BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Date: November 1, 2004

To: Board of Governors

From: Mark W. Olson

Subject: Private Sector Adjustment Factor for 2005

The Committee on Federal Reserve Bank Affairs has reviewed staff's recommendation that the Board adopt a 2005 Private Sector Adjustment Factor for Federal Reserve Bank priced services of $161.0 million. I am forwarding the attached staff memorandum to the Board for its consideration at its November 4 meeting.

Attachment

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

DIVISION OF RESERVE BANK OPERATIONS AND PAYMENT SYSTEMS

Date: November 1, 2004

To: Board of Governors

From: Jonathan Mueller, Brenda Richards, Gregory L. Evans, Dorothy LaChapelle, and Paul Bettge

Subject: Private Sector Adjustment Factor for 2005

ACTION REQUESTED

Staff requests Board approval of its recommendation to adopt a 2005 Private Sector Adjustment Factor (PSAF) for Federal Reserve priced services of $161.0 million. This amount represents a decrease of $18.7 million, or 10.4 percent, from the 2004 PSAF of $179.7 million. This decrease is primarily due to the decrease in clearing balances available for investment in marketable securities and the resulting decrease 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, 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).

[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 estimated 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 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), projected 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, which measures the interest rate effect of the difference between interest rate sensitive assets and liabilities, indicates that a 200 basis point change in interest rates would change cost recovery more than two percentage points.[2, 3] Short-term debt is imputed only when short-term liabilities and clearing balances not used to finance long-term assets are insufficient 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 peer group.[4, 5] For simplicity, given that federal corporate tax rates are graduated, state tax rates vary, and various credits and

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[2] 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.

[3] The PSAF methodology includes an analysis of interest rate risk sensitivity, which compares rate-sensitive assets with rate-sensitive liabilities and measures the change in cost recovery of a change in interest rates of up to 200 basis points.

[4] The pre-tax 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.

[5] 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 peer group.

deductions can apply, a specific tax rate is not calculated for Reserve Bank priced services. Instead, imputed taxes are captured using a pre-tax ROE. 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 imputed costs and the targeted return on equity. The recommended PSAF is, therefore, based on a matching of revenues with actual and imputed costs. If the pre-tax earnings are less than the targeted ROE, imputed expenses are 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 tax-free 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 estimated expenditures. 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 a constant spread, determined by the return on a portfolio of investments, over the three-month Treasury bill rate.[6, 7] 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 a discounted Treasury bill rate.[8] Beginning in 2005, rates and clearing balance levels used in the NICB estimate are based on the most recent rates and clearing balance levels. Recent clearing balance levels are adjusted using historical data on depository institution clearing balance

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[6] The investment portfolio is composed of investments comparable to a BHC's investment holdings. In 2005, these investments were limited to federal funds, Treasury securities, government agency securities, commercial paper, municipal bonds, and money market and mutual funds.

[7] The 2004 constant spread was revised from 35 basis points to 30 basis points after correcting an error in the NICB portfolio model. The revised constant spread decreased the projected 2004 final NICB from $52.7 million to $47.6 million. Using the average spread of 29 basis points over the three-month Treasury bill, applied to the clearing balance levels and rate assumptions used in the 2005 pricing process, NICB is projected to be $61.3 million for 2005.

[8] See staff memo on Proposed 2005 Fee Schedules for Priced Services, which describes a change in the earnings credit rate from 90 percent of the three-month Treasury bill rate to 80 percent of the three-month Treasury bill rate.

management in a changing interest rate environment and applying the constant spread to the most recent three-month Treasury bill rate prior to the calculation date.[9] Because clearing balances are held for clearing priced services transactions or offsetting priced services fees, they are directly related to priced services. The net earnings or expense attributed to the imputed Treasury-bill investments and the cost associated with holding clearing balances, therefore, are considered net income for priced services activities.

DISCUSSION

The decrease in the 2005 PSAF is primarily due to a decrease in clearing balances on which investments are imputed and the resulting decrease in total assets. Since required imputed equity is based on five percent of total assets, priced services equity and the cost of equity also decreased proportionally.

Asset Base

The estimated Federal Reserve assets in 2005 to provide priced services, reflected in table 1, have decreased $1,056.0 million, or 6.1 percent. The decline in total assets is primarily a result of a decrease in imputed investments in marketable securities of $1,064.3 million and a decrease in imputed reserve requirements of $119 million. These elements are imputed based on the estimated level of clearing balances. As a result of consolidation and restructuring of several System functions, Bank premises assets are projected to decrease $38.8 million and leasehold improvements and long-term prepayments are projected to decrease $15.7 million. Offsetting these decreases in assets is an increase in items in process of collection of $201.1 million based on higher estimated float receivables.

As shown in table 2, the assets financed through the PSAF have decreased. Short-term assets funded with short-term payables and clearing balances total $38.9 million. This amount represents a decrease of $1.4 million, or 3.5 percent, from the short-term assets funded in 2004. Long-term assets funded with long-term liabilities, equity, and core clearing balances are projected to total $361.7 million. This amount represents a decrease of $5.2 million or 1.4 percent from the long-term assets funded in 2004.

[9] Previously, the projected balances were based on the average of the most recent six months of data prior to NICB calculation date and the projected T-bill rate was the rolling 13-week average of the three-month T-bill rate.

Debt and Equity Costs and Taxes

As previously mentioned, core clearing balances are available as a funding source for priced service assets. Table 2 shows that $400.6 million in clearing balances is used to fund priced services assets in 2005. The interest rate sensitivity analysis in table 3 indicates that a 200 basis point decrease in interest rates affects the ratio of rate-sensitive assets to rate-sensitive liabilities and produces a decrease in cost recovery of .8 percentage points, while an increase of 200 basis points in interest rates increases cost recovery by .7 percentage points. The established threshold for a change in 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 2004 and 2005. The decrease in clearing balances from which investments are imputed decreases total assets. The decrease in total assets, and the resulting decrease in imputed equity, decreases the estimated cost of equity in 2005. As indicated previously, the pre-tax return on equity is calculated using the combined results of three models. Contributing to the decrease in the overall imputed cost of equity is a decrease in the DCF component of the ROE calculation, resulting in the pre-tax ROE decreasing from 18.6 percent in 2004 to 18.1 percent in 2005. Sales taxes decreased from $12.0 million in 2004 to $8.2 million in 2005. The effective income tax rate used in 2005 also decreased to 29.6 percent from 29.8 percent in 2004. The priced service portion of the Board's expenses decreased $1 million from $7.6 million in 2004 to $6.6 million in 2005.

Capital Adequacy and FDIC Assessment

As shown in table 1, the amount of equity imputed for the proposed 2005 PSAF is $808.0 million, a decrease of $52.8 million from imputed equity of $860.8 million in 2004. As noted above, equity is based on 5 percent of total assets, as required by the FDIC for a well-capitalized institution, as defined for purposes of assessing insurance premiums. In both 2005 and 2004, 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)

	2005	2004	Change
Short-term assets			
Imputed reserve requirement on clearing balances	$ 1,056.6	$ 1,175.6	$ (119.0)
Receivables	64.9	74.0	(9.1)
Materials and supplies	1.7	2.6	(.9)
Prepaid expenses	28.5	25.4	3.1
Items in process of collection[1]	4,445.8	4,244.7	201.1
Total short-term assets	5,597.5	5,522.3	75.2
Imputed investments	$ 9,108.6	$ 10,172.9	$ (1,064.3)
Long-term assets			
Premises [2]	394.9	433.7	(38.8)
Furniture and equipment	173.1	173.3	(.2)
Leasehold improvements and long-term prepayments	79.7	95.4	(15.7)
Prepaid pension costs	806.0	818.2	(12.2)
Total long-term assets	1,453.7	1,520.6	(66.9)
Total assets	$ 16,159.8	$ 17,215.8	$ (1,056.0)
Short-term liabilities[3]			
Clearing balances and balances arising From early credit of uncollected items	$ 10,620.6	$ 11,887.1	$ (1,266.5)
Deferred credit items[1]	4,391.0	4,113.3	277.5
Short-term payables	56.2	61.7	(5.5)
Total short-term liabilities	15,067.8	16,062.1	(994.3)
Long-term liabilities[3]			
Postemployment/retirement benefits	284.0	292.9	(8.9)
Total liabilities	15,351.8	16,355.0	(1,003.2)
Equity	808.0	860.8	(52.8)
Total liabilities and equity	$ 16,159.8	$ 17,215.8	$ (1,056.0)

[1] Represents float that is directly estimated at the service level.
[2] Includes allocations of Board of Governors' assets to priced services of $1.4 million for 2005 and $1.7 million for 2004.
[3] 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)

	2005		2004	
A. Short-term asset financing				
Short-term assets to be financed:				
Receivables	$ 64.9		$ 74.0	
Materials and supplies	1.7		2.6	
Prepaid expenses	28.5		25.4	
Total short-term assets to be financed	$ 95.1		$ 102.0	
Short-term funding sources:				
Short-term payables	56.2		61.7	
Portion of short-term assets funded with clearing balances[1]		$ 38.9		$ 40.3
B. Long-term asset financing				
Long-term assets to be financed:				
Premises	$ 394.9		$ 433.7	
Furniture and equipment	173.1		173.3	
Leasehold improvements and long-Prepayments	79.7		95.4	
Prepaid pension costs	806.0		818.2	
Total long-term assets to be financed	$ 1,453.7		$ 1,520.6	
Long-term funding sources:				
Postemployment/retirement benefits	284.0		292.9	
Imputed equity[2]	808.0		860.8	
Total long-term funding sources	$ 1,092.0		$ 1,153.7	
Portion of long-term assets funded with core clearing balances[1]		$ 361.7		$ 366.9
C. Total clearing balances used for funding priced-services assets		$ 400.6		$ 407.2

[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 long-term liabilities and 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
2005 Interest Rate Sensitivity Analysis[1]
(millions of dollars)

	Rate sensitive	Rate insensitive	Total
Assets			
Imputed reserve requirement on clearing balances		$ 1,056.6	$ 1,056.6
Imputed investments	$ 9,108.6		9,108.6
Receivables		64.9	64.9
Materials and supplies		1.7	1.7
Prepaid expenses		28.5	28.5
Items in process of collection[2]	54.8	4,391.0	4,445.8
Long-term assets		1,453.7	1,453.7
Total assets	$ 9,163.4	$ 6,996.4	$ 16,159.8
Liabilities			
Clearing balances and balances arising from early credit of uncollected items[3]	$ 8,685.1	$ 1,935.5	$ 10,620.6
Deferred credit items		4,391.0	4,391.0
Short-term payables		56.2	56.2
Long-term liabilities		284.0	284.0
Total liabilities	$ 8,685.1	$ 6,666.7	$ 15,351.8

Rate change results	**200 basis point decrease in rates**	**200 basis point increase in rates**
Asset yield ($9,163.4 x rate change)	$ (183.3)	$ 183.3
Liability cost ($8,685.1 x rate change)	(173.7)	173.7
Effect of 200 basis point change	$ (9.6)	$ 9.6
2005 budgeted revenue	$ 900.6	$ 900.6
Effect of change	(9.6)	9.6
Revenue adjusted for effect of interest rate change	$ 891.0	$ 910.2
2005 budgeted total expenses	$ 796.9	$ 796.9
2005 budgeted target ROE	102.9	102.9
Tax effect of interest rate change ($ change x 29.6%)	(2.8)	2.8
Total recovery amounts	$ 897.0	$ 902.6
Recovery rate before interest rate change	100.1 %	100.1%
Recovery rate after interest rate change	99.3 %	100.8%
Effect of interest rate change on cost recovery[4]	(0.8)%	0.7%

[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 a change 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 settlement.
[3] The amount designated rate insensitive represents clearing balances on which earnings credits are not paid.
[4] 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 2005.

Table 4
Derivation of the 2005 and 2004 PSAF
(millions of dollars)

		2005			2004	
A. Imputed elements						
Short-term debt[5]		$ 0.0			$ 0.0	
Long-term debt[6]		$ 0.0			$ 0.0	
Equity						
Total assets from table 1	$ 16,159.8			$ 17,215.8		
Required capital ratio[7]	5%			5%		
Total equity		$ 808.0			$ 860.8	
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						
CAE[8]	22.2%			22.3%		
CAPM	12.3%			12.2%		
DCF	19.7%			21.3%		
Average pre-tax return on equity		18.1%			18.6%	
2. Elements of capital costs						
Short-term debt			$ 0.0			$ 0.0
Long-term debt			0.0			0.0
Equity	$ 808.0 x	18.1% =	146.2	$ 860.8 x	18.6% =	160.1
			$ 146.2			$ 160.1
C. Other required PSAF recoveries						
Sales taxes		$ 8.2			$ 12.0	
Federal Deposit Insurance assessment		0.0			0.0	
Board of Governors expenses		6.6			7.6	
			14.8			19.6
D. Total PSAF			$ 161.0			$ 179.7
As a percent of assets		1.0%			1.0%	
As a percent of expenses[9]		22.2%			23.1%	
E. Tax rates		29.6%			29.8%	

[5] 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.
[6] No long-term debt is imputed because clearing balances are used as a funding source.
[7] Based on the Federal Deposit Insurance Corporation's definition of a well-capitalized institution for purposes of assessing insurance premiums.
[8] 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.
[9] System 2005 budgeted priced services expenses less shipping are $724.8 million.

Table 5
Computation of 2005 Proposed Capital Adequacy
for Federal Reserve Priced Services
(millions of dollars)

	Assets	Risk weight	Weighted assets
Imputed reserve requirement on clearing balances	$ 1,056.6	0.0	$ 0.0
Imputed investments:			
1 – year Treasury note[1]	3,727.1	0.0	0.0
Commercial paper (3 months)[1]	5,044.7	1.0	5,044.7
GNMA mutual fund[2]	336.8	0.2	67.4
	$ 9,108.6		$ 5,112.1
Receivables	64.9	0.2	13.0
Materials and supplies	1.7	1.0	1.7
Prepaid expenses	28.5	1.0	28.5
Items in process of collection	4,445.8	0.2	889.2
Premises	394.9	1.0	394.9
Furniture and equipment	173.1	1.0	173.1
Leases, leasehold improvements & long-term prepayments	79.7	1.0	79.7
Prepaid pension costs	806.0	1.0	806.0
Total	$ 16,159.8		$ 7,498.2

Imputed equity for 2005	$ 808.0
Capital to risk-weighted assets	10.8 %
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 investment is based on Vanguard's GNMA Fund Investor Shares fund, which was chosen based on the investment strategies articulated in its prospectuses. The fund returns can be located at http://flagship4.vanguard.com/VGApp/hnw/FundsByType.