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REGULATING FINANCIAL INTERMEDIARY USE OF FUTURES AND OPTION CONTRACTS: POLICIES AND ISSUES

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The regulation of depository financial intermediaries stresses the prevention of failure and insolvency. The recent development and growth of financial futures and option contracts has created concern among regulators that use of these markets by depository institutions will undermine their solvency and threaten the stability of the financial sector. Although financial futures and option contracts represent an effective vehicle for hedging interest rate risk, the fear is that financial institutions will use them to speculate in interest rate changes rather than to reduce risk.

The current institutional setting leads to serious doubts about a nonregulatory or market solution to this problem. Because margin requirements for futures trading and option premiums are low, the availability of funds is not a barrier to entry into these derivative markets; a depository institution can assume a risk well beyond the value of its equity. With insured deposits, depositors are unlikely to monitor and penalize a thrift for assuming speculative positions. Because futures and option positions are considered off-balance sheet items, quarterly statements of condition released to the public need not reveal an institution's derivative market activity unless it materially affects the balance sheet. Little market discipline can be imposed through deposit insurance premiums because they are currently independent of an institution's risk exposure. Finally, many thrifts are organized as mutuals; stockholders cannot impose market forces on those that take excessive risks through financial futures and options trading.

Given the prospects for a nonregulatory solution, the issue turns on whether or not regulation can be expected to control the use of futures and option contracts by banks and thrifts.¹ If precise regulatory control is possible, hedging with financial futures and options should be allowed and speculation prohibited. If precise control is not possible, the benefits of using futures and option contracts as a risk management tool must be weighed against the potential costs of speculative activity. If the latter are

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too great, derivative market trading by financial intermediaries should be disallowed altogether.

This article outlines the current regulations used to control and monitor depository institutions in trading financial futures and option contracts.² Different control mechanisms are currently used for commercial banks, savings and loan associations, and credit unions; these differences are emphasized. The article then discusses several regulatory problems with emphasis on the definition of interest rate risk exposure and interest rate futures and option accounting. Concluding the article are comments on alternative control mechanisms, such as risk-based capital rules applied to futures and option trading activity.

I. Institutional Aspects

Before beginning the discussion of the current regulations on bank and thrift futures trading, a brief consideration of the institutional aspects of futures and option markets in general will help set the stage for what is to come. Futures and option market institutions have evolved to both facilitate the volume of trade in commodity markets and contribute to the efficiency with which commodity markets operate. They have been established as parallel markets to those in which physical commodity trading takes place. In general, goods may be exchanged according to: 1) agreements specifying transfer of title and delivery on the spot, called a spot or cash market contract, 2) agreements specifying transfer of title on the spot and delivery at some future date, called a forward market contract, 3) agreements permitting frequent transfer of title and liability until a future delivery date, called a futures market contract, and 4) agreements permitting frequent transfer of title and liability until a future delivery date with asymmetric obligations, called an option market contract. Cash and forward contracts trade on the actuals market, which exist to handle the physical commodity. A futures market agreement can be considered a forward market contract with special characteristics that facilitate the transfer of title and liability. An option market agreement is similar to a futures market contract except the option buyer is not obligated to either purchase or sell the commodity at contract maturity.

Several attributes of futures and options contracts serve to separate trading in these markets from trading in actuals (spot and forward) markets. The first feature deals with contract terms. The terms of an actuals market contract are tailored to the needs of the parties involved with respect to commodity grade, quantity, place of delivery, and time of delivery. To reduce the costs of exchange, futures and exchange-traded option contracts are highly standardized in each of these respects. The grade of commodity delivered on a futures contract may be any from a prescribed list of deliv-

erable grades set out by the controlling exchange; others are unacceptable. The size of a futures or option contract is also fixed by the exchange and contracts specify relatively large quantities of the physical commodity. Delivery on a futures contract is made only at locations designated by the exchange, yet delivery may take place at a variety of times during the delivery month. Unlike the seller of a bilateral contract in the actuals market, the seller of a futures contract has several choices as to the grade, place and date of delivery. These features are built into futures contracts to reduce the risk of market manipulation. They also widen the appeal of futures trading to speculators by making it less likely that contracts are settled by delivery.

The second major difference between contracts in futures or options and in actuals markets concerns the settlement of monetary obligations. In actuals markets, contracts are settled by any mutually agreeable method. Futures and option contract settlements are managed by a clearing house interposed between the contract principals. In assuming the opposite position to each of the parties required to make a contract, clearing house operations are greatly facilitated by contract standardization. The role of the clearing house mechanism is to expedite contract settlement by allowing the elimination of a position through offsetting contracts, protecting against default risk by requiring the deposit of initial and subsequent margin monies to the extent prices move adversely to buyer or seller, and organizing delivery of commodities on open contracts during the delivery month or at contract expiration.

Futures and option market participants can be categorized as either hedgers or speculators. Hedging involves making a contract to buy or sell as a temporary substitute for a later cash market transaction of equivalent or greater size. Speculation involves a single market purchase or sale with the intention of re-sale or re-purchase where uncertainty about the future transaction price is a source of both risk and return. In most futures markets, the volume of short (sell) hedging is different than the volume of long (buy) hedging; this market imbalance necessitates the presence of speculators to absorb the excess contracts. In turn, hedging can take place in two different forms. One is a hedge of an existing cash market position; the other, an anticipatory hedge, is a hedge of a cash market position expected to be taken in the future.

The existence of interest rate futures and option contracts widens the choices available to banks and thrifts making decisions in a risky environment. Futures markets are a mechanism for sharing, shifting, and reducing risk between individuals. Hedgers shift interest rate risk to speculators; they trade the risk of interest rate change for the risk of changes in the rate spread between the cash and derivative market instruments. The latter is called basis risk and its presence is why the gain from futures and option

hedging does not exactly offset the loss in a cash position. Perfect futures and option market hedges exist only by coincidence. The advantage of derivative market hedging is that basis risk is usually less than the institution's interest rate risk and this risk substitution can be accomplished at low transaction costs.

II. Current Bank and Thrift Regulations

Any financial intermediary's strategy for participation in financial futures and option markets must take account of the trading restrictions put in place by the federal and state regulatory agencies. The jurisdiction of the Commodity Futures Trading Commission does not extend to trading by depository financial institutions on their own account except to require the reporting of large positions and proscribe market manipulation practices. Regulatory jurisdiction over bank and thrift futures trading has been left to federal and state banking agencies, the Federal Home Loan Bank Board, the National Credit Union Administration, and state insurance commissions. This section of the paper focuses primarily on the policy enacted by the federal regulators of banks and thrifts. In general, regulatory policy disapproves of futures and option trading that increases a thrift's risk exposure; in particular, the policies enacted to screen out speculative trading differ for commercial banks, savings and loan associations, and credit unions.

The federal regulatory agencies are in agreement that use of financial futures and option contracts can effectively hedge interest rate risk, if used properly, and that institutions should hedge only the net interest rate exposure in their overall balance sheet, called macro hedging. A macro hedge makes the institution insensitive to unexpected interest rate changes; a micro hedge makes a well-defined asset or liability insensitive to unexpected interest rate changes. Micro hedges placed to reduce the maturity mismatch or to manage the spread between assets and liabilities in the overall balance sheet would comply with public policy. Although micro hedging strategies can be initiated on a decentralized, profit center basis with an area manager making decisions, the requirement that futures and option hedging should reduce overall risk exposure implies the trading strategy must be implemented at a high level in the organization, where all relevant information can be centralized. It is not necessarily true that a micro hedging strategy automatically reduces an institution's risk exposure and accomplishes the same goal as a macro hedging strategy.³ For this reason, policy proscribes micro hedges placed without consideration of their effect on the institution's net interest rate exposure in their balance sheet. Let us now turn to the specific policies applicable to commercial banks, savings and loans, and credit unions.

Commercial banks and bank holding companies. On November 20, 1979, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency jointly adopted, effective January 1, 1980, and amended March 12, 1980, a policy statement governing bank participation in interest rate futures and option markets for U.S. government and agency securities.⁴ This joint pronouncement recognized that hedging interest rate risk is a legally appropriate activity for commercial banks since it is incidental to the business of banking. On August 21, 1980, the Board of Governors adopted a policy statement governing the futures and option trading activities of bank holding companies and their nonbank subsidiaries.⁵ Subsequently on September 18, 1981, an interpretation of existing policy statements was issued by the three Federal banking regulators stating that the regulations currently in place also apply to the new money market financial futures in addition to U.S. government and agency security futures.⁶ These policy statements are applicable specifically to commercial banking activities and do not pertain to bank trust accounts. Bank futures and option trading is not authorized per se and contracts are not considered to be investment securities by the regulators.

The regulators note that there is evidence that financial futures and options can be used by banks to effectively hedge their interest rate risk, but they also caution that their improper use can increase interest rate risk. Banks that engage in these activities should do so only in accordance with safe and sound banking practices and at activity levels reasonably related to the bank's business requirements and its capacity to fulfill the contractual obligations. Banks should evaluate their interest rate risk exposure resulting from overall asset and liability positions to ensure that futures and option positions reduce their risk. Once the bank's overall exposure is identified, financial futures and options may be used to hedge the interest rate risk exposure associated with undesired mismatches in interest-sensitive assets and liabilities. For example, long futures positions can be used when funding interest-sensitive assets with fixed-rate sources of funds; short futures positions can be used when funding fixed-rate assets with interest-sensitive liabilities. The comptroller also suggests, where practical, that contract gains be used to offset losses resulting from cash security sales to upgrade the yield on portfolio holdings. Futures and options are viewed as a temporary risk management tool to aid the restructuring of the bank's portfolio rather than a permanent income generating device.

The Board of Governors has established the following as minimal guidelines to be followed by banks authorized to participate in financial futures and options.⁷ Similar guidelines have been established by the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency.

1. Prior to engaging in futures or option transactions, a bank should obtain an opinion of counsel or its state banking authority concerning the legality of its activities under state law.
2. The board of directors should consider any plan to engage in futures and option trading and should endorse specific written policies in authorizing these activities. Policy objectives must be specific enough to outline permissible contract strategies and their relationship to other banking activities, and record keeping systems must be sufficiently detailed to permit internal auditors and examiners to determine whether operating personnel have acted in accordance with authorized objectives. Bank personnel are expected to be able to describe and document in detail how the positions they have taken in futures and options contribute to the attainment of the bank's stated objectives.
3. The board of directors should establish limitations applicable to futures and option contract positions; and the board of directors, a duly authorized committee thereof, or the bank's internal auditors should review periodically (at least monthly) contract positions to ascertain conformance with such limits.
4. The bank should maintain general ledger memorandum accounts or commitments registers to adequately identify and control all commitments to make or take delivery of securities. Such registers and supporting journals should at a minimum include:
 - a. the type and amount of each contract,
 - b. the maturity date of each contract,
 - c. the current market cost of each contract, and
 - d. the amount of money held in margin accounts.
5. With the exception of contracts described in item 6, all open positions should be reviewed and market values determined at least monthly (or more often, depending on the volume and magnitude of positions), regardless of whether the bank is required to deposit margin in connection with a given contract. Underlying security commitments relating to option and futures contracts should not be reported on the balance sheet. Margin deposits and any unrealized gains or losses are the only accounting entries recorded. All futures contracts should be valued on the basis of either market or the lower of cost or market, at the option of the bank. Option contracts should be valued on the basis of the lower of cost or market. Losses on option contracts need be computed only in the case of the contract seller, and only where the market value of the underlying instrument is below the contract price adjusted for deferred fee income. Market basis for option contracts

should be based on the market value of the underlying security, except where publicly quoted prices are available. All losses resulting from monthly contract value determination should be recognized as a current expense item; those banks that value contracts on a market basis would recognize gains as a current income item. In the event the above described futures contracts result in the acquisition of securities, they should be recorded on a basis consistent with that applied to the contracts (either market or lower of cost or market). Acquisition of securities arising from option contracts should be recorded on the basis of the lower of adjusted cost (see Item 7(c) below) or market.

6. Futures contracts associated with *bona fide* hedging of mortgage banking operations, i.e., the origination and purchase of mortgage loans for resale to investors or the issuance of mortgage-backed securities, may be accounted for in accordance with generally accepted accounting principles applicable to such activity.
7. Fee income received by a bank in connection with a option contract should be deferred at initiation of the contract and accounted for as follows:
 - a. upon expiration of an unexercised contract the deferred amount should be reported as income;
 - b. upon settlement of the contract prior to maturity, the deferred amount should be accounted for as an adjustment to the expense of such settlement, and the net amount should be transferred to the income account; or
 - c. upon exercise of the contract, the deferred amount should be accounted for as an adjustment to the basis of the acquired securities. Such adjusted cost basis should be compared to market value of securities acquired. See item 5.
8. Bank financial reports should disclose in an explanatory note any derivative market contract activity that materially affects the bank's financial condition.
9. To assure adherence to bank policy and prevent unauthorized trading and other abuses, banks should establish other internal controls including periodic reports to management, segregation of duties, and internal audit programs.

The issuance of long-term option contracts, i.e., those for 150 days or more, which give the other party to the contract the option to deliver securities to the bank will ordinarily be viewed as an inappropriate practice. In almost all instances where option contracts specified settlement in excess

of 150 days, supervisory authorities have found that such contracts were related not to the investment or business needs of the institution, but primarily to the earning of fee income or to speculating on future interest rate movements. Accordingly, the Board concludes that state member banks should not issue option contracts specifying delivery in excess of 150 days, unless special circumstances warrant.

All three federal bank regulators intend to monitor bank transactions in futures and option contracts to ensure that any such activity is conducted in accordance with safe and sound banking practices. Banks are requested to notify their respective regulator(s) at the inception of contract trading activities, indicating the type and purpose of the activity engaged in. Monitoring is also conducted through the bank examination process. In light of this continued review, it may be found desirable to establish position limits applicable to banks as an industry or to institute supervisory action in individual cases.

Securities dealer and trading departments at banks may be treated more liberally and similar to foreign exchange operations at those institutions.⁸ An overriding guideline is that the risk exposure undertaken must not be of a magnitude so as to endanger the entire bank. Trading departments may be viewed and evaluated separately because trading account assets are not usually held to maturity but quickly rolled over. Financial futures and options would be viewed as a tool to preserve the principal or the value of an investment rather than a tool to alter the investment's maturity, as in nondealer hedging. Futures and option contracts executed for trading account purposes should be valued on a basis consistent with other cash trading positions. To this end, the futures contract par value should be considered rather than just the margin deposit required to make the transaction. A bank might favor a substitution of futures or options for cash instruments in its trading accounts because these derivative markets are more liquid than the underlying instrument's cash market and because transactions can be made more cheaply.

With respect to the fiduciary activities of bank trust departments, trust companies, and trust company subsidiaries of bank holding companies, the primary investment requirements placed upon a trustee are that investments be chosen for preservation of the corpus of the trust's assets as well as for the production of reasonable income (the prudent man rule). Traditionally, any investment transaction involving a high level of risk or producing no established income was prohibited as speculative per se. In 1979, the U.S. Department of Labor issued a regulation applicable to employee pension funds stating that a determination of the prudence of an individual investment includes consideration of the role that investment plays in the safety and return of either a portion of the assets or the asset portfolio as a whole.⁹ The courts of some states may now be willing to

entertain a defense that such individual transactions are not speculative per se in the context of certain strategies and objectives.

The legality of financial futures and option trading by trusts, however, turns on state law with regard to the issue of prudence. Where permitted, financial futures and option contracts should be used as vehicles for reducing overall portfolio risk or for increasing portfolio yield without subjecting the account's assets to excessive risk.¹⁰ Prior to engaging in derivative market trading, specific written policies and procedures should be developed that include the following: the types of participating accounts, strategies to be employed and position limits, a system of periodic management review of contract positions and position limits to ascertain conformity with account objectives, and provision for periodic auditing and internal control safeguards. These features should be reviewed and authorized by the director's trust committee of the bank or trust company. In general, Federal Reserve Board examiners are instructed to view writing covered call options and purchasing put options as acceptable trust activities under the "prudent man" rule. Writing naked calls, purchasing calls, and selling puts are regarded as speculative, and thus, inappropriate for a fiduciary account.

The Board of Governor's policy statement dealing with bank holding company participation in financial futures and options reflects the view that bank holding companies should be a source of strength for their subsidiary banks and should not speculate in financial futures. Any positions that bank holding companies or their nonbank subsidiaries take in financial futures or options should reduce risk exposure, not increase it. In addition to the guidelines in items 2, 3, and 4 above, with respect to individual commercial banks, bank holding companies should follow these guidelines.

1. In formulating its policies and procedures, the parent holding company may consider the interest rate exposure of its nonbank subsidiaries, but not that of its bank subsidiaries. As a matter of policy, the Board believes that any financial contracts executed to reduce the interest rate exposure of a bank affiliate of a holding company should be reflected on the books and records of the bank affiliate (to the extent required by the bank policy statements), rather than on the books and records of the parent company. If a bank has an interest rate exposure that management believes requires hedging with financial contracts, the bank should be the direct beneficiary of any effort to reduce that exposure. The Board also believes that final responsibility for financial contract transactions should reside with the management of the bank.
2. The joint bank policy statements of March 12, 1980 include accounting guidelines for banks that engage in financial contract activities. Since

a special task force of the American Institute of Certified Public Accountants is presently considering accounting standards for contract activities, no specific accounting requirements for financial contracts entered into by parent bank holding companies and nonbank subsidiaries are being mandated at this time. The Board expects to review further developments in this area.

3. The Board intends to monitor closely bank holding company transactions in financial contracts to ensure that any such activity is consistent with maintaining a safe and sound banking system. In any cases where bank holding companies are found to be engaging in speculative practices, the Board is prepared to institute appropriate action under the Financial Institutions Supervisory Act of 1966, as amended.
4. Bank holding companies should furnish written notification to their District Federal Reserve Bank within 10 days after financial contract activities are begun by the parent or a nonbank subsidiary. Holding companies in which the parent or a nonbank subsidiary currently engage in financial contract activity should furnish notice by March 31, 1983.

Although the parent holding company cannot execute financial futures and option transactions for its bank affiliates and carry the transactions on the parent company's books, the Board of Governor's policy statement does not preclude centralizing its bank affiliates' contract transactions for execution. As long as all transactions are passed through to its bank affiliates for the purposes of record keeping and those transactions reduce the net interest rate risk exposure of the bank affiliates, the centralization of futures and option trading by the parent may help reduce the risk exposure of the entire organization.

In sum, to ensure a bank's futures and option activities are conducted in accordance with safe and sound practices, the three federal regulators have adopted a framework for self-policing regulation subject to evaluation by bank examiners. This policy stance is quite liberal in allowing a variety of contract positions to be taken by banks as long as it can be documented that they reduce the institution's net interest rate risk exposure. Anticipatory hedges of expected cash market transactions are discouraged only if they are based on an event with low probability of realization. The success that banks have had in matching the maturities of assets and liabilities varies greatly across the industry; therefore, the guidelines on banks' futures and option trading must be general enough to permit banks with a variety of balance sheet exposures to hedge their interest rate risk. The lower of cost or market accounting treatment of futures and option hedges permits banks to defer gains but precludes the deferral of losses.

This accounting treatment is viewed as a deterrent to speculation since speculative losses cannot be hidden for long periods of time.

Savings and loan associations. On May 21, 1976, the Federal Home Loan Bank Board adopted final regulations dealing with mortgage futures transactions by federally-insured savings and loan associations.¹¹ At that time, the regulations were quite restrictive in the sense that eligibility requirements had to be met before engaging in futures transactions, transactions were authorized in GNMA futures only, and an institution's gross futures position was limited to an amount equal to its net worth. Substantial revisions to this policy were proposed on May 1, 1981, and adopted on July 16, 1981.¹² The major changes included: eliminating eligibility requirements for engaging in futures, authorizing use of any financial futures designated for trading by the CFTC, eliminating position limits, extending regulatory coverage to both federally and insured state-chartered associations, and defining the accounting treatment of futures gains and losses.

The following operating procedures and guidelines for savings and loan futures transactions are taken from the Federal Home Loan Bank Board's *Annotated Manual of Statutes and Regulations* (4th Ed. section 563.17-4).

1. To the extent that it has legal power to do so, an insured institution may engage in interest rate futures transactions to reduce its net interest rate risk exposure as provided in this paragraph.¹³ An insured institution may enter into short positions that are appropriate for reducing its net interest rate risk exposure. An insured institution may enter into long positions, other than those that offset short positions, only under the following conditions:
 - a. The futures position must be matched against a firm forward commitment to sell mortgages not yet originated or to issue mortgage-related securities to be based on mortgages not yet originated;¹⁴ and
 - b. The futures position may be entered into and maintained only to the extent that the institution's firm forward commitments exceed 10 percent of long-term assets with fixed interest rates.¹⁵
 - c. An insured institution may engage in interest rate futures using any interest rate futures contracts designated by the Commodity Futures Trading Commission and based upon a security in which the institution has authority to invest.
2. Prior to engaging in interest rate futures transactions, an institution's board of directors must authorize such activity. In authorizing futures trading, the board of directors shall consider any plan to engage in interest rate futures transactions, shall endorse specific written policies,

and shall require the establishment of internal control procedures. Policy objectives must be specific enough to outline permissible contract strategies, taking into account price and yield correlations between assets, liabilities, and the interest rate futures contracts with which they are matched, the relationship of the strategies to the institution's operations, and how such strategies reduce the institution's net interest rate risk exposure. Internal control procedures shall include, at a minimum, periodic reports to management, segregation of duties, and internal review procedures. In addition, the minutes of the meeting of the board of directors shall set forth limits applicable to futures transactions, and set forth the duties, responsibilities and limits of authority of such personnel. The board of directors shall review the position limits, all outstanding contract positions, and the unrealized gains or losses on those positions at each regular meeting of the board.

3. An institution engaging in interest rate futures transactions shall notify the District Director-Examinations of the Federal Home Loan Bank District in which it is located that it is engaging in such transactions. The institution shall report its gross outstanding long and short interest rate futures positions on the Federal Home Loan Bank Board Monthly Report.
4. An institution engaging in interest rate futures transactions shall maintain records of such transactions sufficient to document how the transactions reduce the net interest rate risk exposure of the institution in accordance with the following requirements:
 - a. The institution shall maintain a contract register adequate to identify and control all interest rate futures contracts and including at a minimum, the type and amount of each contract, the maturity date of each contract, the cost of each contract, the dollar amount and the description of the asset or liability with which the futures contract is matched, and the date and manner in which a contract is closed out. Such register shall be prepared in a manner sufficient to indicate at any time the institution's total outstanding long and short interest rate futures positions.
 - b. The institution shall maintain, as part of the documentation of its interest rate futures strategy, a schedule of the assets and liabilities for which net interest rate risk exposure is being reduced and the purpose of each contract entered into.
 - c. The records designated in this paragraph shall be maintained for all futures transactions closed-out during the preceding two years.

5. Upon the initial purchase or sale of an interest rate futures contract, a memorandum entry of the information specified in 5a above shall be made and appropriate margin accounts shall be established. Gains and losses on interest rate futures contracts shall be accounted for as follows:
 - a. Gains and losses on futures contracts that are matched with existing or anticipated assets and liabilities carried or to be carried at cost shall be deferred and included in the measurement of the dollar basis of the asset or the liability and amortized over the estimated life of the asset or liability as an adjustment to interest income or interest expense. If the existing asset or liability is sold or otherwise disposed of, the unamortized gain or loss shall be recognized in income.
 - b. Gains and losses on futures contracts that are matched with existing asset positions carried at the lower of cost or market shall be deferred and recognized in determining the lower of cost or market adjustment of the corresponding asset at the end of each reporting period, or upon sale or disposition of the corresponding asset.

Similar to the three federal bank regulators, the Bank Board realizes that there are substantial benefits to be gained from the ability to hedge against unanticipated adverse movements in interest rates, although futures losses are possible and the temptation to speculate in expected interest rate movements may be strong. The Bank Board's intention is to permit institutions to engage in only those futures transactions which reduce the net interest rate risk exposure arising from an institution's asset and liability structure. Permitted transactions are not defined in terms of whether they hedge specific aspects of a savings and loan's operations against unanticipated interest rate changes; the matching of futures and cash market positions does not, in itself, necessarily reduce the interest rate risk exposure of an institution. The overall balance sheet must be considered. However, in that almost all savings and loan associations are exposed to the risk that interest rates will rise because of their long-term mortgage lending, there is less question about the appropriate risk-reducing hedging strategy. The Bank Board believes the risk exposure of a typical savings and loan will not be lessened and probably be increased by taking long futures market positions. The exception to this general principle applies to the mortgage banking operations of savings and loan associations; hence, the threshold eligibility requirement in 1b above for long positions.

The Bank Board's regulations require the use of hedge or deferral accounting for futures transactions because this treatment recognizes and reflects the basic purpose of futures—to reduce the net interest rate risk

associated with an institution's cash market transactions. Unlike commercial banks, savings and loans are not permitted a choice in the accounting treatment of futures. Service corporation investments of insured savings and loan associations are expressly referenced to the same set of regulations that apply to savings and loans, although they may apply to the Bank Board for broader approval to engage in futures on a case-by-case basis. Finally, the Bank Board applies its interest rate futures regulations directly to all insured institutions. This is done to assure that futures transactions are used to reduce net interest rate risk exposure and to provide uniformity in examination and enforcement for all insured institutions.

In section 563.17-5 of the aforementioned *Annotated Manual*, effective September 13, 1982, the Federal Home Loan Bank Board sets out the regulations governing savings and loan use of option contracts. All insured institutions are permitted to trade in any option contract approved by the Securities and Exchange Commission or designated by the Commodity Futures Trading Commission or domestic exchanges and based upon a security in which the institution is authorized to invest. The regulations permit savings and loans to engage in option transactions without limit for purchased put, purchased call, and written call options. The Bank Board does establish position limits on written put options, however, because the risk exposure in the typical "borrow short-lend long" maturity structure of savings and loans would be compounded with written put options. An institution is permitted to write put options up to a limit of 5% of assets if net worth is less than 3% of assets, up to 10% of assets if net worth is 3%-5% of assets, and up to 15% of assets if net worth is greater than 5% of assets.

The guidelines for board of directors' authorization, notification and reporting, and record keeping requirements are similar to the guidelines for savings and loan futures trading in items 3, 4, and 5 above. Institutions with purchased call options on financial futures must offset these positions rather than take delivery of a purchased futures contract unless the purchased futures contract conforms with item 1a and 1b above. The same applies to institutions with written futures put options if they are exercised. The Bank Board's requirements for option accounting are a combination of mark-to-market and deferral accounting techniques. For option positions matched with a cash market instrument, deferral accounting is to be used for recognizing gains and losses on purchased and written call options and purchased put options. The option gain or loss is treated as an adjustment to the carrying amount of the cash market position against which the option is matched. Unmatched option positions and all written put options must be marked-to-market. Matching option contracts with an anticipated cash market position does not qualify the option position for deferral accounting treatment. The matching of option and cash market positions does not have to be on a one-to-one basis; an institution must

be able to document the rationale behind its option hedge ratio in written option strategies, however.

The Bank Board's regulations also require that the total option premium be divided into two components: its time value and its intrinsic value. The intrinsic value of a option is the market value gained by exercising an option, and therefore, it depends on the relationship between the option exercise price and the price of the underlying instrument. The time value of an option is the difference between the option premium and its intrinsic value. The time value of an option must be recognized as an expense or revenue item amortized over the life of the option. Changes in the intrinsic value of a option must be treated as a gain or loss and are subject to deferral accounting techniques. Finally, the intrinsic value of written put options and all unmatched option positions must be carried at their current market value.

Credit unions. The authority to regulate the investment activities of federally chartered credit unions rests with the National Credit Union Administration (NCUA). On July 20, 1979, the NCUA published final guidelines applicable to futures and option transactions by federally chartered credit unions.¹⁶ The NCUA left the regulation of federally insured state-chartered institutions to state supervisory agencies, under NCUA monitoring. The purpose of the NCUA regulations is to prohibit or limit certain types of investment activities that have resulted in substantial financial losses to federal credit unions that may cause a reduction or loss of dividends to members or otherwise jeopardize the interests of members and may present a potential loss to the National Credit Union Share Insurance Fund.

In the initially proposed regulations, published October 17, 1978, federal credit union participation in option arrangements was banned and futures transactions were limited to the purchase or sale of a futures contract as a hedging device incident to the assembly of a pool of mortgages for sale in the secondary market. In the final interpretation, the NCUA delayed authorizing such transactions and stated that until regulations are published in final form, federal credit union may not buy or sell a futures or option contract unless the purchase or sale is specifically authorized by a regulation issued by the Administration. Currently, no such authorization has been made. The outright prohibition of futures and option trading by federally chartered credit unions reflects the philosophy that derivative market hedging is not beneficial to the typical credit union because either the short-term nature of credit union assets and liabilities effectively hedges away interest rate risk or the expertise of management is not sufficient to monitor and control a futures or option trading strategy.

III. Current Issues

Three issues with respect to the current regulations governing futures and option transactions by banks and thrifts deal with policing behavior so that it conforms with the policy statements, defining undesired interest rate risk exposure, and accounting for financial futures transactions. The policy statements of the three federal banking agencies, and to a lesser extent the Bank Board, establish a framework for the self-regulation of futures and option activities with evaluation by the institution's examiners. The emphasis is on verification of compliance to prescribed policy by evaluating contract positions and their relationship to the institution's entire asset and liability mix. Since the effectiveness of a futures or option hedging strategy can only be known *ex post*, monitoring contract activity through the periodic examination process seems logical. But this policy does rely heavily on examiner judgment in determining the acceptability of a bank's or thrift's derivative market transactions.

Do examiners have the ability to make such a judgment? If banks and thrifts themselves are still learning how to use financial futures and options, how much more informed can examiners be? The regulators seem to have doubts in this area since banks wishing to engage in futures or options are required to file a statement of objectives, strategies, control policies, operating procedures, and audit programs with their respective regulator's district office. Fundamentally, can the regulatory approach to futures and options be no different than the regulatory approach to other banking activities? Given the speed with which futures and option markets move and the level of trader sophistication, a frequent monitoring of contract transactions by the regulators seems advisable to guard against unsafe practices.

The issue of the appropriate definition of undesired interest rate risk exposure is related to the issue of policing compliance. If in an examiner's judgment an institution's futures or option activity lowers net interest rate risk exposure, such activity is acceptable to the regulators. But how should overall exposure be measured and how much of this exposure is deemed undesirable? The standard by which futures and option transactions are judged, the reduction in net interest rate risk exposure, can be measured quite subjectively. None of the policy statements offer any guidance as to the measurement of risk exposure. The most widely used measure of the exposure of net interest income to changes in interest rates involves classifying all asset and liability accounts by their term to maturity or first permissible repricing, whichever comes first, for a given time into the future (the maturity gap approach). Maturity mismatches or gaps between assets and liabilities are calculated for subintervals in the predetermined horizon

to assess the interest rate risk exposure at a subinterval or over the entire horizon.

The overall horizon length and the subinterval cutoffs are determined subjectively; changing these limits alters the evaluation of interest rate risk exposure. Cumulating the subinterval gaps to measure overall risk exposure is of limited value because it hides the differences in asset and liability repricing and maturity that occur within the horizon. With respect to the policy statements governing futures and option trading, the maturity gap approach does not generate a single index number of interest rate risk exposure that a bank or thrift could use to assure that its contract transactions reduce overall net exposure.¹⁷ The maturity gap measure encourages institutions to use futures and options to hedge specific cash market instruments at specific subinterval maturities (micro hedging) to the possible detriment of regulatory objectives (macro hedging).

In addition, the regulators realize that most types of normal banking activities are speculative to some degree, based on expectations of future interest rate movements. Thus, it seems plausible that banks and thrifts will want to carry some cash market interest rate risk even while engaging in derivative market transactions. Hedging may be selective or partial rather than complete and be placed and lifted according to expectations of interest rate changes and futures or option gains. This may be especially true of commercial banks since futures and option losses must be marked to market. Is the purpose of hedging to completely avoid the potential of financial loss? If not, is placing selective hedges only when a futures or option profit is expected really speculation? Since institutions use interest rate forecasts in their cash market activities, it seems natural to use these forecasts in futures and option position-taking. The drawback with such selective hedging is that the risk-reduction potential of derivative market contracts is sacrificed for a return greater than can be earned with complete risk exposure hedging. The success of a selective hedging program depends on consistent forecasting accuracy, which may be beyond the abilities of some bank and thrift managements.

Whether or not an institution selectively hedges just the undesired portion of its interest rate risk exposure, the jointness of cash and derivative market transactions can also have an effect on the underlying risk exposure of the financial intermediary. The policy statements in the last section suggest that futures and option transactions should occur after the institution's cash transactions because the latter are needed to calculate its net increase rate risk exposure. But what if the cash and futures market decisions are made simultaneously rather than sequentially? For example, a thrift may decide to make more long term, fixed-rate loans when it has authorization to engage in futures transactions than it would without such authorization.¹⁸ The thrift's net cash market interest rate risk exposure may

be different with futures than without it. Depending upon its objectives, it may be optimal for the thrift to make simultaneous cash and futures decisions to attain its desired level of risk bearing. The interaction of futures and option hedging decisions with other joint decisions could result in greater interest rate risk exposure than would be present without futures and option hedging.¹⁹ Should banks and thrifts be required to make derivative market decisions without regard to other cash market decisions and vice versa? If so, the gains from preventing joint decisions must be greater than the possibly suboptimal allocation of financial resources resulting from sequential decisions.

The last issue discussed here concerns the accounting treatment applied to financial futures and option transactions, particularly with respect to commercial bank policy.²⁰ As discussed above, commercial banks have the option of carrying futures and option transactions on a mark-to-market basis or a lower-of-cost-or-market basis. In either treatment, contract losses cannot be deferred and must be realized as a current interest expense item as they occur. The rationale for this policy is that it helps to impose a market discipline on futures or option trading activity by acting as a deterrent to speculation. The issue is whether or not it also discourages legitimate hedging activity. The financial effects of futures and option transactions can be deferred as long as the positions are "right" in the sense of favorable price movements relative to the type of position taken. If the positions are "wrong" such that the futures or option market moves against the position, the bank is disciplined by having to report losses.

In and of itself, this treatment seems innocuous, but financial institutions have traditionally applied an amortized cost basis to account for their nondealer cash market transactions. That is, the cash items hedged with futures and options are usually not marked to market and losses are deferred to future periods. Even though the bank's risk exposure is correctly hedged and its balance sheet made less risky, reporting derivative market losses as they are marked to market while deferring cash market gains results in greater volatility in reported earnings when futures are used. This inconsistent accounting treatment of futures and options relative to cash transactions does not recognize and reflect the basis intent of hedging—to reduce the net interest rate risk associated with an institution's cash market transactions.

At the time the three federal banking regulators issued their policy statements, no accepted accounting treatment was in practice in industry, and the accounting profession itself differed in opinion about what the appropriate standard should be. In order to prevent unsafe and unsound banking practice, the regulators considered the prescription of accounting standards for futures and option transactions to be within their statutory responsibility. The Federal Home Loan Bank Board, however, exercised

its responsibility by authorizing deferral accounting for savings and loan futures and option transactions. In August 1984, the Financial Accounting Standards Board (FASB) issued a statement of accounting standards for futures hedging transactions that differ from those authorized by the federal bank regulators and from those proposed by the American Institute of Certified Public Accountants, issued in December 1980.²¹

Since hedge or deferral accounting merely dictates when futures gains or losses are to be recognized as income and the accounting treatment of the hedged item is not effected, FASB outlines three criteria which must be satisfied before deferral accounting can be applied to futures transactions. If a transaction satisfies these criteria, deferred gains or losses are classified as an adjustment to the carrying amount of the hedge item and amortization of interest income or expense begins at the termination of the futures hedge. The FASB criteria for hedge accounting treatment of futures are summarized as follows:

1. The item being hedged must expose the institution to interest rate risk such that futures hedging reduces the overall interest rate risk exposure of the institution (macro hedging). Risk can be assessed on a business unit basis when the decentralized nature of operations makes it impossible to consider the relevant positions and transactions of the entire enterprise.
2. At the inception of the hedge and throughout the hedge period, changes in the market value of the futures position must have a high (probable) correlation with the fair value of, or interest income or expense associated with, the hedged item so that the futures result will substantially offset the effects of price or interest rate changes on the hedged item (micro hedging). The futures contract(s) must be identified with a specific cash item or an identifiable group of essentially similar items.
3. If the hedged item is an anticipated cash transaction, the significant characteristics and expected terms of the anticipated transaction must be identified, and the anticipated transaction must be likely to occur.

In sum, these criteria fit quite well with the principles and objectives underlying the federal regulators' policy statements. Commercial banks may have some marginal difficulty in decomposing their overall interest rate risk exposure into item by item components, as required by criteria 1 and 2, but the problem is not insurmountable. In light of the regulators' willingness to modify their prescribed accounting procedures, it would seem reasonable to authorize deferral accounting for futures transactions satisfying the FASB criteria to correct this technical impediment to banks'

use of futures and options. An effective market discipline on bank futures and option transactions can be imposed in other ways.

IV. Conclusion

There may come a time in the future when a financial intermediary's failure to use the risk-shifting potential of financial futures and options is considered unsafe and unsound banking practice by the federal regulators. As a risk management tool, derivative market hedging can be an effective device for reducing the net interest rate risk exposure of an institution's overall balance sheet until a restructuring can take place. It therefore seems inadvisable to prohibit contract trading entirely as is the policy of the National Credit Union Administration with respect to federal credit unions. Given the current and ongoing deregulation in the banking industry, an institution's environment is likely to become more uncertain, not less; to deny the use of a powerful risk management tool in such an environment only inhibits our financial intermediaries' adjustment to interest rate risk. Before the time of "mandated" futures and option trading arrives, much needs to be done to educate the institutions and regulators alike about the benefits and dangers associated with financial futures and options. The rapid innovation of new contracts, especially financial futures and option contracts, makes this education process continual and more complicated.

As regulatory policy governing financial intermediary use of financial futures and options now stands, some refinements are possible within the context of primary regulation by the market and through self-policing activity. First, the regulators should specify definite measures of interest rate risk exposure to be used uniformly by institutions engaging in financial futures and option transactions. This would aid management as well as examiners in monitoring compliance with stated policy. If it is within the regulator's statutory responsibility to specify accounting treatments for futures and options, it would also seem to be within their statutory responsibility to specify how risk exposure should be measured.

Second, the bank regulators should authorize deferral accounting for futures transactions to remove the bookkeeping impediment to futures and options use that exists in current bank policy. Tying accounting procedures to the intent and purpose of hedging will reduce the variability of reported earnings and help correct any inaccurate notions of what constitutes hedging and speculation that may become institutionalized. The accounting treatment authorized by the Federal Home Loan Bank Board for futures and option use by savings and loan associations would appear to be a good model to copy, at least initially.

Third, as a substitute for the market discipline imposed by the current policy on futures and option accounting, the regulators should institute a system of either risk dependent deposit insurance premiums or risk dependent capital requirements. The latter could be used to force banks that trade futures and options to keep more capital on hand than the 5.5% of assets currently required. A risk-based capital rule related to the type of contract positions taken or the institution's history of success with derivative market hedging would serve as a cushion for contract losses; the greater the required cushion, the less incentive to participate in derivative markets. For example, one rule might impose futures and written option margin requirements over and above the exchange and brokerage requirements with the excess held in a futures and option loss reserve. In either system, the cost of unsound banking decisions with respect to futures and options can be raised. Since it is unlikely that insured depositors will penalize an institution for assuming speculative futures and option positions, restricting the availability of funds for contract transactions through increased insurance premiums or reserves can be used to inhibit an institution's derivative market participation.

In sum, precise regulatory control of futures and options use by banks and thrifts is possible, although current policy should be fine-tuned so that legitimate hedging activity is not discouraged. As bank and thrift participation in financial futures becomes more widespread, the demand for and benefit of such changes should become more apparent.

¹ Throughout the remainder of this paper, the term "thrift" refers to any depository financial intermediary that is a savings and loan association or credit union.

² For other treatments of futures regulations, see Franklin R. Edwards, "The Regulation of Futures and Forward Trading by Depository Institutions: A Legal and Economic Analysis," *Journal of Futures Markets*, Summer 1981, 201-218 and the comments on this paper by Owen Carney which directly follow; Robert C. Lower and Scott W. Ryan, "Futures Trading by National Banks," *Banking Law Journal*, March 1981, 239-256; and John H. Strassen, "The Regulators—An Overview," Chapter 20 in *The Handbook of Financial Futures*, edited by Nancy H. Rothstein and James M. Little, New York, McGraw-Hill Book Company, 1984.

³ For a discussion of why this is true, see Robert W. Kolb, Stephen G. Time, and Gerald D. Gay, "Macro Versus Micro Futures Hedges at Commercial Banks," *Journal of Futures Markets*, Spring 1984, 47-54.

⁴ For supplementary information on these guidelines, see Banking Circular No. 79 (3rd Revision) issued by the Office of the Comptroller of the Currency, April 19, 1983; 45 Fed. Reg. 18120-22 (March 20, 1980); and 45 Fed. Reg. 18116-18 (March 20, 1980).

⁵ See 45 Fed. Reg. 61595-96 (September 17, 1980), and 48 Fed. Reg. 7719-20 (February 22, 1983) as amended.

⁶ See 46 Fed. Reg. 46386 (September 18, 1981).

⁷ The policy statements actually apply to forward contract and standby contract transactions of commercial banks, as well as financial futures and option contract transactions.

⁸ See Federal Reserve Board document AD 82-84 (FIS) re: Manual for Examination Concerning Bank and Bank Holding Company Use of Interest Rate Futures and Forward Contracts (July 26, 1982).

⁹ See U.S. Labor Department regulation 2550.404(a)(1).

¹⁰ See Federal Reserve Board memorandum SR 83-2 (SA) re: Trust Department Uses of Options and Futures Contracts (January 11, 1983).

¹¹ See 41 Fed. Reg. 20860-62 (May 31, 1976).

¹² See 46 Fed. Reg. 23479-84 (May 1, 1981) and 46 Fed. Reg. 36838-32 (July 16, 1981).

¹³ For purposes of this section, net interest rate risk exposure is the volatility in an institution's earnings that can arise from the mismatching of the effective maturities of assets and liabilities.

¹⁴ For the purposes of this paragraph, a firm forward commitment is a written commitment obligating the seller to make delivery, and the buyer to take delivery, of mortgage loans not yet originated or mortgage-related securities to be based on mortgages not yet originated, at a price and on or before a date specified in the commitment.

¹⁵ For purposes of this section, long-term assets are those having remaining terms to maturity in excess of five years.

¹⁶ See 44. Fed. Res. 42673-77 (July 20, 1979).

¹⁷ The disadvantages of the maturity gap approach to interest rate risk exposure measurement are summarized by Alden L. Toevs, "Gap Management: Managing Interest Rate Risk in Banks and Thrifts," *Economic Review*, Federal Reserve Bank of San Francisco, Spring 1983, 20-35; and George G. Kaufman, "Measuring and Managing Interest Rate Risk," *Economic Perspectives*, Federal Reserve Bank of Chicago, January/February 1984, 16-29. These authors also offer an alternative risk exposure measure based on a duration approach.

¹⁸ This result is shown theoretically by G. D. Koppenhaver, "A T-Bill Futures Hedging Strategy for Banks," *Economic Review*, Federal Reserve Bank of Dallas, March 1983, 15-28.

¹⁹ In the situation where banks set deposit rates and take futures positions to hedge the risk of core deposit withdrawals, simultaneously, it has been estimated that such behavior significantly increases the variability of bank profits. See G. D. Koppenhaver, "A Note on Managing Deposit Flows with Cash and Futures Market Decisions," *Journal of Banking and Finance*, 9(1985), 323-331.

²⁰ For other discussions of the federal bank regulators' accounting prescriptions, see Michael R. Asay, Gisela A. Gonzalez, and Benjamin Wolkowitz, "Financial

Futures, Bank Portfolio Risk, and Accounting," *Journal of Futures Markets*, Winter 1981, 607-618.

²¹ See *Statement of Financial Accounting Standards No. 80*. Financial Accounting Standards Board, Stamford, Connecticut (August 1984). FASB has yet to issue a final ruling on the criteria for deferral accounting of option transactions.