

The method for calculating the financing and equity costs in the PSAF requires determining the appropriate levels of debt and equity to impute and then applying the applicable financing rates. This process requires developing a pro forma priced services balance sheet using actual Reserve Bank assets and liabilities associated with priced services and imputing the remaining elements that would exist if the Reserve Banks' priced services were provided by a private-sector business firm.

The amount of the Reserve Banks' assets that will be used to provide priced services during the coming year is determined using Reserve Bank information on actual assets and projected disposals and acquisitions. The priced portion of mixed-use assets is determined based on the allocation of the related depreciation expense. The priced portion of actual Reserve Bank liabilities consists of balances held by Reserve Banks for clearing priced services transactions (clearing balances), estimated based on historical data, and other liabilities such as accounts payable and accrued expenses.

Long-term debt is imputed only when core clearing balances and long-term liabilities are not sufficient to fund long-term assets or if the interest rate risk sensitivity analysis indicates that estimated risk will exceed a change in cost recovery of more than two percentage points.¹⁵ Short-term debt is imputed only when short-term liabilities and clearing balances not used to fund long-term assets, together, are not sufficient to fund short-term assets. Equity is imputed to meet the FDIC definition of a well-capitalized institution, which is currently 5 percent of total assets and 10 percent of risk-weighted assets.

1. *Financing Rates*—Equity financing rates are based on the average of the return on equity (ROE) results of three economic models using data from the BHC model.¹⁶ For simplicity, given that

average spread of 35 basis points over the three-month Treasury bill rate, applied to the clearing balance levels and rate assumptions used in the 2004 pricing process, NICB is projected to be \$52.7 million.

¹⁵ A portion of clearing balances is used as a funding source for priced services assets. Long-term assets are partially funded from core clearing balances, currently \$4 billion. Core clearing balances are considered the portion of the balances that has remained stable over time without regard to the magnitude of actual clearing balances. The PSAF methodology includes an analysis of interest rate risk sensitivity, which compares rate-sensitive assets with rate-sensitive liabilities and measures the effect on cost recovery of a change in interest rates of up to 200 basis points.

¹⁶ The pre-tax return on equity (ROE) is determined using the results of the comparable accounting earnings model (CAE), the discounted

federal corporate tax rates are graduated, state tax rates vary, and various credits and deductions can apply, a specific tax rate is not calculated for Reserve Bank priced services. Instead, the use of a pre-tax ROE captures imputed taxes. The resulting ROE influences the dollar level of the PSAF and Federal Reserve price levels because this is the return a shareholder would expect in order to invest in a private business firm. The use of the pre-tax ROE assumes 100 percent recovery of expenses, including the targeted ROE. The recommended PSAF is, therefore, based on a matching of revenues with actual and imputed costs and imputed profits. Should the pre-tax earnings be less than the targeted ROE, as projected, imputed expenses would be adjusted for the tax savings associated with the adjusted recovery. The imputed tax rate is the median of the rates paid by the BHCs over the past five years adjusted to the extent that BHCs have invested in municipal bonds.

2. *Other Costs*—The PSAF also includes the estimated priced services-related expenses of the Board of Governors and imputed sales taxes based on Reserve Bank expenses. An assessment for FDIC insurance, when required, is imputed based on current FDIC rates and projected clearing balances held with the Federal Reserve.

B. *Discussion*—The increase in the 2004 PSAF is primarily due to a significant increase in clearing balances on which investments are imputed and the resulting increase in total assets. Because required imputed equity is based on five percent of total assets, priced services equity and cost of equity increased.

1. *Asset Base*—The total estimated cost of Federal Reserve assets to be used in providing priced services is reflected in table 14. Total assets have increased \$1,704.6 million, or 11.0 percent from 2003. Growth of \$1,283.0 million in imputed investments, growth of \$131.8 million in imputed reserve requirements, which are based on the level of clearing balances, and an increase of \$308.4 million in cash items in process of collection explains the majority of this increase. As shown in table 15, the assets financed through the PSAF have decreased, primarily due to the decrease in prepaid pension costs.

cash-flow model (DCF), and the capital asset pricing model (CAPM). Within the CAPM and DCF models, the ROE is weighted based on market capitalization, and within the CAE model, the ROE calculation is equally weighted. The results of the three models are averaged to impute the PSAF pre-tax ROE. When needed, to impute short- and long-term debt, the debt rates are derived based on the short-term debt and long-term debt elements in the BHC model.

Short-term assets funded with short-term payables and clearing balances total \$102.0 million. This amount represents a decrease of \$1.8 million, or 1.7 percent, from the short-term assets funded in 2003. Long-term assets funded with long-term liabilities, equity, and core clearing balances are projected to total \$1,520.6 million. This amount represents a decrease of \$16.8 million, or 1.1 percent, from the long-term assets funded in 2003. A decrease of \$17.8 million in prepaid pension costs explains the majority of the decrease. The decrease of \$15.0 million in furniture and equipment is offset by an increase in bank premises and leasehold improvements and long-term prepayments of \$3.9 million and \$12.1 million, respectively.

2. *Debt and Equity Costs and Taxes*—As previously mentioned, core clearing balances are available as a funding source for priced services assets. Table 15 shows that \$407.2 million in clearing balances are used to fund priced services assets in 2004. The interest rate sensitivity analysis in table 16 indicates that the ratio of rate-sensitive assets to rate-sensitive liabilities and the effect on cost recovery of an increase in interest rates of 200 basis points produces a decrease in cost recovery of 1.3 percentage points. The established threshold for change to cost recovery is two percentage points; therefore, interest rate risk associated with using these balances is within acceptable levels and no long-term debt is imputed.

Table 17 shows the imputed PSAF elements, the pre-tax ROE, and other required PSAF recoveries for 2003 and proposed for 2004. The significant increase in clearing balances from which the investments are imputed increases total assets. An increase in total assets, and the resulting increase in imputed equity, increases targeted ROE. Although the pre-tax ROE rate decreased from 19.4 percent for 2003 to 18.6 percent for 2004, with increased imputed equity, the pre-tax ROE increased \$9.6 million. As indicated previously, the pre-tax ROE is calculated using the combined results of three models. The effective tax rate used in 2004 also decreased to 29.8 percent from 30.4 percent in 2003. Sales taxes decreased \$2.8 million from \$14.8 million in 2003 to \$12.0 million in 2004. Offsetting this is a \$1.2 million increase in Board of Governors expenses.

3. *Capital Adequacy and FDIC Assessment*—As shown in table 14, the amount of equity imputed for the proposed 2004 PSAF is \$860.8 million, an increase of \$85.2 million from imputed equity of \$775.6 million in