. Consequently, buyers and sellers of futures contracts need not be concerned with the creditworthiness of each other but only with that of the clearinghouse. This arrangement lowers the risk of default and adds to the attractiveness of futures markets.[2]

Thus the markets for interest rate futures offer well-organized trading opportunities for prospective investors.

## HEDGING CAN BENEFIT BANKERS

The real usefulness of futures markets is that they provide a relatively low-cost method for transferring the risk of unanticipated changes in interest rates. In principle, futures can be used both to increase exposure to interest rate risk (speculate) and to reduce exposure (hedge). But because current regulations prohibit banks from speculating (see SPECULATING WITH INTEREST RATE FUTURES), if bankers are to find interest rate futures beneficial, it has to be as a tool for hedging.

**Hedging With Interest Rate Futures.** To make money, banks borrow at one rate and lend at a higher one. But changes in interest rates can complicate this seemingly simple process, especially if they're unanticipated. If borrowing costs rise relative to lending rates, earnings may be reduced. And if bank stockholders have a preference for steady income, frequent interest rate changes can cause

[1]The history of early futures trading can be found in Henry H. Bakken, "Futures Trading: Origin, Development, and Present Economic Status." Reprinted from *Futures Trading Seminar Volume III* (Madison, Wisconsin: Mimir Publishers, Inc., 1966). A listing of commodities traded on organized exchanges in the U.S. along with dates of initial trading is given in *Annual Report 1978* (Washington: Commodity Futures Trading Commission). A detailed treatment of interest rate futures can be found in Allan M. Loosigian, *Interest Rate Futures* (Princeton: Dow Jones and Company, 1980).

[2]Agreements for delivery in the future can also be made with *forward contracts*. The latter differ from futures contracts in that they are not usually traded on organized exchanges, lack standardized terms, can be canceled only by both transactors, and typically require no margin payments.

## SPECULATING WITH INTEREST RATE FUTURES

A speculator is a person or firm that is willing to bear added risk for the opportunity of earning a profit. With interest rate futures, the risk that speculators are willing to bear is the risk of unexpected changes in interest rates. Speculators can make a profit if they guess correctly about rate movements; but they can lose if they guess incorrectly.

| If Cash Market Rate Turns Out To Be: | Winning Strategy Would Have Been: |
|---|---|
| Below Futures Rate | Long (buy then sell) |
| Above Futures Rate (yield on futures contract) | Short (sell then buy) |

If the actual rate is expected to be lower than the rate implied in the futures contract today, a speculator can profit from buying a contract (going long) and then selling it as the delivery date approaches. Because yields and prices move in opposite directions, an actual rate in the future that is below the futures rate today implies an increase in the value of the underlying securities and therefore an increase in the value of the futures contract itself. Thus the speculator gains as he sells the contract for more than he paid for it. Similarly, an actual rate in the future that is above the implied futures rate today will cause the price of the underlying securities and thereby the price of the futures contract to fall so that a short (sell then buy) strategy would result in a gain as the sale price is higher than the purchase price. For example:

On October 1, 1976 the implied yield in the futures contract for delivery of three-month Treasury bills in the third week of December 1976 was 5.28 percent—above the then current cash market yield of 5.04 percent. A speculator who thought that by mid-December the rate would be below 5.28 percent would take a long position in October then offset it by selling another futures contract before the delivery date in December. If the anticipation was for the rate to be above 5.28 percent, the reverse strategy could be followed.

By December 1, 1976, three-month Treasury bill yields in the cash market had fallen to 4.41 percent while yields on the December futures contract fell to 4.43 percent and its price rose by $2,125, or $25 for every basis point. The long strategy would have resulted in a gain while a short strategy would have shown a comparable loss.

| | Yields | | Futures Contract |
|---|---|---|---|
| Date | Cash Market | Futures Market* | Price† |
| October 1, 1976 | 5.04% | 5.28% | $986,800 |
| December 1, 1976 | 4.41% | 4.43% | $988,925 |
| Change | -.63% | -.85% | +$2,125 |

Strategy Results: ‡

| | |
|---|---|
| Long | +$2,125 |
| Short | -$2,125 |

*Treasury bill futures are reported on an index of 100 minus the futures market yield. The index for the above was 94.72 and 95.57 on October 1 and December 1 respectively.

†Futures contract price is computed as $1 million minus (yield times $1 million times 90/360) for 90-day T-bills.

‡Ignores brokerage fees and commissions and any opportunity cost of margins.

additional problems for bank managers by creating volatility in earnings. Hedging with interest rate futures could help bankers deal with both of these problems.

A banker might find futures useful when other methods of hedging are closed off by regulation or are considered to be too costly. If rates on all of a bank's financial assets and liabilities were to adjust proportionately in line with some common rate, for example, then unexpected changes in interest rates would have no impact on that bank's earnings. An unexpected change in the common rate would raise or lower the prevailing rates on assets and liabilities by the same amount while leaving earnings unchanged. But things usually don't turn out this way. Bank assets and liabilities aren't perfectly homogeneous, and their rates don't move exactly in line with each other. At the same time, regulatory restrictions such as ceilings on interest rates restrict movement in explicit rates of certain assets and liabilities. Finally, competitive pressures might discourage a bank from issuing floating rate loans even though its own sources of funds are sensitive to changes in rates.[3] Under such conditions bankers should consider the use of interest rate futures to protect their positions against unanticipated changes in interest rates.

Bankers can use futures for three purposes —protecting the value of a portfolio, locking in borrowing costs, and locking in the return on investments. In the first two cases, the sale of a futures contract (a short hedge) would guard against interest rates that turn out to be higher than expected, while in the third, the purchase of a futures contract (a long hedge) would protect against interest rates that turn out to be lower than expected. In each case the objective is to protect or hedge against the impact of unexpected changes in interest rates on the profitability of anticipated cash market transactions. These are transactions that involve the purchase or sale of securities for immediate delivery. The cash market position is hedged by taking an opposite position in the futures market (see MECHANICS OF TRADING . . . ).[4]

**A Short Hedge.** A short hedge involves the sale of one futures contract with the intention of offsetting it later by buying another contract for the same instrument with the same delivery date. If the price of the futures contract falls, the investor gains. A futures position of this kind can be used to protect the value of a portfolio and to lock in the cost of borrowing at some future date.

Consider a mortgage banker who in June makes a commitment to buy a pool of mortgages the following January at a set price with the intention of profiting by reselling them to investors at a higher price. If the value of the mortgage pool falls by January, the banker could take a loss on this transaction. Because the prices of fixed-income securities (like mortgages) fall when their interest rates rise (and vice versa), the mortgage banker will suffer a loss if long-term interest rates increase.

To hedge his exposure to loss, the banker may want to take a position that will produce a gain in the futures market if long-term rates do rise. This could be done by selling (shorting) a GNMA futures contract in June and then buying an identical contract in January. Just as the increase in rates will reduce the value of

[3]For a discussion of this point and a more complex example of using interest rate futures to lock in borrowing costs, see James Marvin Blackwell, "The Ramifications of Hedging Interest Rates by Commercial Banks," The University of Texas at Austin, May 1979.

[4]Hedging can be viewed from several different perspectives. Traditional theory focuses on the potential for reducing risk and probably is the view most applicable to commercial bank use of interest rate futures. Hedging also has been viewed as undertaken primarily to earn a profit from a change in the relationship of the cash and futures prices. These two approaches are combined in the framework of portfolio theory, and its implications for hedging differ from those of the other two alone. For a discussion of these views, see Louis H. Ederington, "The Hedging Performance of the New Futures Markets," *Journal of Finance* 34 (March 1979), pp. 157-170.

## MECHANICS OF TRADING INTEREST RATE FUTURES

Suppose an individual or business firm decides in January to buy a futures contract for delivery of three-month Treasury bills two months out (in March). This would be a March futures contract. The first step is to contact a futures broker (a futures commission merchant). After deciding on acceptable bid prices and providing the broker with a security deposit, the buy order is sent to a broker on the floor of the commodity exchange. The floor broker shouts out the bid in the trading pits, and if a seller can be found, the transaction takes place. After the trade is consummated, the buyer and seller have no further dealings with each other as far as this transaction is concerned. But the buyer has an obligation to make payment (in March) to the clearinghouse while the seller is obliged to deliver securities (in March) to the clearinghouse.

Although the minimum amount for a futures contract is $100,000, buyers and sellers do not have to provide the full amount of cash or the actual securities at the time the futures contract is bought or sold. Instead, each puts up a relatively small amount of cash (margin) as a security deposit. The clearinghouse requires a minimum initial margin of between approximately $500 and $2,500, depending on the contract. At the end of each trading day, the clearinghouse adjusts the value of each outstanding contract to reflect final settlement prices for that day. This procedure, known as marking-to-market, means that gains and losses on futures contracts are computed daily.

In essence, the broker has an account with the clearinghouse and the customer has one with the broker. When the value of a contract rises, the buying broker's account with the clearinghouse is credited. If the value of a contract falls, the two accounts are reduced accordingly. And if the value falls sufficiently, it might drop below the maintenance margin at which the broker's account with the clearinghouse (and the customer's account with the broker) must be replenished (through a margin call) to restore it to the initial margin. Such daily marking of contracts to market value together with maintenance margins ensure that the minimum security deposit will be preserved.

Consider an example—the IMM's $1-million par value 90-day Treasury bill contract with initial margin of $1,500 and maintenance margin of $1,200. If the value of this contract falls by more than $300, a call for funds would occur to restore the margin to $1,500. Because each basis point (.01 percent) represents $25 for this contract ($1 million times .01 percent times 90/360 days), a rise in yield of more than 12 basis points would trigger a margin call.

Once buyers and sellers are holding futures contracts, they can satisfy their obligations by taking or making delivery of the specified securities according to the terms of delivery in the contract, or they can cancel their contract by taking an offsetting position. Buyers cancel by selling identical contracts and sellers cancel by purchasing identical contracts. Most futures contracts are terminated by cancellation, which suggests that participants use the markets for something other than locking in future sales or purchases.

the mortgage pool, it will lower the price of the GNMA futures contract and result in a gain for the banker, as he buys a contract for less than he sold one for earlier (Figure 1 overleaf).

In a similar manner, a short hedge can be used to lock in future borrowing costs. Such a strategy might be used, for example, if a fixed-rate loan of some particular maturity is to be financed by rolling over shorter term liabilities during the life of the loan. If interest rates increase, the bank would have to pay higher rates on its liabilities, but these higher rates would be offset to some degree by the gain that results from the transaction in the futures market when rates increase.

**A Long Hedge.** In contrast to a short hedge which is used to guard against a rise in rates, a long hedge is designed to protect against a fall in rates. A long hedge entails the purchase of a futures contract with the intention of offsetting it later by selling an identical contract. This type of hedge can be used to lock in the return on an investment that is planned for a date in the future.

Suppose, for example, that on April 1 a

**FIGURE 1**

**A SHORT HEDGE CAN PROTECT A PORTFOLIO AGAINST A RISE IN RATES**

| | Cash Market | Futures Market |
|---|---|---|
| June | Mortgage banker commits to buy pool of mortgages in January to be resold to investors at that time. | Sells March GNMA futures contract. |
| | Long-term rates rise; the value of the pool of mortgages as well as the value of the GNMA futures contract falls. | |
| January | Acquires mortgage pool and resells to investors at a loss. | Buys March GNMA futures contract. |
| Net Result * | Loss. | Gain. |

*Ignores brokerage fees and commissions and any opportunity cost of margins.

SOURCE: *Hedging Interest Rate Risks*. 1st revised edition. Chicago: Chicago Board of Trade. September 1977, p. 17.

banker anticipates that on June 1 he will receive $1 million from a maturing investment. He plans to reinvest the funds in three-month Treasury bills when the older investment matures. The yield on the bills as of April 1 is 13 percent, but the banker has a premonition that rates will fall in the meantime and he wants to hedge against such a fall. The hedging can be done by purchasing a three-month Treasury bill futures contract for delivery in June.[5] By June 1, if rates in the cash market had fallen to 12.55 percent, the investment in Treasury bills would result in an opportunity loss of $1,125. But if expected future short-term rates were to fall equally, the price of the futures contract would rise and the sale of the contract would result in an exactly offsetting gain of $1,125. The net effect would be a yield of 13 percent, since $1 million of bills could be purchased in June for a net outlay of $967,500—$968,625 less the $1,125 gain from the futures transaction (Figure 2).

In the case of both short and long hedges, interest rate futures can benefit a banker by enabling him to ensure (before paying brokerage fees and commissions of about $50-$60 per hedge) either the value of a portfolio, the cost of borrowing, or the investment yield

[5]Other methods of hedging a cash market position include use of forward contracts, standby contracts, repurchase agreements, and spot market transactions. See *Treasury/Federal Reserve Study of Treasury Futures Markets*, Volume II, May 1979, pp. 23-29 and Appendix A, pp. 5-6.

**FIGURE 2**

## A LONG HEDGE CAN PROTECT AN ANTICIPATED INVESTMENT AGAINST REDUCED YIELDS

| | Cash Market | Futures Market |
|---|---|---|
| April 1 | Proceeds of $1 million from maturing investment expected June 1. Banker wishes to lock in current yield of 13%. Cost of $1 million in 3-mos. T-bills at 13% is $967,500.* | Purchases one ($1 million) June 3-mos. T-bill contract for $967,000 (13.20%). |
| June 1 | Buys $1 million of 3-mos. T-bills for $968,625 (12.55%). | Sells (offsets) one ($1 million) June 3-mos. T-bill contract for $968,125 (12.75%). |
| Net Result † | Opportunity loss = $1,125. | Gain = $1,125. |

* The price of $1 million of 3-mos. T-bills in both the cash and futures markets is computed as $1 million minus (yield times $1 million times 90/360).

† Ignores brokerage fees and commissions and any opportunity cost of margins.

SOURCE: Mark F. Polanis and David C. Fisher, "Banking on Interest Rate Futures," *Bank Administration*, August 1979, p. 39.

from a transaction in the future. In this way, the banker is getting an insurance policy which like any such policy reduces the risk associated with unexpected events.

### BUT THERE ARE PITFALLS

While interest rate futures provide opportunities for bankers to reduce exposure to interest rate risk, they have their pitfalls as well. Their use actually will increase risk under certain conditions, and it can result in lower earnings in some cases. Further, in the extreme case, the use of interest rate futures could jeopardize bank solvency.

**Risk Can Be Higher, Earnings Lower.** Although interest rate futures can help a banker to reduce exposure to adverse movements in rates, they also can increase that exposure. An increase in exposure could occur if a bank's assets and liabilities are affected equally by changes in market interest rates.[6] In this case the portfolio would be hedged already, and taking a position with futures would serve only to establish a new unhedged position. In short, the impact of interest rate futures on a bank is determined by its total balance sheet. Thus an analysis of the extent to which a bank's earnings are sensitive to interest rate changes is an absolute must if hedging is to reduce a bank's exposure to interest rate risk.

Bankers undertake a futures market hedge expecting to lock in a level of earnings from a particular investment strategy. However, the outcome may differ from their expectations. A change in earnings relative to anticipations

[6]See George M. McCabe and Robert W McLeod, "Regulation and Bank Trading in the Futures Markets," *Issues in Bank Regulation* 3 (Summer 1979), pp. 6-14.

can occur because the so-called basis (the cash market yield minus the futures market yield) may not be the same at the time a futures position is offset as it was when the position first was taken.[7] If a hedge is perfect, the opportunity loss in the cash market will be offset exactly by the gain in the futures market. But sometimes a gain or loss in the cash market won't be offset exactly. Thus a crucial element to the success of hedging with interest rate futures is what happens to the basis. Regardless of which direction rates in the cash market move, if the basis does not change, the loss in one market will be just matched by the gain in the other market. If futures rates don't move proportionately with cash market rates and the basis does change, however, the extent of the offset will be affected. Depending upon the size and direction of the change in basis, income could rise or fall (Figure 3).

Bankers need not be completely in the dark about how a change in the basis will affect their earnings. As the delivery date of a futures contract approaches, the price of that contract and the cash market price of the underlying securities should move toward equality. Thus the basis should be approximately zero by the last trading day of a futures contract, and this characteristic can be used to get some idea of how the basis might change.

If the basis for a June-delivery contract is -.20 on April 1, for example, a reasonably good guess is that from April 1 to the last trading day around the third week in June, the change in the basis would be +.20. An increase in the basis would add to the earnings from a long hedge and reduce those from a short hedge. This is not to say that the basis won't jump around prior to the last trading day of a contract. But recognizing that the basis should be about zero at delivery can provide a fairly good idea of how the basis will move as the delivery date approaches.

For bankers contemplating the use of interest rate futures, it's a good idea to become familiar with past behavior of the basis. Hedging substitutes basis risk for risk from the cash market, and the less volatile the change in the basis, the greater the potential for reducing risk by hedging with interest rate futures.[8] When the entire cash market position is matched with a futures position, risk can be reduced if, as is typical, the volatility of the change in the basis is less than that of the change in the cash price.[9]

Hedging with interest rate futures can reduce

[7]Although the basis usually is defined as the cash market price minus the futures market price, numerical examples typically compute the basis as the difference between the cash market yield and the futures market yield. Examples in this article follow the latter and the only point to be aware of in this regard is that when the basis increases algebraically as measured by the difference in yields, it decreases algebraically as measured by the difference in prices and vice versa. Whichever measure of the basis is used, the appropriate cash market component will be determined by the transaction to be hedged. For example, if a short hedge is undertaken to protect the value of securities held by an investor, the cash market component in the calculation of the basis would be that for securities with the same term to maturity as those in the investor's portfolio.

[8]This is illustrated by Ederington, p. 161. In this article it is estimated that in the period 1976-77, some reduction in interest rate risk could have been achieved in two-week and four-week hedges with 8-percent GNMA futures and with 90-day T-bill futures, although the GNMA futures seemed to be more effective in reducing risk, especially for two-week hedges. For both GNMAs and T-bills, greater risk reduction was possible in four-week than two-week hedges. It should be noted that the relationship between the cash price of one type of security and the futures price of a different security is usually not as close as it is for similar securities. As a result, *cross hedging*—hedging a cash market position with a different security in the futures market—is considered to provide less opportunity for reducing interest rate risk than the straight hedging illustrated in the text.

[9]Whether hedging reduces the variance of returns depends upon two things. One is the relative volatility of the change in the basis and that of the cash price and the other is the percentage of the cash market position that is hedged. Although traditional theory assumes this percentage to be one hundred, portfolio theory implies that the risk-minimizing percentage can be different. See Ederington.

FIGURE 3

## A CHANGE IN BASIS WILL HAVE AN IMPACT ON A LONG HEDGE*

| | Cash Market | Futures Market | Basis | Net Result |
|---|---|---|---|---|
| April 1 | $967,500 (13.00%) | $967,000 (13.20%) | -.20 | |
| | **Rates Fall, Basis Unchanged** | | | |
| June 1 | $968,750 (12.50%)<br>(-$1,250) | $968,250 (12.70%)<br>(+$1,250) | -.20 | 0 |
| | **Rates Fall, Basis Increases** | | | |
| June 1 | $968,750 (12.50%)<br>(-$1,250) | $968,875 (12.45%)<br>(+$1,875) | +.05 | $625 |
| | **Rates Fall, Basis Decreases** | | | |
| June 1 | $968,750 (12.50%)<br>(-$1,250) | $967,625 (12.95%)<br>(+$625) | -.45 | -$625 |
| | **Rates Rise, Basis Unchanged** | | | |
| June 1 | $966,250 (13.50%)<br>(+$1,250) | $965,750 (13.70%)<br>(-$1,250) | -.20 | 0 |
| | **Rates Rise, Basis Increases** | | | |
| June 1 | $966,250 (13.50%)<br>(+$1,250) | $966,375 (13.45%)<br>(-$625) | +.05 | $625 |
| | **Rates Rise, Basis Decreases** | | | |
| June 1 | $966,250 (13.50%)<br>(+$1,250) | $965,125 (13.95%)<br>(-$1,875) | -.45 | -$625 |

*Changes in the cash market yield and the basis represent average two-month changes for 90-day T-bills using figures for the first business day in each month over the period January 1976 through March 1980. Although changes in both directions are illustrated above, averages were positive for both measures.

earnings in another way by limiting any gains from unexpected changes in interest rates. Recall that the goal of the long hedge in Figure 3 is to guard against a rate of return less than 13 percent. If the banker has correctly anticipated a fall in interest rates, he'll be better off having locked in that higher rate than he would have been if he hadn't used the futures market. If rates unexpectedly rise, however, his hedge will limit the rate of return to 13 percent instead of the unhedged return of 13 1/2 percent. Thus the possibility that hedging could limit earnings in certain instances should be viewed as part of the price for reduced exposure to loss.

**Regulatory Concern.** Because of these pitfalls and because relatively low required margins may make it easier for trading to take place without the authorization of top bank decisionmakers, interest rate futures are a concern to regulators who are charged with maintaining the soundness of individual banks

as well as the banking system. [10]

The prime concern over banks' use of interest rate futures is that it might result in insolvency. Trouble could occur, for example, if highly risky futures positions were taken or if lack of experience led to injudicious trading. In response to such concerns, Federal regulators have issued trading guidelines to the banks. [11]

Futures positions that increase exposure to loss from interest rate changes are not to be taken (though regulators may not always find it an easy matter to distinguish speculative from hedging transactions). And a bank's participation is to take place in a prescribed manner. Involvement is to begin at the top with a bank's directors endorsing a policy on strategies, internal monitoring and control, position limits, and the like. In addition, regulations prescribe explanatory notes in financial statements to describe futures activity that materially affects a bank's financial condition. At the same time, Federal regulators plan to keep a close watch on how banks use interest rate futures.

## SUMMING UP

All in all, interest rate futures pose a challenge for both bankers and bank regulators. On the positive side, interest rate futures provide bankers with a convenient way to hedge their exposure to interest rate risk. At the same time, however, they have pitfalls, and some of these could lead to serious financial difficulties. For bankers the challenge is to decide how futures can be used to improve their banks' performance, while for policymakers the challenge is to provide an environment within which banks can take advantage of the benefits of interest rate futures while at the same time maintaining the soundness of the banking system. As time goes by and bankers gain more experience with interest rate futures, both they and the policymakers should find these challenges easier to meet.

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[10] For a fuller discussion of this point, see Brian Charles Gendreau, "The Regulation of Bank Trading in Futures and Forward Markets" (Washington: Board of Governors of the Federal Reserve System, June 1979). There are additional areas of concern about interest rate futures that are not covered in this article. They include the possibility of cornering or squeezing the market, the effect on the stability of spot prices, trading of futures by uninformed users, the impact on the flexibility of Treasury debt management, adequacy of required margins, and the accounting and tax treatment of interest rate futures transactions. Many of these worries emanate from the growing popularity of financial futures in recent years and the ensuing proliferation of contracts. Concern was heightened, however, by events in the silver market earlier this year when prices plummeted and there was difficulty in satisfying calls for additional margin.

[11] Guidelines were announced by the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Federal Reserve Board on November 15, 1979 and became effective January 1, 1980. Revisions to the guidelines were announced March 14, 1980 and dealt primarily with the accounting treatment of futures, forwards, and standby contracts. Details can be found in *Federal Register*, November 20, 1979, pp. 66673 and 66722; November 28, 1979, p. 68033; March 20, 1980, pp. 18116 and 18120.

# Appendix . . .

# DIFFERENT EXCHANGES STIPULATE DIFFERENT CHARACTERIS

## TREASURY SECURITIES CONTRACTS

| | Treasury Bills | | | |
|---|---|---|---|---|
| | ACE | COMEX | IMM | IMM |
| Deliverable items | $1 million par value of Treasury bills with not more than 92 days or less than 77 days to maturity | $1 million par value of Treasury bills with 90, 91, or 92 days to maturity | $1 million par value of Treasury bills with 90 days to maturity | $250 thousand par value of Treasury bills due in 52 weeks |
| Initial margin† (per contract) | $800 | $1,500 | $1,500 | $600 |
| Maintenance margin (per contact) | $600 | ‡ | $1,200 | $400 |
| Daily limits | $1,250 (50 basis points) | $1,500 (60 basis points) | $1,250 (50 basis points) | $1,250 (50 basis points) |
| Delivery months | January, April, July, October | February, May, August, November | March, June, September, December | March, June, September, December |

## NON-TREASURY SECURITIES CONTRACTS

| | Government National Mortgage Association Modified Pass-through Mortgage-backed Certificates | | | |
|---|---|---|---|---|
| | CBT (old) | CBT (new) | ACE | COMEX |
| Deliverable items | $100 thousand principal balance of GNMA 8% coupon or equivalent | $100 thousand principal balance of GNMA certificates | $100 thousand principal balance of 8% GNMA certificates | $100 thousand principal balance of 8% GNMA certificates |
| Initial margin† (per contract) | $2,500 | $2,500 | $2,000 | $2,000 |
| Maintenance margin (per contract) | $2,000 | $2,000 | $1,500 | ‡ |
| Daily limits | $2,000 | $2,000 | $2,000 | $1,000 |
| Delivery months | March, June, September, December | March, June, September, December | February, May, August, November | January, April, July, October |

# TICS FOR INTEREST RATE FUTURES CONTRACTS*

| | Intermediate-term Treasury Coupon Securities | | Treasury Bonds | |
|---|---|---|---|---|
| | CBT | IMM | ACE | CBT |
| | $100 thousand principal balance US Treasury notes and noncallable bonds bonds with an 8% coupon rate. Maturity no less than 4 years and no greater than 6 years from the day of delivery | $100 thousand principal balance US Treasury notes with a 7% coupon rate. Maturity no less than 3 years 6 months and no greater than 4 years from day of delivery | $100 thousand face value US Treasury bonds with a maturity of at least 20 years | $100 thousand face value US Treasury bonds. Maturity at least 15 years from delivery day |
| | $900 | $500 | $2,000 | $2,500 |
| | $600 | $300 | $1,500 | $2,000 |
| | $2,000 | $750 | $2,000 | $2,000 |
| | March, June, September, December | February, May, August, November | February, May, August, November | March, June, September, December |

| | Commercial Paper | |
|---|---|---|
| | CBT (30-day) | CBT (90-day) |
| | $3 million face value of prime Commercial paper rated both A-1 by Standard and Poor's and P-1 by Moody's. Maturity not more than 30 days from date of delivery | $1 million face value of prime Commercial paper rated both A-1 by Standard and Poor's and P-1 by Moody's. Maturity not more than 90 days from date of delivery |
| | $1,500 | $1,500 |
| | $1,200 | $1,200 |
| | $1,250 (50 basis points) | $1,250 (50 basis points) |
| | March, June, September, December | March, June, September, December |

* Information in this table was received from the commodity exchanges in late June-early July 1980 and is subject to change. More detailed information is available from a futures broker or from the exchanges themselves. Exchange abbrevations are as follows: ACE = AMEX Commodity Exchange; COMEX = Commodity Exchange; IMM = International Monetary Market; and CBT = Chicago Board of Trade.

† The speculative margin is shown where margins vary according to whether the contracts cover speculative, hedged, or spread positions.

‡ The amount of the maintenance margin is not specified by COMEX; however, brokerages often apply maintenance margins that run about 75 percent of the initial margin.

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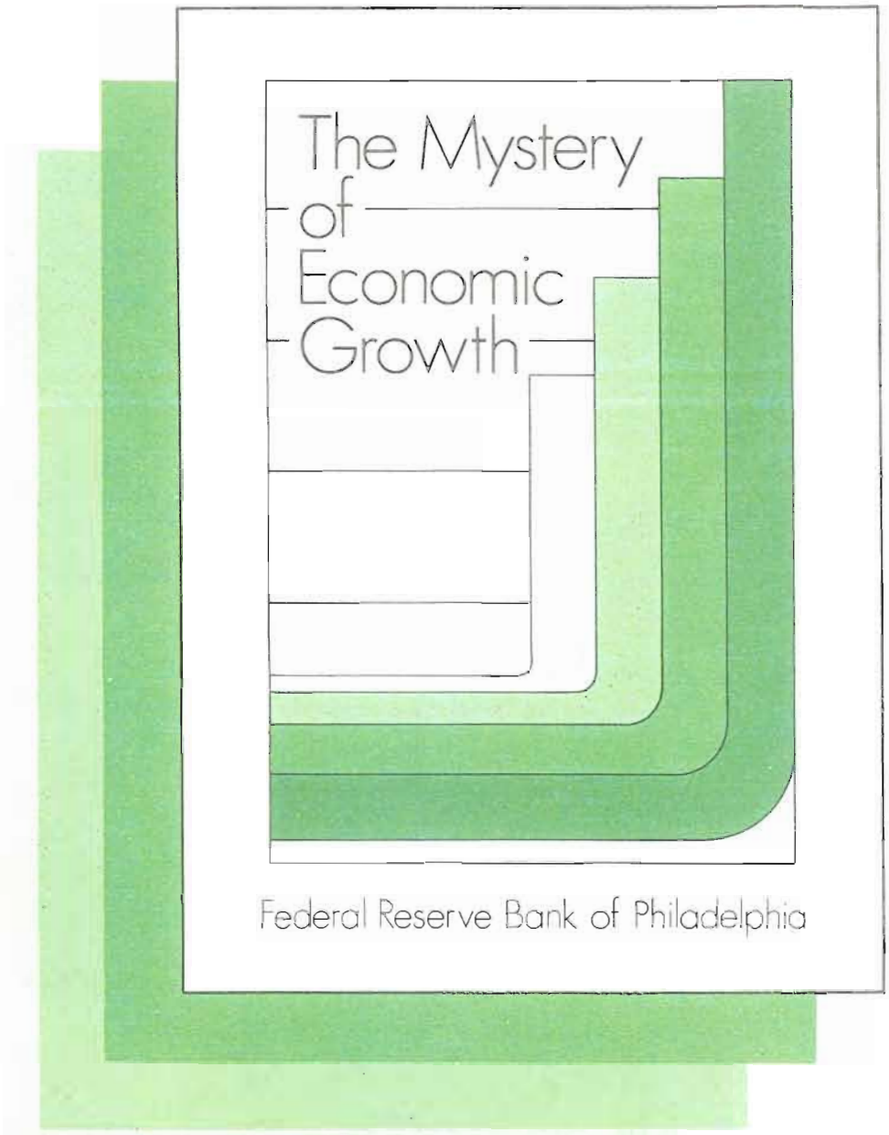


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