BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Date: October 20, 2003

To: Board of Governors

From: Mark W. Olson

Subject: Private Sector Adjustment Factor for 2004

The Committee on Federal Reserve Bank Affairs has reviewed staff's recommendation that the Board adopt a 2004 Private Sector Adjustment Factor for Federal Reserve Bank priced services of $179.7 million. I am forwarding the attached staff memorandum to the Board for its consideration at its October 22 meeting.

Attachment

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

DIVISION OF RESERVE BANK OPERATIONS AND PAYMENT SYSTEMS

Date: October 20, 2003

To: Board of Governors

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

Subject: Private Sector Adjustment Factor for 2004

ACTION REQUESTED

Staff requests Board approval of its recommendation to adopt a 2004 Private Sector Adjustment Factor (PSAF) for Federal Reserve priced services of $179.7 million. This amount represents an increase of $8.0 million, or 4.7 percent, from the PSAF of $171.7 million for 2003. This increase is primarily due to the increase in clearing balances available for investment and the associated increase in priced-services 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, taxes, and certain other expenses that would have been incurred, as well as return on equity (profit) that would have been earned, 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).[2]

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

[2] See staff memorandum on the proposed change to the imputed investment income on clearing balances method for 2004. Using the 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.

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.[3] [4] 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.

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.[5] [6] 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

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[3] 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.

[4] 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.

[5] The pre-tax ROE (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.

[6] 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.

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.

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.

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.

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 $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 2, the assets financed through the PSAF have decreased, primarily due to the decrease in prepaid pension costs. 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.

Debt and Equity Costs and Taxes

As previously mentioned, core clearing balances are available as a funding source for priced services assets. Table 2 shows that $407.2 million in clearing balances are used to fund priced services assets in 2004. The interest rate sensitivity analysis in table 3 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 an 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 4 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.

Capital Adequacy and FDIC Assessment

As shown in table 1, 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 2003. 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

2004 and 2003, 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.

Attachments

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

	2004	2003
Short-term assets		
Imputed reserve requirement on clearing balances	$ 1,175.6	$ 1,043.8
Receivables	74.0	77.4
Materials and supplies	2.6	3.0
Prepaid expenses	25.4	23.4
Items in process of collection	4,244.7	3,936.3
Total short-term assets	5,522.3	5,083.9
Imputed investments	$ 10,172.9	$ 8,889.9
Long-term assets		
Premises [1]	433.7	429.8
Furniture and equipment	173.3	188.3
Leasehold improvements and long-term prepayments	95.4	83.3
Prepaid pension costs	818.2	836.0
Total long-term assets	1,520.6	1,537.4
Total assets	$17,215.8	$15,511.2
Short-term liabilities[2]		
Clearing balances and balances arising from early credit of uncollected items	$11,887.1	$10,508.5
Deferred credit items	4,113.3	3,865.4
Short-term payables	61.7	77.0
Total short-term liabilities	16,062.1	14,450.9
Long-term liabilities[2]		
Postemployment/retirement benefits	292.9	284.7
Total liabilities	16,355.0	14,735.6
Equity	860.8	775.6
Total liabilities and equity	$17,215.8	$15,511.2

[1] Includes allocations of Board of Governors' assets to priced services of $1.7 million for 2004 and $1.5 million for 2003.
[2] 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)

	2004		2003	
A. Short-term asset financing				
Short-term assets to be financed:				
Receivables	$ 74.0		$ 77.4	
Materials and supplies	2.6		3.0	
Prepaid expenses	25.4		23.4	
Total short-term assets to be financed	$102.0		$103.8	
Short-term funding sources:				
Short-term payables	61.7		77.0	
Portion of short-term assets funded with clearing balances[1]		$ 40.3		$ 26.8
B. Long-term asset financing				
Long-term assets to be financed:				
Premises	$433.7		$429.8	
Furniture and equipment	173.3		188.3	
Leasehold improvements and long-term Prepayments	95.4		83.3	
Prepaid pension costs	818.2		836.0	
Total long-term assets to be financed	$1,520.6		$1,537.4	
Long-term funding sources:				
Postemployment/retirement benefits	292.9		284.7	
Imputed equity[2]	860.8		775.6	
Total long-term funding sources	$1,153.7		$1,060.3	
Portion of long-term assets funded with core clearing balances[1]		$366.9		$477.1
C. Total clearing balances used for funding priced-services assets		$407.2		$503.9

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

Table 3
2004 Interest Rate Sensitivity Analysis[1]
(millions of dollars)

	Rate sensitive	Rate insensitive	Total
Assets			
Imputed reserve requirement on clearing balances		$1,175.6	$1,175.6
Imputed investments	$10,172.9		$10,172.9
Receivables		74.0	74.0
Materials and supplies		2.6	2.6
Prepaid expenses		25.4	25.4
Items in process of collection[2]	131.4	4,113.3	4,244.7
Long-term assets		1,520.6	1,520.6
Total assets	$10,304.3	$6,911.5	$17,215.8
Liabilities			
Clearing balances and balances arising from early credit of uncollected items[3]	$9,710.8	$2,176.3	$11,887.1
Deferred credit items		4,113.3	4,113.3
Short-term payables		61.7	61.7
Long-term liabilities		292.9	292.9
Total liabilities	$9,710.8	$6,644.2	$16,355.0

Rate change results	**108 basis point[4] decrease in rates**	**200 basis point increase in rates**
Asset yield	$(77.3)	$ 143.3
Liability cost	(96.1)	160.2
Effect of 108 basis point decrease or 200 basis point increase	$ 18.8	$ (16.9)
2004 budgeted revenue	$934.5	$934.5
Effect of change	18.8	(16.9)
Revenue adjusted for effect of interest rate change	953.3	$917.6
2004 budgeted total expenses	886.3	886.3
2004 budgeted target ROE	112.4	112.4
Tax effect of interest rate change ($ change x 29.8%)	5.6	(5.0)
Total recovery amounts	1,004.3	$993.7
Recovery rate before interest rate change	93.6%	93.6%
Recovery rate after interest rate change	94.9%	92.3%
Effect of interest rate change on cost recovery[5]	1.3%	-1.3%

[1] The interest rate sensitivity analysis evaluates the level of interest rate risk presented by the difference between rate sensitive assets and liabilities. The analysis reviews the ratio of rate-sensitive assets to rate-sensitive liabilities and the effect on cost recovery of an increase or decrease in interest rates of up to 200 basis points.
[2] The amount designated rate sensitive represents the amount of cash items in process of collection that have been credited to customers prior to collection.
[3] The amount designated rate insensitive represents clearing balances on which earnings credits are not paid.
[4] The reduction is limited to the Treasury bill rate assumed in the 2004 NICB of 1.08 percent based on 2003 rates.
[5] The 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 2004.

Table 4
Derivation of the 2004 and 2003 PSAF
(millions of dollars)

		2004			2003	
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	$17,215.8			$15,511.2		
Required capital ratio[3]	5%			5%		
Total equity		$860.8			$775.6	
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]		18.6%			19.4%	
2. Elements of capital costs						
Short-term debt			$ 0.0			$ 0.0
Long-term debt			0.0			0.0
Equity	$860.8 x	18.6% =	160.1	$775.6 x	19.4% =	150.5
			$160.1			$150.5
C. Other required PSAF recoveries						
Sales taxes		$12.0			$14.8	
Federal Deposit Insurance assessment		0.0			0.0	
Board of Governors expenses		7.6			6.4	
			19.6			21.2
D. Total PSAF recoveries			$179.7			$171.7
As a percent of assets		1.0%				1.1%
As a percent of expenses[5]		23.1%				22.4%
E. Tax rates		29.8%				30.4%

[1] No short-term debt is imputed because clearing balances are used as a funding source for those assets that are not funded 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 (22.3%), along with results from a capital asset pricing model (12.2%), and a discounted cash flow model (21.3%).
[5] System 2004 budgeted priced services expenses less shipping are $779.3 million.

Table 5
Computation of 2004 Proposed Capital Adequacy
for Federal Reserve Priced Services
(millions of dollars)

	Assets	Risk weight	Weighted assets
Imputed reserve requirement on clearing balances	$1,175.6	0.0	$0.0
Imputed investments:			
Fed Funds[1]	10.2	0.2	2.0
1 – Year Treasury note[1]	5,043.3	0.0	0.0
Commercial paper (3 months)[1]	3,527.3	1.0	3,527.3
Short term corporate bond mutual fund (Aa3)[2]	30.5	1.0	30.5
Money market mutual fund [2]	1,081.1	1.0	1,081.1
GNMA mutual fund[2]	480.5	0.2	96.1
Total imputed investments	$10,172.9		
Receivables	74.0	0.2	14.8
Materials and supplies	2.6	1.0	2.6
Prepaid expenses	25.4	1.0	25.4
Items in process of collection	4,244.7	0.2	848.9
Premises	433.7	1.0	433.7
Furniture and equipment	173.3	1.0	173.3
Leases, leasehold improvements & long-term prepayments	95.4	1.0	95.4
Prepaid pension costs	818.2	1.0	818.2
Total	$17,215.8		$7,149.3

Imputed equity for 2004	$860.8
Capital to risk-weighted assets	12.0%
Capital to total assets	5.0%

[1] The imputed investments are assumed to be similar to those for which rates are available on the Federal Reserve's H.15 report, which can be located at http://www.federalreserve.gov/releases/h15/data.htm

[2] The imputed mutual fund investments are based on Vanguard's S/T Corporate Inv, Prime MMF, and Fund Investor Shares funds, which were chosen based on the investment strategies as articulated in their prospectuses. These fund returns can be located at http://flagship4.vanguard.com/VGApp/hnw/FundsByFundType#Bond_Funds