

Electronic Banking and the
Regulatory Environment:
Principles, Problems, Prolegomena

by David L. Glass

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I. Introduction

When I was first asked to undertake this assignment, it was presented as an opportunity to think creatively about how, in an ideal world, the bank regulatory structure might be designed to accommodate the brave new world of electronic banking. I was attracted to the opportunity to "blue sky" a bit, free from the constraints of everyday legal and political reality.

But legal and political reality are the vineyards in which I have spent most of my working life, and I quickly found that it's not so easy to change gears. My experience has been that negotiations with legislators and regulators often -- usually -- start with high-minded visions of a more efficient banking system, but nearly always end up quibbling over details that often bear little, if any, relationship to either the original purpose of the exercise or the way things work in the real world.

So to stray too far from practical considerations, I feared, would lead us to results that

sound good in the abstract, but don't hold up to scrutiny. I'm reminded of the physicist and the economist who were shipwrecked, with nothing to eat but a can of beans and no can opener. The physicist thought long and hard, then said, "I've got it. I'll use the lens of my glasses to focus the sun's rays and start a fire. Then we'll heat the can of beans until the gases inside expand and it explodes. I can calculate the angle and velocity of the exploding beans, and put leaves around to catch them." To which the economist replied, "You're making it too complicated. Why don't we simply assume a can opener?"

But 'assuming a can-opener' is worse than just wishful thinking. Last summer the New York State Bankers Association hosted a lunchtime get-together with about 20 bankers and a young Republican member of the House Banking Committee. This was a friendly, informal, off-the-record gathering for the purpose of exchanging views on legislation to reform and modernize the banking system, which is being actively considered by the House Banking Committee as I write these words. At one point a senior officer of a Japanese bank asked our guest if his colleagues in the Congress understand that a failure to reform such antiquated laws as the Glass-Steagall Act -- a Depression-era law that prohibits banks from underwriting securities and restricts their ability to affiliate with an underwriter -- will have serious adverse consequences for the future competitiveness of American banks in the global market place. He started to give a neutral answer; then paused and looked around the cozy conference table at which we were seated. "Let me tell you how it really is," he said. "You can take all of my colleagues in the House who have given any real thought to the global

banking system and seat them comfortably around this table. With their families."

So I offer my thoughts to you today with a caveat: to attempt to idealize a regulatory structure to accommodate the future world of electronic banking, without considering what is happening out there in the "real" world of law and politics, is about as helpful as assuming the existence of a can opener on a desert island. But what I believe is helpful, and what I propose to do today, is to articulate the principles and concerns which should underlie any rethinking of the regulatory structure; take a closer look at some of the specific problem areas that need to be addressed in connection with electronic banking; and then offer some *prolegomena* -- some preliminary first steps -- toward applying our basic principles to solving those problems. Along the way, maybe we can find that can opener.

II. Principles

Let me begin by articulating four principles that I feel are fundamental to our consideration of the optimum regulatory environment for electronic banking.

- First, the banking system does not need more regulation. Daily the evidence mounts, in banking as elsewhere in our economy, that "one size fits all" regulation does not work in a world of increasing complexity and rapid change.

- Second, the market should be left free to determine the most efficient and

effective way to accommodate the technology of the future. By its nature government is reactive, and thus is not well-equipped to innovate.

- Third, supervisory policy should concern itself primarily with behavior, not structure. Effective supervision should be aimed at providing deterrence for conduct detrimental to safety and soundness, and identifying and weeding out the "bad bankers" -- the BCCI's and the Nick Leasons. Otherwise, we fall into the trap of letting the lowest common denominator dictate the shape of the future.

- Fourth, if the market is to dictate the structure of the banking system, the role of regulation should be to protect the safety and soundness of the system. Government is also legitimately concerned to assure free and fair access by qualified participants to the technology needed to compete.

I would like now to take a few moments to expand upon these principles.

1. The banking system needs less, not more, regulation.

Commercial banks, once the dominant players in the financial arena, are being increasingly marginalized as less-regulated competitors pick off one attractive product line after another. At the end of World War II, domestic commercial banks held some 56 percent

of the nation's financial assets; by 1991, that figure was below 30 percent.¹ In proposing legislation to allow banks to affiliate with securities firms and insurance companies, and commercial companies to own banks, Senate Banking Chairman Alfonse D'Amato (R-NY) made this point even more dramatically, asserting that banks have lost half their market share in just 20 years.²

How has this happened? A sea change of this magnitude obviously has more than one cause. Growing public confidence in the capital markets following the reforms of the 1930's, the post-World War II boom in the equity markets, the rise of new types of investment media, and the growth of public and private pension funds all no doubt played a part.

But without a doubt the major factor is the 'net regulatory burden' of banks as compared to other providers of financial services.³ It has resulted in making commercial banks inherently unable to compete with niche players in particular market segments which, by the simple expedient of operating without a bank charter, are free of the regulatory costs and burdens of being a bank.

On the funding side, mutual funds -- especially money market funds -- are free of FDIC insurance premiums, reserve requirements, and social responsibilities imposed on banks under the Community Reinvestment Act (CRA).⁴ Nonexistent 20 years ago, money

market funds had amassed more than \$500 billion in assets by the early '90's. And it is reasonable to assume that the great bulk of this was pure disintermediation -- money siphoned away from the banking system, most likely never to return.

On the asset side, the biggest loss is the exodus of the most creditworthy corporate customers -- once the bread and butter of the commercial banks -- to the commercial paper market, which simply bypasses the banks completely, except to the extent that they can participate as placement agents for a fee. And even there, they are hampered in competing with securities firms, since they cannot commit, as a true underwriter routinely does, to take the paper themselves if sufficient buyers can't be found. The best they can do is create a "Section 20" underwriting affiliate, which in turn is hamstrung by percentage limitations and firewalls that do not apply to securities firms not affiliated with banks.⁵

A perfect, if unusual, example of "regulatory disintermediation" in action is taking place right now in New York State. In 1992 the State Legislature somewhat liberalized the types of collateral banks may offer to support public deposits -- deposits of local governments, which are a vital source of funding for many community banks.⁶ At the same time, however, the legislature considered, and specifically rejected, a proposal to allow pooling of collateral, insisting instead that specific collateral be earmarked to each deposit. They were determined to avoid a repetition of the loss of public money incurred in the 1980's failures of Drysdale Government Securities and Bevill Bresler, in which Government

securities that investors thought were theirs alone turned out to be double-pledged. This is an example, of course, of government in its reactive mode.

But earmarking of collateral is inefficient, and raises the opportunity cost of a bank's securities portfolio, since portfolio decisions must be guided by collateral requirements as well as investment criteria such as yield, risk and duration. And of course, banks seeking government deposits still have the additional regulatory costs associated with deposit insurance premiums and reserve requirements.

As a result, an unregulated entity, which apparently pools the funds of multiple local governments for investment, has in a few years captured \$800 million of public investment funds, vaulting ahead of all but a few of the largest banks. It is essentially a money market fund for municipal governments, created under an interpretation of the State Comptroller's office allowing local school districts to cooperate in purchasing certain services. Because it is subject to no regulation, not even to registration requirements under the securities laws, it has succeeded for much the same reason that registered money market funds have won the hearts of the retail market -- by offering yields that banks, because of the cost of doing business imposed on them by regulation, generally cannot match.

Legislation is now pending in Albany that would "level the playing field" by requiring such investment vehicles to conform to the same standards as banks. But looking

at the larger picture, such legislation is like the proverbial finger in the dike. Like nature, the markets abhor a vacuum; wherever banks are priced out of the market by the cost of regulation, someone will find a way to offer the equivalent service through a less regulated non-bank entity. And because they are on the short end of the regulatory burden equation, banks are losing and will continue to lose that competition.

In the wake of FDICIA, the FDIC Improvement Act of 1991 -- probably the all-time pinnacle of regulatory micro-management -- the American Bankers Association estimated that banks were spending some \$12 billion annually just on regulatory paperwork. Even in the record profit years of 1993 and 1994, this amounted to some 20 or 25 percent of the industry's net profits. The good news is that Congress is now busily trying to undo some of the more absurd and intrusive regulations, enacted in haste to prove to the public that they were getting tough with the S & L crooks. The bad news is that while welcome, this initiative actually offers little to redress the fundamental competitive problem for banks seeking to compete in global markets.

2. Allow the Market to Determine the Structure

As I have suggested, it is the nature of democratic political institutions to react -- or should I say, overreact -- to yesterday's headlines, rather than tomorrow's opportunities. As the Congressman at our luncheon suggested, politicians are not inclined to indulge in

conceptualizing about the "global banking system," or the "global" anything, for that matter. Their concerns are closer to home. I am reminded that Jimmy Carter, the former President, used to post on his wall a quotation from the Christian philosopher Reinhold Niebuhr, to the effect that the purpose of politics is to establish justice in a sinful world. When he lost an election early in his career, a member of his staff added a sign reading, "But you can't establish justice in a sinful world unless you win the election."

It is axiomatic that politicians are focused on the needs and desires of the people who vote for their election and reelection. The result is that an abstract constituency, such as "global banking reform," gets short shrift. Certainly we have seen numerous examples of this in recent years. For instance, in 1991 Congress, responding to the public's unease regarding the ill-understood BCCI scandal, enacted the Foreign Bank Supervision Enhancement Act (FBSEA), which significantly raised the regulatory barriers to foreign bank entry and has slowed the processing of legitimate expansion proposals by reputable foreign banking organizations to a trickle.

Recently I met with a representative of a foreign banking organization that is interested in possibly opening a branch in the United States. When he asked me how long it would take the Federal Reserve to process the application, I had to admit that even as a Fed veteran I didn't have a clue, except that we were probably talking years. Why? Because his country is not on that still-short list that the Federal Reserve has found to have

"comprehensive supervision or regulation on a consolidated basis by the appropriate authorities in the home country" -- a determination the law requires the Fed to make.⁷ And understandably, banks from such countries are reluctant to make themselves test cases, at the cost of a lengthy, intrusive and uncertain investigatory and approval process.

My concern here is with the danger of overkill based on lack of understanding of what is being regulated. I'm thinking of the recent flood of legislative proposals to regulate the derivatives market, with much finger-pointing at examples such as Orange County, California and the State of Wisconsin as well as multinational banks and corporations. For the most part, these cases resulted from a breakdown of prudent investment practices rather than some inherent feature of derivatives.

Last January the United States Supreme Court unanimously upheld a ruling of the Office of the Comptroller of the Currency (OCC), that national banks, acting solely as agent and without taking any risk, may sell annuities to their customers.⁸ Within days the insurance agents' lobby weighed in with a letter to the Congress demanding that it overrule the Court. Predictable enough; but what I found striking, if disingenuous, was the agents' attempt to characterize banks selling annuities -- plain-vanilla investments for which the bank earns a simple brokerage commission, while undertaking no market or underwriting risk -- as a potential "derivatives disaster."⁹ They were playing, of course, to the public's -- and by extension the Congress' --presumed fear of that which it does not understand.

This is the danger of focusing on the tool rather than the workman. If a brutal murder is committed with a hammer, does it make sense to outlaw the use of hammers by skilled carpenters? But because our society and its legal structure have become obsessed with process and the recognition of "rights," this is precisely the type of result that most often obtains.¹⁰

3. Supervise, don't regulate

So the third principle is that supervision, rather than the writing of more rules, is the way to deal with issues raised by banking innovation, and in particular by electronic banking. Our quaint American notions of due process and fair play mandate that new rules may not be put in place without an extended public comment period. Even the best-crafted rule is likely to be out of step with the pace of technological change by the time it is adopted.

Fortunately, we have within the banking system a model of how to do it better. That is the model of supervision, based on broad principles such as safety and soundness, and the exercise of judgment by officials of presumed experience and expertise. And it works. In fact, in his recent best-seller "The Death of Common Sense," Philip Howard cites the bank regulatory agencies as avatars of the supervisory model:

A few federal agencies still manage with nothing more

than general mandates. The Federal Reserve Board sets monetary policy with virtually no constraints. The Comptroller of the Currency certifies banks as healthy based on standards like 'safety and soundness.' They look at each situation in context, and are considered highly effective.¹¹

We are all familiar with recent cases in which unauthorized or unsupervised trading has led to disastrous losses -- in the case of Barings, sufficient to wipe out capital accrued over two centuries of conservative operation. Given examples like these, and recurrent crises in the financial system, some have argued that supervision is inadequate and that fundamental systemic reform is necessary.¹² The argument is that with multiple and overlapping bank regulatory authorities, the tendency is to lowest-common-denominator supervision, or what the late Arthur Burns -- former Federal Reserve Chairman, and one-time Professor of Economics at this distinguished institution -- once called "competition in laxity." In this view, supervision cannot work effectively because, with three federal bank regulatory authorities, its application is bound to be uneven and to encourage forum-shopping.

There is some merit in this, of course. Presumably no rational person, starting from scratch, would conclude that we need three separate federal agencies to perform essentially the same function. Admittedly, the existence of three supervisory authorities is a function of history more than logic. But having said that, I still think the argument misses the point. More rule-making will not prevent a Barings or a BCCI; it can hardly be supposed that the "bad bankers" in those cases did not know they were breaking the rules. Neither is

overhauling the system likely to catch these situations before the damage is done, if internal controls are inadequate to do so.

On the other hand, there is every reason to anticipate that market participants react to these events and move internally to protect themselves. When Citicorp recently incurred a \$400,000 loss to a 28 year old Russian "hacker" with a laptop, it turned out that one key step in the verification process for the illegal transfers was missing -- a gap the bank moved quickly to close.¹³ And no regulatory penalty is likely to be as great a deterrent as possible criminal prosecution or, in the case of Barings, the total loss of a once-proud institution. Only slightly less extreme is the supervisory cease-and-desist order, which in another recent case was applied to mandate that an entire trading operation be shut down as the price of inadequate controls.

Contrast these swift and effective responses with what would have happened if the authorities decided instead that each of these situations called for another rule. There would be months, perhaps years, of drafting, followed by comment periods and perhaps hearings, followed by redrafting and more comment periods. At the end there would be a rule that would try to anticipate and prohibit similar activity in the future. But it is impossible to anticipate everything the ingenuity of man can concoct, especially when large sums of money are at stake. So the great majority of responsible, well-behaved market participants dutifully comply with the new rules, in the process enriching a few lawyers and

programmers. Responsible participants lose as the market becomes less efficient and less responsive. Meanwhile, we may be sure that the rogue traders are still out there, busily looking for the inevitable loopholes.

4. Regulation should protect systemic safety and soundness.

In the wake of the Great Depression, the prevention of bank failures emerged as the driving force behind banking regulation in the United States. Actually, the country was no stranger to bank failures before that; even during the "Roaring '20's" some 5,700 banks were closed, with a loss to depositors of some \$500 million. But the closures in the early years of the Depression -- some 4,000 in 1933 alone -- imprinted upon the national consciousness a fear of bank failure all out of proportion to its real economic impact. We decided that banks simply must not be allowed to fail. Measured by its own terms, this policy was remarkably successful; by the mid-50's only 5 or 6 banks failed annually, on average, an astonishingly small number compared against the 14,000 commercial banks then in existence. The failure rate of American business generally was about ten times as high during that period.

The price we paid for this abundance of caution is now obvious. Simply put, we enabled too many small, inefficient banking units to survive. Now the industry is going through the inevitable consolidation, following the shakeout of the late 1980's. Lacking a crystal ball, I won't comment on the fashionable prediction that by 2000 there will be only

20 banks left in the U.S. But in any event, it should not be a regulatory objective to prevent the failure of any particular institution. The proper role of safety and soundness regulation in the modern financial system is the prevention of systemic failure.

On the other side of the coin, it is also a proper function of government to insure that institutions have fair and ready access to the payments infrastructure. This objective is at odds with systemic safety, in that standards that emphasize safety will tend to raise the threshold for smaller or less established participants.

III. Problems

Now that we have some principles to guide us, let's turn to consideration of the current problem areas in the development of electronic banking. At the outset, it is important to distinguish between electronic banking at the wholesale, or bank-to-bank, level, and the development of retail electronic banking media, such as ATM machines and e-cash. The former is, of course, a reality; CHIPS¹⁴ and SWIFT⁵ operate effectively and through self-governing mechanisms that impose market discipline on their participants.

But retail electronic banking is still in its infancy. Policy decisions at this juncture will influence, for better or worse, whether the infant makes it through adolescence to a healthy adulthood. And the policy concerns are very different: for retail electronic banking

to succeed, it must entice a fickle and diverse public to participate. This means providing both incentives to choose electronic over paper media, and instilling a level of confidence at which the public is simply not concerned regarding the safety of its money. Whatever its faults, the deposit insurance system has achieved at least that in the United States; the question is how to preserve the public's confidence in an electronic environment, without sacrificing the benefits of market discipline or exposing the taxpayer to another "S&L debacle."

A. Wholesale Electronic Banking

At the wholesale level, electronic banking has grown and flourished over the past quarter-century or so, through an ad hoc mix of private and public initiatives. At the private level, the most notable development in the United States was the establishment and growth of CHIPS, which by a wide margin is now the world's largest large-value payment system (LVPS).¹⁶ In 1994 CHIPS averaged 180,000 payments, with a value of \$1.2 trillion, daily -- representing some 20% of all funds transfers in the G-10 countries. To date, CHIPS has never failed to settle, notwithstanding political crises (Iran, Kuwait); financial crises (the 1987 stock market crash); and operational crises (the World Trade Center bombing and electric power failures). At the beginning of this year it had 115 bank participants, representing 29 countries.

Going forward, the proper concerns of public policy in the wholesale area are, I submit, fourfold: 1) to minimize risk, consistent with maintaining efficient operation; 2) to shift the cost of systemic risk to the participants, rather than the public; 3) to promote and facilitate cross-border payments; and 4) to assure access on a fair and equal basis to all qualified participants. The success of CHIPS, as well as its influence in the modern global payments system, make it a useful test case for addressing these concerns.

1. Risk Reduction

The first point about risk is that it cannot ever be eliminated, since risk arises from uncertainty. The second point is that risk reduction can only be accomplished by trading off other desirable values, such as efficiency and low cost. Therefore, sound policy should be directed not at the elimination of risk, but at its optimization within the constraints represented by these other values.

The CHIPS approach to risk minimization encompasses requirements for system membership; timing restrictions on funds flows, requiring that a certain percentage of a bank's message volume be sent by a certain time of day; bilateral credit limits that each member is willing to absorb with each other member; and a net debit cap, equal to five percent of the aggregate credit limits for that participant set by all other participants. What these have in common is a reliance upon market discipline. Each participant has a powerful

incentive, arising from its own exposure, to set its bilateral limits and debit caps carefully. And they are strictly enforced within the CHIPS protocol; a payment message exceeding either limit simply will not be processed.

2. Risk Shifting

The second aspect of risk management in an LVPS is the shifting of risk away from the public to the parties who should properly bear that risk -- i.e., the participants. There are two conceptual approaches to risk shifting. First, one could require that each party in effect insure the system against the effect of its own failure -- a "defaulter pays" system. The alternative is a "survivor pays" system, in which the remaining participants are called upon to absorb the loss.

The "defaulter pays" approach could be achieved by mandating full collateralization of each participant's net debit cap. But such a system is, I submit, quite undesirable in terms of promoting growth and development of large volume payment systems. First, it completely removes any aspect of market discipline. With full collateralization, one is indifferent regarding the credit quality of one's counterparty. This, of course, was the fatal flaw in the deposit insurance system; up to \$100,000, a depositor is indifferent about who holds his money, and will offer his account to the highest bidder.

Second, the "opportunity cost" of holding collateral could be prohibitive. Under existing CHIPS rules, each participant must pose collateral equal to 5 percent of its highest bilateral credit limit for any other participant. The aggregate "opportunity cost" of this arrangement is about \$8 million currently. But going to 100 percent collateralization would raise this cost to \$180 million. There is no realistic way this cost could be absorbed.

The other approach to risk-shifting is the "survivor pays" model. This is realized in CHIPS through a mechanism known as "additional settlement obligation" -- ASO. In effect, it is a shared loss arrangement, in which each surviving participant is liable, in the ratio represented by its own bilateral credit limit divided by the aggregate bilateral credit limits for all participants against the defaulting party. This approach obviously promotes market discipline; their potential exposure under the ASO will induce participants to set their credit limits at appropriate levels.

It should be noted that this is a different methodology than is employed on a central bank system such as Fedwire. In such a real-time gross settlement (RTGS) system, the central bank is exposed to risk, to the extent that any participant runs an intraday ("daylight") overdraft. In theory, this risk could be eliminated by requiring full collateralization. The central bank would still bear the liquidity risk of a failure to settle, however. The Federal Reserve has put in place a methodology for pricing of daylight overdrafts, with escalating penalties as appropriate limits are exceeded.

3. Cross-Border Settlement

Two areas of concern have hindered the development of cross-border settlement. First is finality-of-settlement risk -- the risk that occurs if one participant is unable or unwilling to meet its settlement obligation. Second is the separate, though related, foreign exchange exposure, known as "Herstatt risk." Even where settlement is final, there is the risk that one side of the foreign exchange (FX) transaction will not be completed, exposing the participant to the risk of currency loss.

There is no consensus among bankers at present regarding the magnitude and significance of these risks. What is clear is that there is no obvious return for the party assuming the risk. But central banks are satisfied that the risks are real and significant, and have made clear that if the private sector will not deal with them, regulatory intervention may be necessary.¹⁷

4. Access to the System

As electronic banking looms larger and larger in the scheme of things, the issue of access comes to the fore. As membership in or access to a particular facility becomes more and more essential to competing and doing business, exclusion of a potential competitor raises the spectre of a violation of American antitrust law. A tightening of admission

standards will promote safety on the system by excluding marginal competitors. Conversely, admission of more parties necessarily implies a reduction of standards that could undermine the safety of the system. These inherently inconsistent objectives will have to be balanced.

B. Global Regulation of Financial Service Conglomerates

The formation of financial services conglomerates -- entities owning banks, securities firms, insurance companies and others under one umbrella -- is a trend well under way, even though it is nominally still prohibited under American law. The Bank Holding Company Act provides, with limited exceptions, that a company that owns or controls one or more banks may not own nonbanking businesses unless they are "closely related to banking" as determined by the Federal Reserve Board.¹⁸ Meanwhile, the Depression-era Glass-Steagall Act prohibits affiliations of banks with firms "engaged principally" in the business of underwriting securities.¹⁹

In a series of regulatory rulings and court decisions over the past fifteen years or so, these prohibitions, once thought to be absolute, have been stretched by the ingenuity of banks and their counsel. Now the time is ripe for their removal. On paper, conditions have never been more favorable. The Clinton Administration and the Chairmen of the House and Senate Banking Committees are all on record favoring reform. And the stranglehold of the House

Commerce Committee over Glass-Steagall reform has been broken, now that John Dingell (D-MI) has been swept out of the Chairman's seat by the 'Gingrich Revolution.'

But let's not be too hasty in our rush to assume a can opener. As I speak, the insurance agents' lobby and their allies in the Congress are locked in a pitched battle to preserve their turf from further inroads by banks. In the process, we risk seeing the industry divided between those banks that really want insurance powers, and those that really want Glass-Steagall reform. Why, you may wonder, should the competitiveness of American banks in the global banking system be held hostage by people who sell insurance for a living? The answer is simple: insurance agents, and their families, vote; the global banking system does not. As Speaker Gingrich recently put it, candidly if not elegantly, any banking legislation the Congress may pass must take care of the insurance agents, because for every bank president there are 150 insurance agents.

So fundamental reform remains elusive. But let's assume (that word again) that we are now in the brave new world of global financial conglomerates. The question is, how are they to be supervised?

Most observers agree on the principle of functional supervision -- each entity within the conglomerate being subject to oversight by a regulatory body designed for that purpose: the SEC for securities, the banking agencies for banking, and so forth. But that only opens

up more questions.

This past summer the Tripartite Group, a coalition of international banking, securities, and insurance regulators assembled under the auspices of the Basle Committee, issued a discussion paper on the supervision of financial conglomerates. As has been said of the Mideast peace talks, the good news is that they're talking; the bad news is that they don't agree on a whole lot. They did agree that supervision of each entity by its primary regulator was the first priority, but added that such supervision "needs to be complemented by an assessment from a group-wide perspective." They advocate the appointment of a lead supervisor, or "convenor," for this purpose, but reached no consensus as to how the convenor would be chosen. And they stressed the need to "look through" the conglomerate's legal structure to identify the individuals who manage the entity. Again, though, they conceded that this was more difficult as activities become more integrated and decision-making shifts to the parent company level.

In short, the Tripartite Group report is a good start -- but only a start. At least they are on the right track in focusing on supervision, rather than rule-making.

C. Retail Electronic Banking

1. Electronic Money ("e-cash")

Within the past generation we have all become accustomed to "electronic loans" -- the credit card -- and "electronic checks" -- the debit card. So the development of electronic cash seems the logical, almost inevitable next step. And indeed it appears that we are on the threshold of the era of e-cash, although how accepting consumers will be remains to be seen. I admit to being something of a Luddite myself when I ride the New York subway, which has its own primitive version of e-cash in the form of a stored-value magnetic stripe card, which one can swipe through a card reader to pay the fare. Similarly, the City Bar Association library on 44th Street has had the same type of system to operate its copy machines for at least ten years.

But these are what we would call "closed systems" -- they can be used in one dedicated application only, and thus are not a true substitute for cash. What we are talking about here is the "open system" -- a form of stored value that can be used as freely as cash.²⁰ This could take the form of a stored-value "smart card" that one carries around as an "electronic purse." Or it could take the form of stored value in a computer that is transferred over the Internet pursuant to coded instructions. Each of these raises policy questions, of which I will focus on just a few of the more urgent ones. I will leave to others a discussion

of the technical, business and marketing issues related to deployment of e-cash systems.

2. Should non-bank providers be allowed?

The threshold issue is, who should be permitted to provide e-cash systems? Banks have argued in recent years for the right to compete in other people's backyards -- most notably, securities underwriting and insurance. E-cash technology is certainly available to nonbank entities. Should we throw the doors open and let the market decide?

The notion has a superficial appeal; but at the risk of appearing to contradict my pro-market bias, I think it is misguided. We are talking about an entirely new payment medium, with potential that can only be guessed at and a class of participants lacking in sophistication. In my view, therefore, there are decisive policy reasons to exclude players outside the banking industry from being e-cash providers at this point.

First, the elaborate safety net of consumer protection we have built around the banking system -- particularly deposit insurance, and the regulation and supervision that are its handmaidens -- would not apply to nonbanks. At the least, this would result in consumer confusion. Charles Keating swindled hundreds of widows and orphans by the simple expedient of selling them notes of the parent holding company, which he misled them to believe were insured obligations of the S & L itself.

More recently, the regulatory authorities have been wringing their hands over the notion of banks selling mutual funds, annuities, and other securities, insisting on strict separation of these activities from the deposit-taking function and mandating belt-and-suspenders disclosure that these investments are not bank obligations and are not FDIC insured. The concern, borne out by surveys, is that large numbers of bank customers will think they are getting something risk-free, just because it was purchased at a bank. And, this being the United States, predictably there already have been lawsuits alleging that investors were misled into purchasing them. Somehow, we never hear about investors being misled when the market is up. (I like to tell my banking law students that "U.S." actually stands for "Unfair -- Sue!")

So a threshold policy decision is whether e-cash liabilities should be treated as insured deposits. The Federal Deposit Insurance Act defines a "deposit" as "the unpaid value of money or its equivalent . . ." on the books of a bank. E-cash would seem to fit the bill, since it is simply another form of bank liability to a customer. The problem arises with an electronic purse. Should a bank, or ultimately the deposit insurance system, be liable for something the consumer holds in the palm of her hand as though it was cash? I am reminded of a debate I had some years back with a New York State Assemblyman who sponsored legislation requiring banks to issue replacement certified or official checks where the consumer had lost the original. I tried to argue, to no avail, that a certified or official check

is the equivalent of cash, and should be handled as such by the consumer. But his constituent had suffered a loss, and that was the end of the matter.

My personal view is that resolving the deposit insurance question is probably essential if we want to promote acceptance of e-cash among the public. Otherwise, we may find ourselves back in the days of wildcat banking, before the National Currency Act of 1863, when currency consisted of bank notes that were only as good as the issuing bank. Small banks especially would not be able to compete without deposit insurance. But assuming that deposit insurance will apply is tantamount to excluding non-banks from offering open systems.

The level playing field argument is valid here as well. As I have argued, because of regulation nonbanks have a significant competitive advantage over banks. But this advantage is gained precisely because they are free of prudential safeguards that, as a matter of policy, we want surrounding our payments system. The point is, leveling the playing field is not a matter of protecting banks from competition; it's a matter of protecting consumers from risks that society has deemed unacceptable as a matter of policy. And at the macro level, policymakers recognize that consumer confidence is the cornerstone of any sound payments system.

3. Effect on Monetary Policy

From a policymaker's 'macro' perspective, there is a second issue as well militating against non-bank e-cash providers. This is the potential of leakage from the money supply, with consequences for central bank control. The Federal Reserve regulates money, by and large effectively, by acting on bank reserves. If nonregulated issuers are able to proliferate, the implementation of monetary policy will become next to impossible.

I well remember a lesson I learned in my early days as an attorney at the Federal Reserve Bank of New York. Citicorp had purchased a credit card subsidiary in Maryland, and then came up with an ingenious innovation called "Purchase Plus." The idea was that you would prepay your credit card account, creating a credit balance in advance of doing your Christmas shopping. Citicorp analogized it to the "layaway" plans that merchants used to offer. Oh, yes: while your funds were sitting there, Citicorp would pay you 8 percent interest. Citicorp argued that this was just a means of funding; but it looked, smelled and quacked an awful lot like a deposit.

I remember sitting in the main Board room at the Federal Reserve as the legal arguments for and against this arrangement were presented. Chairman Volcker sat quietly listening, until at one point he took his trademark cigar out of his mouth and said, "If Citicorp is taking deposits through a nonbank in Maryland, how am I supposed to control the money supply?" A silence descended over the gathering; and I understood for the first time that no amount of legal analysis was going to carry the day.

In May 1994 the European Monetary Institute Working Group on European Payment Systems studied this issue and concluded -- largely for the reasons I have outlined -- that only banks should be allowed to offer electronic purses.²¹ Earlier this year a report prepared for the Association of Payment Clearing Services concluded that the same considerations apply to payments over the Internet.²² So I don't think I'm being provincial in my belief that only banks should be allowed to offer e-cash as we have defined it.

4. Reserve Requirements

As I have suggested, e-cash carries implications for monetary policy. The effect on the aggregates should be manageable, provided that only banks are allowed to participate in offering open systems. Now let's consider the effect on reserve requirements.

Suppose I withdraw \$100 in cash from my checking account. On the bank's balance sheet, liabilities (deposits) drop by \$100, offset by a reduction in cash of a like amount. Assuming a 10 percent reserve requirement on checking accounts, however, the bank's required reserves go down by only \$10, while its actual reserves have dropped by \$100, the full amount of the cash taken out. Thus, it will need to add reserves in the short run.

Now consider if, instead of withdrawing cash, I download \$100 into my smart card. There is no effect on the bank's cash, and no effect on reserves. All I've done is to reduce my

checking balance and increase my smart card balance. I still have a claim on the bank, simply in a different form. The effect is no different than if I opened a second checking account and moved \$100 from my first account. Eventually, of course, the e-cash gets spent and shows up as a balance, initially in the merchant's computer or card reader. The merchant deposits this balance, and the e-cash liability is converted back to a demand deposit.

It seems, therefore, that the use of e-cash will not affect a bank's reserve management operation, if -- and this is a big 'if' -- they are treated as a bank liability subject to the same marginal reserve requirement as a demand deposit.

D. Security in an Electronic Environment

The security implications of electronic banking are obvious, and clearly must be addressed up front. At the risk of over-simplifying, there are two broad areas of concern: money laundering and similar criminal activity, and the potential for fraud directed at both issuers and users of e-cash systems.

1. Money Laundering

Currency has long been the staple of the underground economy. Policy makers have fought back hard against laundering operations, mainly by writing rules that mandate tracking and reporting of large currency flows. The Treasury did its part, stopping the printing of bills larger than \$100 to make the logistics of transporting a large amount of cash more difficult.

The concern is that e-cash could make money laundering easier.²³ Obviously, a handful of plastic cards with encoded value will be easier to transport undetected than the proverbial suitcase full of bills. To some extent, this concern can be ameliorated by extending reporting requirements to deposits of value from an e-cash system as well as to actual currency deposits. But what about the potential for transfer of smaller amounts to remote locations, where they could be deposited undetected? This is an issue that will need to be addressed as we move forward.

2. Fraud against the Consumer

As I stated earlier, it is axiomatic that consumers will never accept a payment method which exposes their money to fraud. Recognizing this, Congress passed the Electronic

Funds Transfer Act, under which the Federal Reserve promulgated its Regulation E, with the specific objective of limiting consumer liability for the fraudulent use of debit and ATM cards.

But does Regulation E cover the electronic purse? To the extent that it is used as an access device for downloading value from an account, the answer seems to be yes. But what about once the card is loaded up with value and being used to make routine purchases? Couldn't it be said that the bank's liability to the customer has ended, just as if she was carrying around cash withdrawn from an ATM? This issue, too, will need to be addressed. The current regulatory burden initiative in the Congress would specifically exempt e-cash systems from Regulation E. While on the one level this is appropriate -- they should be thought of as cash -- it remains to be seen whether the perceived lack of protection will build consumer resistance to their use.

3. Fraud Against the Issuer

From the issuer's perspective, the potential for fraud looms as a critical threshold issue. If criminals can create counterfeit electronic purses, for example, the issuing bank's exposure could be much larger than for existing payment media.²⁴ The main reason is that, unlike debit and ATM cards, a forged or stolen electronic purse is used off-line, and thus is much harder to detect. Some years back my wife was victimized by a thief who removed

her wallet from her purse in a store. She detected the theft within minutes and called the bank to report the theft. Within a few minutes thereafter the thief attempted to use the card at a nearby store, where it was declined. But how do you 'decline' an electronic purse? In principle, its use should be as undetectable as cash.

The potential for fraud exists today, of course. I previously referred to the Wall Street Journal report on the theft of \$400,000 from Citicorp by a 28 year old Russian "hacker" with a laptop computer. But let's not lose our perspective. In 1991 there was an estimated loss from online fraud of about \$5 million, compared with \$18 million in ATM fraud, \$712 million in credit-card fraud, and \$10 billion in good old-fashioned check fraud.²⁵ The risks of on-line fraud are real; but with Americans still writing 60 billion checks a year, and desktop publishing technology increasing rapidly, check fraud will probably continue to be the greater problem.

Digital signature technology offers great promise in deterring online fraud, both to protect banks from loss and to build consumer confidence in e-cash. In 1993 the National Institute of Standards and Technology (NIST) proposed a public key-based digital signature standard (DSS). In effect, this requires the use of two "keys," a public key and a private key. The private key is known only to the owner, while the public key is generally accessible. The public key allows the signature to be verified by the recipient of a message, and to verify that the message was not altered after being signed. But only the owner has the private key

needed to originate a message.

Most significantly -- and here is the real ingenuity of the digital signature -- its use deters not only theft, but alteration of the message to which it is attached, whether that message is a payment instruction or something else. Others are far more qualified than I to explain the technology; but in essence, it works because the underlying software establishes a mathematical relationship between the document and the private key, as well as between the private and public keys. Thus, if the content of the message is altered, the mathematical relationship is destroyed, and the recipient will be unable to confirm the validity of the message.

E. Fragmentation

Which leads me into one more problem area with respect to retail electronic banking: fragmentation, or the lack of uniformity in legal structure. The complexity of electronic payments media will increasingly mandate a coordinated approach, certainly on a national and ultimately on an international scale. But we have nothing approaching standardization at present, in large part because of the pervasive influence of state law.

The difficulty of ATM deployment is a good example of this. ATMs fit literally under the federal definition of a "branch," in that they are capable of taking deposits, making

loans and paying checks.²⁶ But federal law throws the control of branching to the states, which historically have been a crazy quilt of provisions, ranging from open (statewide branching) to protectionist (unit banking, with branches not allowed at all). To make matters worse, branching across state lines historically has been prohibited.

The Comptroller of the Currency tried a brute-force solution to this problem early on; he simply asserted that ATMs were not branches, and thus could be deployed anywhere. But the courts shot him down rather quickly, holding -- correctly, under the law -- that he had exceeded his authority.²⁷

Last year Congress finally enacted, and the President signed, an interstate branching law.²⁸ But again state prerogatives control. The law provides that banks can branch interstate after June 1, 1997, but only by acquiring an existing bank, unless the target or "host" state affirmatively authorizes de novo branching. A state may also "opt in" earlier than June 1, 1997, with or without de novo, and may "opt out" before that date.

The drawback is that by authorizing de novo branching, a state throws its borders open to banks from other states, with no assurance that its banks will be afforded reciprocal privileges. We debated this matter within our Association, and concluded, largely for this reason, not to favor de novo branching at this time. Last month California enacted an opt-in bill that does not permit de novo. Meanwhile, Texas decided to "opt out" altogether. So the

deployment by a bank of ATM machines across state lines, which would seem to be the logical method for geographic expansion of a retail network, is as problematic as ever. It is ironic, if characteristic, that yesterday's battle is being waged with such vigor, even as the ATM, the modern delivery system for retail banking, remains in limbo.

There is one potential bright spot on the horizon. In 1986 a federal court in New York ruled that an ATM machine owned by a supermarket, and leased to a bank on a non-exclusive basis, was not a "branch" of the bank because it was not "established" by the bank.²⁹ Picking up on this distinction, the Comptroller of the Currency last November proposed, as part of a comprehensive revision of the regulation governing national bank powers, that national banks be allowed to have ATM machines anywhere, notwithstanding branching laws, as long as they were non-exclusive.³⁰ That proposal has not yet been made final, and the possibility of court challenge once it is should not be overlooked. But at least it may break the logjam on ATM deployment.

Fragmentation at the state level is a problem in other respects. For instance, Utah has now passed a law governing digital signatures; but California and several other states are considering laws that operate quite differently. There is a danger that non-conforming standards will seriously diminish the value of the digital signature as a security device in an electronic environment.

IV. Prolegomena

Let me try to conclude by pulling together some of the ideas we've explored here into a few *prolegomena* -- a few preliminary steps toward accommodating the regulatory structure to the future of electronic banking.

- First, the market should be allowed to guide the regulatory structure -- not the other way around. As we have seen, government is reactive, and not well suited to innovation or fast-moving technology.

- Second, the fundamental objective of regulatory policy should be systemic safety and soundness. While there are no foolproof formulas, the risk-based capital standards that came out of the Basle Accord are a good place to start. They are objective, readily measured, and comparable from one regulatory or accounting system to another. They take explicit account of off-balance sheet exposures. And most important, they do not dictate any particular activities or portfolio decisions. A bank must meet its capital requirement, but how it gets there is its own business.

For several years the regulators have attempted to refine the measurement of capital to take explicit account of market and interest rate risk. In both cases they have responded to the comments and concerns of market participants, allowing the way banks actually take

account of these risks internally to guide them. This is, I think, a good demonstration of public-private cooperation. After all, both sides share the same objective.

- Third, with respect to large-value payment systems, the current mix of public and private initiatives appears to be working well. Further, modest reductions in the risk level of CHIPS and other private LVPS¹ should be pursued, while maintaining their emphasis on market discipline through bilateral netting and additional settlement obligation.

- Fourth, the cross-border payment problem must be addressed. There is no consensus at this point, but the problem is being actively studied.

- Fifth, a means for supervising international financial conglomerates should be pursued. The work of the Tripartite Group is a start.

- Sixth, standardization of e-cash security, whether in the form of digital signatures or some other method, must be accomplished. A uniform, nationwide standard should be adopted, through the development of a uniform law that can be adopted by the states along the lines of the Uniform Commercial Code.

By the way, has anyone found that can opener?

1.

Rogers, D., Saunders, A. and Walter, I., "Financial Intermediation and Banking Regulation in the United States" (copr. 1994, New York State Bankers

Association).

2. D'Amato, Alfonse, "My Plan For A Stronger Financial Industry," Wall Street Journal, Feb. 2, 1995, p. A18.

3. Rogers et al., supra n. 1.

4. Passed in 1977 for the purpose of prohibiting 'redlining' -- the exclusion of entire neighborhoods from eligibility for credit, particularly mortgages -- the CRA has come to embody an affirmative duty for banks and thrift institutions to make credit and other services available in low and moderate income neighborhoods. This duty is enforced through the assigning of a "CRA rating" by the bank examiners and the requirement that regulators take a bank's CRA performance into account in approving or denying mergers and expansion proposals. On July 1, 1995, new final regulations implementing CRA took effect for all insured banks. See 12 CFR Parts 25 (Comptroller of the Currency); 228 (Federal Reserve); 345 (Federal Deposit Insurance Corporation); 563e (Office of Thrift Supervision).

5. For a discussion of the legal underpinnings of 'Section 20' companies, see Glass, David L., "Recent Section 20 Battles," 4 Rev. of Fin. Serv. Reg. 107 (June 15, 1988).

6.
L. 1992, Ch. 708.

7.
12 USC § 3105 (d) (2) (A).

8.
NationsBank v. Variable Annuity Life Insurance Co., 115 S. Ct. 810 (1995); see generally Glass, David L., "Bank Sales of Annuities," 11 Rev. of Banking & Fin. Serv. _____ (1995) (publication pending).

9.
Id., footnote 137.

10.

Howard, Philip K., The Death of Common Sense (New York: Random House, 1994).

11.

Howard p. 29.

12.

E.g., Shull, Bernard, "The Limits of Prudential Supervision," Public Policy Brief No. 5/1993 (The Jerome Levy Economics Institute of Bard College).

13. "Russian Hacker, in Hitting Citicorp, Shows Global Vulnerability of Banks," Wall Street Journal, August 21, 1995.

14.

Clearing House Interbank Payments System, a privately owned and operated system that operates through bilateral netting of its participants transactions among themselves.

15.

Society for Worldwide Interbank Transfers

16.

Risk Reduction and Enhanced Efficiency in Large-Value Payment Systems: A Private-Sector Response, The New York Clearing House Association, January 1995, at 6.

17. Risk Reduction at 4.

18.

12 USC §1843(c)8).

19.

12 USC §377.

20.

Wenninger, John, and Laster, David, "The Electronic Purse," Current Issues in Economics and Finance, V. 1 No. 1 (Federal Reserve Bank of New York, April 1995).

21. Id. at 4.

22.

Rider, Paul, and Hawkes, Linda, "Paying for Purchases made over the Internet," June 1995, at 6.

23.

Wenninger and Laster at 4-5.

24.

Id. at 3.

25.

"Bank Fraud, the Old-Fashioned Way," Business Week, Sept. 4, 1995.

26.

12 USC §36(f) (the so-called McFadden Act).

27.

Independent Bankers Association of America v. Smith, 534 F. 2d 921 (D.C. Cir. 1975), cert. denied, 429 U.S. 862 (1976).

28.

Riegle-Neal Interstate Banking and Branching Efficiency Act, P.L. 103-328 (Sept. 29, 1994).

29. Independent Bankers Association of New York State, Inc. v. Marine Midland Bank, N.A., 757 F. 2d 453 (2d Cir. 1986), cert. denied, 476 U.S. 1186 (1986).

30.

59 F.R. 61034 (Nov. 29, 1994).