BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Date: October 26, 2001

To: Board of Governors

From: Edward W. Kelley, Jr.

Subject: Private Sector Adjustment Factor for 2002

The Committee on Federal Reserve Bank Affairs has reviewed staff's recommendation that the Board adopt a 2002 Private Sector Adjustment Factor (PSAF) for Federal Reserve Bank priced services of $150.1 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 26, 2001

To: Board of Governors

From: Brenda Richards, Gregory L. Evans, Tillena Clark, and Paul Bettge

Subject: Private Sector Adjustment Factor for 2002

ACTION REQUESTED

Staff requests Board approval of its recommendation to adopt a 2002 Private Sector Adjustment Factor (PSAF) for Federal Reserve priced services of $150.1 million. This amount represents a decrease of $56.8 million, or 27.5 percent, from the PSAF of $206.9 million for 2001. This decrease is primarily due to the changes in PSAF method approved by the Board earlier this month.

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 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). 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).

The Board approved the following method changes, which are incorporated in the 2002 PSAF and NICB calculations:

- 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.[1] The new method requires 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.

- Equity is imputed at 5 percent of total assets in order to meet the FDIC definition of a well-capitalized institution in its classification for assessing insurance premiums.

- 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.

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

The new method reduces both the amount of imputed debt and its associated costs included in the PSAF and the imputed investments and related income included in the NICB. Following is a description of the PSAF and NICB calculations:

[1] Core clearing balances are considered the portion of the balances that have remained stable over time without regard to the magnitude of actual clearing balances. The remainder of the balances is considered non-core clearing balances and short term in duration.

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 applying the applicable financing rates. This 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.

Short-term debt is imputed only when non-core clearing balances and short-term liabilities are not sufficient to fund short-term assets. 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. Equity is imputed to meet regulatory requirements for 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.

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 precise 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 are invested in municipal bonds.

Other Costs

The PSAF also includes the estimated priced services 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 balances used to finance priced-services assets and imputed reserves. Based on these net clearing balance levels, Reserve Banks impute an equal investment in three-month Treasury bills. The calculation also involves determining the actual 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 income for priced services activities.

DISCUSSION

The decrease in the 2002 PSAF is primarily due to the recent method changes. Because core clearing balances, rather than imputed debt, are funding long-term priced services assets, there is a decline in PSAF expenses associated with debt financing. In addition, a reduction in required imputed equity results in a reduction of equity costs. The decline in debt financing expenses and equity costs in the PSAF is offset by a reduction in imputed Treasury-bill investment earnings in the NICB.

Asset Base

The total estimated cost of Federal Reserve assets to be used in providing priced services is reflected in table 1. While total priced services assets have decreased, the pension asset and other assets financed through the PSAF including premises, receivables, and prepaid expenses have increased. Table 2 shows that the short-term assets funded with short-term payables and non-core clearing balances total $113.3 million. This amount represents an increase of $9 million, or 8.6 percent, from the short-term assets funded in 2001. Long-term assets funded with long-term liabilities, core clearing balances, and equity are projected to total $1,479.3 million. This amount represents an increase of $83.9 million, or 6 percent, from the long-term assets funded in 2001. Growth of $81.6 million in the pension asset explains the majority of the increase, while increases in Board and Reserve Bank building assets explain an additional $13.6 million. These increases are offset by a decrease of $11.3 million in other Reserve Bank fixed 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 $633.0 million in clearing balances are used to fund priced services assets in 2002. 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 0.2 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 2002 along with the financing and tax rates used for developing the 2002 PSAF. The elimination of imputed short- and long-term debt results in a decline in expenses associated with debt financing of $32.0 million. The pre-tax return on equity rate decreased from 24.0 percent for 2001 to 22.1 percent for 2002. As a result of this rate decrease and reduced imputed equity, the pre-tax return on equity declined $28.6 million. As indicated previously, the 2002 pre-tax return on equity was calculated using the combined results of three models, while 2001 PSAF pre-tax return on equity was calculated using the single CAE method. The effective tax rate used in 2002 also decreased to 29.3 percent from 31.5 percent in 2001.

Capital Adequacy and FDIC Assessment

As shown in table 5, the amount of equity imputed for the proposed 2002 PSAF is $592.3 million, a decrease of $72.1 million from imputed equity of $664.4 in 2001. As noted above, the 2002 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 2002 and 2001, 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.

Peer Group

Using total deposits instead of total assets as the basis of selection of the peer group marginally changed the peer group composition. Three new holding companies are represented for 2000 data, the last year for which audited data are available.

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

	2002	2001
Short-term assets		
Imputed reserve requirement on clearing balances[1]	$ 678.5	$ 742.4
Investment in marketable securities[1]	5,473.0	6,681.9
Receivables	81.7	77.3
Materials and supplies	3.8	3.6
Prepaid expenses	27.8	23.4
Items in process of collection[2]	4,102.8	3,606.7
Total short-term assets	10,367.6	11,135.3
Long-term assets		
Premises [3]	431.1	417.5
Furniture and equipment	177.7	185.5
Leasehold improvements and long-term prepayments	70.4	73.9
Prepaid pension costs	800.1	718.5
Total long-term assets	1,479.3	1,395.4
Total assets	$11,846.9	$12,530.7
Short-term liabilities		
Clearing balances and balances arising from early credit of uncollected items	$ 7,377.5	$ 7,424.3
Deferred credit items[2]	3,509.8	3,606.7
Short-term debt[4]	0.0	18.9
Short-term payables	103.9	85.4
Total short-term liabilities	10,991.2	11,135.3
Long-term liabilities		
Postemployment/retirement benefits	263.4	251.9
Long-term debt[4]	0.0	479.1
Total long-term liabilities	263.4	731.0
Total liabilities	11,254.6	11,866.3
Equity	592.3	664.4
Total liabilities and equity	$11,846.9	$12,530.7

[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 $1.1 million for 2002 and $0.7 million for 2001.
[4] No debt is imputed in 2002 because clearing balances are used as an available funding source.

Table 2
Portion of Clearing Balances used
to Fund Priced Services Assets in 2002
(millions of dollars)

A. Short-term asset funding			
Short-term assets to be funded:			
Receivables	$81.7		
Materials and supplies	3.8		
Prepaid expenses	27.8		
Total short-term assets to be funded		$113.3	
Short-term funding sources:			
Short-term payables		103.9	
Portion of short-term assets funded with imputed short-term debt or non-core clearing balances[1]			$ 9.4
B. Long-term asset funding			
Long-term assets to be funded:			
Premises	$431.1		
Furniture and equipment	177.7		
Leasehold improvements and long-term prepayments	70.4		
Prepaid pension cost	800.1		
Total long-term assets to be funded		$1,479.3	
Long-term funding sources:			
Postemployment/retirement benefits liability	263.4		
Imputed equity[2]	592.3		
		855.7	
Portion of long-term assets funded with imputed long-term debt or core clearing balances[1]			623.6
C. Total clearing balances used for funding priced-services assets			$633.0

[1] Clearing balances shown on table 1 are available for funding priced-services assets. Using these balances reduces the amount available for investment in Treasury bills for the net income on clearing balances calculation. Short-term assets are funded with non-core clearing balances. Long-term assets are funded with core clearing balances; a total of $4 billion in balances is available for this purpose. No short- or long-term debt is imputed.
[2] See table 4 for calculation of required imputed equity amount.

Table 3
2002 Interest Rate Sensitivity Analysis
(millions of dollars)

	Rate sensitive	Rate insensitive	Total
Assets			
Imputed reserve requirement on clearing balances		$ 678.5	$ 678.5
Investment in marketable securities	$5,473.0		5,473.0
Receivables		81.7	81.7
Materials and supplies		3.8	3.8
Prepaid expenses		27.8	27.8
Items in process of collection[1]	593.0	3,509.8	4,102.8
Long-term assets		1,479.3	1,479.3
Total assets	$6,066.0	$5,780.9	$11,846.9
Liabilities			
Clearing balances and balances arising from early credit of uncollected items[2]	$5,892.2	$1,485.3	$ 7,377.5
Deferred credit items		3,509.8	3,509.8
Short-term payables		103.9	103.9
Long-term liabilities		263.4	263.4
Total liabilities	$5,892.2	$5,362.4	$11,254.6

Rate change results		**200 basis point decrease in both rates**
Asset yield ($6,066.0 x -.02)		$(121.3)
Liability cost ($5,892.2 x -.02)		(117.8)
Effect of 200 basis point decrease		$ (3.5)
2002 budgeted revenue	$955.9	
Effect of decrease	(3.5)	
Revenue adjusted for effect of interest rate decrease	$952.4	
2002 budgeted total expenses	$900.9	
2002 budgeted target ROE	92.5	
Tax effect of interest rate decrease ($-3.5 x 29.3%)	(1.0)	
Total recovery amounts	$992.4	
Recovery rate before interest rate decrease	96.2%	
Recovery rate after interest rate decrease	96.0%	
Effect of interest rate decrease on cost recovery[3]	.2%	

[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 2002.

Table 4
Derivation of the 2002 and 2001 PSAF
(millions of dollars)

		2002		2001	
A. Imputed elements					
Short-term debt[1]		$ 0.0		$ 18.9	
Long-term debt[2]		$ 0.0		$479.1	
Equity					
Total assets from table 1	$11,846.9				
Required capital ratio[3]	5%				
Total equity		$592.3		$664.4	
B. Cost of Capital					
1. Financing rates/costs					
Short-term debt		N/A		4.7%	
Long-term debt		N/A		6.5%	
Pre-tax return on equity[4]		22.1%		24.0%	
2. Elements of capital costs[5]					
Short-term debt			$ 0.0	$ 18.9 x 4.7% =	$ .9
Long-term debt			0.0	479.1 x 6.5% =	31.1
Equity	$592.3 x	22.1% =	130.9	664.4 x 24.0% =	159.5
			$130.9		$191.5
C. Other required PSAF recoveries					
Sales taxes		$14.1		$10.5	
Federal Deposit Insurance Assessment		0.0		0.0	
Board of Governors expenses		5.1		4.9	
			19.2		15.4
D. Total PSAF recoveries			$150.1		$206.9
As a percent of assets		1.3%			1.7%
As a percent of expenses[6]		19.0%			28.5%
E. Tax rates		29.3%			31.5%

[1] No short-term debt is imputed in 2002 because clearing balances are used as a funding source. For 2001, short-term debt is imputed to finance only those assets that are not funded with short-term payables.
[2] No long-term debt is imputed in 2002 because clearing balances are used as a funding source. For 2001, long-term debt consists of total priced long-term assets less postretirement/postemployment benefit liabilities.
[3] Based on the Federal Deposit Insurance Corporation's definition of a well-capitalized institution for purposes of assessing insurance premiums.
[4] For 2001, the pre-tax rate of 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. For 2002, the pre-tax rate of return on equity is determined averaging the result from the method used for 2001 (23.5%), along with results from a capital asset pricing model (21.4%), and a discounted cash flow model (21.4%).
[5] The division of financing between debt and equity for 2001 was determined using the debt-to-equity ratio from the bank holding company model.
[6] System 2002 budgeted priced services expenses less shipping are $791.9 million.

Table 5
Computation of 2002 Proposed Capital Adequacy
for Federal Reserve Priced Services
(millions of dollars)

	Assets	Risk weight	Weighted assets
Imputed reserve requirement on clearing balances	$ 678.5	0.0	$ 0.0
Investment in marketable securities	5,473.0	0.0	0.0
Receivables	81.7	.2	16.3
Materials and supplies	3.8	1.0	3.8
Prepaid expenses	27.8	1.0	27.8
Items in process of collection	4,102.8	.2	820.6
Premises	431.1	1.0	431.1
Furniture and equipment	177.7	1.0	177.7
Leases, leasehold improvements & long-term prepayments	70.4	1.0	70.4
Prepaid pension costs	800.1	1.0	800.1
Total	$11,846.9		$2,347.8

Imputed equity for 2002	$592.3
Capital to risk-weighted assets	25.2%
Capital to total assets	5.0%