

Priced services: The Fed's impact on correspondent banking

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With the passage of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA), the Congress set in motion the process of eliminating numerous competitive barriers between financial intermediaries. The basis for a more "level playing field" was developed as product and price barriers were removed, reserve requirement levels lowered, reserve inequities narrowed, and the regulatory reporting burden standardized across depository institutions. The goal was improved industry efficiency from increased competition. At the same time, the Congress decided that the Bank Operations Division of the Federal Reserve, a long-time provider of *free* correspondent banking services, should be more accountable to the forces of the marketplace. Services would no longer be provided free of charge nor limited to member banks, and the Federal Reserve would be an active market participant alongside other (private) correspondent banks.

What initially seemed a relatively minor aspect of DIDMCA has resulted in significant controversy and substantial modification to Fed service operations and to the correspondent banking industry. This article reviews the development of the correspondent banking industry as it has been affected by the presence of the Fed since DIDMCA. In particular, how have the Federal Reserve and other correspondent banks responded to the "Fed pricing environment"? The history of the Federal Reserve as a financial service provider is briefly discussed, as are the reasons why Congress required a (quasi) governmental agency to compete with private sector correspondents. The legislative mandate is then discussed, followed by the Fed's and private correspondents' interpretation of and responses to that mandate. Finally, the result of the Fed's presence is analyzed by viewing changes in correspondent bank services, service prices, market shares, and Fed performance.

Correspondent banking

Financial institutions are in the business of transferring claims over financial resources. In doing so they collect and clear checks and securities, transfer funds, make loans, and perform other financial service functions. While all financial institutions want to be capable of providing most of these services to customers, few are involved with the actual production of many of them. For example, few banks in Florida would physically transport checks drawn on a Wyoming bank through the entire clearing process. The same can be said for bond or coupon collection or storage, the interbank transfer of funds, and investment decisions. Instead, an elaborate network has developed in which the larger institutions, which have sufficient customer demand to justify the necessary physical and human capital required by these production processes, produce the services. Once the network is in place, efficiencies allow the larger banks to provide similar services to other financial institutions and corporate customers. In this fashion, a symbiotic correspondent-respondent relationship has evolved. Similarly, correspondents from different regions utilize one another to provide nationwide services.

The number of respondent services provided by correspondents is almost endless, but all can be categorized as either credit or non-credit services. Credit services include loan participations and overlines which allow a respondent institution to make large loans that exceed its own legal lending limit. Non-credit services include clearing services (funds transfers, check and securities collection) and asset management offerings (coin and currency delivery, document safekeeping, investments).¹ While the respondent institution benefits from this relationship by being able to offer a wider array of services than would otherwise be pos-

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sible, the correspondent utilizes its excess capacity (decreasing its own service average costs) and receives payment either from explicit fees ("hard charges") or, more commonly, cash balances. Additionally, the credit services provide the correspondent with an alternative market outlet for portfolio diversification and risk reduction.

During the early 1900s, this correspondent network provided a nationwide payments mechanism. Checks were cleared and interbank fund transfers occurred without the aid of a central bank. However, the system was plagued by non-par check and securities collection and numerous means to delay the interbank transfer of funds. Many observers feared these inefficiencies might impair economic growth. As a consequence, when Congress established the Federal Reserve System in 1913, it gave the Fed a regulatory and operational role in the payments system. The stated role was to "make and promulgate from time to time regulations governing the transfer of funds and charges."² The Reserve Banks would collect at par checks that were both deposited by and drawn on member banks. Additionally, the Federal Reserve was not required to pay a presentment fee to the paying bank but would charge a processing fee to the presenting institution instead.

The Fed had little success in eliminating non-par check clearance during the 1914-18 period because very few institutions chose to use it as a clearing agent. Instead, established clearing arrangements continued to be used as smaller banks continued to profit from presentment fees and slow presentment of items drawn on themselves. In 1918 the Fed removed service fees and offered member banks free access to all services. This was followed by a rather steady rise in Fed service usage over the next 60 years. Par clearance evolved as a result of the Fed's active opposition to non-par banking and the growing intolerance of bank customers for exchange charges.

Between 1920 and 1980 the Fed provision of correspondent services performed a convenient dual role. First, the free services allowed member banks to justify Federal Reserve membership and the resulting idle reserve balances. Second, by maintaining a presence in the payments system the Fed was better able to implement service enhancements and more efficient payment system technology. Check

clearing efficiencies resulting from Fed-induced MICR-encoding are the best known examples of benefits resulting directly from Fed participation in the payments system.³ With the introduction of regional check processing centers (RCPCs) in 1972, the Fed significantly improved check clearing times and nearly cut system float in half.⁴ However, inefficiencies also occurred. Since the Fed service was free, a number of efficient clearing arrangements were eliminated as institutions decided to utilize the Fed alternative. Local clearinghouses were closed and the absence of the pricing mechanism created some unique check routing. For example, regional institutions suddenly found it "economical" to stop exchanging checks with other local institutions, perhaps across the street, and instead to sort the checks into groups drawn on institutions in a particular Federal Reserve check territory. The banks would then send them to the Fed and receive prompt payment while the Fed would return the checks to the paying institutions. The process resulted in a more lengthy and costly clearing process on these particular items than had occurred prior to the introduction of the new Fed facilities. This was obviously not the intent of the RCPCs but resulted because of the zero price set for clearing checks. Thus, part of the improvement in check clearing resulting from the introduction of the RCPCs was offset.

During the late 1970s, it became obvious that some changes were needed in the financial industry. With rising interest rates, price controls and product restrictions often led to severe disintermediation and had a significant impact on bank profitability. Inefficiencies resulting from barriers became a matter of great concern. The Federal Reserve saw its ability to implement monetary policy impeded as large banks began to withdraw from Fed membership because of the high reserve balance opportunity cost and the lower reserve requirements common at the state level. With declining membership, fewer institutions were subject to the reserve requirements with which the Fed controlled monetary growth. To correct this problem some new means of maintaining control was necessary.⁵

At the same time, private correspondents were complaining that the Fed was monopolizing certain markets by giving away check services to nonmember as well as member

banks. While the Fed had allowed nonmembers to utilize the new RCPCs with the hope of improving the check-clearing process, it was aware of circuitous check routing patterns.

DIDMCA

In March 1980, the Congress passed DIDMCA. In addition to eliminating numerous price and product barriers, it attempted to give the Federal Reserve better control over the monetary aggregates by requiring all depository financial institutions to hold reserves with the Fed. This not only made the declining membership problem moot, it also gave the Federal Reserve deposit information on savings and loan institutions and credit unions. To ease the reserve burden, the reserve requirement ratio was lowered from previous levels. However, the lower ratio and resulting decline in reserve balances and government securities held by the Fed would reduce earnings on these balances and, as a result, decrease payments to the Treasury.⁶ Given the size of the federal deficit, the Congress attempted to recoup part of this revenue loss by having the Fed price its correspondent services. This also would subject the Fed to competitive market forces and help eliminate inefficiencies previously introduced.

The Act mandated that the Fed explicitly price 1) coin and currency services; 2) check clearing and collection services; 3) wire transfer services; 4) automated clearinghouse services; 5) net settlement services; 6) security safekeeping services; 7) Federal Reserve float; and 8) any new services. Services were to be made available to all depository institutions regardless of Fed membership (i.e., banks, S&Ls, and credit unions) and to be explicitly priced-based on all long-run direct, indirect, and imputed costs. The imputed cost would take into account taxes and return on capital that the Fed would have if not for its special quasi-governmental status. Additionally, the Fed was to develop a fee schedule and a list of pricing principles by which future prices would be established.

While DIDMCA stated that costs were to be recovered “over the long run”, the pricing principles and resulting prices were to “give due regard to competitive factors and the provision of an adequate level of such services nationwide.” This provided justification for a continuing Fed presence in the payments sys-

tem. The final article of the pricing section of the Act stated that “the Board shall require reductions in the operating budgets of the Federal Reserve banks commensurate with any actual or projected decline in the volume of services.” Thus, demand decreases should result in commensurate cut-backs in the Fed’s scale of operation. Two very different interpretations of these mandates were made.

Reaction

Initial reaction to the pricing provisions of DIDMCA was swift and intensified significantly during the first two years after the law’s enactment. The Fed responded to the request for pricing principles and published the following principles for public comment (these supplemented those included in the Act):

1) Over the long run fees should recover total cost for all priced services.

2) Fees should be structured so as to avoid disruptions in services and facilitate an orderly transition to pricing.

3) Both fees and the level of service should be administered flexibly to allow for response to changes in market conditions.

4) Incentives may be provided to improve the efficiency and capacity of the payments system and induce desirable long-run changes.

The request for public comment described the Fed’s position concerning its participation in the payments system. The Fed took the position that the Congress wanted to encourage competition in the provision of these services and, by so doing, assure that they were provided in the most efficient manner possible. Similarly, the increased competition between the Fed and other service providers would stimulate innovation and provide improved payment alternatives. However, the increased drive for efficiency would not be allowed to create an incentive for a return to “undesirable banking practices” such as non-par clearing or circuitous routing of checks. Nor would competition alone be the determining factor in deciding on service levels and prices. To avoid these undesirable practices and insure an “adequate” level of services nationwide, the Fed would maintain an operational presence in the payments mechanism. This attempt to impose, but limit, the forces of the marketplace emphasizes the contradictory nature of this interpretation of DIDMCA.

The initial response by the financial industry was mixed. Smaller institutions were generally indifferent to this section of the Act and simply tried to adjust to the other modifications such as new reporting requirements and new services. However, most larger correspondents favored the imposition of market discipline on the Fed and many doubted that it was capable of becoming a viable competitor. While these banks had been major users of Fed services in the past, they had also competed with the Fed. Although the Fed had given the product away, the private correspondents had maintained a significant market share in the correspondent business by providing a more complete array of services and being more flexible and customer-oriented. Many correspondents felt it was the intent of Congress to gradually phase down the Fed's role as service provider. The Fed would suddenly be at a significant competitive disadvantage if it had to price its services and would be required to phase down or drop out of many business lines completely. The check clearing service, the most lucrative correspondent business line, was expected to be the one most affected. Thus, the Act essentially was expected to create new correspondent business opportunities.

When the Fed published its pricing principles and proposed prices the private correspondents argued that the wording was too vague and might not fulfill the intent of the Congress. The proposed prices were thought too low and incapable of recovering all Fed expenses. The price adjustment to allow for the Fed's special tax and cost of capital status was also thought to be too low at 12 percent. However, there was little doubt that once prices became effective the Fed would begin losing volume and that private correspondents would be the principal beneficiaries.

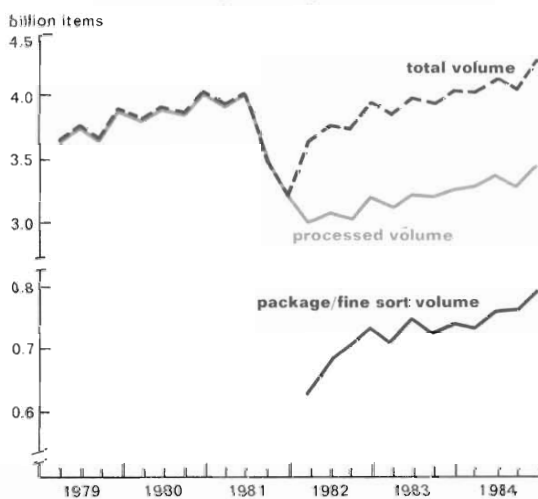
In January 1981, the Fed began phasing in the pricing scheme by imposing prices on the wire transfer and net settlement services. As expected, given the lack of close substitutes in the marketplace, little volume shift occurred. In contrast, customer reaction was immediate and significant when check services were priced in August 1981. Fed-processed check volume fell nearly 22 percent between the second and fourth quarter of that year. Financial institutions realized that the Fed service had become relatively more expensive and immediately sought alternatives. The available

alternatives included private correspondents, direct exchanges between institutions, and the reemergence of regional clearinghouses.⁷ Small and intermediate-sized institutions evaluated the new alternatives and, in many cases, chose the private sector correspondents.

The larger correspondents utilized alternative clearing methods but also continued to use the Fed as a check clearing agent, though in a much different manner. Much of the check volume they had originally sent to the Fed to be processed was now sent as pre-sorted work. The larger banks would sort the check items and utilize the Fed for transportation purposes only. While the Fed had offered this service (package or fine sort) prior to the pricing era, the depositing bank had little incentive to use it. Because Fed handling of package items is minimal, the price was set low. Check volume flows for processed and package/fine sort check items are shown in Figure 1.

The Fed volume declines were a welcome sight to private correspondents. Given the provisions in DIDMCA, the next logical step, according to this group, would be for the Fed to scale back operations and phase into the role of a service provider of last resort. However, the Fed took an alternative stance. Instead of phasing out of the business, it decided that the

Figure 1
Federal Reserve quarterly check volume



NOTE: Package/fine sort volumes were not reported prior to 1982. However the totals were minimal.
SOURCE: PAC's Quarterly Reports.

intent of DIDMCA was for the Fed to have a major role in the payments system.

Given that most economists would argue that private institutions are inherently more efficient than public ones, why should the Federal Reserve have stayed in the correspondent business? Basically, three arguments can be made for its inclusion: 1) Congress had mandated that it develop and maintain an efficient nationwide payments system and this may be impossible or more costly for the Fed to do without a market presence; 2) correspondent markets were not competitive and an alternative supplier of services was needed in certain areas to prevent "unreasonable" prices and to insure adequate and efficient service levels and resource allocation; and 3) given that some correspondent services have joint economies and natural monopoly characteristics (i.e., the economies of scale are such that one provider may produce more cheaply than multiple providers) it might be more cost effective for the Fed to provide competition to a private natural monopolist than to regulate it.

Representatives of the Fed argued that if it was to serve as an innovative stimulant and induce payment system efficiencies it had to maintain a viable role in the marketplace. Additionally, "adequate" accessibility to the payment system for all institutions is a goal the private sector alone would not achieve. Respondents in remote rural areas might receive an inferior level of service if private correspondents were the only service providers.⁸ Finally, because of scale economies, certain services such as wire transfers and transportation networks may be more efficiently offered by a limited number of providers. The Fed already has the structure in place to provide these services and, because of shared inputs in the production of regulatory and payment services, may have additional joint production economies. For example, joint production efficiencies may be realized when the Fed performs its reserve accounting function and funds wire transfers. It should be emphasized that while these arguments can be used to justify a Fed presence in the correspondent industry, they are by no means universally accepted as applicable to the correspondent service industry.

After years of offering a rather generic, operationally prudent array of services, the Fed decided to change significantly its behavior in response to the marketplace. Under the spur

of market competition, what occurred was a classic example of organizational restructuring. Services were modified better to meet customer needs, bank operations became more flexible, and sales efforts became much more customer-oriented. Some Reserve Banks brought in marketing officers from the outside while others promoted from within. The general goals were to provide the market with information concerning the alternatives that were available and then let the marketplace decide whether the Fed should stay in the business. The decision was to be based on the viability of the "new Fed," not the bureaucratic, slow-to-change, inflexible "old Fed."

Within two years much of the transformation had taken place. Check clearing schedules were quickened, a larger array of services was introduced, and prices remained relatively low. Much Fed float was eliminated and the rest was priced, leading to decreased use of some inefficient cash management services. The use of electronic means of initiating funds transfers was encouraged and, aided by subsidies, increased substantially. Some of the check volume that had originally shifted away from the Fed has been regained, the previous growth trends have reemerged, and some Reserve offices that scaled back operations or laid off employees have reinstated them as volumes have increased.

The correspondent industry and the banking industry in general were significantly affected by this Fed behavior. Small to intermediate-sized banks and thrifts generally favored the change. Through its efforts to stay in the market, the Fed has challenged the private correspondents to compete by providing improved services and better prices. Therefore, whether respondents use the Federal Reserve or a private correspondent, the results for respondents are improved funds availability and an improved bottom line. Respondents, in many cases, began "unbundling" services by using different correspondents for various services. This enabled them to be more aware of the true cost of services.

The private correspondents, however, had a different view of the new Fed. They challenged the rationale for many of the moves made by the Fed after the initial volume decline in 1981. Many argued that the Fed was more concerned with the maintenance of market share than with improvements in the pay-

ments mechanism. Thus, the objective was survival at all costs instead of efficiency gains. Similarly, many argued that the Fed had marketing tools unavailable to them. For example, 1) by having a unique exemption from presentment fees (provided in the Fed Act) the Fed could keep expenses and, therefore, prices low; 2) because of interstate banking restrictions the Fed has the only true interstate clearing network; and 3) because of its dual role as competitor and regulator the Fed had significant marketing advantages, including control of the rules of the game. This rule-setting capability, if misused, could obviously place the Fed in a favorable market position. This last point has been by far the major criticism since enactment of DIDMCA.

In 1983 the Fed spent over \$30 million to implement a new transportation network to clear checks. At the same time, it developed a "uniform presentment" time for presenting checks to paying institutions. Previously, the Fed had presented checks for payment at agreed upon times set by the local clearing-houses. These times generally ranged from 6:00 a.m. to 12:00 p.m. However, the Uniform Commercial Code allows for checks to be presented as late as 2:00 p.m. and, within that guideline, the Fed decided that noon would be a better standard presentment time than those already in place. The later presentment time would allow the Fed to offer later deposit deadlines, reach more end points for collection, and, thus, provide improved collection services.

Viewing the collection side of the payments system only, this would improve the payments mechanism because it would speed the collection of funds. However, bankers argued that legitimate cash management services would be significantly impaired. The correspondent banks argued that the Fed, in an abuse of its rule-making authority, was changing the rules to serve itself.

Private correspondents also challenged the Fed for purposely subsidizing certain services and being slow to fully price others. The Automated Clearing House (ACH) service, for example, was considered a merit good by the Fed and, thus, was subsidized when pricing began.⁹ Over time this subsidization has been decreased and is scheduled for complete removal during 1986. Correspondents argue that the current artificially low price discourages

entry into the service line and gives the Fed too much control of the marketplace.

Another item that DIDMCA required to be priced was Fed float. The Fed could offer a more competitive service, such as an attractive fixed funds availability schedule (e.g., one day guaranteed funds on check deposits), only at the expense of generating significant float and indirectly charging it back to the taxpayers.¹⁰ Private correspondents obviously cannot do the same and claimed that as long as Fed float was not removed they would be at an unfair competitive disadvantage. Although the Fed initially planned to fully price float, and since has, the process was delayed longer than many correspondents thought reasonable.

With growing dissatisfaction among the largest correspondent banks in the country, many of them formed a coalition in 1982 aimed at seeking congressional investigation of the role the Federal Reserve was creating for itself in the correspondent industry. The two major concerns of the National Payments System Coalition were 1) whether the Fed had accurately interpreted the intent of Congress in DIDMCA; and 2) the appropriateness of Fed behavior. More precisely, many correspondents believed the Fed had used its regulatory power to systematically introduce changes in the payment system aimed at maintaining or increasing its market share. Coalition members argued that the correspondent business was best performed by the private sector and that Fed involvement was actually anticompetitive. The coalition was instrumental in having airline couriers bring a law suit against the Fed to prevent it from implementing noon or uniform presentment. Similarly, coalition members continually asked Congress to reevaluate the proper role of the Fed.

For two days in June 1983, congressional subcommittees listened to Fed personnel, Coalition members, financial industry trade association representatives, and a number of bankers discuss the Fed's role in the payments system.¹¹ The presentations and discussions proceeded along lines similar to those that appeared earlier in the banking press.

Coalition members argued that the Fed had misinterpreted the intent of DIDMCA and was exploiting its comparative advantage as a regulatory agency. They asserted that, because it was well established that private institutions consistently outperform governmental agencies,

the role of government should be minimized in areas of commerce where it was not required. While the Fed should have a presence in the payment system, it should not have an unfair competitive advantage. Such a presence did not require that the Fed have a significant market share.

Trade association and Fed representatives emphasized the need for a competitive alternative. Fed representatives argued that no inherent competitive advantages existed for the Fed and that, while potential conflicts between its role as regulator and competitor existed, many countervailing powers existed (e.g., Congress, General Accounting Office, the public). Furthermore, without the Fed presence there would be a natural conflict of interest between collecting and paying banks, and possibly large and small banks. If the Fed was to play a role in the payments system, and many people argued it should, regulation (or guidance) by competition was preferable to regulation by fiat.

While individual reports were issued by two subcommittees, the findings were similar and only the recommendations of the Subcommittee on Domestic Monetary Policy will be discussed here.¹² The findings were overwhelmingly in favor of the Fed's position. The subcommittee concluded that there was a "compelling need for a public institution to play a central role in the payments system . . . and that institution should be the Federal Reserve." They also found the behavior of the Fed to be in accordance with the directive of DIDMCA. The Fed had competed fairly and had not abused its power by exploiting its regulatory role to serve its competitive ends. The subcommittee went one step further and encouraged the Fed to play a central role in the development of electronic payment mechanisms such as automatic-teller-machine networks, processing credit and debit card transactions, and creating a means for non-financial institutions to bypass intermediaries and access the payments system directly.¹³

The findings gave significant support to the Fed's participation and competitive behavior in the payments system. While congressional findings do not really answer the economic questions, they were a clear signal to coalition members and financial institutions in general that the Fed would be an active market

participant and, currently, had the full support of Congress.

Correspondents that had relied heavily on Congress to redirect the Fed toward a more passive and, in their view, more fair role were left to reevaluate their marketing efforts in view of the continuing presence of the Fed. In fact, recent events and discussions with bankers indicate that, out of frustration, some private correspondents may be taking a less aggressive approach toward marketing efforts. Some Seventh District correspondents that competed vigorously with the Fed for check volume in the past have recently raised prices significantly, recognizing that substantial volume declines could occur. Thus, instead of increased competition and its resulting benefits, a consequence of Fed involvement in correspondent banking has been that certain correspondents have reevaluated profit margins, assessed the Fed's reaffirmed role as regulator and competitor, have become less aggressive, and have not reinvested in the business. If this becomes common, the potential benefits of the initial increase in competition may not be realized, i.e., cost efficiencies, lower prices, and innovative output.

Situation analysis—five years after DIDMCA

The pricing provisions in DIDMCA have obviously had an impact on the correspondent banking industry. Although it would be speculative to discuss how the industry would have evolved without Fed pricing, the active role taken by the Fed has encouraged modifications and new offerings. Similarly, explicit pricing by the Fed has encouraged correspondents and respondents to become aware of their service cost structures either as providers or users of financial services. The Fed has also experienced volume shifts and variations in its market share over the transition period from a non-priced to a pricing environment. The following sections describe each of these events and evaluates the influence of the Fed on financial service offerings, correspondent prices, market shares, and its revenue performance through 1984.

Correspondent services. Prior to pricing, most Fed offices offered a rather basic, inflexible level of services. Because the major concern was with quantity rather than quality, vari-

ations from the basic offerings were kept to a minimum. As one writer described Fed services offerings, "you can have any color you want so long as it's black." The private sector had a large respondent customer base mainly because customers were willing to pay for quality and flexibility instead of obtaining the basic service free from the Fed.

However, when pricing began most Fed offices modified their service offerings. Quality and, within limits, flexibility were emphasized. Customer needs suddenly became an important factor, as they would be for any true participant in a competitive market. Most offices improved collection services (check, securities, coupons) and availability schedules, and relaxed presorting requirements. The changes made depositing easier and improved the collecting banks' level of available funds.

New services. The improved transportation network introduced in 1983 revamped the Fed check collection service. Payor bank services that allowed banks to obtain account information earlier than was previously possible were introduced, enabling banks to provide improved cash management services and to manage better their own balances. In early 1984 the Fed also introduced a high-dollar group sort (HDGS) program aimed at speeding the collection of large dollar items drawn on selected regional institutions. These selected institutions (generally remote disbursement points) have few but very large dollar items drawn on their corporate accounts which, under typical clearing arrangements, required substantial clearing time. The HDGS program has been successful in speeding their collection. Over the first six-month period in which HDGS was offered, check collection speed increased, on average, by one-tenth of a day according to Phoenix-Hecht, a consulting firm specializing in cash management analysis. When billions of dollars are being collected, this translates to a significant improvement in available funds and, as a result, in profits. The benefit for the payment system is the deterrence of socially inefficient controlled disbursement.

Phoenix-Hecht also found that over the period since Fed pricing began, slippage in check collection for selected disbursement points decreased by nearly 1.25 days. Slippage is the difference between the check clearance time experienced by the writer and the time

required for the depositor to obtain use of the funds. The greater the slippage, the longer the check writer has use of the funds and the more valuable the remote disbursement point is as a cash management tool. However, as a result of the new check collection services provided by both the Fed and private correspondents, the slippage has not only decreased but has actually turned negative on the selected endpoints surveyed. Thus, corporations utilizing these specific disbursement points may actually be losing money by "playing the float".

Future product developments are also being considered by the Federal Reserve System. The existing check services will be augmented by adding or deleting institutions to the HDGS program. The check return item service is being modified to provide prompt notification to institutions that checks are being returned to the depositor. This may aid in decreasing some of the check hold times banks currently impose on customers. Additional cash management services are also being considered to speed the delivery of information to the paying institution prior to the delivery of the physical check. Similarly, check truncation is also being considered to deemphasize the importance of paper flows and concentrate on information flows. The credit union industry has been the major user of this service (via private correspondents). While legal considerations have slowed the use of check truncation, the Fed hopes its involvement will encourage others to utilize it.

A related service considered twice previously by the Fed is electronic check collection (ECC). It has not been introduced because of concerns by commercial banks about legal and operational problems. Essentially, the service would involve the Fed collecting large dollar checks via the current process with one additional phase. When the check is presented to the Fed office for collection, the Fed would advise the paying institution via electronic transmission of information or the complete check image that its account was being debited by the specified amount. The depositing bank would therefore receive immediately available funds. The physical check would then be transported to the paying bank via standard means, although one can envision the time when the check would be truncated.¹⁴

The advantages of ECC are that checks would be collected sooner, remote disburse-

ment activities (a net social inefficiency) would be made disadvantageous to all parties, and resources used to speed the transportation of paper would be put to more productive uses. Given the recommendation of Congress that the payment system be encouraged to use more electronic means of payment, the ECC proposal will probably reappear if the legal and operational concerns can be resolved.

Another new service currently being studied by the Fed involves the presentment of checks by collecting banks directly to the paying institution for immediate credit, just as if they had been presented by the Fed. This differs from current procedures because many collecting banks must pay a presentment charge and/or be denied use of the funds for one day if they present checks directly to the paying institution. As discussed earlier, the Fed does not pay presentment fees and, since it manages the accounts, receives immediate funds. This *direct settlement service* (DSS) was proposed by Bank of America and would have the Fed serve as the bookkeeper while private correspondents physically cleared the checks. While DSS may increase total collection costs because a larger number of institutions would be expending resources to collect the same number of checks (a net social cost), it could discourage socially inefficient expenditures for remote or controlled disbursement activities. Thus, the viability of DSS essentially reduces to a cost/benefit analysis involving elements which are difficult to quantify.

Service prices. Prices of Fed services have changed significantly since the initial pricing effort required by DIDMCA. Price schedules have become more complicated and now more closely approximate the structures of many private correspondents. While eight Federal Reserve districts initially set single district-wide prices for clearing checks, in 1985 only the Cleveland district maintained this practice. All others chose to price at the individual office level. Nearly all offices now have time of day check pricing to allow for later presentment times at a premium price. Thus, with the benefit of time, the Fed has gained experience and perhaps has improved its pricing methodology. The private sector has also been affected by the presence of a new competitor. In the Seventh Federal Reserve District the check prices charged by a number of correspondents

are below those charged before DIDMCA. Thus, as would be expected with increased competition, price setting has become a major aspect of marketing efforts.

As a new entrant in the pricing environment, one might expect the initial Fed prices to be less closely associated with production expenses than those charged by other correspondents with more pricing experience. An earlier study indicated that initial Fed prices, while generally at the low end of the price range, were usually within the range of prices charged for similar services by local private correspondents. However, that cross-sectional analysis indicated that Fed prices were not closely correlated with those of local correspondents and were also not closely related to a cost-of-labor index. Private correspondent prices tracked much more closely to the wage indexes at various cities around the country. Prices should track closely to the wage index if the Fed and private correspondents price on a cost-plus basis, and labor is an important production input.¹³

To see if Fed prices are now more closely related to input costs, the correlations were re-estimated for 1983 check service fees. Once again, these services are considered because of their size and importance in the payments system. The results for 1983 are presented in Table 1. Fed prices in 1983 did not track closely with the labor cost index for either check service considered. The private correspondent check prices, while more closely associated, also did not closely follow the labor expense index. Thus, there has been a deterioration in this association since 1980. The major change has been in the relationship between the Fed and private correspondent prices. These should be closely related if competition exists and private correspondents and Federal Reserve Banks operate under similar production conditions. The prices of Fed city and RCPC check services are positively and significantly associated with those of private correspondents. The higher correlations found in 1983 compared to 1980 suggest that the marketplace has encouraged market participants to monitor competitive prices closely and "stay in line" with them. To the extent that the wage index is indicative of true production expenses, the results also suggest that this increased price competitiveness may have come at the expense of a close relationship between private corre-

Table 1
**Relationships between FRB and private correspondent check prices,
and a cost of labor index**

Variables	Correlation coefficient*
FRB city check service and BLS index (n=12)	.301 (.342)
FRB RCPC check service and BLS index (n=11)	.298 (.374)
Private correspondent city check service and BLS index (n=12)	.348 (.266)
Private correspondent RCPC check service and BLS index (n=12)	.426 (.167)
FRB and private correspondent city check service (n=12)	.686 (.014)
FRB and private correspondent RCPC check service (n=11)	.760 (.007)

*Where n=the number of observations and the significance probability of the correlations are in parentheses. Expanded samples were used for the first two correlations as additional office and BLS data were available. The correlations were slightly inferior.

Table 2
Federal Reserve processed check market share*

	Written check volume <i>(billions)</i>	Reported FR volume <i>(billions)</i>	Estimated** FR processed volume	FR market share of total written volume	FR market— share of potential market volume
1979	32.0	15.1	13.7	42%	60%
1980	34	15.7	14.1	42	60
1981	35	15.9	14.3	40	58
1982	37	15.2	11.2	30	42
1983	39	15.9	11.7	30	42
1984	41	16.5	12.1	30	42

*Total written check volume for 1981-84 is calculated assuming an annual growth rate of 5.0% since 1979. This assumption is based on the trend during the 1975-79 period; see "A Quantitative Description of the Check Collection System", Table 5.9. Government checks are excluded. FR Volume is from PACS data or the FRB *Annual Reports*.

**Prior to 1982 package sort was inaccurately counted as one item per bundle. For 1980 and 1981 this was accounted for by subtracting out the number of packages. 1979 volumes were not adjusted but the resulting over-statement is expected to be very small. Volumes for all years are adjusted to account for double-counting of other Fed items since two FR offices process these items. In 1979, 9.4% of total volume was processed at two offices and 10% of processed volume was assumed for the remaining years.

—The two market share figures differ because of different denominators. Potential market volume is based on 30% of all written checks being deposited by bank customers at the payor bank. These items, therefore, do not enter the clearing process. See "A Quantitative Description," pages 285, 277, and 158 for a discussion of the basis for these assumptions.

Table 4
Federal Reserve income statement—priced services*
(millions of dollars)

	Total	Commercial check	EFT	ACH*	Definitive safekeeping & noncash	Cash services**
Total cost						
1984	461.8	345.2	48.3	10.4	37.0	21.0
1983	450.0	335.9	48.8	5.4	33.6	26.4
1982	420.9	304.0	47.9	1.9	36.5	30.6
1981	168.8	122.4	33.9	3.3	6.8	—
Cost + PSFAF						
1984	519.2	388.6	55.6	11.8	42.0	21.1
1983	506.3	378.3	56.6	6.2	38.8	26.3
1982	475.3	344.7	55.6	2.2	42.0	30.9
1981	192.7	138.9	39.3	3.8	10.7	—
Total revenue						
1984	560.9	423.0	60.1	11.4	42.8	21.6
1983	493.7	368.8	57.4	6.6	34.8	26.0
1982	390.9	284.0	49.3	1.3	27.8	28.4
1981	156.3	118.9	30.2	.4	6.8	—
Net profit [revenue - (cost + PSFAF)]						
1984	41.8	34.4	6.5	-.4	.9	.5
1983	-12.6	-9.5	.8	.4	-3.8	-.6
1982	-84.5	-60.7	-6.3	-.9	-14.1	-2.5
1981	-36.3	-20.0	-9.1	-3.5	-3.7	—

* Float expenses and clearing balance earned credit revenue are not included in the totals. Totals may not sum due to rounding.

** The ACH service was subsidized by 80% in 1982, 60% in 1983 and 40% in 1984. The cost figures include the subsidy. A revenue subsidy is included in the cash service figures.

¹ There are, however, some unique services occasionally offered to develop and maintain a banking correspondent relationship. For example, a correspondent can assist visiting bankers in obtaining hotel reservations, sporting event tickets, etc. For a discussion of correspondent banking, see Robert Knight, "Correspondent Banking: Part I-Balances and Services (November 1970); Part II-Participations and Fund Flows (December 1970); Part III-Account Analysis" (December 1971); *Monthly Review*, Federal Reserve Bank of Kansas City.

² *Federal Reserve Act*, paragraph 14, Section 16 (12 USC 248(0)).

³ MICR encoding involves the imprinting of machine readable information on a check (dollar value, etc) to allow the clearing process to be significantly sped up. Many people would argue that the Fed would not have to be a market participant to affect the payments system. The regulatory role would be sufficient. Others argue that while enhancements may have been introduced without di-

rect Fed involvement, the timing would have been significantly later.

⁴ Float is the equivalent of an interest-free loan because the Fed credits the account of one institution prior to debiting another (the collecting bank and paying bank, respectively.) It should also be mentioned that since member banks held idle reserves they actually incurred a cost to utilize Fed services. However, the cost was fixed instead of variable, thus, the marginal cost was zero. The new RCPCs were also unique in that the Fed even allowed non-member banks, which held no reserves with the Fed, to utilize their services.

⁵ In addition to, or in lieu of, lower reserve requirements, most states allowed interest-bearing assets to be counted as reserves. It has been estimated that non-member bank net incomes would have declined by 9 to 17 percent had they been subject to Fed reserve requirements; see L. Goldberg and J.T. Rose, "The Effects on Non-member Banks of the Imposition of Member Bank Reserve Requirements—With and Without Federal Reserve Services," *Journal of Finance*, 31, (December

1976), pp. 1457-69. The role of standardized reserve requirements in controlling the monetary aggregates is not universally accepted. See Robert Laurent's article in this issue.

⁶ The changes in reserve requirements were actually phased in with member bank ratios being lowered to the new level over a four-year period, and non-member institution ratios being phased upward over eight years. Thus, Fed balances, and Treasury revenue, would be affected most in the early years of the phase-in period.

⁷ For a discussion of Fed wire transfer volume and its determinants (including substitutes), see A. Reichert, W. Strauss, and R. Merris, "An Economic Analysis of Short Run Fluctuations in Federal Reserve Wire Transfer Volume," *Journal of Bank Research* (Winter 1985) pp. 222-28; for a discussion of check clearinghouse arrangements, see J. Frodin, "Fed Pricing and the Check Collection Business; The Private Sector Response," *Business Review*, Federal Reserve Bank of Philadelphia (January/February 1984) pp. 13-22.

⁸ An "adequate" level of service is obviously difficult to define. Using economic criteria, institutions located in these areas receive an inferior level of service because it is uneconomical to provide better service. Daily postal service to all areas is another example of service not economically justified, but provided because it is felt an "adequate" level of service is needed.

⁹ Being a merit good implies that the product will not be consumed in "sufficient" quantities if left to the forces of the marketplace. This occurs because of incomplete information, distorted preferences, etc. Other merit goods, also receiving subsidies and legal support, include education and certain in-kind subsidizations (low-cost housing or school lunches). Demerit goods would include pornography and alcoholic beverages.

¹⁰ The float is indirectly charged back to taxpayers because the monetary authority will move to offset the float for monetary control purposes by selling securities via open market operations. This sale leads to a smaller Fed portfolio resulting in decreased earnings, and fewer receipts to present to the Treasury at the end of the fiscal year. To obtain the same revenues as would have occurred without the decreased payment from the Fed, the Treasury must increase tax revenues.

¹¹ Joint hearings were held by the Commerce, Consumer, and Monetary Affairs Subcommittee of the Committee on Government Operations; and the Domestic Monetary Policy Subcommittee of the Committee on Banking, Finance, and Urban Affairs.

¹² "The Role and Activities of the Federal Reserve System in the Nation's Check Clearing and Pay-

ments System"—Report of the Subcommittee on Domestic Monetary Policy; Committee on Banking, Finance, and Urban Affairs; U.S. House of Representatives (November 19, 1984).

¹³ This last recommendation is intended to stem the mixing of commerce and banking functions resulting from the creation by non-financial firms of *pro forma* depository entities for the sole purpose of accessing payment services. However the entities' powers also included deposit taking and other depository functions. By developing a means of access without requiring the utilization of an intermediary, Congress believed the distinction between banking and commerce could be preserved.

¹⁴ For a discussion of ECC's benefits, operational problems, etc., see "A Review of Electronic Check Collection as a Potential Service to the Financial Community," Federal Reserve Bank of Chicago (1982, unpublished report).

¹⁵ For an analysis of all Fed services compared to private sector services in 1980 see D. Evanoff and A. Reichert, "An Analysis of Federal Reserve and Correspondent Bank Prices," Federal Reserve Bank of Chicago (January, 1981). A number of factors could cause the lack of a close association between Fed or private correspondent prices and the wage index. These include non-labor-intensive production, different protection techniques, and different scale economies at various facilities across the country. However, the check production process is labor intensive and it is not obvious that unique production techniques and scale economies fully explain the failure to find the expected relationship.

¹⁶ For an alternative discussion of market shares see D. Humphrey, *The U.S. Payment System: Cost, Pricing, Competition and Risk*. Monograph Series in Finance and Economics, New York University (1984), pps 74-77. Summarizing the findings, he estimates 1983 Fed market share for the ACH and wire transfer service to be 95 percent and 67 percent respectively. Data for the current estimates are from (1) R. Knight, "Account Analysis charges for Selected Correspondent Banking Services," Robert Knight Associates, 1983. (2) Federal Reserve Bank of Atlanta, *A Quantitative Description of the Check Collection Process*, Volume 1 Atlanta (1979). (3) Bureau of Labor Statistics, "Wage Differences Among Selected Areas, 1983," U.S. Department of Labor (1984). Alternative wage indexes resulted in nearly identical results.

¹⁷ The 1981 volumes and market shares may appear somewhat surprising since check pricing began in August of that year. However, volume for the first two quarters exceeded that from the previous year. While a quarterly analysis of market share would indicate a much larger impact on Fed check volume in 1981, the impact is not as pronounced on the annual figures until 1982.