FEDERAL RESERVE SYSTEM

[Docket No. R-0967]

Federal Reserve Bank Service Pricing

AGENCY: Board of Governors of the Federal Reserve System.

ACTION: Notice.

SUMMARY: The Board has adopted guidelines for the Reserve Banks' use of volume-based fee structures for their electronic payment services and products. The Board has also approved the continuation of volume-based fees for certain electronic check products, pending completion of an analysis showing that those fees meet the guidelines. Finally, the Board has approved specific volume-based fees for the origination of automated clearing house (ACH) transactions and a reduction in the fee for the receipt of transactions.

DATES: The volume-based pricing guidelines for electronic payment services and products became effective March 25, 1997. The ACH volume-based fees become effective May 1, 1997.

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SUPPLEMENTARY INFORMATION:

I. Background

In 1993, the Board approved volume-based fees for the Reserve Banks' noncash collection service and several check products. Under certain conditions, volume-based fee structures promote the efficient use of payment services by allowing Reserve Banks to set variable fees closer to the incremental costs of providing the services. One of the objectives of adopting volume-based fees was to encourage more efficient use of payment services by permitting the Reserve Banks to address the differences in demand for the services by high-volume and low-volume customers through the fees charged for those services.

Reserve Banks serve customers that vary in size and that have very different business needs. For the most part, the Reserve Banks have tried to meet those differing needs by designing specialized products. In some cases, however, it is difficult to meet the needs of both high-volume and low-volume

customers solely through specialized product offerings. This situation occurs most frequently in the Reserve Banks' electronic payments services and products because they tend to be homogeneous. Thus, it is very difficult to develop specialized products to meet the needs of both high-volume and low-volume customers.

Currently, volume-based fees are in effect for several electronic check products. The Federal Reserve Bank of Minneapolis uses volume-based fees for its check truncation product. In this case, truncation customers may select from two sets of fees--a per-item fee of $0.015 with an $11.00 daily minimum or a per-item fee of $0.007 with a $25.00 daily minimum.[1] The Federal Reserve Bank of Richmond uses volume-based fees for its account total and account total plus products.[2] Account total customers may select from two sets of fees--a per-account fee of $0.25 with a $45.00 daily minimum or a per-account fee of $2.00 with a $15.00 daily minimum. Account total plus customers may also select from two sets of fees--a per-account fee of $0.25 with a $50.00 daily minimum or a per-account fee of $2.00 with a $20.00 daily minimum.

In approving these fees, the Board requested its staff to recommend principles or guidelines that would be used in the future to determine when and how volume-based pricing might be used in setting fees for Federal Reserve priced services (58 FR 60649, November 17, 1993).

The following discussion presents the Board's analysis of the issues raised by the use of volume-based fees for electronic payment services and products, presents specific guidelines for the use of such fees, assesses the existing

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[1]In 1993, the Board also approved the use of volume-based fees for the Minneapolis office's weekday other Fed, weekend other Fed, and city fine sort deposit products. In November 1994, the staff recommended that the Minneapolis office's volume-based fees for paper check products be eliminated. Results of econometric studies of the check service's cost structure indicate that the use of volume-based fees is not appropriate for paper-based check products. The Minneapolis office subsequently discontinued the use of volume-based fees for these products.

[2]The account total products provide information on the number and the dollar value of checks drawn on the accounts of individual customers of a depository institution and are typically used to support the institution's cash management services. The account total plus product provides additional information on each check drawn on those accounts.

volume-based fees for electronic products, and analyzes the use of specific volume-based fees for the ACH service.

II. Reserve Banks' Current Fee Structures

The Monetary Control Act requires the Federal Reserve to set fees that, over the long run, recover all direct and indirect costs incurred in providing priced services to depository institutions plus imputed costs that would be incurred by a private-sector service provider, such as interest on debt, taxes, and return on capital. These imputed costs are called the private sector adjustment factor (PSAF).

In establishing fee structures to recover the total costs of each payment service, in most cases, the Reserve Banks have implemented a combination of fixed and variable fees. For example, the fee structure for the ACH service includes a monthly account servicing fee, a file fee, and per-item fees. The account servicing fee is intended to recover from all ACH customers a portion of the high fixed costs incurred in providing the ACH service; the file fee is intended to recover costs, such as processing overhead and accounting costs, that do not vary with the number of transactions contained in files transmitted to the Federal Reserve; and the per-item fee is set to recover all remaining costs.[3]

The types of fee structures that have been implemented by the Reserve Banks are similar to the fee structures used by other payment service providers, which also use multi-part fee structures.[4] Private-sector ACH and funds transfer service providers charge monthly access fees, participation or membership fees, and per-item fees, which, in some cases, include discounts for high-volume customers.

The use of multi-part fee structures result in differential costs for users of payment services. For example, the current ACH fee structure includes a monthly account servicing fee of $25.00, a file fee of $1.75, and a per-item fee

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[3]The Federal Reserve also charges electronic connection fees to depository institutions that establish an electronic connection with the Federal Reserve to send and receive electronic payment transactions and information about those transactions. The electronic products available include ACH, Fedwire funds transfer, electronic check presentment, accounting information, and so forth.

[4]The Reserve Banks only charge a per-item fee for their Fedwire funds transfer service, although depository institutions that use the service also incur electronic connection fees.

for unsorted transactions of $0.01. For a customer that transmits one file containing 1,000 transactions each day of a typical month, the average cost per transaction would be $0.013. For a customer that transmits one file containing 5,000 transactions each day of a typical month, the average cost per transaction would be $0.011. Thus, multi-part fee structures result in low-volume customers incurring higher average costs than high-volume customers because the fixed fees are spread over fewer transactions.

The use of multi-part fee structures have also contributed to the Reserve Banks' ability to recover the costs of priced services because, in some cases, the fixed fees reflect the fixed costs associated with a product. Nevertheless, the current fee structures for electronic payment services and products have not permitted the Reserve Banks to set transaction fees close to marginal or incremental costs because the fixed costs incurred in providing these services are very high and setting a non-differential fixed fee to recover fixed costs fully would likely cause low-volume customers to discontinue using the services or products. As a result, transaction fees for electronic payment services are set well above marginal costs and do not reflect the real resource costs of providing additional levels of the services.[5]

III. Guidelines for Use of Volume-Based Fees For Electronic Payment Services and Products

Volume-based fee structures are an extension of multi-part fee structures. Rather than creating implicit volume discounts for high-volume customers, the volume discounts are more explicit. Volume-based fee structures would allow Reserve Banks to set per-item fees for high-volume users closer to marginal costs under certain prevailing market conditions. Thus, the use of volume-based fee structures for the Reserve Banks' electronic payment services and products potentially may provide an opportunity to improve payment system efficiency.

Economic theory supports the use of volume-based fees

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[5]For example, the combined per-item fees that are currently charged to originators and receivers for the ACH service are $0.020 per item for unsorted files. These per-item fees are greater than estimates of the marginal costs of processing an ACH transaction. Based on econometric studies for the period 1989 to 1994, the marginal cost of an ACH transaction is estimated to be between $0.006 to $0.008 per item. See "Scale Economies and Technological Change in Federal Reserve ACH Payment Processing," Paul W. Bauer and Diana Hancock, Economic Review, Federal Reserve Bank of Cleveland, vol. 31 (Quarter 3, 1995), p. 14-29.

when certain conditions are met. First, economic theory suggests that volume-based fees require the existence of economies of scale over wide volume ranges.[6] In multi-product industries, volume-based fees also may be justified for products that exhibit economies of scope with a product that exhibits economies of scale over wide volume ranges. The Board's pricing principles, however, require the Reserve Banks to set fees so that the total costs for each major service category are recovered. Thus, the potential existence of economies of scope among payment services offered by the Reserve Banks is not considered, at this time, a sufficient guideline for using volume-based fees.

The Board has determined that Reserve Banks must demonstrate that a payment service or product exhibits economies of scale over current industry processing levels. It is anticipated that volume-based fees would be retained until there is evidence that increasing returns to scale have been exhausted. The Reserve Banks may demonstrate that this guideline is met either by using the results of an econometric study or, if such a study has not been conducted, by presenting evidence that the service or product exhibits technical characteristics similar to those exhibited by a service or product for which increasing returns to scale have been demonstrated.

Second, volume-based fees should promote the efficient use of resources in providing payment services. The Board has determined that the efficient use of resources can be demonstrated in one of two ways: (1) there are incremental cost differences in serving high-volume and low-volume customers or (2) there are differences in demand for the service or product among its end users. To the extent that volume-based pricing permits fees to reflect more accurately the costs of providing a service or product to high-volume and low-volume customers, those customers should make decisions that would lead to a more efficient use of economic resources. Alternatively, the use of volume-based fees may increase end users' demand by offering lower fees to customers with high demand elasticities. To the extent that differences in demand elasticities exist, the use of volume-based fees would improve the scale of the Reserve Banks'

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[6]Volume-based fees may also be justified by the existence of network externalities. Network externalities arise when a good becomes more valuable to a user when other users also choose to consume that good. For example, telephone service becomes more valuable to a user as the number of other users who are connected to the telecommunications network increases. At present, we do not have strong intuitive evidence nor do we have well-developed methods to establish the importance of network externalities for use in establishing pricing policies.

processing operations and result in a reduction in the average cost of serving all customers. The Board has determined that Reserve Banks should provide evidence that there are cost differences between serving high-volume and low-volume customers that support the price differential being proposed or that demand characteristics differ across end users.

Third, economic theory indicates that societal welfare can potentially be increased only so long as a firm using differential fees does not engage in predatory behavior. A number of pricing constraints have been proposed in antitrust law that are intended to prevent predation. One of the best known, the Areeda-Turner rule, specifies that the incumbent's price must be no lower than its reasonably anticipated short-run marginal cost.[7] To the extent that econometric studies have been conducted, their findings could be used to satisfy this guideline. It is unlikely, however, that there will be econometric estimates of the marginal costs for all products. Thus, estimates of marginal costs for some products may have to be based on available cost accounting data. The Board has determined that no fee should be set below marginal cost or a reasonable approximation of marginal cost. Moreover, the Board believes that this guideline along with its current requirement that each major service recover its total costs, including the PSAF, over the long run, would ensure that proposed prices are not predatory, but competitive, in nature.

In determining when the Reserve Banks should be permitted to implement volume-based fees, the Board has determined that thresholds should be set to ensure that the Federal Reserve's dual objectives of promoting efficiency and a competitive environment for payment services are met. To the extent that markets are contestable, economic theory suggests that established firms cannot set prices that yield profits greater than profits that are commensurate with the risk of producing the service.[8] Because the markets for electronic payment services and products are typically contestable, Reserve

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[7]See "Predatory Pricing and Related Practices Under Section 2 of the Sherman Act," P. Areeda and D. F. Turner, Harvard Law Review, 1975, p. 637-733.

[8]In a contestable market, potential competitors may freely enter the market and serve the same customers with the same production technology as the incumbent firm(s). Thus, in contestable markets where incumbent firms are earning profits that are greater than the risk they are taking, competitors may enter the market, earn normal profits, and make the incumbents' fee structure unsustainable.

Banks would not be able to adopt fee schedules that would lead to unusually high profits. Based on the preceding analysis, the Board has determined that the following guidelines will be used in determining when volume-based fees may be appropriate for a Federal Reserve priced electronic payment service or product:

1. The payment service or product must demonstrate economies of scale over the current industry processing levels for a particular service or product, based on either the results of an econometric study or, if such a study has not been conducted, evidence that the service or product exhibits technical characteristics similar to those exhibited by a service or product for which increasing returns to scale have been demonstrated. Volume-based fees may be retained until there is evidence that increasing returns to scale have been exhausted;

2. Reserve Banks should provide evidence that there are cost differences between serving high-volume and low-volume customers that support the proposed price differential or that demand characteristics differ across end users;

3. No fee should be set below marginal cost or a reasonable approximation of marginal cost; and

4. Consistent with the Board's pricing principles, the fees established for the service should be expected to recover total costs.

IV. Evaluation of Current Volume-Based Fees for Electronic Payment Products

In assessing the use of volume-based fees for the Minneapolis Reserve Bank's check truncation product, it appears that three of the four guidelines are met. The Federal Reserve has not performed an econometric study of the cost structure of the Reserve Banks' electronic check products nor have the Reserve Banks provided evidence that the cost structure for these products exhibits characteristics similar to those of a product with demonstrated increasing returns to scale. The Minneapolis Bank, however, has achieved significant unit cost reductions in providing its electronic check products, which include the truncation product. From January 1994 to November 1996, the volume of electronic check products processed by the Bank increased 161 percent and its unit cost for the products declined about 42 percent.

There do appear to be differences in the demand characteristics of customers. Following the introduction of

volume-based fees, larger community banks and third-party service providers began using the Minneapolis Bank's truncation product. Previously, only small banks and credit unions used the product. From January 1994 to November 1996, the number of checks truncated by the Minneapolis Bank increased 253 percent. While this increase is only slightly greater than the increase in the System's overall truncation volume, the Minneapolis Bank's check truncation volume is the highest in the Federal Reserve System.

The marginal cost of electronic check products has not been estimated. Cost data provided by the Minneapolis Bank's staff indicate, however, that the fees charged to high-volume customers recover the average variable cost for the products, which would likely be greater than the marginal cost. In addition, the Bank recovered the total costs of its commercial check service over the three years it has offered this product.

The Richmond Reserve Bank adopted volume-based fees for its account total and account total plus products, which were intended to meet the needs of low-volume customers that offer cash management services. Since offering volume-based fees for these products in 1994, low-volume customers have shown limited interest in the products and only three are using them currently. As noted above, studies of the cost structure of electronic check products have not been completed and the marginal costs have not been estimated.

The Board has determined that, as a condition of retaining their volume-based fees, the Reserve Banks should demonstrate that economies of scale exist for electronic check products or provide evidence that the products exhibit characteristics similar to those exhibited by products with increasing returns to scale. The Federal Reserve Banks of Minneapolis and Richmond should also demonstrate that their fees cover the marginal costs of the products they are offering. In addition, the Federal Reserve Bank of Richmond should analyze the costs of providing its account total products to high-volume and low-volume customers to determine whether there are cost differences in serving various size classes of customers or should analyze the demand for the products to determine whether their are differences in demand elasticities.

V. ACH Volume-Based Fees

The Board has approved the volume-based fees depicted in Table 1 for the ACH service, effective May 1, 1997. Customers that deposit files of less than 2,500 items will be assessed a file fee of $1.75 and a per-item fee of $0.009. Customers that deposit files of more than 2,500 items will be assessed a file fee of $6.75 and a per-item fee of $0.007. The fee for the receipt of ACH transactions will be reduced to $0.009 for all

customers. Because current presort customers will need to make software changes to take advantage of volume-based fees, through August 31, 1997, they will be charged the high-volume origination per-item fee and one file fee ($6.75) when they transmit presorted files to the Federal Reserve. Beginning September 1, all depositors will be assessed fees based on the number of items in each file.

Fees for the ACH service have been reduced twice in the last six months, reflecting the efficiencies that are being realized as a result of the centralization of ACH processing using the new Fed ACH application software. In October 1996, the interregional per-item fee was eliminated and all items in mixed files were assessed the local per-item fee. At the same time, the presort per-item fee was reduced from $0.010 to $0.009. In January 1997, there were additional price reductions. Specifically, the premium cycle surcharge and addenda fee were reduced and the discrete file fee was eliminated. At the time the 1997 fees were approved, the Board indicated that further fee reductions would be sought during the first quarter of 1997 (61 FR 64087, December 3, 1996).

Table 1
ACH Fee Comparison

	Current Fees	New Fees
Origination Fees:		
Per-Item (Mixed)	$0.010	$0.009 (up to 2500) $0.007 (more than 2500)
Per-Item (Presort)	$0.009	$0.007 through August 31, 1997. Discontinued as of September 1, 1997.
File Fees:	$1.75	$1.75 (up to 2500) $6.75 (more than 2500)
Receiver Fees: Per-Item	$0.010	$0.009

On average, the new fees reduce the cost of originating ACH transactions by 17 percent and of receiving transactions by 10 percent.[9] The reduction in transaction fees for various Federal Reserve customers is shown in Table 2.

Table 2
Representative Cost Savings

Selected Customers[1]	Percentage Decrease[2]
Small	4.9
Medium	10.0
Large:	
Does not presort	29.1
Presorts	24.3

[1]The small customer originated approximately 100 items in one file and received approximately 70 items. The medium customer originated approximately 4,000 items in two files and received approximately 17,000 items. The large customer that does not presort originated approximately 200,000 items in four files and received approximately 39,000 items. The large customer that presorts originated approximately 190,000 items in 108 presorted files and received approximately 44,000 items.

[2]Includes originated and received per-item fees and originated file fees.

The Federal Reserve believes that the volume-based fees may stimulate increased use of the ACH service because the fees for high-volume originators are set close to the marginal cost of processing ACH transactions. To the extent that this expectation is correct, the use of volume-based fees for the ACH service should further the Federal Reserve's goal of moving to a predominately electronic payments system.

Retaining high-volume originators would enable the Federal Reserve to continue to spread fixed costs over larger volumes and to serve low-volume customers cost effectively. In addition, because the new ACH fees reduce the cost of the ACH service for low-volume originators and all receivers, they do not price small customers out of the market and, therefore, preserve the benefits of a large network.

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[9]There may be a small number of third-party sending points whose fees would increase as a result of this proposal because sending points are assessed the file fees while the originating depository institution is assessed the per-item fees. The Reserve Banks believe that the number of organizations affected would be small. Further, those organizations may be able to use the lower per-item fees as an incentive to attract more customers.

The Board has determined that volume-based fees for the ACH service satisfy all of the guidelines for their use. First, the ACH cost function exhibits economies of scale over more than 150 percent of the current industry's volume level, as shown in Bauer and Hancock's econometric study.[10] While the study was conducted when the Federal Reserve processed ACH transactions at twelve sites, the use of a centralized application has not created any material changes in the characteristics of the service. ACH processing continues to use large amounts of computer resources with relatively few labor resources.

Second, the Reserve Banks analyzed Fed ACH processing costs and found that the average per-item cost to process larger files was about $0.002 less than the per-item cost for smaller files. The analysis focused on the data processing costs to edit and sort transactions contained in incoming ACH files, which comprise approximately 19 percent of total ACH processing costs. Because there are other fixed costs associated with processing ACH files, it is likely that cost differences for processing high-volume and low-volume files of ACH transactions are greater than the difference that was demonstrated.

There also appear to be differences among end users' demands for ACH services. For example, individuals may be willing to pay slightly higher fees for increased convenience, as in the case of electronic bill-payment services. Corporations may choose a payment method based on its cost-effectiveness and certainty of settlement. In addition, according to the 1994-1995 Phoenix-Hecht Blue Book of Bank Prices, banks frequently grant discounts to some corporate customers for ACH processing services. It is reasonable to assume that the discounts are granted, at least in part, due to differences in demand among end users and/or due to differences in the cost of serving end users.

Third, the results of the Bauer-Hancock econometric study confirm that the fees are above the estimated marginal cost, that is, the combined origination and receipt fees of $0.016 or $0.018 are well above the estimated marginal cost of $0.006 to $0.008.

Finally, the Board anticipates that the ACH service will be able to recover its costs over the long term. In addition, the Board expects full cost recovery for 1997 (see Table 3). The current 1997 cost and revenue estimates for the ACH service reflect some slight refinements, compared with earlier budget estimates. Revenue in the revised estimate is below the final 1997 budget figure because the $0.002 per-item

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[10]Bauer and Hancock, Economic Review, p. 14-29.

fee differential is greater than the price reductions assumed when the Reserve Banks prepared their budgets. In addition, the estimated volume growth rate for commercial ACH transactions has been reduced slightly, from 18.5 percent to 16.0 percent, to reflect more accurately expectations based on actual 1996 performance. Operating costs and imputed expenses are below the 1997 budget estimates, reflecting lower data processing costs due to enhancing the performance of the Fed ACH software. Based on these refinements, the Board now expects that the ACH service's net income will be slightly higher than the original budget estimate.

Table 3
ACH Pro Forma Cost and Revenue Performance
($ millions)

Year	1 Revenue	2 Operating Costs & Imputed Expenses	3 Special Project Costs Recovered	4 Total Expense [2+3]	5 Net Income (ROE) [1-4]	6 Target ROE	7 Recovery Rate after Target ROE (percent) [1/(4+6)]	8 Special Project Costs Deferred & Financed
1996 (Act)	79.8	63.5	9.2	72.7	7.1	3.6	104.6	16.7
1997 (Bud)	75.4	59.9	11.1	71.0	4.3	4.0	100.5	10.8
1997 (Est)	73.5	57.7	11.1	68.8	4.7	4.0	101.0	10.8

VI.COMPETITIVE IMPACT ANALYSIS

In assessing the competitive impact of a proposed, substantial change to a Federal Reserve priced service, the Board must consider whether there would be a direct and material adverse effect on the ability of other service providers to compete with the Federal Reserve due to differing legal powers or due to the Federal Reserve's dominant market position deriving from such legal differences. If the Board determines that legal differences or a dominant market position deriving from such legal differences exist, then the Board must further evaluate the proposal to assess its benefits--such as its contributions to payment system efficiency, payment system integrity, or other Board objectives--and to determine whether the proposal's objectives could be achieved with a lesser or no adverse impact.

The Board has determined that volume-based fees are not a significant departure from the multi-part fee structures currently used by the Reserve Banks. Nevertheless, it is important to assess their use in the context of the service for which the fee structure is being proposed.

The Board has determined that adoption of a volume-based fee structure for electronic services would not have a direct and material adverse effect on the ability of other service providers to compete effectively with the Federal Reserve in providing electronic check products and ACH services.

In the check service, the Reserve Bank's dominant market position is likely due, in part, to legal advantages, such as the ability to present checks later in the day and the ability to control the timing and manner of settlement. The use of volume-based fees for Reserve Bank electronic check products, however, should not significantly change the Reserve Banks' competitive position relative to private-sector service providers. Volume-based fees are used by a number of private-sector service providers and would not represent a significant departure from the multi-part fees that are currently assessed by the Reserve Banks.

In the case of the ACH service, the Federal Reserve's dominant market position does not derive from legal differences. The Federal Reserve generally abides by the rules of the National Automated Clearing House Association (NACHA), which also govern the processing of ACH payments by private-sector operators.

By order of the Board of Governors of the Federal Reserve System, March 19, 1997.

(signed)
William W. Wiles
Secretary of the Board