

investment return is imputed for cost-recovery measurement purposes for the pricing year. Imputing the return under the actual return method requires applying the investment yields during the pricing year to the imputed investments. The constant annual spread method, however, simplifies the process during the year by applying the historical ten-year average portfolio spread over the current three-month Treasury bill rate.²⁶

2. Imputing the Actual Return

The data in the table show the results of selecting an optimized portfolio for

each year as described above and imputing the return as if the portfolio were held during that year.²⁷ The investments were chosen to optimize the return while placing a 35 basis point constraint on the standard deviation of the spread. Over the ten-year period, the asset mix is composed primarily of commercial paper or one-year Treasury notes and money market mutual funds. When holding clearing balance levels constant as in this example, fluctuations experienced using the actual return method reflect both variance in the Treasury bill rate and variance in the

spread between the portfolio yield and the Treasury bill rate. The actual standard deviation associated with the actual return method over the ten-year period is greater than the 23 basis point standard deviation associated with the current imputed investment method. The actual standard deviation of the portfolio spreads is also greater than the 35 basis point standard deviation applied to select each year's optimum portfolio. The ten-year average NICB generated in this example would have been \$106.4 million with a standard deviation of \$42.2 million.

Actual return method		
Year	Spread over 3-month T-bill	NICB (millions)
1993	0.29	\$78.4
1994	-0.19	43.1
1995	0.60	152.3
1996	0.18	101.2
1997	0.67	151.4
1998	0.37	118.4
1999	-0.37	35.4
2000	0.35	129.2
2001	0.44	111.7
2002	1.12	142.6
Average 10-year	0.35	106.4
Standard deviation 10-year	0.42	\$42.2

3. Imputing the Constant Annual Spread

During the development of this proposal, the Federal Reserve met with a group of representatives from banks, corporate credit unions, and their trade associations to obtain information about institution investment practices.²⁸ These representatives observed that construction of a risk-management framework and hypothetical portfolio appeared unduly complex for imputing income from hypothetical investments and suggested that a constant basis point calculation could be simpler and provide similar results. They suggested that the NICB calculation impute investment income based on a clearing balance investment yield expressed as a constant spread over the rate used to determine the clearing balance cost of funds. The representatives observed that this approach might be easier to understand, administer, and monitor.

Using a constant spread over the three-month Treasury bill rate to impute the income from investing clearing balances would, by definition, not reflect the actual variability within the year between the investment rate of return and the Treasury bill rate that would occur with the actual return method. Although investment income imputed using a constant annual spread would vary with fluctuations in the three-month Treasury bill rate, finance theory suggests that a discount to the constant annual rate might be required to earn the consistency during the year that is produced by a constant spread method.

Unfortunately, historical mutual fund data needed to calculate NICB under the constant annual spread method are not available.²⁹ Conceptually, however, the averaging of the basis-point spreads in the constant annual spread method will reduce the basis-point fluctuations that otherwise would have occurred.

Removing the fluctuations in the return related to the actual variability between the investment yield rate of return and the Treasury bill rate that would occur with the actual return method generates a higher return in some years than would have been experienced with the actual return method and a lower return in others.

Both commenters preferred the actual return method over the constant annual spread method. The commenters noted that the actual return method is more transparent and more representative of BHC practices. One commenter stated that the need to demonstrate that the constant annual spread would be achievable with the actual portfolio would result in the same level of effort as the actual return method.

The Board agrees with the industry representatives that the constant annual spread method reduces some complexity associated with the imputation process during the pricing

²⁶ A calculation of the optimized portfolio return will still be necessary, however, to factor into future pricing-years' constant annual spread.

²⁷ To eliminate fluctuations in implementation method results related to changes in clearing balances in the table, all clearing balance amounts are held constant throughout the analysis period. To construct the optimized portfolio, balances are held at the levels estimated for 2002 price-setting;

investable balances are \$5.473 million and balances on which earnings credits are paid are \$5.892 million. To impute the results for each year, the balances are held at the 2004 level; investable balances are \$10.302 million and balances on which earnings credits are paid are \$9,711.

²⁸ The advisory group included participants from the American Bankers Association, the Independent

Community Bankers of America, and the Association of Corporate Credit Unions.

²⁹ In order to model the results that the constant annual spread method would have produced for years prior to 2004, returns for years prior to 1993 would need to be simulated. Those simulated portfolios would, in turn, be based on optimum portfolios that include years prior to 1983, the earliest year for which required data are available.