INTEREST RATE RISK

Interest Rate Regulation in US Housing Finance

by Fred A Thompson

BACKGROUND AND INTRODUCTION

Housing finance in the United States started as a vertically integrated, locally oriented system. An institution, such as a savings and loan or a bank, would take applications for home loans. Using local knowledge of property values and borrower creditworthiness, approved loans would be closed and the mortgage would be placed in the institution’s own portfolio. Mortgage loans also would be serviced by the originating institution, with local surveillance of payment delinquencies or loan defaults. Thus, three functions: origination, servicing, and investment would be undertaken by the same portfolio lending institution.

The portfolio lender was usually a depository institution, raising funds in local markets from household savings and business deposits. Deposit liabilities were invested in loans and investments at a spread or margin above cost. An important role of the depository was to intermediate between deposit and mortgage markets. Portfolio management was largely passive, with deposit flows and asset composition shaped by the institution’s charter and economic conditions. Asset management was used to meet legal reserve or liquidity requirements, and to provide liquidity for deposit withdrawals.

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Beginning in the 1960s and culminating in the 1980s, the U.S. experienced higher and more volatile rates of interest. For depository institutions specializing in housing finance, the major peril was interest rate risk. Predominately short-term deposits either repriced to market rates of interest, or disintermediation occurred. The cost of deposit and other borrowed sources of funds became variable. Mortgage portfolio lenders found that deposits repriced much more rapidly than long-term mortgage loans. In a rising rate environment, spreads evaporated and even became negative. Many depositories with large mortgage asset exposures in the early 1980s subsequently failed. When depositories were sold or liquidated, huge market value losses were embedded in their portfolios.

Interest rate risk exposure prompted many depository institutions to become more sophisticated in their asset/liability management. Measures undertaken included measuring, monitoring, and managing interest rate risk exposure. Objectives included stable net interest income, and stability in the market value of portfolios subject to price risk. If portfolio assets repriced at the same frequency and incremental yield amount as the cost of funding liabilities, then the spread between earning assets and interest costs could be maintained (a matching of assets and liabilities). Many institutions revised their asset mix to include more adjustable-rate loans. Increasing numbers originated and sold long-term fixed-rate loans into the secondary market. Some hedged against fluctuating rates using derivatives such as futures contracts, interest rate swaps, interest rate caps and floors, and other instruments.

In a purely private enterprise system, there is no reason to regulate the amount of interest rate risk exposure of financial intermediaries. Those institutions that gamble and fail will become extinct. Those institutions that manage their risk purposefully and prudently will survive and prosper. But what if much of the risk is borne by a third party?

In the U.S., deposit institutions such as commercial banks, thrift institutions, and credit unions must carry deposit insurance. Up to certain account limitations, depositors are assured that if the bank fails, they will get their money back regardless of the bank’s financial condition. Ordinary insurance was designed to deal with particular risk—the predictable chance that disaster or failure will occur randomly and idiosyncratically. In the U.S., deposit insurance became federalized because depository institutions also face systemic risks—adverse circumstances that affect large numbers of institutions regionally or nationally. Deposit insurance written by federal agencies diversifies the risk of insolvency geographically within the U.S., and provides credible “deep pocket” funding in case massive failures occur, as in a general depression.

When deposit institutions get into difficulty,
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there are several layers of protection for depositors and deposit insurers. First, there are liquidity requirements. High quality, short-term assets may be sold to satisfy depositors that want their money back. Second, the institution may borrow in the Fed funds and other markets. In the end, uninsured deposits, subordinated debt, and stockholder capital provide a cushion so that, after insured depositors obtain their money, the insurer has less residual loss exposure.

However, the process by which an institution becomes financially troubled and travels the rocky road to liquidation is not transparent to the federal regulators or deposit insurers. If an institution takes credit risk or interest rate risk and has unrealized gains or losses, regulatory accounting data may not show any difficulty for a substantial period of time. For example, because of underwater and impaired loans a deposit institution may have a market net worth of zero, but this may not be apparent in accounting data for several years.

A moral hazard problem emerges when insured institutions change their behavior as a result of the insurance. Thus, the managers of a bank whose deposits are insured against loss may make more risky loans and investments in order to recoup losses embedded in the portfolio. Most depositors either cannot monitor the condition of their bank or, because of deposit insurance, don't care about its financial condition. The bank may continue to borrow deposit funds even if its financial condition is shaky. As a result, perverse incentives for bank management may lead to hidden losses, growing probable insolvency, and burgeoning losses for the insurer in the future.

Because of the increased level and scope of risk in modern global financial markets, deposit institutions are regulated for safety and soundness. The general goals of regulation are to prevent practices that are inimical to the public interest, and to protect federal deposit insurance agencies from excessive loss exposure due to manageable risks. Regulation and regulation-induced incentives are one way of providing another level of protection for the federal deposit insurance agencies and, ultimately, the taxpaying public. The most important classes of risk subject to regulation are called credit risk and interest rate risk.

MEASURES OF INTEREST RATE RISK

Interest rate risk may be defined as the potential impact on earnings and net asset values resulting from changes in interest rates. Interest rate risk arises because an institution's asset and liability cash flows reprice asynchronously. Income risk means losing (or gaining) income when movements in borrowing and lending rates are mismatched in their repricing periodicity. Price risk occurs when changes in interest rates cause changes in the market value of long-term, fixed-rate assets (or liabilities) more than they cause changes in the market value of short-term, variable-rate liabilities (or assets).

Examples of interest rate risk appear in the origination, servicing, and investing in mortgage loans. Price risk is present in firm rate commitments given to borrowers on loans not yet closed, warehoused loans awaiting sale, purchased servicing rights, and loans held in portfolio.

Gap Analysis

Several techniques to measure interest rate exposure have been devised. For example, gap is the difference between rate sensitive assets (RSA) and rate sensitive liabilities (RSL) expressed in dollar amounts. Assets and liabilities with one year or less to maturity or repricing are often considered to be rate sensitive. Those balance sheet items that do not reprice contractually (such as passbook accounts, money market deposits, consumer revolving credit, and nonaccrual assets) may be classified based upon historical experience.

Gap = RSA - RSL

A one-year gap measures the difference between assets and liabilities maturing or repricing within a year. When RSA exceeds RSL, a bank is positively gapped. When RSA is less than RSL, a bank is negatively gapped.

Net interest income is interest income less interest expense. The dollar amount of the gap times the change in interest rates (r) gives a rough measure of the change in net interest income (NII).

NII = Gap x r

For banks that are positively gapped, an increase in interest rates results in higher income. For banks that are negatively gapped, an increase in interest rates causes income to fall. For example, if a bank has a negative gap of $100 million and interest rates increase by 200 basis points (+0.02), NII will decline by $2 million:

NII = -100,000,000 x 0.02 = -2,000,000

Gap is an easily understood technique for portraying mismatches. However, its very simplicity means that it is often not a good predictor of net interest income sensitivity, nor does it gauge price risks embedded in the balance sheet.

Duration

Duration can be a measure of the price risk of a financial instrument or an entire balance sheet. In its simplest form, it is the present value weighted time to maturity of fixed payment instruments. Modified duration is a measure of the change in the value of an instrument in response to a change in interest rates. The formula for modified duration for an option-free bond is given in Figure 1.

The first term (from left to right) represents the reciprocal of the yield to maturity divided by the frequency of payment. The second term is the time-weighted present values of all cash flows. The third term is the present...
Figure 1: Modified duration for an option-free bond

\[
D = \frac{1}{(1 + y / t)^x} \left( \sum_i C_i \frac{F_i / (1 + r / t)^n - F_i / (1 + r / t)^{n-1}}{r(t-1)} \right) \left( \frac{1}{1 + r / t} \right) \left( \frac{1}{1 + r / t} \right)
\]

The duration of a depository's assets and liabilities can be accumulated to provide the duration of equity - the sensitivity of stockholder equity to changes in rates. The following balance sheet model summarizes the concept of duration of equity using assets \( A \), liabilities \( L \), and equity \( E \) as symbols.

\[ A = L + E \]

The duration of thrift assets may be defined as the weighted duration of liabilities and equity:

\[ D_A = \frac{L/A}{D_L} + \frac{E/A}{D_E} \]

Rearranging the equation in terms of the duration of equity:

\[ D_E = \left( D_A - \frac{L/A}{D_L} \right) / A/E \]

Duration of equity is affected by the market value of assets relative to the market value of liabilities, and by leverage. If the duration of equity is close to zero, then the market value of stockholder equity will not be significantly affected by shifts in interest rates.

**Simulation**

To more accurately gauge the effect on income of changes in interest rates, more data and computationally intensive techniques are needed. A computer simulation model can be constructed using detailed balances, repricing schedules, and associated rates and yields. Under a set of explicit assumptions, cash flows can be generated by simulating the repricing, maturity, rollover, and new business over a future span of time. Thus projected balance sheet (and off-balance sheet) activities can generate pseudo income statements (typically for 12 to 60 month future periods). Simulating base case income behavior with existing balances and yield curves, and then changing the yield curve and simulating how income would change, can give a good indication of the interest-sensitivity of income.

This level of analytical detail must be acquired at some cost. Hardware and software must be acquired, data feeds devised, analytical staff must be hired and trained, discrepancies between different financial reporting systems reconciled, and financial management reporting revamped. It turns out that some degree of stochastic simulation capability is necessary in any effort to measure interest rate risk. This is because some balance sheet items have variable effective maturities, options, and time dependent cash flows that do not lend themselves to deterministic closed form formulas and precise forecasts.

**REGULATORY APPROACHES**

Historically, thrift balance sheet structures have exhibited greater interest rate risk exposure than other intermediaries. It is understandable that thrift regulators have been in the forefront of regulating interest rate risk. In 1980, the Federal Home Loan Bank Board (predecessor of the Office of Thrift Supervision) implemented capital regulations permitting thrifts to receive a credit to their capital requirement for the amount of adjustable-rate mortgages in their portfolios. Additionally, the issuance of fixed-term liabilities with maturities of more than five years permitted a reduction in capital requirements.

In 1984, the Bank Board required thrifts to report quarterly their repricing balances and interest rates in Section H of their submitted regulatory reports. The Bank Board constructed a computer model to process the data and return gap reports to each institution. Managers of thrift institutions were required to report risk exposure assessments quarterly to their boards of directors. The boards, in turn, were required to review and adopt interest rate risk policies to guide managerial decisions.

In 1986, the Bank Board added a maturity matching credit to their capital requirements. By maintaining maturity gaps within prescribed limits, thrifts could receive up to a two percentage point deduction in their...
capital requirements.

In 1989, the Bank Board issued Thrift Bulletin 13, which provided guidance on the responsibilities of management and boards of directors regarding interest rate risk. Thrift interest rate exposures were to be measured by gauging the effect on the market value of portfolio equity and net interest income of interest rate shocks of plus and minus 100, 200, 300, and 400 basis points. These projections were made using analytical models meeting regulatory guidelines, and results were reported to boards of directors.

In response to the Basle Committee on Banking Supervision's "1988 Accord" on international risk-based capital standards for banks, and in response to the U.S. federal deposit insurance debacle that cost several hundred billion dollars, the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989 altered the regulatory landscape for all depository institutions. Greater emphasis is now placed on evaluating risk factors to prescribe capital requirements. Higher risk loans may still be booked, but higher capital requirements are to be set aside to support risky loans as compared to low-risk loans. Accordingly, limits and incentives are effected through risk-based capital guidelines imposed on thrift and banking institutions in stages through 1990-91. Higher base capital requirements (8 percent) are supplemented with incremental requirements that may be less than, or greater than, the base requirement - depending on credit risk.

In 1991, the Federal Financial Institutions Examination Council (FFIEC) issued guidelines identifying types of high-risk securities as unsuitable for depository institutions. If a derivative product fails any of the FFIEC high-risk security tests, it cannot be included in bank or thrift portfolios.³

### Table 1: Summary credit risk based capital guidelines

<table>
<thead>
<tr>
<th>Category</th>
<th>OCC</th>
<th>OTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash, US Treasuries, Ginnie Mae Securities</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Fannie Mae MBSs, Freddie Mac PCs</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Private MBSs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA, AA</td>
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<td>50</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Qualifying</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Non-qualifying</td>
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<td>100</td>
</tr>
<tr>
<td>CMOs backed by Agency MBSs</td>
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<td>20</td>
</tr>
<tr>
<td>Recourse sales / subordinated interests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodwill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deduct from assets and capital</td>
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<td></td>
</tr>
<tr>
<td>Deduct non-supervisory / supervisory goodwill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IOs/POs</td>
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<td>20</td>
</tr>
<tr>
<td>REO, Loans past due, equity risk investment</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
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### BASELINE CAPITAL REQUIREMENTS

Currently both the Office of the Comptroller of the Currency (OCC) for banks, and the Office of Thrift Supervision (OTS, for thrifts) have issued regulations requiring institutions to hold capital against credit risk of their portfolios. These requirements differ slightly as shown in Table 1.

Base capital/risk adjusted assets is 8 percent. If the risk-based requirement is 50 percent, then only 4 percent capital need be held against that asset class. If the risk-based requirement is 200 percent, then 16 percent capital is required to accommodate credit risk. This has important implications for the required spreads associated with different credit risk categories.

### BANK INTEREST RATE RISK REGULATION

Under the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991, the U.S. banking agencies were to develop regulations for measuring and monitoring interest rate risk for risk-based capital guidelines. In September 1993, the OCC, Treasury, Board of Governors of the Federal Reserve System (Fed), and the Federal Deposit Insurance Corporation (FDIC) jointly issued a proposed rule on interest rate risk regulation.

The proposed interest rate risk reporting schedule asks that banks classify balance sheet items by type of security, and by remaining term to maturity repricing. There are seven time bands, and classifications of assets based upon each instrument's cash flow characteristics. No coupon or rate information is collected, only outstanding principal balances.

For example, the maturity and repricing data on assets would include securities, loans and leases, and other interest-bearing assets classified by their time to repricing: 0 to 3 months, > 3 months and 1 year, > 1 year and 3 years, > 3 years and 5 years, > 5 years and 10 years, > 10 and 20...
years, >20 years. Liabilities including transactions accounts, time deposits, and certificates of deposit, are also spread across time buckets under rising rate and declining rate assumptions. Non-maturity deposits are distributed across time bands, subject to certain guidelines. The notional principal amounts of off-balance-sheet positions (such as swaps, futures, options, caps, and floors) are also included based upon the general characteristics of categorical types of derivatives. The estimation of interest sensitivity of off-balance-sheet items is also requested of banks using their own internal models. Trading account positions are reported separately across time bands.

Using stated assumptions about rates, amortization, and prepayment rates based on a 200 basis point parallel shift in interest rates, an estimated percentage change in the value of each instrument is calculated to arrive at "risk weights." Multiplying the risk weights times the reported positions produces the estimated change in the present value of balance sheet and off-balance-sheet positions. The sum of the estimated changes provides a crude estimate of the institution's overall interest rate risk. Two estimates based upon +200 and -200 basis point shifts are calculated. The larger loss (decline in net economic value) is taken as the institution's exposure.

Institutions are required to hold additional capital equal to their "excess exposure." Excess exposure is defined to be the dollar exposure that exceeds 1 percent of assets.

The final rule for thrifts supervised by OTS was published on September 8, 1993, effective July 1, 1994 based upon data reported year end 1993. As of mid-1994, no inter-agency action has been taken to promulgate a final rule on interest rate risk for banks. The banking agencies are attempting to coordinate their regulations with international proposals, while seeking pragmatic solutions to reporting and modeling logistics.

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<th>THRIFT INTEREST RATE RISK REGULATION</th>
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The OTS measures the interest rate risk (IRR) facing a thrift institution by the sensitivity of its Net Portfolio Value (NPV) to changes in interest rates. The OTS uses Schedule CMR financial data of the Thrift Financial Report, which includes maturity or repricing intervals, balances or notional principal amounts, and interest rate data for balance-sheet and off-balance-sheet items. A thrift association's interest rate risk exposure is measured as the change that occurs in the NPV as a result of a 200 basis point shock in interest rates, divided by the estimated value of its assets. Only institutions with measured interest rate risk in excess of 2 percent of assets will be required to maintain incremental interest rate risk capital. The amount of extra capital required is one-half of the measured IRR, times the present value of assets in the base case. This amount is deducted from total capital before computation of the 8 percent risk-based capital requirement (based upon credit risk, as outlined above).

Expressed in equations, the OTS requirement may be stated:

\[
	ext{IRR} = \frac{\text{NPV}_{\text{base}} \cdot \min(\text{NPV}_{200})}{\text{PV of Assets}_{\text{base}}}
\]

Suppose that an institution has an estimated PV of assets of $100 million. If the NPV of portfolio equity in the base case is $10 million, and in the +200 basis points case the NPV is $12 million, and in the -200 basis points case it is $7 million, then interest rate risk is measured:

\[
\text{IRR} = \frac{($10 - $7)}{$100} = 0.03 \text{ or 3%}
\]

The amount of capital to be deducted from total capital prior to calculating risk-based capital adequacy is one-half of the difference between IRR and the 2 percent "normal" level, times the present value of assets:

IRR Capital = 1/2 x (0.03 - 0.02) x $100 = $0.5 million

Thus, $0.5 million would be deducted from total capital before meeting the 8 percent of risk weighted assets capital requirement.

The objectives of the interest rate risk component of the capital requirements are to:

- Make capital requirements sensitive to differences in interest rate risk exposure. For example, the thrift that funds 30-year, fixed-rate mortgages with 6-month CDs has more interest rate risk than a thrift that has a portfolio of adjustable-rate loans funded with deposits. The thrift with more risk will be required to have more capital.
- Discourage savings institutions from undertaking excessive risk by making such behavior more costly. For example, the spread of fixed-rate mortgage rates over short-term deposit costs might be 300 basis points, generating high near-term earnings. The incremental cost of the capital associated with the higher risk asset reduces the effective spread of the risky position.
- Finally, the interest rate risk component of the risk-based capital requirements reduces the exposure of the deposit insurance fund and protects taxpayer interests. By imposing a market-like discipline, the OTS is fostering increased overall safety and soundness, and probable overall gains in economic efficiency.

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<th>OBJECTIONS AND COMMENTS</th>
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Questions were posed in comment letters concerning the methodology used in the OTS approach, the answers to which are highlighted here. The 200 basis point interest rate shock to the zero coupon Treasury curve was selected because it is consistent with the historical standard deviation of annualized interest rate moves. The 200 basis point shift is large enough to bring the option characteristics of
mortgage-related assets (i.e., the refinance threshold) into play. Parallel shifts in the yield curve permit straightforward estimations and reduced complexity, which facilitates projection of capital needs. An instantaneous "shock" is preferred because of simplicity, and because it represents the worst-case evolution of interest rate movements.

One of the complexities in addressing interest rate risk is the optionality imbedded in mortgage instruments. Option-based models are designed to value bond and complex options features by taking into account interest rate volatility. The OTS model uses interest rate simulation to generate numerous interest rate paths, which in conjunction with prepayment models and descriptors of loan features, are used to generate mortgage cash flows along each path. The averaged discounted cash flows are used to estimate a market price for base and shock scenarios.

Prepayment submodels of mortgage instruments are based upon national prepayment rate data. Geographic or institutional variations are not considered. Off-balance-sheet servicing rights are included in the NPV calculations along with purchased and excess loan servicing assets. Economic value was selected in preference to the accounting treatment for servicing, the latter being deemed to be irrelevant for this purpose.

For core deposits that have no scheduled maturity, such as passbook accounts, money market deposit accounts, and transactions accounts, the OTS has decided to use uniform industry decay rate assumptions. This will continue until OTS determines that institution-specific data may be used to estimate individual decay rates.

The duration of equity securities is assumed to be 4.5 years based upon limited interest rate sensitivity analyses. Because equity security investments are a small part of thrift portfolios, this assumption is not expected to have a material impact on the NPV of portfolios.

Secondary market certificate of deposit rates are used to discount cash flows associated with deposits. For discounting the cash outflows of other thrift liabilities, the OTS uses the London Interbank Offered Rate (LIBOR).

As is apparent, there are many issues associated with the volume of input data and the complexity of the analytical modeling needed to assess interest rate risk. Analytically intensive measures of interest rate risk may be justified by the potentially greater risk inherent in long-term mortgage lending that dominates thrift portfolios. The banking agency approach is less complex and requires less data input, thereby lessening the reporting burden of commercial banks. Reconciliation of the two approaches may occur when the banking agencies finalize their interest rate regulations, or when the OTS is merged into a consolidated banking agency as currently proposed by the Treasury Department.

**DIFFERENCES BETWEEN THRIFT AND BANK AGENCY MODELS**

The jointly proposed bank agency model for identifying interest rate risk is simple, pragmatic, and widely criticized. Inaccurate indications of interest rate risk exposure will not protect the FDIC. Lower data requirements and analytical approximations diminish the regulatory burden, however.

The OTS model requires detailed rate and maturity data and utilizes much more sophisticated option-adjusted spread methodologies to value option-laden financial instruments. The regulatory burden is such that OTS has exempted institutions that have more than 12 percent risk-based capital and assets under $300 million from reporting and interest rate risk capital component requirements. OTS estimated that more than 1,100 institutions, out of a total of about 1,900 institutions, were exempt based on 1993 data. Despite this, approximately three-fourths of exempt institutions voluntarily completed schedule CMR data forms in order to receive OTS interest rate risk reports summarizing their exposure.

Research conducted at OTS suggests that the banking model provides a superior guide for identifying high interest rate risk thresholds. Of 306 thrifts identified as requiring more capital under the OTS regulations, 131 would be identified as low risk under the banking agency model (43 percent of the total). The analytical weaknesses of the banking agency model has led to serious consideration of abandoning the banking model altogether in favor of information-intensive, sophisticated internal models meeting formal agency or FFIEC certification. Although on-site internal models would no doubt be preferred by most commercial banks, there remains the question of whether examiners could be comfortable with "black box" modeling results.

Banking agencies are also concerned about the international playing field. The Bank for International Settlements proposal on monitoring interest rate risk is not compatible with either the bank or the OTS approach. The Basle Committee's market risk proposals emphasize gross and net positions weighted to measure a bank's exposure to interest rates, equity prices, and exchange rate risk. Minimum capital is taken as a percentage of the weighted exposure. The proposals are simple, practical, and will probably require testing and refinement for some time before they can be evaluated or implemented.

**INTERNATIONAL INTEREST RATE RISK REGULATORY PROPOSALS**

In April 1993, the Basle Committee released draft proposals covering so-called "market risks." These risks encompass potential losses due to changes in market values of traded debt securities due to changes in interest rates, changes in equity values held directly by banks or in affiliates, and changes in the values of assets and liabilities due to exchange rates. Although balance sheet and off-balance sheet
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exposures are estimated, major components, such as loans and deposits, are omitted. The Basle committee’s proposed standards are to apply internationally.

The Basle committee’s market risk proposals emphasize gross and net positions weighted to measure a bank’s exposure to interest rate, equity price and exchange rate risks. For interest rate risk, banks would be required to report net long or short positions in thirteen different repricing periods (time periods). The thirteen time bands are further grouped into three zones: short, medium- and long-term. Each time band has duration weights for interest rate sensitivity. Additionally, each position has a risk weight to account for interest rate volatility and a factor for the capital coverage desired. Netting occurs within time bands, then across bands within the maturity zones and finally across the zones. “Disallowance factors” weight the nettings, apparently based upon correlated interest rate changes across the term structure.

As previously discussed, federal regulators in the United States have proposed a somewhat different approach to measuring interest rate risk for capital determination. The Basle committee proposal on monitoring interest rate risk appears to be at variance with the bank regulators’ approach and incompatible with the OTS approach. While the Basle proposals seem workable, they will probably require testing and refinement before they can be evaluated and implemented in the U.S. The banking agencies are very much concerned about the impact of these regulations on the “levelness” of the international financial market playing field.

The reaction of the U.S. banking agency regulators has been one of “back to the drawing board”. The proposed interest rate risk regulation issued jointly by the Fed, Treasury, OCC and the FDIC for comment is reportedly under substantial revision and will not reappear until early 1995. The final form of the market risk standards will be the result of international negotiation and agreement. Institutional difference in banking institutions, differing regulatory structures and concerns, and interindustry competitive effects involving other types of financial firms add to the challenge of reaching an international consensus.

CONCLUSION

Arguably, the risk-based capital requirements that differentiate among institutions that have lesser or greater risk exposures impose a “market-like” discipline on deposit institutions. If the new capital requirements are constraining, deposit intermediaries may find some segments of the mortgage market to be unprofitable. This may give further impetus to the momentous changes in the primary and secondary mortgage markets that have occurred over the past decade. Measuring and monitoring the risks facing banks and thrifts will also greatly diminish the probability of failures of deposit institutions and the necessity of taxpayer bailouts of the federal deposit insurers.

NOTES


2 Ibid., pp. 189-213.

3 A high-risk security fails one or more of the following tests: 1. The mortgage derivative product has an average weighted life greater than 10 years. 2. The expected weighted average life of the product: a. Extends by more than four years, assuming an immediate and sustained parallel shift in the yield curve of +300 basis points. b. Shortens by more than six years, assuming an immediate and sustained parallel shift in the yield curve of -300 basis points. 2. The estimated change in price is more than 17 percent, due to an immediate and sustained parallel shift in the yield curve of ±300 basis points.


6 Basle Committee. The Supervisory Treatment of Market Risks: Consultative Proposal by the Basle Committee on Banking Supervision, April 1993.