BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

DIVISION OF RESERVE BANK OPERATIONS AND PAYMENT SYSTEMS

Date: October 28, 2002

To: Board of Governors

From: Roger W. Ferguson, Jr. RWF, Jr

Subject: Private Sector Adjustment Factor for 2003

The Committee on Federal Reserve Bank Affairs has reviewed staff's recommendation that the Board adopt a 2003 Private Sector Adjustment Factor (PSAF) for Federal Reserve Bank priced services of $171.7 million. I am forwarding the attached staff memorandum to the Board for its consideration as a summary item at its October 31 meeting.

Attachment

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

DIVISION OF RESERVE BANK OPERATIONS AND PAYMENT SYSTEMS

Date: October 28, 2002

To: Board of Governors

From: Brenda Richards, Lezell W. Murphy, Gregory L. Evans, and Paul Bettge

Subject: Private Sector Adjustment Factor for 2003

ACTION REQUESTED

Staff requests Board approval of its recommendation to adopt a 2003 Private Sector Adjustment Factor (PSAF) for Federal Reserve priced services of $171.7 million. This amount represents an increase of $21.6 million, or 14.4 percent, from the PSAF of $150.1 million for 2002. This increase is primarily due to the increase in clearing balances available for investment in marketable securities and the associated increase in priced-service equity.

BACKGROUND

Each year, as required by the Monetary Control Act of 1980, the Reserve Banks set fees for priced services provided to depository institutions. These fees are set to recover, over the long run, all direct and indirect costs and imputed costs, including financing costs, return on equity (profit), taxes, and certain other expenses that would have been incurred if a private business firm provided the services. These imputed costs are based on data developed in part from a model comprising consolidated financial data for the nation's fifty largest bank holding companies (BHCs).[1] The imputed costs and imputed profit are collectively referred to as the PSAF. In a comparable fashion, investment income is imputed and netted with related direct costs associated with clearing balances to estimate net income on clearing balances (NICB).

[1] The peer group of the fifty largest bank holding companies is selected based on total deposits.

Private Sector Adjustment Factor

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.[2, 3] Short-term debt is imputed only when clearing balances not used to finance long-term assets and short-term liabilities 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.

Financing rates

When needed to impute short- and long-term debt, the debt rates are derived based on these elements in the BHC model. 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.[4]

2 A portion of clearing balances is used as a funding source for priced services assets. Long-term assets are partially funded from an initial core amount of $4 billion clearing balances. 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.

3 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.

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

For simplicity, given that 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 return on equity assumes 100 percent recovery of expenses, including the targeted return on equity. The recommended PSAF is, therefore, based on a matching of revenues and actual and imputed costs. Should the pre-tax earnings be greater or less than the targeted ROE, the PSAF is adjusted for the tax expense or 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.

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.

Net Income on Clearing Balances

The NICB calculation is made each year along with the PSAF calculation and is based on the assumption that Reserve Banks invest clearing balances net of imputed reserve requirements and balances used to finance priced-services assets. Based on these net clearing balance levels, Reserve Banks impute an investment in three-month Treasury bills. The calculation also involves determining the priced services cost of earnings credits (amounts available to offset future service fees) on contracted clearing balances held, net of expired earnings credits, based on the federal funds rate. The rates and clearing balance levels used in the NICB estimate are based on the actual rates and balances from the six months before the calculation date. Because clearing balances are held for clearing priced services transactions, they are directly related to priced services. Therefore, the net earnings or expense attributed to the imputed Treasury-bill investments and the cost associated with holding clearing balances are considered net income for priced services activities.

DISCUSSION

The increase in the 2003 PSAF is primarily due to a significant increase in clearing balances on which investments in marketable securities 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.

Asset Base

The total estimated cost of Federal Reserve assets to be used in providing priced services is reflected in table 1. Total assets have increased $3,664.3 million, or 30.9 percent. Growth of $3,416.9 million in imputed investments in marketable securities and $365.3 million in imputed reserve requirements, which are based on the level of clearing balances, explains the majority of this increase. These increases are offset by a decrease of $166.5 million in items in process of collection.

While assets financed through the PSAF such as premises, receivables, and prepaid expenses have decreased, most priced service assets, including the prepaid pension costs, furniture and equipment, and Board of Governors' assets have increased. Table 2 shows that the short-term assets funded with short-term payables and clearing balances total $103.8 million. This amount represents a decrease of $9.5 million, or 8.4 percent, from the short-term assets funded in 2002. Long-term assets funded with long-term liabilities, equity, and core clearing balances are projected to total $1,537.4 million. This amount represents an increase of $58.1 million, or 3.9 percent, from the long-term assets funded in 2002. Growth of $35.9 million in prepaid pension costs explains the majority of the increase, while increases in Reserve Bank leasehold improvements and long-term prepayments and furniture and equipment assets explain an additional $23.5 million. These increases are offset by a decrease of $1.3 million in Reserve Bank premises assets.

Debt and Equity Costs and Taxes

As previously mentioned, core clearing balances from the NICB calculation are available as a funding source for priced services assets. Table 2 shows that $503.9 million in clearing balances are used to fund priced services assets in 2003. The interest rate sensitivity analysis in table 3 indicates that potential T-bill and federal funds rate decreases of 200 basis points produce a decrease in cost recovery of 0.4 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 4 shows the imputed PSAF elements, the pre-tax return on equity, and other required PSAF recoveries proposed for 2003 and 2002. The significant increase in clearing balances from which marketable security investments are imputed increases total assets. An increase in total assets, and the resulting increase in imputed equity, increases expenses associated with the return on equity. Although the pre-tax return on equity rate decreased from 22.1 percent for 2002 to 19.4 percent for 2003, with increased imputed equity, the pre-tax return on equity increased $19.6 million. As indicated previously, the pre-tax return on equity is calculated using the combined results of three models. The effective tax rate used in 2003 also increased to 30.4 percent from 29.3 percent in 2002.

Capital Adequacy and FDIC Assessment

As shown in table 5, the amount of equity imputed for the proposed 2003 PSAF is $775.6 million, an increase of $183.3 million from imputed equity of $592.3 million in 2002. As noted above, equity is based on 5 percent of total assets, as required by the FDIC for a well-capitalized institution in its definition for purposes of assessing insurance premiums. In both 2003 and 2002, the capital to risk-weighted asset ratio and the capital to total assets ratio both exceed regulatory guidelines. As a result, no FDIC assessment is imputed for either year.

Table 1
Comparison of Pro Forma Balance Sheets
for Federal Reserve Priced Services
(millions of dollars – average for year)

	2003	2002
Short-term assets		
Imputed reserve requirement on clearing balances[1]	$ 1,043.8	$ 678.5
Imputed investment in marketable securities[1]	8,889.9	5,473.0
Receivables	77.4	81.7
Materials and supplies	3.0	3.8
Prepaid expenses	23.4	27.8
Items in process of collection[2]	3,936.3	4,102.8
Total short-term assets	13,973.8	10,367.6
Long-term assets		
Premises [3]	429.8	431.1
Furniture and equipment	188.3	177.7
Leasehold improvements and long-term prepayments	83.3	70.4
Prepaid pension costs	836.0	800.1
Total long-term assets	1,537.4	1,479.3
Total assets	$15,511.2	$11,846.9
Short-term liabilities[4]		
Clearing balances and balances arising from early credit of uncollected items	$10,508.5	$7,377.5
Deferred credit items[2]	3,865.4	3,509.8
Short-term payables	77.0	103.9
Total short-term liabilities	14,450.9	10,991.2
Long-term liabilities[4]		
Postemployment/retirement benefits	284.7	263.4
Total liabilities	14,735.6	11,254.6
Equity	775.6	592.3
Total liabilities and equity	$15,511.2	$11,846.9

[1] Funded with clearing balances.
[2] Represents float costs that are directly estimated at the service level.
[3] Includes allocations of Board of Governors' assets to priced services of $1.5 million for 2003 and $1.1 million for 2002.
[4] No debt is imputed because clearing balances are used as an available funding source.

Table 2
Portion of Clearing Balances used
to Fund Priced Services Assets
(millions of dollars)

	2003		2002	
A. Short-term asset financing				
Short-term assets to be financed:				
Receivables	$ 77.4		$ 81.7	
Materials and supplies	3.0		3.8	
Prepaid expenses	23.4		27.8	
Total short-term assets to be financed	$103.8		$113.3	
Short-term funding sources:				
Short-term payables	77.0		103.9	
Portion of short-term assets funded with clearing balances[1]		$26.8		$ 9.4
B. Long-term asset financing				
Long-term assets to be financed:				
Premises	$429.8		$431.1	
Furniture and equipment	188.3		177.7	
Leasehold improvements and long-term prepayments	83.3		70.4	
Prepaid pension costs	836.0		800.1	
Total long-term assets to be financed	$1,537.4		$1,479.3	
Long-term funding sources:				
Postemployment/retirement benefits	284.7		263.4	
Imputed equity[2]	775.6		592.3	
Total long-term funding sources	1,060.3		855.7	
Portion of long-term assets funded with core clearing balances[1]		$477.1		$623.6
C. Total clearing balances used for funding priced-services assets		$503.9		$633.0

[1] Clearing balances shown on table 1 are available for financing priced-services assets. Using these balances reduces the amount available for investment in Treasury bills for the net income on clearing balances calculation. Long-term assets are financed with core clearing balances; a total of $4 billion in balances is available for this purpose. Short-term assets are financed with clearing balances not used to finance long-term assets. No short- or long-term debt is imputed.
[2] See table 4 for calculation of required imputed equity amount.

Table 3
2003 Interest Rate Sensitivity Analysis
(millions of dollars)

	Rate sensitive	Rate insensitive	Total
Assets			
Imputed reserve requirement on clearing balances		$1,043.8	$1,043.8
Imputed investment in marketable securities	$8,889.9		$8,889.9
Receivables		77.4	77.4
Materials and supplies		3.0	3.0
Prepaid expenses		23.4	23.4
Items in process of collection[1]	70.9	3,865.4	3,936.3
Long-term assets		1,537.4	1,537.4
Total assets	$8,960.8	$6,550.4	$15,511.2
Liabilities			
Clearing balances and balances arising from early credit of uncollected items[2]	$8,699.8	$1,808.7	$10,508.5
Deferred credit items		3,865.4	3,865.4
Short-term payables		77.0	77.0
Long-term liabilities		284.7	284.7
Total liabilities	$8,699.8	$6,035.8	$14,735.6

Rate change results		**200 basis point decrease in both rates**
Asset yield ($8,960.8 x -.02)		$(179.2)
Liability cost ($8,699.8 x -.02)		(174.0)
Effect of 200 basis point decrease		$ (5.2)
2003 budgeted revenue	933.7	
Effect of decrease	(5.2)	
Revenue adjusted for effect of interest rate decrease	$928.5	
2003 budgeted total expenses	883.9	
2003 budgeted target ROE	104.7	
Tax effect of interest rate decrease ($-5.2 x 30.4%)	(1.6)	
Total recovery amounts	$987.0	
Recovery rate before interest rate decrease	94.4%	
Recovery rate after interest rate decrease	94.0%	
Effect of interest rate decrease on cost recovery[3]	- .4%	

[1] The amount designated rate sensitive represents the amount of cash items in process of collection that are invested in three-month Treasury bills.
[2] The amount designated rate insensitive represents clearing balances on which earnings credits are not paid.
[3] Effect of a potential change in rates is less than a 2 percentage point change in cost recovery, therefore, no long-term debt is imputed for 2003.

Table 4
Derivation of the 2003 and 2002 PSAF
(millions of dollars)

		2003			2002	
A. Imputed elements						
Short-term debt[1]		$ 0.0			$ 0.0	
Long-term debt[2]		$ 0.0			$ 0.0	
Equity						
Total assets from table 1	$15,511.2			$11,846.9		
Required capital ratio[3]	5%			5%		
Total equity		$775.6			$592.3	
B. Cost of Capital						
1. Financing rates/costs						
Short-term debt		N/A			N/A	
Long-term debt		N/A			N/A	
Pre-tax return on equity[4]		19.4%			22.1%	
2. Elements of capital costs						
Short-term debt			$ 0.0			$ 0.0
Long-term debt			0.0			0.0
Equity	$775.6 x	19.4% =	150.5	$592.3 x	22.1% =	130.9
			$150.5			$130.9
C. Other required PSAF recoveries						
Sales taxes		$14.8			$14.1	
Federal Deposit Insurance assessment		0.0			0.0	
Board of Governors expenses		6.4			5.1	
			21.2			19.2
D. Total PSAF recoveries			$171.7			$150.1
As a percent of assets		1.1%				1.3%
As a percent of expenses[5]		22.4%				19.0%
E. Tax rates		30.4%				29.3%

[1] No short-term debt is imputed because clearing balances are used as a funding source for those assets that are not financed with short-term payables.
[2] No long-term debt is imputed because clearing balances are used as a funding source.
[3] Based on the Federal Deposit Insurance Corporation's definition of a well-capitalized institution for purposes of assessing insurance premiums.
[4] One component of the pre-tax return on equity is based on the average after-tax rate of return on equity, adjusted by the effective tax rate to yield the pre-tax rate of return on equity for each bank holding company for each year. These data are then averaged over five years to yield the pre-tax return on equity for use in the PSAF. The final pre-tax rate of return on equity is determined averaging the result from this component (22.9%), along with results from a capital asset pricing model (13.8%), and a discounted cash flow model (21.6%).
[5] System 2003 budgeted priced services expenses less shipping are $765.2 million.

Table 5
Computation of 2003 Proposed Capital Adequacy
for Federal Reserve Priced Services
(millions of dollars)

	Assets	Risk weight	Weighted assets
Imputed reserve requirement on clearing balances	$1,043.8	0.0	$0.00
Imputed investment in marketable securities	8,889.9	0.0	0.0
Receivables	77.4	0.2	15.5
Materials and supplies	3.0	1.0	3.0
Prepaid expenses	23.4	1.0	23.4
Items in process of collection	3,936.3	0.2	787.3
Premises	429.8	1.0	429.8
Furniture and equipment	188.3	1.0	188.3
Leases, leasehold improvements & long-term prepayments	83.3	1.0	83.3
Prepaid pension costs	836.0	1.0	836.0
Total	$15,511.2		$2,366.6

Imputed equity for 2003	$775.6
Capital to risk-weighted assets	32.8%
Capital to total assets	5.0%