

2001 Annual Report

The Economics of Financial Privacy:
To Opt Out or Opt In?



Federal Reserve Bank of
Richmond

MESSAGE FROM THE PRESIDENT AND FIRST VICE PRESIDENT

The year 2001 brought with it tragedy, change, and economic uncertainty. It is impossible to reflect on the past year of activities in our Bank and in the economy without recalling the terror and destruction that befell this country on September 11. Just as our attention had focused on that Tuesday morning's business, it was quickly diverted to news of the horrific events that separated this day from any day before it. Within minutes, our attention shifted to securing the safety of our employees and maintaining public trust in the country's financial system.

Although the Bank maintains aggressive contingency plans developed by thinking the unthinkable, it is with the hope that there will never be a need to activate them. On September 11, the unthinkable became reality. In the hours and days that followed, staff across the Fifth District responded in a manner that makes us very proud. Despite a natural desire to comfort family and mourn with fellow citizens, our people rallied to support essential Federal Reserve operations. We will be forever grateful for their dedication and commitment.

Stability Maintained in the U.S. Financial System

Our Bank played a significant role in helping the Federal Reserve System stabilize the nation's financial markets and avert a liquidity crisis. Staff in Loans, Supervision and Regulation, Reserve Accounts, Cash, and Check Processing Departments worked around the clock. The Bank provided substantial funds through discount window loans and check-processing services. The volume of loans requested was unprecedented. On September 12, discount window loans at the Richmond Fed totaled \$10.9 billion, about 25 percent of the credit extended by the System that day. In comparison, \$94 million in loans were made a week earlier.

It took collaboration and teamwork throughout the District and the Fed nationally to meet the challenge of September 11. One small electronic payments team at the Richmond Office provided backup for colleagues at the New York Fed. Within moments after the World Trade Center attacks, this team took over the monitoring of critical large dollar funds and securities transfer services. Any interruption of these critical payments services obviously would have severely disrupted not only the financial system but also the broader economy.

Others manned Bank facilities and their perimeters. Security staff worked 12-hour shifts and continuously tightened procedures to keep fellow employees safe. Still others took to the road to deliver checks to branch offices and banks around the District after air transportation was grounded, and many employees worked extended shifts to process the enormous backlog of checks deposited by banks.

As the tragedy unfolded in New York City and Washington, we learned firsthand that, in a crisis, our ability to communicate well with our customers and the public is paramount. Internally, constant communication among our officers and staff provided a vital network for handling the situation. It also unified us, strengthened us, and enabled us to contribute effectively to the Fed's overall effort to help our country work through this especially difficult period in our recent history.

The crisis last fall was not the only time during the year that our emergency preparedness was tested. On July 18 a fire in a Baltimore railway tunnel forced most of the city's nearby businesses to close because of the fumes and other potential dangers. While our Baltimore Office is located close to the tunnel, staff remained on hand to maintain payment activities and other operations without disruption.

Changes in the Bank and the District

Every day, our staff is dedicated to improving service and increasing efficiency in carrying out the Bank's business. In this spirit, the Bank reorganized many of its operations along functional lines in the spring of 2001. Overall, we expect the reorganization to reduce costs and enable us to serve our customers better. In particular, the functional management structure will help the Bank better support the Fed System's Check Modernization Project, an effort to standardize and reengineer the nation's check processing infrastructure over the next several years.

These improvements were extremely important in 2001 as the structure of our District's banking industry also changed. With the merger of Charlotte-based First Union Corporation and Winston-Salem-based Wachovia Corporation, the Fifth District became headquarters for two of the nation's four largest banking organizations. As a result, the District now ranks second nationally in total bank holding company assets owned. Accommodating these large banking organizations requires us to focus on retaining and attracting staff with a broad range of experience and specialized skills to supervise the more complex and sophisticated activities of these institutions.

A Year of Economic Challenges

The Fed faced the extraordinary challenge of deciding how to respond with monetary policy in the aftermath of the September 11 attacks. Yet the year had already been challenging from a policy perspective since the evolving economic slowdown was a significant departure from the rapid growth of the late 1990s.

Signs of weakness had been increasingly apparent throughout much of the year in some economic sectors such as manufacturing. The number of jobs in District factories had been declining since the fall of 2000, but the losses accelerated after the terrorist attacks. In all, 120,000 District manufacturing jobs were lost in 2001, many in traditional industries such as textiles, apparel, and furniture.

Despite economic weakness, jobs in the District's non-manufacturing sector generally grew during the first three quarters of 2001. During the week of September 11, however, business and retail activity came to a virtual standstill. Many lost jobs when District airports closed and air travel ceased for a week or more. Because of its proximity to Washington, Reagan National airport did not reopen until early October. Not only were the airlines affected, but jobs related to travel, hotel, food services, and tourist activities were also lost. Not surprisingly, jobs in the non-manufacturing sector declined in the fourth quarter. Moreover, weaker overall economic conditions throughout the year in District states caused state governments to fall short of anticipated tax revenues, which generated substantial budgetary challenges. Despite these difficulties, by the end of 2001 many District businesspeople were optimistic that an economic upturn would

materialize in the region as well as the nation in 2002.

The events of September 11 highlighted the importance of our relationships with the business community throughout the District. We routinely consult with our directors at all three of our offices, our advisory council members, and our other business contacts regarding current business conditions and the outlook. We relied even more heavily on them in the aftermath of September 11 to keep us abreast of emerging developments. Published statistics and databases simply could not provide us with the up-to-the-minute information we needed to deal effectively with the crisis. We thank our contacts for all their assistance during that time and throughout the year.

Two Directors Conclude Their Terms

We would especially like to thank retiring directors Jim Culberson and Craig Ruppert for their important contributions this year and in earlier years. Jim served on the Richmond board from 1999 through 2001. He had previously served as a director of our Charlotte Office from 1985 through 1990. While on the Richmond board, Jim shared his extensive banking experience with us, which made him a key contributor to the Bank's Financial and Strategic Planning Committee during his term. He also served as a member of the Committee on Research, Public Affairs, and Community Affairs for those three years and chaired the Committee in 2000 and in 2001.

Craig served two three-year terms on the Richmond board from 1996 through 2001. He was a member of the Committee on Buildings through both terms, and was chairman of the Committee for five years. In that capacity, he provided valuable insights while overseeing the security enhancements to the Richmond Office. He was also a member of the Executive Committee; the Committee on Research, Public Affairs, and Community Affairs; and the Committee on Financial and Strategic Planning.

Financial Privacy Examined

In light of the many extraordinary events in 2001, it is easy to lose sight of more routine but nonetheless important issues that were evolving in banking. Among

the most significant were the proposed changes in the way financial institutions treat information regarding their customers. In late 1999, the Gramm-Leach-Bliley Act was passed to modernize the way financial institutions are regulated. Among other things, the Act imposed new regulations on financial firms' sharing of customer information with outside companies.

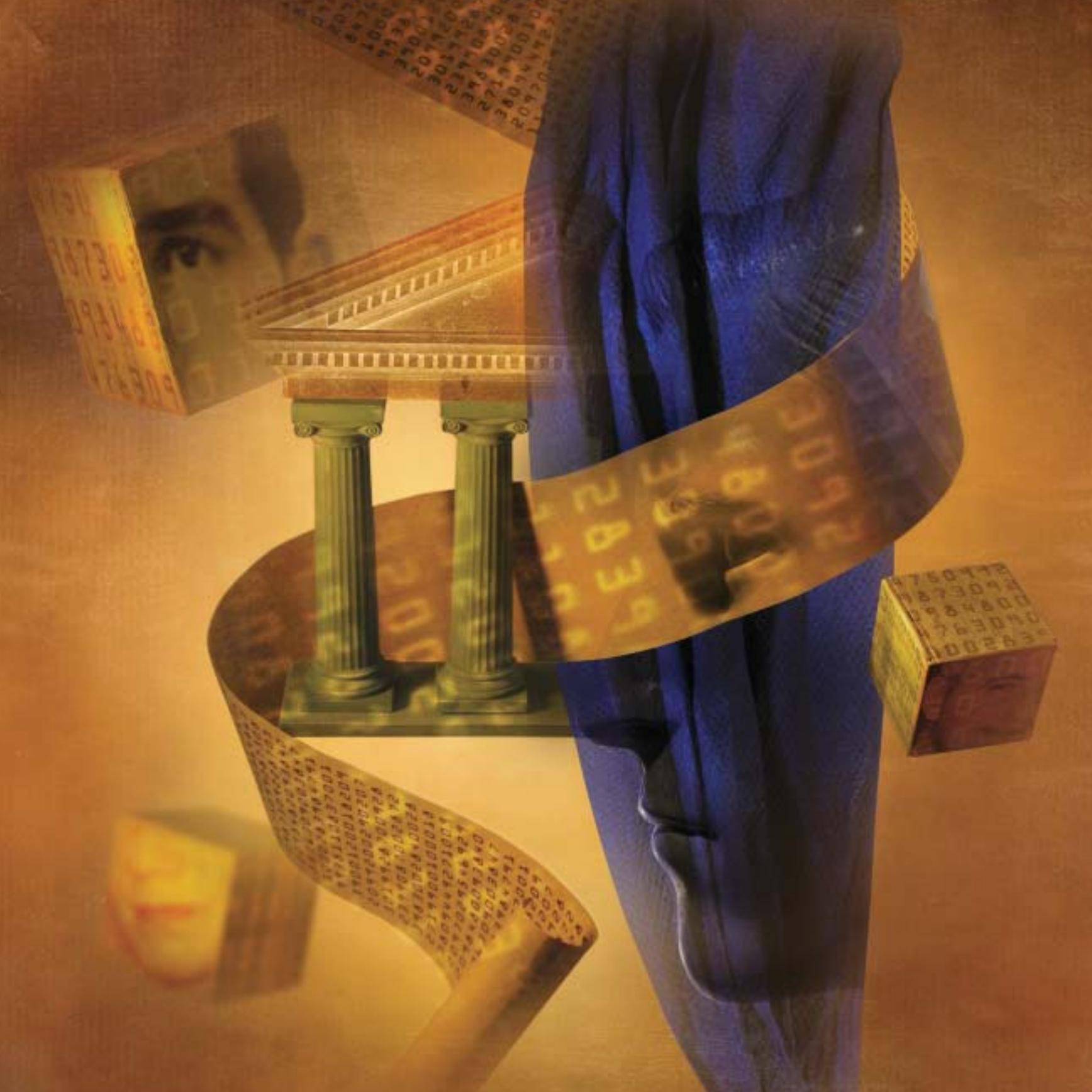
According to the financial privacy provisions of Gramm-Leach-Bliley, which took effect in mid-2001, if a financial institution shares nonpublic customer information with third parties, it is required to give its customers an opportunity to "opt out." Privacy advocates have argued for a stricter "opt-in" provision that would require financial institutions to get explicit consent from consumers before sharing personal information about them. State legislators in some states have proposed even tighter regulations on sharing information within affiliated companies.

In "The Economics of Financial Privacy," Jeff Lacker, Senior Vice President and Director of Research, takes a look at the opt-out and opt-in debate from an economist's perspective. Fundamentally, the issue centers around the proper allocation of "rights" in a contractual relationship — a customer's right to privacy versus the right of a financial institution to share its information. The answer economics provides is that whether regulations allocate the rights in accord with opt-out or opt-in is irrelevant. Under an opt-out standard, banks could pay customers to refrain from opting out, while under an opt-in standard, banks could pay customers for their information. In either regime, the market should deliver an appropriate balance between consumers' desire for privacy and the economic value of information sharing.

Interestingly enough, the debate is ongoing and fervent. Jeff's article analyzes the debate and concludes that it is unnecessary.

J. Alfred Broaddus, Jr.
PRESIDENT

Walter A. Varvel
FIRST VICE PRESIDENT



The Economics of Financial Privacy:

To Opt Out or Opt In?

A consumer's financial transactions give rise to a wealth of very personal data. Every credit card purchase, every ATM withdrawal, every loan payment, every paycheck deposit leaves an electronic trace at a person's bank. Advances in information technology now allow firms to collate information from disparate sources and compile comprehensive profiles of individual behavior. The resulting databases can allow businesses to target very specific consumer categories — high-income, gun-owning dog lovers, for example — in ways that were never before possible.

When should a bank be able to share information about you with other businesses? Some consumer advocates want to protect consumers' financial privacy by restricting such information sharing. New technologies, they say, have encouraged increased intrusions on consumer privacy, leading to more junk mail, more telemarketing calls, and a heightened risk of identity theft. They argue for tough "opt-in" laws that would require financial institutions to obtain a consumer's explicit consent

before sharing personal information about them.

Banks and other financial service providers point out that information sharing provides benefits to consumers by allowing for more targeted marketing and services. The new technologies make it easier for businesses to find consumers that would be interested in buying their specialized products and services — hunting-dog training supplies, for example. Such marketing directly benefits consumers when it results in a voluntary purchase. In addition, greater information sharing can reduce wasteful marketing to consumers that are likely to be uninterested. With these benefits in mind, financial service providers argue for "opt-out" laws that merely require them to give consumers the right to request that their information not be shared.

After vigorous debate, Congress adopted an opt-out requirement for banks and other financial institutions as part of the Gramm-Leach-Bliley Act of 1999 (GLBA), legislation that was designed to encourage financial modernization. Any financial institution that intends to share nonpublic customer information with third parties

Jeffrey M. Lacker

The author is Senior Vice President and Director of Research.

The views expressed are the author's and not necessarily those of the Federal Reserve System.

¹ The deadline for compliance was July 1, 2001. For more information on the financial privacy provisions of the GLBA, see the Federal Trade Commission's Web site (Federal Trade Commission 2002). The privacy provisions of the GLBA apply to any institution engaged in activities that have been deemed "financial in nature or incidental to such financial activities" under the Bank Holding Company Act. This means that whenever the Fed and the Treasury determine that an activity is financial in nature and therefore a permissible activity for a financial holding company, the entire financial industry is brought under the privacy provisions of the GLBA.

(companies not related by ownership ties) must give customers an opportunity to deny them permission to do so, or opt out. In addition, financial institutions are required to provide customers with an annual statement of their privacy policy. Consumers received a blizzard of notices in the mail when those provisions were fully implemented in the summer of 2001.¹

The controversy did not end with the passage of the GLBA. The Act allows individual states to adopt privacy provisions that are stricter than the federal standard if they so desire. California's legislature recently considered an opt-in law that would have required financial institutions to obtain customer permission before sharing information with third parties. Moreover, banks would have been required to give consumers the right to opt out of information sharing with affiliated companies (companies related by ownership ties).

This essay examines the opt-out/opt-in debate from the perspective of the economics of financial privacy. The premise is that a financial institution's privacy policy is a *characteristic* of the products and services the institution offers. We can therefore apply the well-understood principles governing how markets work when there are important differences in product characteristics. The result is surprising for both sides of the issue: it doesn't seem

to matter whether opt-out or opt-in is adopted as the standard. Either way, competitive forces should bring about an economically efficient amount of information sharing. In fact, even in the absence of opt-out or opt-in laws, the amount of information sharing should be economically appropriate. Opt-out/opt-in laws will be irrelevant as long as financial institutions are not prevented from offering customers a range of desirable privacy options.

The broad and multifaceted issues that surround privacy go well beyond the opt-out/opt-in debate. Although this essay is narrowly focused on the latter, the general principles outlined here have a much wider application. At a fundamental level, opt-out versus opt-in is really a question about the proper allocation of "rights" in contractual relationships — a customer's right to privacy versus the right of a financial institution to share its information. The answer economics provides is that whether rights are allocated in accord with opt-out or opt-in is irrelevant, as long as consumers and financial institutions are free to agree to an alternative arrangement if it suits them. Most financial privacy questions concern the specification of rights of various parties in contractual relationships. The irrelevance result of this essay thus should carry over to other related settings; laws and regulations

providing more (or less) “privacy rights” should generally have little effect on consumers’ financial privacy.²

Privacy in the Financial Marketplace

Financial privacy can be thought of as a bundle of characteristics associated with a particular financial service. A bank that does not share nonpublic customer information with third parties is providing its customers a service with different characteristics from a bank that does share such information. How do markets work when products or services differ in their characteristics?

In well-functioning competitive markets, consumers selecting among products with different bundles of characteristics are willing to pay more for products with characteristics they value. Some characteristics make a product more costly to provide. Producers are willing to supply products with more costly characteristics only if they are compensated for the additional cost. One would expect to see products with characteristics for which a customer’s willingness to pay exceeds the incremental production cost. For example, some people are willing to pay more for a car with a built-in CD player, but CD players are costly. It is logical then that consumers

whose willingness to pay exceeds the cost of the CD player would own cars with CD players.

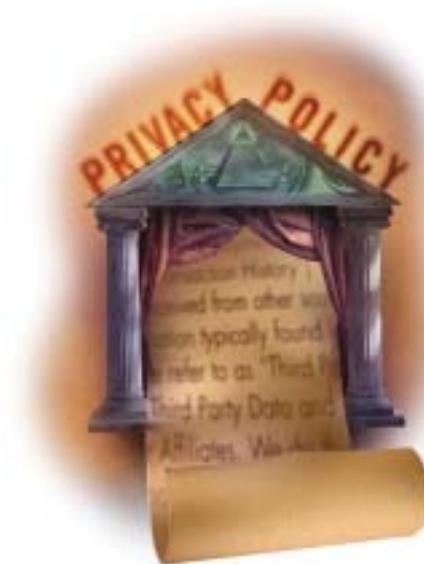
Well-functioning markets generally provide goods and services that are appropriate when judged against the benchmark of economic efficiency. With regard to product characteristics, economic efficiency means that a given product characteristic is supplied if and only if the value of that characteristic to consumers exceeds its cost to society. When markets function smoothly, the incentives of producers and consumers are aligned with economic efficiency. Suppliers find it profitable to provide products with the appropriate characteristics, since consumers are willing to pay at least the additional cost. Characteristics for which consumers’ valuations fall short of the cost of production cannot be profitably supplied.

Financial privacy is a service characteristic that some consumers prefer. Many consumers harbor deep concerns about privacy in general and financial privacy in particular. According to one recent poll, 56 percent of consumers say they are “very concerned” about potential loss of privacy.³ Overall, consumers seem to have three main fears.⁴ They fear being robbed or cheated by criminals that obtain personal information. They fear embarrassing revelations due to

² For other economic analyses of financial privacy, see Kahn, McAndrews, and Roberds (2000) and Bauer (forthcoming).

³ National Consumers League (2000).

⁴ Research by Alan Westin, as cited in Paul (2001).



⁵ See Kovacevich (2000).

the disclosure of sensitive information. And they dislike intrusive marketing in the form of telephone calls or junk mail. When financial institutions share customer information with outside companies, it can erode customer privacy on all three counts.

Providing greater financial privacy can be costly for a financial service provider because it means foregoing the potential economic value of information sharing. Marketers can make better decisions the more information they have about prospective customers and are therefore willing to pay banks to get it. Better information helps marketers find customers who genuinely may be interested in buying their products and saves them the expense of soliciting consumers who are not. These benefits provide genuine economic value by increasing the probability of a successful buyer-seller match and decreasing the probability of wasting marketing efforts on those who would not be interested.

Consumers that place a high value on financial privacy ought to be willing to pay for high-privacy financial services. If consumers prefer that their bank not share nonpublic information about them with unaffiliated companies, they should be willing to pay for this service characteristic implicitly through lower deposit interest rates, higher loan interest rates, or higher

account-related fees. More directly, banks could offer direct inducements — a bonus payment, coupon, or sweepstakes entry, for example — to customers that agree to information sharing. Many nonfinancial firms offer such enticements to customers that return “product registration cards” filled out with their name, address, and other information. Consumers that value financial privacy would pay by foregoing their bank’s offer. Similarly, many grocery stores offer cards to customers that qualify them for discounts when they present the cards at check-out stations. In exchange, stores gather data on customer purchases.

Along the same lines, if sharing nonpublic customer information with third parties is economically beneficial, financial institutions should be willing to compensate their customers who allow them to do so.⁵ The outside firms with which the information is shared should be willing to pay an amount up to the information’s value to them. The financial institution should then be willing to pass this along to their customers in the form of higher interest rates on savings, lower interest rates on loans, or lower fees. More directly, they should be willing to simply pay those customers who agree to share an amount up to the incremental value of the information.

Ideally, the economic benefits of



financial privacy should be balanced against the economic costs. When the economic value of sharing nonpublic customer information with third parties falls short of the value consumers place on preventing that information sharing, economic efficiency would dictate that no information sharing takes place. Similarly, when the economic value of sharing nonpublic customer information with third parties exceeds the value consumers place on preventing it, economic efficiency would dictate that information sharing should take place. If the market for financial privacy is well functioning, then we should see an economically efficient amount of financial privacy.

Does the Market for Financial Privacy Work Well?

Is there anything different about financial privacy? Are the markets for financial privacy poorly functioning in the sense that they deliver outcomes that are not economically efficient? There does not appear to be any plausible reason to think so.

For markets to malfunction in this sense, one of two conditions must exist: either a divergence between the value of a product characteristic to consumers and their willingness to pay it, or a divergence between the cost to suppliers of providing that charac-

teristic and the overall cost to society. Divergences could be caused by externalities, monopoly power, or verification problems.

An externality occurs when an action by one group affects the well-being of others that do not transact with that group. For example, burning leaves in my front yard raises the risk of fire for my suburban neighbor.⁶ Externalities are often invoked to explain a broad range of government laws and regulations — prohibiting suburban leaf burning, for example.

Is there an externality in the market for financial privacy? No, it doesn't appear so. Sharing nonpublic customer information about a consumer affects that consumer's privacy but not the privacy of other consumers. The sharing institution is a counterparty of the affected customer, and either can withdraw from the relationship. The two of them have ample opportunity to take information sharing into account when setting the terms of their relationship. Thus no parties are affected by the information sharing except those who are participants in the transaction.

"Public goods" are a type of externality that can result in inefficiency and are defined by two properties. They are nonrivalrous, meaning that one person's use does not detract from the ability of another to use it. And they are nonexcludable, meaning that one

⁶ One could argue that the two parties could negotiate an efficient solution to this problem; my neighbor can simply pay me not to burn leaves, or can sue me if the fire spreads. For additional explanation see the section on the Coase Theorem.



cannot prevent people from using it. A lighthouse is a classic example of a public good: one ship's use does not prevent another ship's use, and you cannot prevent a ship from using it.⁷ Information is nonrivalrous because one person's use does not prevent another from using the same information. But information is excludable because you can prevent people from obtaining it. Therefore financial information is not a public good.

Monopoly power is another possible cause of market malfunction. When a firm is sheltered from competitive pressures it can raise prices and restrain supply. Similarly, a protected monopolist may find it profitable to supply too little of a desired product characteristic when customers are prevented from seeking preferred characteristics from other suppliers. This problem may have been relevant to the banking industry decades ago when competition was severely limited by regulatory restrictions on pricing, entry, and geographic expansion, but these restrictions have been largely dismantled. As a consequence, the market for financial services is now widely judged to be relatively competitive. Thus it seems unlikely that banks or other financial institutions are manipulating privacy policies because of significant monopoly power.⁸

A third potential cause of market mis-

function stems from the difficulty of verifying whether a financial institution is living up to its stated privacy policy. A customer that receives junk mail or telemarketing calls may have a hard time discerning where the marketer obtained the information. The spelling of a name or address can be altered slightly in order to trace information sharing, but this technique is obviously limited. In cases of identity theft it is often impossible to determine exactly how the identity was stolen after the fact.

Do verification problems interfere with the efficiency of the market for financial privacy? Not necessarily. Note that there are a number of mechanisms to help ensure that an institution lives up to its privacy commitments, despite the difficulty of observing whether or not it has done so. First, an institution that fails to comply with its stated financial privacy policy may be liable for "unfair and deceptive trade practices." If caught, the institution would be subject to civil litigation as well as regulatory action by the Federal Trade Commission. The potential legal costs can deter noncompliance, even if the probability of detection is small. There is nothing particularly unique about financial privacy in this regard. Consumers often rely on hard-to-verify commitments by the firms they patronize — a commitment to product quality, for example.

⁷ Coase (1974) pointed out, however, that coastal lighthouses are often funded from fees charged to ships using nearby ports, so even the services of lighthouses are at times excludable. A lighthouse is therefore only a public good when ships cannot be excluded from using its services if they do not pay — for example, in settings where most ships are on long-distance voyages.

⁸ If financial institutions were exercising market power and this resulted in inefficient financial product characteristics, a more appropriate remedy would be for regulators to ensure effective competition rather than regulate service characteristics. Moreover, it would appear inconsistent to regulate service characteristics on the grounds of impediments to competition while not regulating service prices.

⁹ The phrase appeared in television advertising for Capital One during November 2001. As of this writing, the company's home page prominently features the following description of their "New No-Hassle Card": "9.9% Fixed APR on Everything, No Telemarketing, No Annual Fee."

Second, institutions that wish to attract customers for whom privacy is important will want to convince those customers of their organization's commitment to its privacy policy. Such institutions will have an incentive to cultivate and safeguard their reputation as a high-privacy entity. At least one prominent bank has advertised a "no telemarketing" promise, indicating that banks are capable of actively competing on the basis of their privacy policies.⁹ Third parties can evaluate a financial institution's compliance, just as *Consumer Reports* independently assesses the quality of consumer products. The potential for embarrassing media publicity also motivates an institution to live up to its commitments. Standard industry practice is for a firm that rents its mailing list to approve every mailing or telemarketing script that is used. Evidently firms believe that at least some consumers could trace marketing contacts to them, with possibly detrimental effects on their customer relationships.

While reputational considerations and laws on trade practices can go partway toward ensuring that a firm is faithful to its stated privacy policy, some would argue that these mechanisms are inherently limited and imperfect. Enforcement is often costly and compliance is rarely 100 percent. Do these imperfections warrant legislative restric-

tions aimed specifically at information sharing? No. Any entity attempting to verify and enforce a financial firm's privacy commitments will confront the same imperfections. A governmental effort to enforce a ban on information sharing, for example, will face the same verification difficulties — costly enforcement and incomplete compliance — as would any private parties. So a government ban on information sharing would have no advantage; in fact, it would have the disadvantage of possibly preventing economically useful information sharing.

The market for financial privacy therefore appears to work fairly well. This means that we should expect economically efficient outcomes: information will be shared if and only if the economic benefits of information sharing exceed the value consumers place on preventing information sharing.

Opt-Out Versus Opt-In

Provided the market for financial privacy works fairly well, it should not make much difference whether we adopt an opt-out law or an opt-in law. Either way, an economically efficient level of information sharing will result. Why is this so?

Under an opt-out law, banks that value information sharing will be willing to provide inducements to get

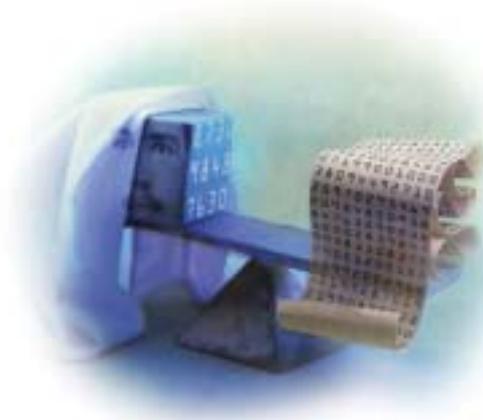
high-privacy customers not to opt out because information sharing can lower the cost of providing banking services. Similarly, automakers are willing to discount the price of cars without CD players, since these cars are less costly to build. Banks will be willing to pay an amount up to the incremental value of sharing the customer's nonpublic information. If that falls short of the value the customer implicitly places on privacy, then the customer will decline the inducement and opt out. In that case, the economic value of the information sharing is less than the cost to the customer of yielding this bit of privacy, and information sharing is not economically efficient. Alternatively, the customer may feel that the value of the inducement exceeds the value of preventing information sharing, in which case the inducement is accepted and the customer does not opt out. Here, the economic value of the information sharing exceeds the cost to the customer of yielding this bit of privacy, and information sharing is economically efficient.

Under an opt-in law, the reasoning and the result are exactly the same. Banks will be willing to provide the same inducement to get a customer to opt in as they would have provided to get a customer to refrain from opting out — up to the economic

value of the information sharing. If that amount exceeds the value that the customer places on preventing information sharing, then information sharing will take place and is economically efficient. Otherwise the customer will refuse the enticement; in this case information sharing is not economically efficient and will not take place.

In fact, the same reasoning applies in the absence of opt-out or opt-in laws. If the law is silent on whether banks need to seek permission to share nonpublic information with third parties, banks nonetheless could decide to do so on their own. If some customers truly care about information sharing with third parties, they will seek out banks that give them the option of preventing it. If information sharing is economically useful, banks will find it more costly to serve customers that insist on preventing it. Competition will force banks to pass along the increased cost to high-privacy customers. Ultimately, an economically appropriate amount of information sharing will take place, with or without opt-out or opt-in laws.

The difference between opt-out and opt-in standards is like the difference between treating CD players in cars as standard equipment or as an add-on option. If CD players are an option, one would expect the price of



¹⁰ Coase (1960).



the option to reflect the incremental cost. If instead CD players are standard equipment, the discount for cars without CD players should reflect the incremental cost. It should not make a difference whether car buyers have to ask to get a CD player in their car or ask not to have one. Either way we should see a market-clearing quantity of cars with CD players.

The debate between proponents of opt-out and opt-in seems predicated on the view that the choice would affect how many consumers would prevent information sharing. The hypothesis seems to be that fewer consumers would opt out under an opt-out standard than would fail to opt in under an opt-in standard. This could well be the case, but it would be evidence that many consumers are relatively indifferent about information sharing by their financial institution; they would not bother to opt out, nor would they bother to opt in. If this is true, then little is at stake for these consumers. Those who would neither opt out nor opt in evidently place little value on preventing their financial institution from sharing nonpublic information about them. The economic efficiency implications of the choice between opt-out and opt-in would therefore be negligible for them as well, even if participation rates differed significantly.

An Alternative Line of Reasoning: The Coase Theorem

The knowledgeable reader may have noticed that the logic of this essay is closely related to the insights that Ronald H. Coase presented in his celebrated paper "The Problem of Social Cost."¹⁰ (This paper was cited by the Royal Swedish Academy of Sciences in awarding him the 1991 Nobel Prize in Economics.) Coase wrestled with the issue of externalities, the same issue as in my leaf-burning example. Before Coase's paper economists generally believed that, absent government intervention, externalities would result in inefficient outcomes because one party (I, for example) would ignore the cost (increased fire hazard) that his action (leaf burning) imposed on another party (my neighbor). The contribution of Coase was to notice that the two parties could negotiate an efficient solution to the externality problem as long as the relevant rights were clearly assigned. For example, if I am entitled to burn leaves, my neighbor could offer to pay me not to, or could offer to help me dispose of them by some other method. Alternatively, if I am required to obtain my neighbor's permission to burn leaves, I could offer to pay my neighbor. If the value to me of burning leaves is less

than the value to my neighbor of my not burning leaves, then my neighbor will pay me not to do so in the first case. In the second case, I will be unwilling to offer my neighbor enough money to get permission to burn leaves. Either way we get an efficient outcome; I don't burn leaves. The general proposition is that (under certain conditions) any well-defined allocation of property rights leads to efficient outcomes. This result is often called the Coase Theorem.

The application to financial privacy should be clear. Opt-out and opt-in are just different allocations of property rights. Opt-out means financial institutions have the right to share information; customers can ask them to stop. Opt-in means customers have the right to no-information-sharing; financial institutions can ask them for permission to share. Either way, according to Coase, the prediction is an efficient amount of information sharing.

The Coase Theorem has its limitations, however. It is said to hold only if "transaction costs" are zero; in other words, any agreement that is in the mutual interest of the parties is actually agreed upon. Transaction costs are the difficulties associated with actually reaching an agreement among the affected parties. It may be costly to communicate and coordinate among a large number of parties, for exam-

ple. When transaction costs are significant, the assignment of property rights can affect efficiency. One premise of this essay, as I discuss later, is that the costs of opting out are negligible, in which case the Coase Theorem applies.¹¹

The logic of this essay, however, differs subtly from Coase's analysis. Coase envisioned bargaining between affected parties. As a result, the assignment of property rights could alter the distribution of net benefits, even if that assignment had no effect on efficiency. For example, if I have the right to burn leaves, I get paid not to burn them; yet if I need permission, I earn nothing when I don't burn them. I am better off in the first case, while my neighbor is better off in the second case. The assignment of rights thus alters the relative well-being of my neighbor and me, even though either assignment leads to efficient leaf-burning decisions. In competitive markets, in contrast, the assignment of contractual rights generally does not affect people's well-being. The choice between opt-out and opt-in determines which rights are, by default, bundled together with financial services. Under either regime, competition and free entry implies that both high-privacy and low-privacy financial services will be available at prices reflecting their true cost. In competitive markets, the choice of regime should have no effect on the

¹¹ The costs are negligible in part because of the regulations that require financial institutions to provide customers with a "reasonable means" of opting out. In a sense, then, this part of the allocation of property rights has efficiency implications consistent with the Coase Theorem. The reasonable-means provision appears to be an efficient choice since it minimizes the "transaction costs" of opting out. Friedman (2000) applies Coase's approach to a broad array of privacy issues in which transaction costs are nonnegligible.



OPT IN

OPT OUT

net cost of financial services with particular characteristics, just as a law mandating that CD players be sold separately should have no effect on the total price of cars with CD players. The efficiency implication of Coase's famous theorem carries over to competitive markets, however, and buttresses the case made here: market mechanisms should work well at providing an efficient level of financial privacy.

Opt-Out in Practice: Few Consumers Do

During the first half of 2001, many banks began mailing out the privacy notices required by the GLBA. Those that share nonpublic customer information with unaffiliated companies are required to give their customers the opportunity to opt out of third-party information sharing. Although there is only limited evidence so far, press reports suggest that the response rate is rather low. According to the trade publication *American Banker*, industry estimates of the number of consumers who have opted out "hover around 5 percent."¹² One survey of savings banks showed that more than half were experiencing an opt-out rate of one percent or less.¹³

Opting out does not appear to be very hard. The financial privacy reg-

ulations require that financial institutions give customers a "reasonable means" of exercising their right to opt out. The regulations even offer examples of acceptable and unacceptable methods. Providing a toll-free number to call or supplying a mail-in card for a check-box response are deemed reasonable means. Requiring a customer to write his or her own letter is not deemed reasonable.

Despite these requirements, critics claim that opting out is difficult because privacy notices are complex, confusing, and hard to read.¹⁴ Food labels are often cited, in contrast, as a simple, well-understood notice system. Some financial institutions, however, are actively working toward simpler and clearer privacy notices.¹⁵ Apparently, they view that it is in their business interest to make their notices as agreeable to their customers as possible. Many institutions sent privacy notices for the first time in 2001, and some experimentation and learning seem to be taking place. Perhaps opt-out rates will rise as GLBA privacy notices are refined and consumers learn about what they contain.

Nevertheless, the fact that so few bank customers are currently taking the relatively easy step of opting out seems to indicate that most consumers now place a negligible value on preventing financial institutions from sharing

¹² Lee (2001).

¹³ America's Community Bankers (2001).

¹⁴ See transcripts and supporting documentation from the workshop on effective privacy notices hosted by the Federal Trade Commission and the federal financial regulatory agencies (Federal Trade Commission 2001).

¹⁵ See the presentations by Marty Abrams, John Dugan, Patricia Faley, and David M. Klaus at the privacy notices workshop along with the public comments submitted by Walter Kitchenman, Vance Gudmundsen, and Steve Bartlett in connection with the event (Federal Trade Commission 2001).

¹⁶ One could argue that consumers are just lazy, but this reasoning leads to the same conclusion; the value they place on financial privacy is not enough to motivate them to opt out.

¹⁷ The three main credit bureaus also offer a program through their trade group that allows consumers to opt out of pre-approved credit offers, but the credit bureaus do not release statistics on the number of consumers opting out.

¹⁸ According to a recent survey, 24 percent of consumers protect their privacy by disabling cookies (Harris Interactive Inc. 2001). An American Bankers Association poll found that 36 percent of consumers said they had read their bank's privacy notice (American Bankers Association 2001).

¹⁹ America's Community Bankers (2001).

nonpublic information about them with third parties. A small fraction of consumers feel strongly enough to take advantage of the opt-out option. This group appears to place a significant value on guarding their financial privacy. But for a broad majority of Americans, the value they place on financial privacy does not exceed the inconvenience of exercising their right to opt out.¹⁶

This pattern — about 5 percent of people willing to take action to protect their privacy — is consistent with other evidence on consumers' privacy preferences. The Direct Marketing Association, a marketing industry trade group, offers consumers the ability to opt out of telephone or mail marketing by their members. The 4.2 million participants in their telephone opt-out program represent about 4.2 percent of U.S. households with telephone service. The 4.0 million participants in their mail opt-out program represent about 3.8 percent of total U.S. households.¹⁷

A very low opt-out rate is also consistent with other choices consumers make with regard to privacy. Few consumers disable cookies when browsing the Internet. (Cookies are small files that a Web site places on a user's computer to enable tracking the user on subsequent visits.) Few consumers read privacy notices. Many consumers readily provide their credit card number over the phone or to a waiter.¹⁸

The picture that emerges, then, is that a few consumers place significant value on preventing information sharing by their financial institutions, but the broad majority of consumers are relatively indifferent.

Opt-Out in Practice: Few Banks Pay

Financial institutions do not appear to be offering inducements to customers to get them to refrain from opting out. This suggests that the economic value of sharing nonpublic customer information is relatively low. Otherwise financial institutions would find it worthwhile to compensate their customers for their cooperation. In fact, not all institutions are even engaged in information sharing that would trigger the opt-out requirement. A survey of savings banks found that fewer than one-third needed to send out opt-out notices.¹⁹

Banks do not lack opportunities to share customer information. There is an active market for consumers' names, addresses, and other personal information. Individual merchants rent their customer lists to marketers, often through list brokers. Credit bureaus offer selections from their databases based on age, income, occupation, family status,

net worth, type of automobile, religion, and so on. According to its Web site, Equifax even offers a selection based on a person's carburetor type. American Express offers customer lists selected on the basis of purchase patterns — shoe buyers that spend more than \$1,000 annually, for example. Lists are available from magazines, membership organizations, book clubs, and merchants.²⁰

Apparently, the market for consumer information does not provide banks with sharing opportunities that would make it worthwhile to offer material rewards for consumer cooperation. A glance at the prices for such information suggests why — prices are relatively low. Rates for lists of merchandise buyers, for example, appear to be relatively consistent, ranging from 8 cents to 13 cents per name as of early 2001. Base prices at one large credit bureau range from 1.65 to 4 cents per name per mailing, depending on volume, with add-on charges for additional selection criteria ranging from .25 cents per name for length of residence, title, or gender to 2 cents per name for net worth. Thus the value to a financial institution of sharing nonpublic customer information might not be large enough to warrant offering a significant sum to customers.

Why Is Financial Privacy an Issue Now?

Applying economics to financial privacy leads to the conclusion that financial markets can provide an appropriate balance between consumers' desires for privacy and the economic value of information sharing. If this is true, then why do surveys show widespread consumer concern about privacy yet few consumers taking action to opt out of information sharing? And why has there been such clamor for privacy legislation in the past few years, culminating in the financial privacy provisions of the GLBA?

The dramatic changes in communications and computing technologies in recent years might help explain why so many recent surveys report consumer concern about privacy. Financial institutions have always possessed detailed information about their customers. Moreover, active markets for customer lists have been around for decades.²¹ Only recently, however, has the collation and analysis of information from disparate sources become highly automated. This technological advance allows more targeted marketing efforts; a company can solicit high-income, gun-owning dog lovers, for example. The resulting improvement

²⁰ For information on lists see Equifax (2001), American List Counsel (2002), and Worlddata (2002).

²¹ I recall my father managing rentals of his company's mailing list in the 1960s. The list was kept on "addressograph plates" — metal strips embossed with names and addresses. While these strips could be linked together for automated addressing of mass mailings, any sorting or selection had to be handled manually. The list was rented out through mailing houses that handled the actual printing and distribution. All rentals had to be approved by list owners. Decoys — false names and addresses — were included in the list to provide a means of verification by the list owner.



PRIVATE

A hand is shown pulling a small metal ring from a circular porthole. The porthole is set into a larger circular frame with the word "PRIVATE" written around its perimeter in a serif font. The background behind the porthole is a warm, golden-brown color.

SECRET

A hand is shown holding several colorful letter blocks. The blocks are arranged to spell out the word "SECRET". The blocks are in various colors: red, white, black, and blue. The background is a dark, textured red color with a faint, glowing "SECRET" watermark.

in marketing success rates appears to have led to an increase in the number of mail and telephone solicitations.

Before the technological developments that lowered the cost of manipulating databases, assembling such detailed consumer profiles was not economically feasible. Consumers came to view the limited nature of information sharing by financial institutions as an implicit part of their contractual relationship, relying on the *practical obscurity* of what other firms knew about them.²² Since widespread information sharing was impractical then, few surveys asked how consumers felt about it. New technologies have dispersed the fog of practical obscurity that formerly surrounded many consumer transactions. The privacy concerns that appear in consumer surveys could represent ex post regret at the lack of contractual constraints on information sharing. This conflicts, however, with the evidence cited earlier indicating that most consumers do not feel strongly about information sharing. Alternatively, perhaps consumer preferences haven't changed, but consumers are merely asked about them more often today. Now that interfirm information sharing is economically viable, we see surveys on the subject.

Economists are often skeptical of survey evidence on consumer preferences, but it is not the sincerity of

consumers' responses that is in doubt. Surveys rarely confront consumers with the cost consequences of their choices. When asked whether they desire greater privacy without reference to cost, they are likely to say "yes" — more of a good is generally preferred to less, after all. But when confronted with real-life choices, many consumers decide that the benefits of greater privacy are outweighed by the costs. One recent study found a dramatic disparity between consumers' stated privacy preferences and their actual online behavior.²³ Participants answered many "highly personal" questions, despite having stated that privacy was important to them. The discrepancy between widespread consumer "concern" and the willingness of many consumers to readily compromise their privacy could well reflect the gap between the artificial choices implicit in survey questions and the real choices consumers actually face.²⁴

Conclusion

The economics of financial privacy is based on the notion that a financial institution's privacy policy is a characteristic associated with the products and services the institution offers. In well-functioning markets, prices reflect product characteristics; consumers are

²² Gramlich (1999).

²³ Spiekermann, Grossklags, and Berendt (no date available).

²⁴ Harper and Singleton (2001).



willing to pay more for characteristics they value, and producers charge more for characteristics that are more costly to supply. Consumers that value financial privacy ought to be willing to pay for privacy policies that they prefer. And if it is economically beneficial to share information with other companies, financial institutions ought to be willing to compensate their customers for permission to do so. The fact that few banks seem to be paying customers not to opt out is strong evidence that the economic value of information sharing is relatively small. And the fact that so few consumers are opting out, despite the low cost of doing so, is evidence that few consumers place a significant value on preventing information sharing.

This line of reasoning also leads to a stark and surprising conclusion: the choice between opt-out and opt-in standards is irrelevant. Under an opt-

out standard, banks could pay customers to refrain from opting out, while under an opt-in standard, banks could pay customers to opt in. Either way, financial markets should deliver an efficient amount of information sharing. One puzzle remains, however: Why is financial privacy such a controversial issue if few consumers care enough about preventing information sharing to take simple steps to prevent it? Nevertheless, the economics of the issue is clear—financial privacy laws like the GLBA accomplish less than either privacy advocates or their critics presume.

This article benefited from the comments of my colleagues in the Bank's Research Department, especially John Weinberg, Marvin Goodfriend, Laura Fortunato, Ned Prescott, Aaron Steelman, and John Walter, and from the assistance of Elise Couper.

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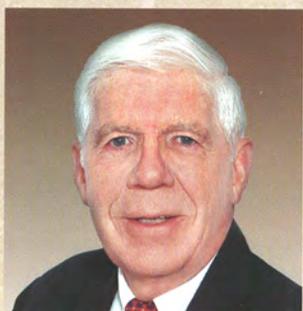
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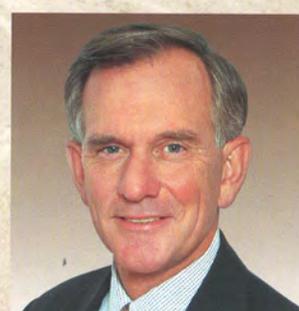
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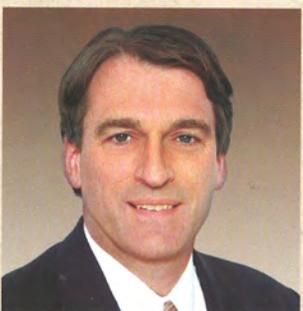
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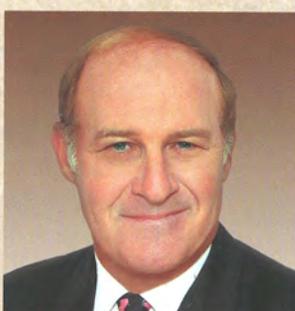
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The background of the page features a large, faint watermark of the University of Toronto seal. The seal is circular with a scalloped outer edge and contains the text "UNIVERSITY OF TORONTO" around the perimeter and a large "U" in the center.

Financial Statements

MANAGEMENT ASSERTION

DECEMBER 31, 2001

To the Board of Directors:

The management of the Federal Reserve Bank of Richmond (FRB Richmond) is responsible for the preparation and fair presentation of the Statement of Financial Condition, Statement of Income, and Statement of Changes in Capital as of December 31, 2001 (the "Financial Statements"). The Financial Statements have been prepared in conformity with the accounting principles, policies, and practices established by the Board of Governors of the Federal Reserve System and as set forth in the Financial Accounting Manual for the Federal Reserve Banks, and as such, include amounts, some of which are based on judgments and estimates of management.

The management of the FRB Richmond is responsible for maintaining an effective process of internal controls over financial reporting including the safeguarding of assets as they relate to the Financial Statements. Such internal controls are designed to provide reasonable assurance to management and to the Board of Directors regarding the preparation of reliable Financial Statements. This process of internal controls contains self-monitoring mechanisms, including, but not limited to, divisions of responsibility and a code of conduct. Once identified, any material deficiencies in the process of internal controls are reported to management, and appropriate corrective measures are implemented.

Even an effective process of internal controls, no matter how well designed, has inherent limitations, including the possibility of human error, and therefore can provide only reasonable assurance with respect to the preparation of reliable financial statements.

The management of the FRB Richmond assessed its process of internal controls over financial reporting including the safeguarding of assets reflected in the Financial Statements, based upon the criteria established in the "Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, the management of the FRB Richmond believes that the FRB Richmond maintained an effective process of internal controls over financial reporting including the safeguarding of assets as they relate to the Financial Statements.

Federal Reserve Bank of Richmond

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Walter A. Varvel

FIRST VICE PRESIDENT

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Directors of the Federal Reserve Bank of Richmond:

We have examined management's assertion that the Federal Reserve Bank of Richmond ("FRB Richmond") maintained effective internal control over financial reporting and the safeguarding of assets as they relate to the Financial Statements as of December 31, 2001, included in the accompanying Management's Assertion. The assertion is the responsibility of FRB Richmond's management. Our responsibility is to express an opinion on the assertions based on our examination.

Our examination was made in accordance with standards established by the American Institute of Certified Public Accountants, and accordingly, included obtaining an understanding of the internal control over financial reporting, testing, and evaluating the design and operating effectiveness of the internal control, and such other procedures as we considered necessary in the circumstances. We believe that our examination provides a reasonable basis for our opinion.

Because of inherent limitations in any internal control, misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal control over financial reporting to future periods are subject to the risk that the internal control may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, management's assertion that the FRB Richmond maintained effective internal control over financial reporting and over the safeguarding of assets as they relate to the Financial Statements as of December 31, 2001, is fairly stated, in all material respects, based upon criteria described in "Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.

A handwritten signature in blue ink that reads "PricewaterhouseCoopers LLP". The signature is written in a cursive, flowing style.

March 4, 2002

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Governors of the Federal Reserve System and the Board of Directors of the Federal Reserve Bank of Richmond:

We have audited the accompanying statements of condition of the Federal Reserve Bank of Richmond (the "Bank") as of December 31, 2001 and 2000, and the related statements of income and changes in capital for the years then ended. These financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on the financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 3, the financial statements were prepared in conformity with the accounting principles, policies, and practices established by the Board of Governors of the Federal Reserve System. These principles, policies, and practices, which were designed to meet the specialized accounting and reporting needs of the Federal Reserve System, are set forth in the "Financial Accounting Manual for Federal Reserve Banks" and constitute a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Bank as of December 31, 2001 and 2000, and the results of its operations for the years then ended, on the basis of accounting described in Note 3.

A handwritten signature in blue ink that reads "PricewaterhouseCoopers LLP". The signature is written in a cursive, flowing style.

March 4, 2002

2001 Annual Report

FEDERAL RESERVE BANK OF RICHMOND STATEMENTS OF CONDITION (IN MILLIONS)

ASSETS	As of December 31,	
	2001	2000
Gold certificates	\$ 741	\$ 750
Special drawing rights certificates	147	147
Coin	165	117
Items in process of collection	174	658
Loans to depository institutions	1	5
U.S. government and federal agency securities, net	33,556	30,437
Investments denominated in foreign currencies	3,544	4,121
Accrued interest receivable	341	355
Prepaid expense – interest on Federal Reserve notes to the U.S. Treasury	13	584
Interdistrict settlement account	13,211	2,402
Bank premises and equipment, net	232	202
Other assets	101	102
Total assets	\$52,226	\$39,880
LIABILITIES AND CAPITAL		
Liabilities:		
Federal Reserve notes outstanding, net	45,208	34,048
Deposits:		
Depository institutions	3,191	1,641
Other deposits	76	47
Deferred credit items	109	683
Accrued benefit costs	83	76
Other liabilities	45	27
Total liabilities	48,712	36,522
Capital:		
Capital paid-in	1,757	1,679
Surplus	1,757	1,679
Total capital	3,514	3,358
Total liabilities and capital	\$52,226	\$39,880

The accompanying notes are an integral part of these financial statements.

FEDERAL RESERVE BANK OF RICHMOND
STATEMENTS OF INCOME
(In MILLIONS)

	For the years ended December 31,	
	2001	2000
INTEREST INCOME		
Interest on U.S. government and federal agency securities	\$1,756	\$1,982
Interest on investments denominated in foreign currencies	80	71
Interest on loans to depository institutions	1	1
Total interest income	1,837	2,054
OTHER OPERATING INCOME (LOSS)		
Income from services	78	68
Reimbursable services to government agencies	34	34
Foreign currency losses, net	(354)	(371)
U.S. government securities gains (losses), net	19	(5)
Other income	6	4
Total other operating loss	(217)	(270)
OPERATING EXPENSES		
Salaries and other benefits	203	187
Occupancy expense	26	24
Equipment expense	76	69
Assessments by Board of Governors	92	75
Other credits	(59)	(34)
Total operating expenses	338	321
Net income prior to distribution	\$1,282	\$1,463
DISTRIBUTION OF NET INCOME		
Dividends paid to member banks	\$ 103	\$ 101
Transferred to surplus	78	974
Payments to U.S. Treasury as interest on Federal Reserve notes	1,101	388
Total distribution	\$1,282	\$1,463

The accompanying notes are an integral part of these financial statements.

FEDERAL RESERVE BANK OF RICHMOND
STATEMENTS OF CHANGES IN CAPITAL
 (IN MILLIONS)

For the years ended December 31,
 2001 and December 31, 2000

	Capital Paid-in	Surplus	Total Capital
Balance at January 1, 2000 (33.8 million shares)	\$1,691	\$1,691	\$3,382
Net income transferred to surplus	—	974	974
Surplus transfer to the U.S. Treasury	—	(986)	(986)
Net change in capital stock redeemed (0.2 million shares)	(12)	—	(12)
Balance at December 31, 2000 (33.6 million shares)	1,679	1,679	3,358
Net income transferred to surplus		78	78
Net change in capital stock issued (1.5 million shares)	78	—	78
Balance at December 31, 2001 (35.1 million shares)	\$1,757	\$1,757	\$3,514

The accompanying notes are an integral part of these financial statements.

NOTES TO FINANCIAL STATEMENTS

1. Organization

The Federal Reserve Bank of Richmond (“Bank”) is part of the Federal Reserve System (“System”) created by Congress under the Federal Reserve Act of 1913 (“Federal Reserve Act”) which established the central bank of the United States. The System consists of the Board of Governors of the Federal Reserve System (“Board of Governors”) and twelve Federal Reserve Banks (“Reserve Banks”). The Reserve Banks are chartered by the federal government and possess a unique set of governmental, corporate, and central bank characteristics. Other major elements of the System are the Federal Open Market Committee (“FOMC”) and the Federal Advisory Council. The FOMC is composed of members of the Board of Governors, the president of the Federal Reserve Bank of New York (“FRBNY”) and, on a rotating basis, four other Reserve Bank presidents.

Structure

The Bank in Richmond, Virginia, and its branches in Baltimore, Maryland, and Charlotte, North Carolina, serve the Fifth Federal Reserve District, which includes Maryland, North Carolina, South Carolina, Virginia, the District of Columbia, and a portion of West Virginia. In accordance with the Federal Reserve Act, supervision and control of the Bank are exercised by a Board of Directors. Banks that are members of the System include all national banks and any state chartered bank that applies and is approved for membership in the System.

Board of Directors

The Federal Reserve Act specifies the composition of the Board of Directors for each of the Reserve Banks. Each board is composed of nine members serving three-year terms: three directors, including those designated as Chairman and Deputy Chairman, are appointed by the Board of Governors, and six directors are elected by member banks. Of the six elected by member banks, three represent the public and

three represent member banks. Member banks are divided into three classes according to size. Member banks in each class elect one director representing member banks and one representing the public. In any election of directors, each member bank receives one vote, regardless of the number of shares of Reserve Bank stock it holds.

2. Operations and Services

The System performs a variety of services and operations. Functions include: formulating and conducting monetary policy; participating actively in the payments mechanism, including large-dollar transfers of funds, automated clearinghouse (“ACH”) operations and check processing; distributing coin and currency; performing fiscal agency functions for the U.S. Treasury and certain federal agencies; serving as the federal government’s bank; providing short-term loans to depository institutions; serving the consumer and the community by providing educational materials and information regarding consumer laws; supervising bank holding companies and state member banks; and administering other regulations of the Board of Governors. The Board of Governors’ operating costs are funded through assessments on the Reserve Banks.

The FOMC establishes policy regarding open market operations, oversees these operations, and issues authorizations and directives to the FRBNY for its execution of transactions. Authorized transaction types include direct purchase and sale of securities, matched sale-purchase transactions, the purchase of securities under agreements to resell, and the lending of U.S. government securities. The FRBNY is also authorized by the FOMC to hold balances of and to execute spot and forward foreign exchange and securities contracts in nine foreign currencies, maintain reciprocal currency arrangements (“F/X swaps”) with various central banks, and “warehouse” foreign currencies for the U.S. Treasury and Exchange Stabilization Fund (“ESF”) through the Reserve Banks.

3. Significant Accounting Policies

Accounting principles for entities with the unique powers and responsibilities of the nation's central bank have not been formulated by the Financial Accounting Standards Board. The Board of Governors has developed specialized accounting principles and practices that it believes are appropriate for the significantly different nature and function of a central bank as compared to the private sector. These accounting principles and practices are documented in the *Financial Accounting Manual for Federal Reserve Banks* ("Financial Accounting Manual"), which is issued by the Board of Governors. All Reserve Banks are required to adopt and apply accounting policies and practices that are consistent with the Financial Accounting Manual.

The financial statements have been prepared in accordance with the Financial Accounting Manual. Differences exist between the accounting principles and practices of the System and accounting principles generally accepted in the United States of America ("GAAP"). The primary differences are the presentation of all security holdings at amortized cost, rather than at the fair value presentation requirements of GAAP, and the accounting for matched sale-purchase transactions as separate sales and purchases, rather than secured borrowings with pledged collateral, as is generally required by GAAP. In addition, the Bank has elected not to present a Statement of Cash Flows. The Statement of Cash Flows has not been included as the liquidity and cash position of the Bank are not of primary concern to the users of these financial statements. Other information regarding the Bank's activities is provided in, or may be derived from, the Statements of Condition, Income, and Changes in Capital. Therefore, a Statement of Cash Flows would not provide any additional useful information. There are no other significant differences between the policies outlined in the Financial Accounting Manual and GAAP.

Effective January 2001, the System implemented proce-

dures to eliminate the sharing of costs by Reserve Banks for certain services a Reserve Bank may provide on behalf of the System. Data for 2001 reflects the adoption of this policy. Major services provided for the System by this bank, for which the costs will not be redistributed to the other Reserve Banks, include Standard Cash Automation and the Currency Technology Office.

The preparation of the financial statements in conformity with the Financial Accounting Manual requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates. Certain amounts relating to the prior year have been reclassified to conform to the current-year presentation. Unique accounts and significant accounting policies are explained below.

a. Gold Certificates

The Secretary of the Treasury is authorized to issue gold certificates to the Reserve Banks to monetize gold held by the U.S. Treasury. Payment for the gold certificates by the Reserve Banks is made by crediting equivalent amounts in dollars into the account established for the U.S. Treasury. These gold certificates held by the Reserve Banks are required to be backed by the gold of the U.S. Treasury. The U.S. Treasury may reacquire the gold certificates at any time and the Reserve Banks must deliver them to the U.S. Treasury. At such time, the U.S. Treasury's account is charged and the Reserve Banks' gold certificate accounts are lowered. The value of gold for purposes of backing the gold certificates is set by law at \$42 2/9 a fine troy ounce. The Board of Governors allocates the gold certificates among Reserve Banks once a year based upon average Federal Reserve notes outstanding in each District.

b. *Special Drawing Rights Certificates*

Special drawing rights (“SDRs”) are issued by the International Monetary Fund (“Fund”) to its members in proportion to each member’s quota in the Fund at the time of issuance. SDRs serve as a supplement to international monetary reserves and may be transferred from one national monetary authority to another. Under the law providing for United States participation in the SDR system, the Secretary of the U.S. Treasury is authorized to issue SDR certificates, somewhat like gold certificates, to the Reserve Banks. At such time, equivalent amounts in dollars are credited to the account established for the U.S. Treasury, and the Reserve Banks’ SDR certificate accounts are increased. The Reserve Banks are required to purchase SDRs, at the direction of the U.S. Treasury, for the purpose of financing SDR certificate acquisitions or for financing exchange stabilization operations. At the time SDR transactions occur, the Board of Governors allocates amounts among Reserve Banks based upon Federal Reserve notes outstanding in each District at the end of the preceding year. There were no SDR transactions in 2001.

c. *Loans to Depository Institutions*

The Depository Institutions Deregulation and Monetary Control Act of 1980 provides that all depository institutions that maintain reservable transaction accounts or nonpersonal time deposits, as defined in Regulation D issued by the Board of Governors, have borrowing privileges at the discretion of the Reserve Banks. Borrowers execute certain lending agreements and deposit sufficient collateral before credit is extended. Loans are evaluated for collectibility, and currently all are considered collectible and fully collateralized. If any loans were deemed to be uncollectible, an appropriate reserve would be established. Interest is accrued using the applicable discount rate established at least every fourteen days by the Board of Directors of the Reserve Banks, subject to review by the Board of

Governors. Reserve Banks retain the option to impose a surcharge above the basic rate in certain circumstances.

d. *U.S. Government and Federal Agency Securities and Investments Denominated in Foreign Currencies*

The FOMC has designated the FRBNY to execute open market transactions on its behalf and to hold the resulting securities in the portfolio known as the System Open Market Account (“SOMA”). In addition to authorizing and directing operations in the domestic securities market, the FOMC authorizes and directs the FRBNY to execute operations in foreign markets for major currencies in order to counter disorderly conditions in exchange markets or to meet other needs specified by the FOMC in carrying out the System’s central bank responsibilities. Such authorizations are reviewed and approved annually by the FOMC.

Matched sale-purchase transactions are accounted for as separate sale and purchase transactions. Matched sale-purchase transactions are transactions in which the FRBNY sells a security and buys it back at the rate specified at the commencement of the transaction.

The FRBNY has sole authorization by the FOMC to lend U.S. government securities held in the SOMA to U.S. government securities dealers and to banks participating in U.S. government securities clearing arrangements on behalf of the System, in order to facilitate the effective functioning of the domestic securities market. These securities-lending transactions are fully collateralized by other U.S. government securities. FOMC policy requires FRBNY to take possession of collateral in excess of the market values of the securities loaned. The market values of the collateral and the securities loaned are monitored by FRBNY on a daily basis, with additional collateral obtained as necessary. The securities loaned continue to be accounted for in the SOMA.

Foreign exchange (“F/X”) contracts are contractual agreements between two parties to exchange specified currencies,

at a specified price, on a specified date. Spot foreign contracts normally settle two days after the trade date, whereas the settlement date on forward contracts is negotiated between the contracting parties, but will extend beyond two days from the trade date. The FRBNY generally enters into spot contracts, with any forward contracts generally limited to the second leg of a swap/warehousing transaction.

The FRBNY, on behalf of the Reserve Banks, maintains renewable, short-term F/X swap arrangements with two authorized foreign central banks. The parties agree to exchange their currencies up to a pre-arranged maximum amount and for an agreed upon period of time (up to twelve months), at an agreed upon interest rate. These arrangements give the FOMC temporary access to foreign currencies that it may need for intervention operations to support the dollar and give the partner foreign central bank temporary access to dollars it may need to support its own currency. Drawings under the F/X swap arrangements can be initiated by either the FRBNY or the partner foreign central bank, and must be agreed to by the drawee. The F/X swaps are structured so that the party initiating the transaction (the drawer) bears the exchange rate risk upon maturity. The FRBNY will generally invest the foreign currency received under an F/X swap in interest-bearing instruments.

Warehousing is an arrangement under which the FOMC agrees to exchange, at the request of the Treasury, U.S. dollars for foreign currencies held by the Treasury or ESF over a limited period of time. The purpose of the warehousing facility is to supplement the U.S. dollar resources of the Treasury and ESF for financing purchases of foreign currencies and related international operations.

In connection with its foreign currency activities, the FRBNY, on behalf of the Reserve Banks, may enter into contracts which contain varying degrees of off-balance sheet market risk, because they represent contractual commitments involving future settlement and counter-party credit risk. The FRBNY controls credit risk by obtaining credit approvals, establishing transaction limits, and performing daily monitoring procedures.

While the application of current market prices to the securities currently held in the SOMA portfolio and investments denominated in foreign currencies may result in values substantially above or below their carrying values, these unrealized changes in value would have no direct effect on the quantity of reserves available to the banking system or on the prospects for future Reserve Bank earnings or capital. Both the domestic and foreign components of the SOMA portfolio from time to time involve transactions that can result in gains or losses when holdings are sold prior to maturity. However, decisions regarding the securities and foreign currencies transactions, including their purchase and sale, are motivated by monetary policy objectives rather than profit. Accordingly, earnings and any gains or losses resulting from the sale of such currencies and securities are incidental to the open market operations and do not motivate its activities or policy decisions.

U.S. government and federal agency securities and investments denominated in foreign currencies comprising the SOMA are recorded at cost, on a settlement-date basis, and adjusted for amortization of premiums or accretion of discounts on a straight-line basis. Interest income is accrued on a straight-line basis and is reported as "Interest on U.S. government and federal agency securities" or "Interest on investments denominated in foreign currencies," as appropriate. Income earned on securities lending transactions is reported as a component of "Other income." Gains and losses resulting from sales of securities are determined by specific issues based on average cost. Gains and losses on the sales of U.S. government and federal agency securities are reported as "U.S. Government securities gains (losses), net." Foreign-currency-denominated assets are revalued daily at current market exchange rates in order to report these assets in U.S. dollars. Realized and unrealized gains and losses on investments denominated in foreign currencies are reported as "Foreign currency losses, net". Foreign currencies held through F/X swaps, when initiated by the counter-party, and warehousing arrangements

are revalued daily, with the unrealized gain or loss reported by the FRBNY as a component of “Other assets” or “Other liabilities,” as appropriate.

Balances of U.S. government and federal agency securities bought outright, securities loaned, investments denominated in foreign currency, interest income, securities lending fee income, amortization of premiums and discounts on securities bought outright, gains and losses on sales of securities, and realized and unrealized gains and losses on investments denominated in foreign currencies, excluding those held under an F/X swap arrangement, are allocated to each Reserve Bank. Income from securities lending transactions undertaken by the FRBNY are also allocated to each Reserve Bank. Securities purchased under agreements to resell and unrealized gains and losses on the revaluation of foreign currency holdings under F/X swaps and warehousing arrangements are allocated to the FRBNY and not to other Reserve Banks.

Statement of Financial Accounting Standards No. 133, as amended and interpreted, became effective on January 1, 2001. For the periods presented, the Reserve Banks had no derivative instruments required to be accounted for under the standard.

e. Bank Premises and Equipment

Bank premises and equipment are stated at cost less accumulated depreciation. Depreciation is calculated on a straight-line basis over estimated useful lives of assets ranging from 2 to 50 years. New assets, major alterations, renovations and improvements are capitalized at cost as additions to the asset accounts. Maintenance, repairs and minor replacements are charged to operations in the year incurred. Internally developed software is capitalized based on the cost of direct materials and services and those indirect costs associated with developing, implementing, or testing software.

f. Interdistrict Settlement Account

At the close of business each day, all Reserve Banks and branch-

es assemble the payments due to or from other Reserve Banks and branches as a result of transactions involving accounts residing in other Districts that occurred during the day's operations. Such transactions may include funds settlement, check clearing and ACH operations, and allocations of shared expenses. The cumulative net amount due to or from other Reserve Banks is reported as the “Interdistrict settlement account.”

g. Federal Reserve Notes

Federal Reserve notes are the circulating currency of the United States. These notes are issued through the various Federal Reserve agents to the Reserve Banks upon deposit with such Agents of certain classes of collateral security, typically U.S. government securities. These notes are identified as issued to a specific Reserve Bank. The Federal Reserve Act provides that the collateral security tendered by the Reserve Bank to the Federal Reserve Agent must be equal to the sum of the notes applied for by such Reserve Bank. In accordance with the Federal Reserve Act, gold certificates, special drawing rights certificates, U.S. government and federal agency securities, triparty agreements, loans to depository institutions, and investments denominated in foreign currencies are pledged as collateral for net Federal Reserve notes outstanding. The collateral value is equal to the book value of the collateral tendered, with the exception of securities, whose collateral value is equal to the par value of the securities tendered. The Board of Governors may, at any time, call upon a Reserve Bank for additional security to adequately collateralize the Federal Reserve notes. The Reserve Banks have entered into an agreement which provides for certain assets of the Reserve Banks to be jointly pledged as collateral for the Federal Reserve notes of all Reserve Banks in order to satisfy their obligation of providing sufficient collateral for outstanding Federal Reserve notes. In the event that this collateral is insufficient, the Federal Reserve Act provides that Federal Reserve notes become a first and paramount lien on all the assets of the Reserve Banks. Finally, as obligations of the United States, Federal Reserve notes are backed by the full

faith and credit of the United States government.

The “Federal Reserve notes outstanding, net” account represents Federal Reserve notes reduced by currency held in the vaults of the Bank of \$10,230 million, and \$16,797 million at December 31, 2001 and 2000, respectively.

h. Capital Paid-in

The Federal Reserve Act requires that each member bank subscribe to the capital stock of the Reserve Bank in an amount equal to 6 percent of the capital and surplus of the member bank. As a member bank’s capital and surplus changes, its holdings of the Reserve Bank’s stock must be adjusted. Member banks are those state-chartered banks that apply and are approved for membership in the System and all national banks. Currently, only one-half of the subscription is paid-in and the remainder is subject to call. These shares are nonvoting with a par value of \$100. They may not be transferred or hypothecated. By law, each member bank is entitled to receive an annual dividend of 6 percent on the paid-in capital stock. This cumulative dividend is paid semiannually. A member bank is liable for Reserve Bank liabilities up to twice the par value of stock subscribed by it.

i. Surplus

The Board of Governors requires Reserve Banks to maintain a surplus equal to the amount of capital paid-in as of December 31. This amount is intended to provide additional capital and reduce the possibility that the Reserve Banks would be required to call on member banks for additional capital. Reserve Banks are required by the Board of Governors to transfer to the U.S. Treasury excess earnings, after providing for the costs of operations, payment of dividends, and reservation of an amount necessary to equate surplus with capital paid-in.

The Consolidated Appropriations Act of 2000 (Public Law 106-113, Section 302) directed the Reserve Banks to transfer to the U.S. Treasury additional surplus funds of \$3,752 million during the Federal Government’s 2000 fiscal year.

Federal Reserve Bank of Richmond transferred \$987 million to the U.S. Treasury. Reserve Banks were not permitted to replenish surplus for these amounts during fiscal year 2000 which ended September 30, 2000; however, the surplus was replenished by December 31, 2000.

In the event of losses or a substantial increase in capital, payments to the U.S. Treasury are suspended until such losses or increases in capital are recovered through subsequent earnings. A portion of the payments made to the U.S. Treasury earlier in the year are classified as “Prepaid expense-interest on Federal Reserve notes to the U.S. Treasury.” Weekly payments to the U.S. Treasury may vary significantly.

j. Income and Costs related to Treasury Services

The Bank is required by the Federal Reserve Act to serve as fiscal agent and depository of the United States. By statute, the Department of the Treasury is permitted, but not required, to pay for these services. The costs of providing fiscal agency and depository services to the Treasury Department that have been billed but will not be paid are immaterial and included in “Other credits.”

k. Taxes

The Reserve Banks are exempt from federal, state, and local taxes, except for taxes on real property, which are reported as a component of “Occupancy expense.”

4. U.S. Government and Federal Agency Securities

Securities bought outright are held in the SOMA at the FRBNY. An undivided interest in SOMA activity, with the exception of securities held under agreements to resell and the related premiums, discounts and income, is allocated to each Reserve Bank on a percentage basis derived from an annual settlement of interdistrict clearings. The settlement, performed in April of each year, equalizes Reserve Bank gold certificate holdings to Federal Reserve notes outstanding. The Bank’s allocated share of SOMA balances

was 5.974 percent and 5.870 percent at December 31, 2001 and 2000, respectively.

The Bank's allocated share of securities held in the SOMA at December 31, that were bought outright, were as follows (in millions):

	2001	2000
Par value:		
Federal agency	\$ 1	\$ 8
U.S. government:		
Bills	10,877	10,492
Notes	15,887	14,099
Bonds	6,193	5,447
Total par value	32,958	30,046
Unamortized premiums	675	571
Unaccreted discounts	(77)	(180)
Total allocated to Bank	\$33,556	\$30,437

Total SOMA securities bought outright were \$561,701 million and \$518,501 million at December 31, 2001 and 2000, respectively.

The maturity distribution of U.S. government and federal agency securities bought outright, which were allocated to the Bank at December 31, 2001, were as follows (in millions):

Maturities of Securities Held	Par Value		Total
	U.S. Government Securities	Federal Agency Obligations	
Within 15 days	\$ 638	\$ —	\$ 638
16 days to 90 days	7,440	—	7,440
91 days to 1 year	7,804	—	7,804
Over 1 year to 5 years	9,150	1	9,151
Over 5 years to 10 years	3,186	—	3,186
Over 10 years	4,739	—	4,739
Total	\$32,957	\$ 1	\$32,958

At December 31, 2001 and 2000, matched sale-purchase transactions involving U.S. government securities with par values of \$23,188 million and \$21,112 million, respectively, were outstanding, of which \$1,385 million and \$1,239 million were allocated to the Bank. Matched sale-purchase transactions are generally overnight arrangements.

At December 31, 2001 and 2000, U.S. government securities with par values of \$7,345 million and \$2,086 million, respectively, were loaned from the SOMA, of which \$439 million and \$122 million were allocated to the Bank.

5. Investments Denominated in Foreign Currencies

The FRBNY, on behalf of the Reserve Banks, holds foreign currency deposits with foreign central banks and the Bank for International Settlements and invests in foreign government debt instruments. Foreign government debt instruments held include both securities bought outright and securities held under agreements to resell. These investments are guaranteed as to principal and interest by the foreign governments.

Each Reserve Bank is allocated a share of foreign-currency-denominated assets, the related interest income, and realized and unrealized foreign currency gains and losses, with the exception of unrealized gains and losses on F/X swaps and warehousing transactions. This allocation is based on the ratio of each Reserve Bank's capital and surplus to aggregate capital and surplus at the preceding December 31. The Bank's allocated share of investments denominated in foreign currencies was approximately 24.344 percent and 26.301 percent at December 31, 2001 and 2000, respectively.

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The Bank's allocated share of investments denominated in foreign currencies, valued at current exchange rates at December 31, were as follows (in millions):

	2001	2000
European Union Euro:		
Foreign currency deposits	\$ 1,118	\$ 1,218
Government debt instruments including Agreements to resell	656	714
Japanese Yen:		
Foreign currency deposits	460	724
Government debt instruments including agreements to resell	1,294	1,446
Accrued interest	16	19
Total	\$3,544	\$4,121

Total investments denominated in foreign currencies were \$14,559 million and \$15,670 million at December 31, 2001 and 2000, respectively.

The maturity distribution of investments denominated in foreign currencies which were allocated to the Bank at December 31, 2001, was as follows (in millions):

Maturities of Investments Denominated in Foreign Currencies	
Within 1 year	\$3,339
Over 1 year to 5 years	98
Over 5 years to 10 years	107
Over 10 years	—
Total	\$3,544

At December 31, 2001 and 2000, there were no open foreign exchange contracts or outstanding F/X swaps.

At December 31, 2001 and 2000, the warehousing facility was \$5 billion, with zero outstanding.

6. Bank Premises and Equipment

A summary of bank premises and equipment at December 31 is as follows (in millions):

	2001	2000
Bank premises and equipment:		
Land	\$ 19.7	\$ 16.2
Buildings	122.6	117.9
Building machinery and equipment	44.1	35.1
Construction in process	0.3	8.5
Furniture and equipment	292.8	253.4
	479.5	431.1
Accumulated depreciation	(247.5)	(229.1)
Bank premises and equipment, net	\$232.0	\$202.0

Depreciation expense was \$31 million and \$30 million for the years ended December 31, 2001 and 2000, respectively.

Bank premises and equipment at December 31 include the following amounts for leases that have been capitalized (in millions):

	2001	2000
Bank premises and equipment	\$20	\$33
Accumulated depreciation	(13)	(22)
Capitalized leases, net	\$ 7	\$11

The Bank leases unused space to outside tenants. Those leases have terms ranging from 1 to 5 years. Rental income from such leases was \$1.3 million for each of the years ended December 31, 2001 and 2000. Future minimum lease payments under noncancellable agreements in existence at December 31, 2001, were (in millions):

2002	\$1.1
2003	1.2
2004	1.2
2005	1.2
2006	1.2
Thereafter	0.0
	\$5.9

7. Commitments and Contingencies

At December 31, 2000, the Bank was obligated under non-cancelable leases for premises and equipment with terms ranging from 1 to approximately 4 years. These leases provide for increased rentals based upon increases in real estate taxes, operating costs or selected price indices.

Rental expense under operating leases for certain operating facilities, warehouses, and data processing and office equipment (including taxes, insurance and maintenance when included in rent), net of sublease rentals, was \$40 million and \$37 million for the years ended December 31, 2001 and 2000, respectively. Certain of the Bank's leases have options to renew.

Future minimum rental payments under noncancelable operating leases and capital leases, net of sublease rentals, with terms of one year or more, at December 31, 2001, were (in millions):

	Operating	Capital
2002	\$1.4	\$1.4
2003	1.2	0.9
2004	1.0	0.8
2005	0.4	0.1
Thereafter	0.0	0.0
	\$4.0	3.2
Amount representing interest		(0.2)
Present value of net minimum lease payment		\$3.0

At December 31, 2001, there were no other commitments and long-term obligations in excess of one year.

Under the Insurance Agreement of the Federal Reserve Banks dated as of March 2, 1999, each of the Reserve Banks has agreed to bear, on a per incident basis, a pro rata share of losses in excess of 1 percent of the capital paid-in of the claiming Reserve Bank, up to 50 percent of the total capital paid-in of all Reserve Banks. Losses are borne in the ratio that

a Reserve Bank's capital paid-in bears to the total capital paid-in of all Reserve Banks at the beginning of the calendar year in which the loss is shared. No claims were outstanding under such agreement at December 31, 2001 or 2000.

The Bank is involved in certain legal actions and claims arising in the ordinary course of business. Although it is difficult to predict the ultimate outcome of these actions, in management's opinion, based on discussions with counsel, the aforementioned litigation and claims will be resolved without material adverse effect on the financial position or results of operations of the Bank.

8. Retirement and Thrift Plans

Retirement Plans

The Bank currently offers two defined benefit retirement plans to its employees, based on length of service and level of compensation. Substantially all of the Bank's employees participate in the Retirement Plan for Employees of the Federal Reserve System ("System Plan") and the Benefit Equalization Retirement Plan ("BEP"). The System Plan is a multi-employer plan with contributions fully funded by participating employers. No separate accounting is maintained of assets contributed by the participating employers. The Bank's projected benefit obligation and net pension costs for the BEP at December 31, 2001 and 2000, and for the years then ended, are not material.

Thrift Plan

Employees of the Bank may also participate in the defined contribution Thrift Plan for Employees of the Federal Reserve System ("Thrift Plan"). The Bank's Thrift Plan contributions totaled \$6 million for each of the years ended December 31, 2001 and 2000, and are reported as a component of "Salaries and other benefits."

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9. Postretirement Benefits Other Than Pensions and Postemployment Benefits

Postretirement benefits other than pensions

In addition to the Bank's retirement plans, employees who have met certain age and length of service requirements are eligible for both medical benefits and life insurance coverage during retirement.

The Bank funds benefits payable under the medical and life insurance plans as due and, accordingly, has no plan assets. Net postretirement benefit costs are actuarially determined using a January 1 measurement date.

Following is a reconciliation of beginning and ending balances of the benefit obligation (in millions):

	2001	2000
Accumulated postretirement benefit obligation at January 1	\$71.0	\$63.8
Service cost-benefits earned during the period	2.3	1.9
Interest cost of accumulated benefit obligation	5.6	4.7
Actuarial loss	12.5	3.0
Contributions by plan participants	0.4	0.3
Benefits paid	(3.4)	(2.7)
Plan amendment/settlement	(11.0)	—
Accumulated postretirement benefit obligation at December 31	\$77.4	\$71.0

Following is a reconciliation of beginning and ending balances of the plan assets, the unfunded postretirement benefit obligation, and the accrued postretirement benefit costs (in millions):

	2001	2000
Fair value of plan assets at January 1	\$ —	\$ —
Actual return on plan assets	—	—
Contributions by the employer	3.0	2.4
Contributions by plan participants	0.4	0.3
Benefits paid	(3.4)	(2.7)
Fair value of plan assets at December 31	\$ —	\$ —
Unfunded postretirement benefit obligation	\$77.4	\$71.0
Unrecognized prior service cost	11.6	0.7
Unrecognized net actuarial loss	(20.1)	(7.9)
Accrued postretirement benefit costs	\$68.9	\$63.8

Accrued postretirement benefit costs are reported as a component of "Accrued benefit costs."

At December 31, 2001 and 2000, the weighted average discount rate assumptions used in developing the benefit obligation were 7.0 percent and 7.5 percent, respectively.

For measurement purposes, a 10.00 percent annual rate of increase in the cost of covered health care benefits was assumed for 2002. Ultimately, the health care cost trend rate is expected to decrease gradually to 5.00 percent by 2008, and remain at that level thereafter.

Assumed health care cost trend rates have a significant effect on the amounts reported for health care plans. A one percentage point change in assumed health care cost trend rates would have the following effects for the year ended December 31, 2001 (in millions):

	1 Percentage Point Increase	1 Percentage Point Decrease
Effect on aggregate of service and interest cost components of net periodic postretirement benefit costs	\$1.7	\$(1.3)
Effect on accumulated postretirement benefit obligation	5.6	(7.7)

The following is a summary of the components of net periodic postretirement benefit costs for the years ended December 31 (in millions):

	2001	2000
Service cost benefits earned during the period	\$2.3	\$1.9
Interest cost of accumulated benefit obligation	5.6	4.7
Amortization of prior service cost	(0.1)	(0.1)
Recognized net actuarial loss	0.3	0.1
Net periodic postretirement benefit costs	\$8.1	\$6.6

Net periodic postretirement benefit costs are reported as a component of "Salaries and other benefits."

Postemployment benefits

The Bank offers benefits to former or inactive employees. Postemployment benefit costs are actuarially determined and include the cost of medical and dental insurance, survivor income, and disability benefits. Costs were projected using the same discount rate and health care trend rates as were used for projecting postretirement costs. The accrued postemployment benefit costs recognized by the Bank at December 31, 2001 and 2000, were \$13.6 million and \$11.8 million, respectively. This cost is included as a component of "Accrued benefit costs." Net periodic postemployment benefit costs included in 2001 and 2000 operating expenses were \$2.6 million and \$2.4 million, respectively.

FEDERAL RESERVE BANK OF RICHMOND
SUMMARY OF OPERATIONS

(UNAUDITED)

	Year-to-Date December			
	Dollar Amount		Volume	
	2001	2000	2001	2000
CASH				
Currency received and counted	48.1 Billion	47.6 Billion	3.2 Billion	3.0 Billion
Currency destroyed	6.7 Billion	8.7 Billion	719.0 Million	1,168.9 Million
Coin bags received and counted	60.1 Million	68.8 Million	131.5 Thousand	110.9 Thousand
NONCASH PAYMENTS				
Commercial checks processed	1.4 Trillion	1.3 Trillion	1.7 Billion	1.7 Billion
Commercial checks, packaged items handled	720.2 Billion	706.3 Billion	784.9 Million	814.5 Million
U.S. government checks processed	43.5 Billion	40.8 Billion	37.7 Million	28.8 Million
Automated Clearing House transactions:				
Commercial ¹	602.0 Billion	856.4 Billion	208.0 Million	264.7 Million
Government ¹	276.6 Billion	387.1 Billion	2.2 Million	3.2 Million
Fedwire funds transfers	21.6 Trillion	19.6 Trillion	11.9 Million	10.8 Million
LOANS TO DEPOSITORY INSTITUTIONS				
Discount window loans made	14.7 Billion	2.5 Billion	66	160
SECURITIES SERVICES				
Safekeeping balance of book-entry securities as of December 31	246.9 Billion	226.7 Billion	N/A	N/A
Fedwire securities transfers	11.7 Trillion	11.1 Trillion	699.7 Thousand	655.8 Thousand
SERVICES TO U.S. TREASURY AND GOVERNMENT AGENCIES				
Issues, redemptions, and exchanges of U.S. savings bonds	1,736.5 Million	1,022.3 Million	6.2 Million	5.9 Million
Food stamps redeemed	412.0 Million	330.1 Million	81.9 Million	66.7 Million

N/A = not applicable

¹ ACH operations were consolidated in September 2001, and the statistics are now reported from the consolidation site at the Federal Reserve Bank of Atlanta.

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