Research Department
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FRBSF Weekly Letter

Market Value—Part I

Financial institutions like other businesses traditionally have employed accounting methods based on historical costs. The use of historical cost has been defended on grounds of being verifiable, objective, and conservative. Transactions enter the books when they are made, and assets are kept at their stated book values until they are sold. Thus, changes in wealth are recorded in the current period only if there is a cash flow transaction that results in a realized gain or loss. Although historical cost accounting may provide an objective measure of *current* cash flow, it does not provide a reliable picture of potential cash flows beyond the accounting period, and hence, of current wealth or the economic value of the firm.

Inflation and relative price changes, especially as they are reflected in interest rates, can alter the market values of assets and liabilities substantially without affecting their book values. Financial institutions make loan and deposit contracts that often extend far into the future. Depending on the extent to which these contracts are fixed in nominal dollars and are not hedged one against another, the net worth of the financial institution will be affected by unexpected changes in market interest rates. But, with historical cost accounting, such changes in net worth go unrecorded until the capital gains and losses are realized. Thus, historical cost accounting ignores all but the currently realized portion of wealth effects.

An outmoded system

Is our accounting system so outmoded that financial statements are of limited use to decision-makers? Proponents of historical cost methods argue that with supplementary information an informed person can make the adjustments necessary to make intelligent use of such statements. In many industries they may be correct. However, the recent plight of the thrift institutions, mutual savings banks, and some commercial banks —and the wide divergences between book values and market values of their equities— suggest that investors and regulators are not well served by historical cost accounting. As a supplement, market (current) value accounting must be explored as a method of assessing the true net worth of an institution.

Persistent inflation during the 1970s raised strong doubts about the meaning of conventional historical-cost financial statements for both financial and nonfinancial corporations. In 1974, the Securities Exchange Commission began to require that certain firms provide replacement cost (i.e., inflation-adjusted) data for some non-monetary assets. But the early reporting requirements were sketchy and the rules did not apply to financial institutions.

In 1979, the Financial Accounting Standards Board (FASB) issued FAS #33 which required all large, publicly-held firms to provide supplemental statements in their annual reports to show the effects of inflation on the firm. Although over 250 large banks and S&Ls were required to comply with FAS #33, the ruling was not well suited to financial institutions. Broadly speaking, it required that net assets be adjusted for changes in the purchasing power of the dollar. Such an adjustment is a far cry from adjusting for changes in the market value of a financial institution's net worth, which depends primarily on changes in the present value of nominal contracts due to (previously unanticipated) changes in interest rates (interest rate risk) and to changes in the probability of repayment (default risk).

Concepts

Market value accounting in principle requires that all assets and liabilities be recorded at their *present values*, i.e., the worth that the market would place on the expected cash flows associated with these

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financial claims. These present values may differ from those anticipated when the contracts were struck at then-current interest rates and assessments of default risk—the basis of the historical costs of the assets and liabilities. The institution's resultant market-value net worth is then the difference between the aggregate market values of its assets and liabilities.

To appreciate the importance of market value accounting, one must see how a change in open-market interest rates affects the present values of fixed-rate loan and deposit contracts and how these interact to alter the net worth of the institution. Suppose an institution makes a 5-year loan of $100 at 10 percent annual compound interest. (The borrower contracts to pay five end-of-year $10 payments and repay the $100 principal at the end of the fifth year.) If loan rates were to rise to 12 percent soon after the 10-percent contract were made, the present (market) value of the loan would decline from $100 to approximately $93 (the present value at a 12 percent discount rate of five end-of-year $10 payments and return of $100 principal). The example illustrates how market value accounting, in concept, provides a balance sheet that reflects the present value of future claims and cash flows.

With the rise in open-market loan rates to 12 percent, the above loan contract would reduce the present-value net worth of the institution by $7. Of course, the institution might have hedged this risk partly or fully by locking in deposits at *fixed-rate* contracts. The same rise in open-market interest rates would also lower the present value of deposit contracts. Since these contracts are *liabilities* to the institution, their declines in present value would tend to offset the effect of declining *asset* present values, thereby mitigating the net effect on present-value net worth. For example, the 5-year loan might have been financed by a 3-year, 10-percent fixed-rate deposit of $100. The same rise in open-market rates to 12 percent would cause the deposit's present value to decline from $100 to $95. The net effect of present value declines of $7 for the loan and $5 for the deposit would be a $2 reduction in the net worth of the bank.

With historical cost (book value) accounting, the effect of the rise in interest rates would not be apparent at all in the above example until the fourth and fifth years. In the fourth year, the institution would have to refinance its deposit liability at the higher 12-percent interest rate. It therefore would suffer a net *loss* of $2 on this part of its portfolio—$10 income from the loan versus $12 now in interest cost. This loss would reduce the net worth of the institution. The strength of market value accounting is that it reveals the effect of a deterioration in future earnings on net worth *before* it occurs. The present values of forecasted income effects show up in the current period as unrealized income, i.e., implied capital gains/losses.

Market value accounting requires a forecast of interest rates and uncertain cash flows such as loan prepayments, deposit withdrawals and defaults. The current term structure of interest rates contains the market's forecast of interest rates. But estimating loan prepayments, withdrawals, or defaults raises difficult conceptual and practical issues. Despite these problems, stockholders and potential purchasers of institutions must perform at least a rough measure of current value accounting in order to assess the market value of net worth. The fact that

market values of equities diverge widely from book values for financial institutions gives some indication of the fact that stockholders implicitly perform market value accounting. (Other factors, such as deposit insurance and possible government bailouts, also affect equity prices.)

In concept, market value accounting is relatively simple. In its purest form, assets and liabilities are "marked to market" by estimating their current present values, and the implied capital gains/losses are charged against current income and net worth (capital) *in the current accounting period.* In a less pure form, implicit capital gains/losses on classes of assets and liabilities would be amortized over the stated maturities of the contracts. Thus, current income and net worth would reflect the amortized portions of past and current unrealized capital gains/losses.

Proposals

The thrift and banking industries and their regulators have called for a host of creative "mark-to-market" proposals. Although the concepts of market valuation are borrowed from market value accounting, proposed adjustments (i.e., amortization schemes) applied to earnings and capital range from the fairly straightforward to the bizarre. While the pure concept of market value accounting would require that implied capital losses be charged against earnings in the current period, some proposals have recommended charging such losses against "asset restructuring" or "goodwill" accounts, taking as long as 40 years to charge them against capital earnings!

Last fall, the Federal Home Loan Bank Board proposed a variation on market value accounting that contained provisions like those mentioned above to prevent unrealized capital losses from erasing current earnings and net worth. Even with such concessions, adverse reaction from the S&L industry forced the regulator first to modify and then to shelve the plan. While the industry regarded the proposal as overly strict, the accounting profession claimed it was not sufficiently strict to adhere to the principles of market value accounting.

Some form of market value accounting for S&Ls and banks will come eventually because volatile interest rates make market value estimates a necessity. Lower interest rates would render its introduction more palatable to the financial industry, although interest-rate volatility would impart large swings to market-value earnings and net worth even in a low interest-rate environment. Meanwhile, the recent former Chairman of the Federal Home Loan Bank Board is still hopeful for a mark-to-market accounting scheme, while the Chairman of the FDIC and the Comptroller of the Currency are also sympathetic to its implementation.

This support of federal regulators for market value accounting reflects their concern for greater disclosure on sensitivity to changes in interest rates as well as problem loans. Market value accounting would also be one way of providing the information needed to institute a system of variable-rate deposit insurance based on sensitivity to interest-rate changes.

Next week, Part II of this *Letter* will address the drawbacks of market value accounting and evaluate the effects of recent interest-rate swings on S&L net worth.

Jack Beebe and Matthew Blank

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 4/27/83	Change from 4/20/83	Change from year ago Dollar	Change from year ago Percent
Loans (gross, adjusted) and investments*	163,735	− 814	4,254	2.7
Loans (gross, adjusted) — total#	142,278	− 864	3,728	2.7
Commercial and industrial	45,240	261	2,374	5.5
Real estate	56,880	− 196	− 259	− 0.5
Loans to individuals	23,634	25	244	1.0
Securities loans	2,674	− 370	328	14.0
U.S. Treasury securities*	8,093	− 34	2,079	34.6
Other securities*	13,363	85	− 1,554	− 10.4
Demand deposits — total#	39,221	−2,308	1,968	5.3
Demand deposits — adjusted	28,212	− 671	1,477	5.5
Savings deposits — total†	64,990	−1,044	34,606	113.9
Time deposits — total#	66,662	− 259	− 25,298	− 27.5
Individuals, part. & corp.	59,617	− 285	− 22,942	− 27.8
(Large negotiable CD's)	19,761	− 420	− 14,125	− 41.7

Weekly Averages of Daily Figures	Week ended 4/27/83	Week ended 4/20/83	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (−)	95	62	102
Borrowings	135	12	105
Net free reserves (+)/Net borrowed(−)	− 40	50	− 3

* Excludes trading account securities.
\# Includes items not shown separately.
† Includes Money Market Deposit Accounts, Super-NOW accounts, and NOW accounts.

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