

# FEDERAL RESERVE SYSTEM

[Docket No. R-1152]

## Federal Reserve Bank Services

### Imputed Investment Income on Clearing Balances

**AGENCY:** Board of Governors of the Federal Reserve System.

**ACTION:** Notice with request for comments.

**SUMMARY:** The Board requests comment on a proposal to modify the method for imputing priced-service income from clearing balance investments. The Federal Reserve Banks impute this income when setting fees and measuring actual cost recovery each year.

Specifically, the Board requests comment on a proposal to impute the income from its clearing balance investments on the basis of a broader portfolio of investment instruments than used today, selected from instruments available to banks and subject to a portfolio management framework. Selection of the portfolio mix would be subject to a risk-management framework that includes criteria consistent with those used by bank holding companies and regulators in evaluating investment risk. The Board also requests comment on two different implementation methods for imputing this investment income.

This proposal focuses on the imputed investment of clearing balances; it would not change the terms or conditions under which depository institutions hold clearing balances. If adopted, the changes would be effective for the 2004 fees for Federal Reserve priced services.

**DATES:** Comments must be submitted on or before July 14, 2003.

**ADDRESSES:** Comments, which should refer to Docket No. R-1152, may be mailed to Ms. Jennifer J. Johnson, Secretary, Board of Governors of the Federal Reserve System, 20<sup>th</sup> and C Streets, NW, Washington, DC 20551. However, because paper mail in the Washington area and at the Board of Governors is subject to delay, please consider submitting your comments by e-mail to [regs.comments@federalreserve.gov](mailto:regs.comments@federalreserve.gov) or faxing them to the Office of the Secretary at 202/452-3819 or 202/452-3102. Members of the public may inspect comments in Room MP-500 between 9 a.m. and 5 p.m. weekdays, pursuant to § 261.12, except as provided in § 261.14 of the Board's Rules Regarding Availability of Information, 12 CFR 261.12 and 261.14.

**FOR FUTURE INFORMATION CONTACT:** Gregory L. Evans, Manager (202/452-3945) or Brenda L. Richards, Sr. Financial Analyst (202/452-2753); Division of Reserve

Bank Operations and Payment Systems. Telecommunications Device for the Deaf (TDD) users may contact 202/263-4869.

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

The Monetary Control Act (MCA) requires Federal Reserve Banks to establish fees for “priced services” provided to depository institutions at a level necessary to recover, over the long run, all direct and indirect costs actually incurred and imputed costs.<sup>1 2</sup> In addition, the Reserve Banks impute a priced services return on capital (profit).<sup>3</sup> The imputed costs and imputed profit are collectively referred to as the private-sector adjustment factor (PSAF). Just as the PSAF is used to impute costs that would have been incurred and profits that would have been earned had services been provided by a private business firm rather than the central bank, the Reserve Banks impute income that would have been earned on the investment of clearing balances customers hold with the Reserve Banks had those balances been held by a private business firm. This imputed income, less the costs associated with the clearing balances, is referred to as the net income on clearing balances (NICB).

Since 2002, the imputed elements of the Reserve Bank pricing process reflected in the PSAF and NICB calculations have become more integrated. For example, by using a small portion of the investable clearing balances as a financing source for the assets used in the delivery of priced services, the financing costs embedded in the PSAF are reduced. This proposal extends the review of the key features of the methods for computing the imputed elements.

Calculating the PSAF includes projecting the level of priced-services assets, determining the financing mix used to fund the assets, and the rates used to impute financing costs.<sup>4</sup> Much of the data for the PSAF are developed from the “bank holding company (BHC) model,” a model that contains consolidated financial data for the nation’s fifty largest (based on deposit balances) BHCs.<sup>5</sup> As part of this process, a core

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<sup>1</sup> Priced services include primarily check, automated clearinghouse, Fedwire funds transfer, and Fedwire securities services.

<sup>2</sup> Imputed costs include financing costs, taxes, and certain other expenses that would be incurred if a private business firm provided the services.

<sup>3</sup> The return on capital is imputed using the average of the results of three economic models, the comparable accounting earnings model, the discounted cash-flow model, and the capital asset pricing model.

<sup>4</sup> Equity is imputed based on the Federal Deposit Insurance Corporation’s (FDIC) definition of a “well-capitalized” institution for insurance premium purposes.

<sup>5</sup> The top fifty BHCs are used as the data peer group as they are considered to be the private-sector providers of services most analogous to the Reserve Bank priced-services activities.

amount of clearing balances is considered stable and available to finance long-term assets.<sup>6</sup>

The method for deriving the NICB is reviewed periodically to ensure that it is still appropriate in light of changes that may have occurred in Reserve Bank priced services activities, accounting standards, finance theory, regulatory practices, and banking activity.<sup>7</sup> The current methodology for imputing investment income assumes that the Reserve Banks invest all clearing balances, net of imputed reserve requirements and the amount necessary to finance long-term assets, in three-month Treasury bills. The imputed income on the Treasury-bill investments net of the actual earnings credits granted to clearing balance holders based on the federal funds rate is considered income or expense for priced-services activities. The net income associated with clearing balances is one component in pricing decisions and in evaluating cost recovery.

### **A. Clearing balances**

Depository institutions may hold both reserve and clearing balances with the Federal Reserve Banks.<sup>8</sup> Reserve balances are held pursuant to a regulatory requirement and are not a result of an institution's use of priced services.<sup>9</sup> Clearing balances were introduced when Reserve Banks implemented the MCA of 1980, which required the Federal Reserve to price its payment services and broadened direct access to those services to include institutions that previously did not have a Federal Reserve balance requirement. Clearing balances are held to settle transactions arising from use of Federal Reserve priced services for institutions that either do not hold reserve balances or find their reserve balances inadequate to settle their transactions. At year-end 2002, depository institutions held more than \$10 billion in clearing balances at Reserve Banks.

Clearing balances held at Reserve Banks are similar to compensating balances held by respondent banks at correspondent banks. Respondent banks hold compensating balances to support the settlement of payments, as well as for other purposes. Reserve Banks and some correspondent banks establish a contractual balance level that the account holder must maintain on average over a specified period. Both Reserve Banks and correspondent banks provide compensation in the form of earnings

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<sup>6</sup> The Board classified clearing balances of \$4 billion as core beginning with the 2002 price-setting. Core balances have not fallen below \$4 billion since 1992. (66 FR 52617, October 16, 2001)

<sup>7</sup> In 1994, the Board requested comment on a proposal to modify the methodology for imputing clearing balance income. The Board proposed replacing the three-month Treasury-bill imputed investment with a longer-term Treasury investment based on the earning asset maturity structure of the largest BHCs. As a result of issues related to interest rate risk raised in the comments, the Board did not adopt the proposal. The proposal would have created an asset and liability mismatch that created interest rate risk exposure inappropriate for Federal Reserve priced services. In addition, Federal Reserve priced services would not have assumed the interest rate risk associated with longer-maturity investments because the imputed return would have been adjusted monthly to reflect current rates. (59 FR 42832, August 19, 1994)

<sup>8</sup> "Clearing balances," unless otherwise indicated, refers to total clearing balances including contracted balances and balances in excess of the contracted amount, held by depository institutions with the Federal Reserve Banks.

<sup>9</sup> Regulation D, 12 CFR Part 204.

credits to the holders of clearing or compensating balances. Earnings credits provided by the Reserve Banks are based on the federal funds rate and the contracted level of clearing balances. Reserve Bank earnings credits are not paid on any clearing balances held in excess of the contracted amount, they can only be used to pay fees for priced services, and they must be used within one year or they are forfeited. Correspondent banks use a similar approach to calculate earnings credits as compensation for respondent balances. Correspondent bank earnings credits are determined based on a variety of rates, including Treasury bill, federal funds, and others. Recognizing that Reserve Banks may compensate for balances at a different rate than correspondent banks, the Board requests comment on whether the Board should consider modifications to the Reserve Banks' earnings credit rate in the future, and, if so, what factors should be considered in the evaluation.

## **B. Imputed Investment of Clearing Balances**

The Reserve Banks impute income on the clearing balance investments rather than using the actual results from monetary policy investment activities.<sup>10</sup> The imputation of clearing balance income is analogous to assuming that the priced-services enterprise, which is essentially a "monoline" bank offering only payment services, also includes a treasury function.

Income is currently imputed based on the assumption that all available clearing balances are invested in three-month Treasury bills.<sup>11</sup> The Board chose three-month Treasury bills as the imputed investment vehicle because, at that time, the yield was considered to approximate the return that would be realized had clearing balance funds been held and invested by a private business firm. In addition to providing a short-term earnings rate consistent with creating a matched asset and liability structure with the short-term liabilities, the ninety-day Treasury-bill yield data are easily verified by outside observers with publicly available data.

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<sup>10</sup> Decisions about monetary policy investment transactions are not motivated by profit objectives; therefore, the actual investment results are not applicable to priced-service activities.

<sup>11</sup> Clearing balances needed to meet an imputed reserve requirement (10 percent of clearing balances) and to "fund" assets used in the production of priced services (\$504 million in 2003) are not available for investment.

## II. Discussion

Table 1 presents the spread of the three-month Treasury bill rate compared to the federal funds rate for the past twenty years. As the table shows, the current

<b>Table 1</b>	
Spread from federal funds	T-bills (current)
1983	-0.23
1984	-0.27
1985	-0.27
1986	-0.50
1987	-0.72
1988	-0.88
1989	-0.79
1990	-0.29
1991	0.08
1992	0.08
1993	0.05
1994	-0.05
1995	-0.15
1996	-0.13
1997	-0.28
1998	-0.38
1999	-0.26
2000	-0.30
2001	-0.06
2002	0.01
<b>Average</b>	<b>-0.27</b>
<b>Standard deviation</b>	<b>0.28</b>

practice of imputing clearing balance investments in three month Treasury-bills while paying earnings credits at the federal funds rate has resulted in an average negative interest rate spread of 27 basis points over the past twenty years with an average standard deviation over the same period of 28 basis points.<sup>12</sup> The spread of the earnings rate imputed on clearing balances versus the rate for the cost of earnings credits has ranged from 8 basis points to -88 basis points over that period.<sup>13</sup> As a result of the average negative spread, most of the net income on clearing balances recognized during these years was the result of imputed earnings on excess balances held, which have no associated cost.

Although basic finance theory suggests a direct relationship between risk and earnings where earnings increase, on average, with the amount of risk incurred, a minor change to the current imputed investments could significantly increase earnings and decrease volatility. For example, investing in a simple portfolio of overnight loans to financial institutions (federal funds) would simultaneously eliminate the interest rate spread and reduce the volatility, as expressed by the standard deviation, to zero.<sup>14</sup> The results of an investment in federal funds demonstrate that the current investment assumption imputes less income than could be easily achieved with a low-risk alternative. Consequently, the Board believes that the current method may impute an inappropriately low NICB to priced services. The Board notes that financial institutions, such as correspondent banks and bank holding companies (BHCs), invest in a much wider array of instruments than that imputed by the Federal

Reserve, including loans, Treasury securities with longer maturities, government agency securities, federal funds, commercial bonds, commercial paper, money market mutual funds, asset-backed securities, gold, foreign currencies, repurchase agreements, and derivatives.

<sup>12</sup> The standard deviation measures the variance around the average and indicates the level of volatility of the rates. Two-thirds of the time the actual yield will fall in the range of the average plus or minus one standard deviation. Ninety-five percent of the time the actual yield is expected to fall in the range of the average plus or minus two standard deviations.

<sup>13</sup> Although not represented here because of simplifying assumptions, some of the volatility in actual NICB is a result of changes in rates and changes in contracted and excess clearing balance levels.

<sup>14</sup> While reducing interest rate risk, a change in investment from Treasury bills to federal funds would increase credit risk. As a practical matter, however, banks have not incurred losses due to default in federal funds transactions.

The Board requests comment on a proposal to impute the income on clearing balances from a broader portfolio of acceptable investment instruments, allocated within the constraints imposed by criteria used by BHC and regulators to evaluate investment risk. The Board also requests comment on two different implementation methods for imputing investments and the related income.

#### **A. Investment Instruments**

As noted in the Background section, the top fifty BHCs (based on deposits) were selected as the closest private-sector peer group for Reserve Bank priced services. Because the BHCs are a proxy for providers of priced-services activities, options for Reserve Bank priced services clearing balance investments should be comparable to those available to bank holding companies. In principle, all of the investment instruments available to bank holding companies could be appropriate clearing balance investments. The Board requests comment on whether investment options for Federal Reserve priced services should include all investment instruments permitted by regulators for bank holding companies.

In practice, the Federal Reserve proposes to limit its imputed investments to federal funds; investments suitable for a buy-and-hold strategy, such as Treasury securities, government agency securities, commercial paper, and municipal and corporate bonds; and money market and mutual funds.<sup>15</sup> For investments with a fixed term, this strategy eliminates capital gains and losses from the investment returns and simplifies the recognition and reporting of imputed investment income. Realized gains and losses on imputed mutual fund investments would be incorporated in the total return and recorded as net earnings. The Board requests comment on whether this investment strategy is appropriate.

#### **B. Risk-Management Framework**

To ensure that the imputed investments are indeed comparable to the investments of a similar private-sector entity, the Board believes that a risk-management framework should be established to limit the imputed investments to prudent levels in accordance with sound business practice and regulatory constraints. The exposure to any one type of risk, measured in terms of earnings or equity at risk, would be limited. The Reserve Banks currently use two risk measures in calculating the PSAF that manage liquidity and interest rate risk. The Board requests comment on two additional measures that would be part of the risk-management framework for the imputed investment of clearing balances, one to manage the longer-term effects of interest rate risk and another to manage credit risk. In addition, the Board requests comment on any other risk-management criteria that should be considered.

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<sup>15</sup> Mutual fund investments would be selected from those that are publicly available and widely held. The specific funds used for imputing income would be disclosed during the price setting process so that performance could be tracked and replicated.

1. *Liquidity Risk*

While clearing balances are contractually short term in nature, a portion of clearing balances can be considered as core deposits that are expected to remain stable over time. When it made changes to the PSAF method, the Board determined that core clearing balances, which it initially established at \$4 billion, should be available to finance long-term assets used in the delivery of priced services, rather than invested only in short-term assets. (66 FR 52617, October 16, 2001) Limiting the use of clearing balances to finance long-term assets to only that portion that is deemed core clearing balances effectively manages liquidity risk. The Board proposes that the portion of core clearing balances not used to finance priced services assets be available for imputed investment in longer-term instruments. The Board requests comment on whether using core clearing balances for imputed longer-term investments is appropriate.

2. *Interest Rate Risk*

One aspect of interest rate risk arises when the cost of funds and the investment yield on those funds change at different intervals. Financing longer-term assets with short-term liabilities at rates that do not change concurrently could create unacceptable earnings volatility. The Board adopted a method to address interest rate risk as part of the recent change in the PSAF methodology. This method addresses the risk to earnings in a changing rate environment by requiring that longer-term investment of clearing balances be managed so that a 200-basis-point change in the rates for the yield on all relevant priced services assets – currently the three-month Treasury bill rate – and the cost of all relevant priced service liabilities – the federal funds rate – would not affect the overall priced services recovery rate by more than 200 basis points. The Board intends to maintain this risk tolerance as a prudent constraint on the imputed investments.

The Board proposes to adopt a second measure of interest rate risk, known as economic value of equity (EVE), for use in conjunction with the earnings at risk measure. The EVE measure, which is used by BHCs and regulators, compares the present value of interest-bearing assets and liabilities in the current rate environment with the prospective present value given a change in interest rates; the comparison shows the change in present values as a proportion of equity. EVE is used as a complement to the interest rate sensitivity analysis already adopted to evaluate the effects of long-term mismatches between assets and liabilities on the value of an entity; the interest rate sensitivity analysis captures the risk to near-term earnings. Large BHCs typically manage the EVE measure within a risk-tolerance range of 5 to 10 percent.<sup>16</sup> The Board proposes to adopt a risk tolerance of a change of 8 percent of equity for a 200-basis-point-rate change. The Board requests comment on whether these two measures of interest rate risk, earnings at risk and equity at risk, are together sufficient measures for monitoring and controlling interest rate risk. The Board also requests comment on

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<sup>16</sup> More information on measurement of interest rate risk can be found at <http://www.occ.treas.gov/handbook/irr.pdf>.

whether a constraint on the EVE measure limiting the effect of a 200 basis point rate change to a change of eight percent of equity is an appropriate risk tolerance level.

### 3. *Credit Risk*

Credit risk results from the possibility that the issuer of a bond or other borrower cannot repay its obligations as promised. Criteria for managing credit risk are necessary when investment instruments other than Treasury securities are used. The overall level of credit risk compared with the level of equity is measured by the ratio of risk-adjusted assets to capital. The FDIC uses two risk-based capital measures as criteria in defining a “well capitalized” institution for insurance premium purposes. One requires a risk-based capital ratio of 10 percent or more for total capital and the other requires a risk-based ratio of 6 percent for tier one capital.<sup>17</sup> Only tangible equity capital (tier one capital) is imputed to Reserve Bank priced services; therefore, the two measures are the same for priced services. Because the current investment in three-month Treasury bills carries a risk weight of zero, the balance sheet underlying the 2003 PSAF shows that the priced services risk-based capital ratio is nearly 33 percent for both measures.<sup>18</sup> A change in investment strategy that includes investments with greater risk requires establishing a minimum risk-based total capital ratio within which to make investment decisions. As a result, the Board proposes to establish a minimum risk-adjusted total capital ratio that maintains the ratio of total capital to risk-adjusted assets at a level equal to or greater than that maintained by the fifty largest BHCs. Between 1997 and 2002 the average risk-adjusted total capital ratio for these institutions has remained near 12 percent. Because only tangible equity is imputed to priced services, the target ratio for the priced-services’ risk-adjusted assets to tier one capital would be 12 percent, well above the average ratio of eight percent maintained by the entities in the BHC model. The Board requests comment on whether this target ratio adequately limits imputed investment credit risk. The Board also requests comment on whether the target ratio should be 10 percent, the minimum required by the FDIC for a well capitalized institution.

### **C. Implementation Methods**

The Board requests comment on alternative methods to impute clearing balance income based on the proposed conceptual framework. The first method involves constructing a specific portfolio of hypothetical investments, tracking its yield, and ascribing the income to the priced-services activities. The second method imputes an investment yield expressed as a constant spread over the cost of clearing balances, without specifying an underlying portfolio.

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<sup>17</sup> <http://www.fdic.gov>

<sup>18</sup> 67 FR 67834, November 7, 2002

1. *Constructing a hypothetical portfolio*

To construct a hypothetical portfolio, the Reserve Banks would select from the investment options described above that are available to correspondent banks.

Selecting the investments and the proportions of the clearing balances assigned to each investment requires an allocation method that avoids any projections of future economic conditions or interest rate environments to address concerns that such forecasts would be viewed as a market signal of future monetary policy actions. The Board proposes an allocation method that optimizes the portfolio yield within the current and proposed risk management framework criteria. This allocation would be based on the historical performance of the available investment instruments and applied to the upcoming year.

To avoid the administrative complexities of incorporating realized capital gains and losses on an imaginary portfolio in the imputed investment results, any investment with a fixed term, such as corporate bonds, would be held to maturity.<sup>19</sup> In addition, the Board proposes that adjustments to the portfolio allocation maintain the appropriate investment balance to optimize return; however, the amount invested in any one instrument could only decrease by the amount of the investment maturing that period, or increase by the amount of additional balances available for investment.<sup>20</sup>

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<sup>19</sup>This results in a ladder approach to determining the average yield. For an investment in five-year corporate bonds, for example, the average yield would incorporate the yield from bonds purchased in increments over the preceding five years.

<sup>20</sup> To facilitate public verification of imputed portfolio income, the Board would publish the portfolio components and imputed investment income on its public website.

### Hypothetical Portfolio Example

The data in table 2 illustrate the results of two hypothetical investment portfolios, both of which meet the proposed risk-management framework but have different return and volatility profiles.<sup>21</sup> In both cases, the 1993 portfolios were selected from BHC-allowable investments to maximize return using actual yield data from 1983 through 1992. The portfolios were rebalanced each subsequent year to optimize the return based on the yield data from the previous ten years.<sup>22</sup> That is, for 2002 the portfolio yield reflects the actual 2002 yields of assets chosen based on each investment's performance from 1992 through 2001. Many variations on the frequency of portfolio adjustment and the length of the period from which to base yield data used in selecting the portfolio are

<b>Table 2</b>		
<b>10 Year yield (1993-2002)</b>		
	<b>A</b>	<b>B</b>
Average spread over federal funds	54	35
Standard deviation	98	29
Average NICB (millions)	\$65.0	\$48.3
NICB standard deviation (millions)	\$87.9	\$22.2

possible and finance theory does not provide clear guidance on the optimal approach. The rolling ten-year portfolios performed as well as or better than other alternatives examined. For simplicity and comparability, all variables, other than the portfolio mix, yield, and federal funds rates, are held constant in the models for all years.<sup>23</sup>

Example A shows the results of selecting an appropriate portfolio within the risk parameters using ten-year historical yield data. The investments in portfolio A were chosen to optimize the return without placing any constraints on volatility. The imputed return on the portfolio yields a spread over federal funds of 54 basis points. The composition of portfolio A varies over the ten year period, based on the optimum investment mix using the previous ten years' yield data. Over this time, it maintains a fairly consistent asset mix composed of primarily federal funds, Government National Mortgage Association (GNMA) mutual funds, money market mutual funds, and commercial paper. Hypothetical portfolio A, however, has a standard deviation of 98 basis points. The standard deviation for hypothetical portfolio A demonstrates greater volatility than the Reserve Banks experience with the current three-month Treasury-bill investment, which has a standard deviation of 28 basis points. Because the standard deviation for portfolio A, driven by changes in the yield, equates to approximately \$88 million in NICB, variability in the NICB could range from net income of approximately

<sup>21</sup> For Tables 2 and 3, the following simplifying assumptions apply: 1) all clearing balance amounts are held constant throughout the analysis period, 2) total clearing balances are \$10.5 billion, 3) investable balances are \$9 billion, and 4) balances eligible for earnings credits are \$8.6 billion.

<sup>22</sup> A ten-year period was selected for illustration purposes because the data are available and the period includes a variety of interest rate environments.

<sup>23</sup> For these reasons, the model results vary from the actual results experienced by Federal Reserve priced services.

\$153 million to a net cost of approximately \$23 million in two-thirds of the years in which the selected portfolio is held.

Example B shows the results of selecting an appropriate portfolio based on the same criteria used for portfolio A but constraining the volatility in the model to approximately what is currently experienced with Treasury bill investments. The imputed return is an average yield spread over federal funds of 35 basis points, and has approximately the same volatility as currently experienced with three-month Treasury-bill investments. Over the ten-year period, the portfolio consists primarily of federal funds, commercial paper, money market mutual funds, and small investments in twenty-year AAA bonds, GNMA mutual funds, and short-term corporate bond mutual funds. Because the standard deviation for portfolio B, driven by changes in the yield, equates to approximately \$22 million in NICB, variability in the NICB could range from \$70 million to \$26 million in two-thirds of the years in which the selected portfolio is held.

The Board recognizes that a portfolio could be constructed that would have less volatility than hypothetical portfolio B and that such a portfolio would be expected to have a lower yield than hypothetical portfolio B. Priced services management finds the NICB volatility that has been associated with the current three-month Treasury-bill investment strategy acceptable, however, and would not choose a portfolio with lower volatility if it generated a lower yield. On the other hand, given the multi-year cost recovery horizon, priced services management might choose a portfolio with greater volatility than hypothetical portfolio B if it generated sufficiently greater yield.

The Board requests comment on the proposed method for selecting and adjusting a hypothetical portfolio. In particular, the Board requests comment on whether private sector providers face additional market-driven volatility constraints that should be considered when allocating among imputed assets.

## 2. *Imputing a constant 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.<sup>24</sup> These representatives commented that construction of a risk-management framework and hypothetical portfolio appears unduly complex for imputing income from hypothetical investments and suggested that a constant basis point calculation could be simpler and provide similar results. Because the cost of clearing balances is based on the federal funds rate, they suggested that the NICB calculation impute investment income based on a clearing balance investment yield expressed as a constant spread over the federal funds rate. The representatives commented that this approach would be easier to understand, administer, and monitor.

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<sup>24</sup> The advisory group included participants from the American Bankers Association, the Independent Community Bankers Association, and the Association of Corporate Credit Unions.

Using a constant spread over the federal funds rate to impute the income from investing clearing balances would, by definition, not reflect the actual variability between the investment yield and the cost of funds that would occur with the hypothetical portfolio. As demonstrated by the variation in the average rate spread and volatility between portfolios A and B, both of which met the risk management constraints, constant spreads of varying amounts could be defended as appropriate. Further, finance theory suggests that a discount to the constant rate might be required to essentially buy the consistency that is produced by a constant spread method.

The Board proposes that if a constant spread is used, it be based upon a method that reviews allowable investment returns over time and holds the selected investments over time. One such method would be to use the results of one of the hypothetical portfolios above to determine the constant spread to impute over a future period.

Table 3 demonstrates NICB results when imputing a constant spread return over the ten years from 1993 through 2002 using the average spread of 35 basis points from portfolio B in Table 2. While the average NICB is about the same, the volatility is decreased significantly. The volatility experienced with the constant spread approach is limited to the volatility in the earnings on the amount of excess clearing balance investments due to the change in the federal funds rate, whereas the volatility associated with hypothetical portfolio B also includes the result of changes in the spread between the portfolio yield and the federal funds rate.

	<b>Portfolio B</b>	<b>Constant Spread</b>
1993	\$55.8	\$42.3
1994	\$11.4	\$46.5
1995	\$67.7	\$52.4
1996	\$29.8	\$50.5
1997	\$50.1	\$51.0
1998	\$48.9	\$50.7
1999	\$18.7	\$49.3
2000	\$61.9	\$53.8
2001	\$56.2	\$45.4
2002	\$82.5	\$37.5
Average	\$48.3	\$48.0
Standard deviation	\$22.2	\$5.1

The Board requests comment on whether a long-run average spread over federal funds would be an appropriate basis on which to impute income and, if so, how to take into account the reduced volatility provided by this method compared to the hypothetical portfolio method.

### **III. Competitive Impact Analysis**

All operational and legal changes considered by the Board that have a substantial effect on payments system participants are subject to the competitive impact analysis described in the March 1990 policy statement “The Federal Reserve in the Payments System.”<sup>25</sup> Under this policy, the Board assesses whether the change would have a direct and material adverse effect on the ability of other service providers to

<sup>25</sup> FRRS 7-145.2

compete effectively with the Federal Reserve in providing similar services because of differing legal power or constraints or because of a dominant market position of the Federal Reserve deriving from such legal differences. If the fees or fee structures create such an effect, the Board must further evaluate the changes to assess whether their benefits – such as contributions to payment system efficiency, payment system integrity, or other Board objectives – can be retained while reducing the hindrances to competition.

This proposal is intended to expand the investment instruments assumed in the NICB calculation to resemble more closely investments pursued by bank holding companies, the services of which are considered to most closely resemble the services provided by Reserve Banks. Imputed investment decisions would be made within a framework that incorporates risk-management measures used in industry and regulatory practice. Accordingly, the Board believes this proposal will not have a direct and material adverse effect on the ability of other service providers to compete effectively with the Federal Reserve in providing similar services.

By order of the Board of Governors of the Federal Reserve System,  
May 23, 2003.

Jennifer J. Johnson  
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Secretary of the Board.